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:

Sorrel Bank, Park Avenue, Sheffield, S35 7DR

Client:

Mr. Adrian Want

Survey date:

31st October 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 Barnsley Metropolitan Borough Council. The proposal is described as:

"The demolition of the existing dwelling and erection of 2 (no.) detached dwellings with basements and integrated garages."

[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: SK 30879 99373 and has an area of approximately ~0.137ha. The site comprises a dwelling and garden with introduced shrubs, grassland, scattered trees, ornamental hedgerow, and developed, sealed surfaces in Sheffield. The underlying geology of the site is mudstone, siltstone, and sandstone (Pennine Lower Coal Measures Formation) overlain by freely draining slightly acid loamy soils of low fertility. Typical habitats of this soil type include neutral and acid pastures and deciduous woodlands, with acid communities such as bracken and gorse in the uplands. Adjacent to the south and north of the site are small lanes, adjacent to the east of the site is a patch of scattered trees and a disused school, and adjacent to the west is a dwelling and garden. MAGIC habitat designations within 2km include patches of: 'Priority Deciduous Woodland' (closest ~0.01km north), BAP 'Woodpasture and Parkland' (closest ~0.01km north), 'Priority Traditional Orchard' (closest ~0.13km east), 'Open Mosaic Habitat' (closest ~0.41km southeast), as well as ancient and semi-natural woodland (closest ~0.65km northeast), and 'Priority Lowland Heathland' (~1.85km southeast). The closest watercourse to the site is the High Wood Dike located ~0.35km east of the site boundary. The wider landscape comprises a small area of settlement with dwellings with large gardens, patches of woodland, scattered trees/treelines, grassland, and arable land in a rural area north of Sheffield City Centre.
Survey Details
The site survey was undertaken by Jessica Sibley BSc (Hons) MSc, Consultant Ecologist and accredited agent on a 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
31/10/2024	12	85	65	8	None

Executive Summary

A Biodiversity Net Gain (BNG) assessment will be required for the site.

Invasive non-native species present on-site (i.e., small-leaved cotoneaster and common rhododendron) should 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.

Two bat emergence surveys are required during the active bat season (optimal May to August, suboptimal September) to confirm presence or likely-absence of a bat roost within B1.

A separate GLTA should be undertaken for any off-site trees, if pruned/felled as part of the proposed works.

A low-impact lighting strategy should be adopted for foraging and commuting bats.

Other recommendations within this report include precautionary working methods for nesting birds, reptiles, common 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.

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 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, PRA map in appendix 2, 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 **(***UKHab codes used)* **Primary codes:** • Developed land; sealed surface [u1b] • Building [u1b5] • Other developed land [u1b6] • Other neutral grassland [g3c]	The site does not contain any habitats listed as a habitat of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). However, the site contains grassland, scattered trees, and ornamental hedgerow 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. **Developed land; sealed surface [u1b] including one building [u1b5] and other developed land [u1b6]** The site includes developed sealed surfaces, including one building (B1) which is considered in relation to roosting bats, later in this report (see section 'bats'), as well as hardstanding pathways and a drive. **Other neutral grassland [g3c]** Sections of the site are grassland which best represents 'other neutral grassland'. The sward height is maintained short between ~10-20cm. Species richness among the sward is ~6-8 species per m^2. There is >20% cover of broadleaved herbs and sedges. Species include: **D:** Springy turf moss *Rhytidiadelphus squarrosus*. **A:** Red fescue *Festuca rubra*.

• Non-native ornamental hedgerow [h2b] **Secondary codes:** • Scattered trees [32] • Introduced shrub [847] • Young trees – self set [202] • Mortared wall [853]	**F:** Common bent *Agrostis capillaris*, and white clover *Trifolium repens*. **O:** Yorkshire fog *Holcus lanatus*, false oat grass *Arrhenatherum elatius*, creeping buttercup *Ranunculus repens,* dandelion *Taraxacum officinale agg*., and hawksbeard *Crepis sp*. **O:** Hoary willowherb *Epilobium parviflorum*, comfrey *Symphytum sp*., primrose *Primula sp*., and self-heal *Prunella vulgaris*. Grassland – condition indication: The sward height across the grassland parcel is homogeneously short, without microclimates for vertebrates and invertebrates. Cover of bare ground is <5%. No bracken or scrub were recorded across the habitat parcels. The combined cover of creeping buttercup and white clover accounts for >5% of the grassland parcels. No invasive non-native species (as listed under Schedule 9 of the Wildlife and Countryside Act, 1981), were recorded across the parcels. **Non-native ornamental hedgerow [h2b]** Bordering the south boundary of the site is ~2.5m tall non-native ornamental hedgerow dominant with Leyland cypress *Cupressus leylandii*, with rare (abundance) holly *Hedera helix* and barberry *Berberidaceae sp*. The hedgerow is bordered by introduced shrubs. **Scattered trees [32]** There are three scattered trees within the site boundary. T1 is a *Eucalyptus sp*. tree with an approximate Diameter at Breast Height (DBH) of ~51cm. T2 is a *Cotoneaster sp*., tree with an approximate DBH of ~24cm. T3 is a sour cherry *Prunus cerasus* tree with an approximate DBH of ~16cm. 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. The trees over sail shrub vegetation beneath (i.e., >20%). **Introduced shrub [847] and young trees – self set [202]** Sections of the site also include patches of shrub with some young trees – self set. Species include occasional *Spirea sp*., barberry, *Mahonia sp*., koromiko *Veronica salicifolia*, *Pieris sp*., *Camellia sp*., small-leaved cotoneaster *Cotoneaster microphyllus*, common rhododendron *Rhododendron ponticum*, *Skimmia sp*., *Hydrangea sp*., spurge *Euphorbia sp*., rose *rosa sp*., holly, and *Fuchsia sp*., with rare in abundance scattered beech *Fagus sylvatica*, ash *Fraxinus excelsior*, and hazel *Corylus sp*., tree saplings. **Mortared wall [853]** The east, south, and west boundaries of the site have mortared stone walls.
Foreseen Impacts	The proposed development will result in the loss of/impacts to <0.102ha of grassland and shrubs. Some trees may also be lost as part of the works. This could result in a net loss in biodiversity at the site.
Recommendations	**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	**On-site designations:** The site is not subject to any statutory designation. **Statutory designated sites (within 2km):** There are two statutory sites within a 2km radius of the site, as detailed below: • **Wharncliffe Heath** Local Nature Reserve (**LNR**) – ~1.62km southwest – (heath with Iron Age & Romano-British archaeology). • **Wharncliffe Crags** Site of Special Scientific Interest (**SSSI**) – ~1.4km northwest – (woodland and dry heathland overlooking the River Don valley). The site lies within the impact risk zone for Wharncliffe Crags SSSI and Dearne Valley Wetlands SSSI, and the proposed development is not listed as a possible high risk for these designations. **Non-statutory designated sites:** The presence of non-statutory designated sites within 2km of the site cannot be established without data from Barnsley Biological Records Centre (BBRC).
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	Small-leaved cotoneaster and common rhododendron were identified on the site which are listed as invasive, non-native species under Schedule 9 of the Wildlife and Countryside Act 1981.
Foreseen Impacts	Construction could result in the spread of small-leaved cotoneaster and common rhododendron.
Recommendations	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 small-leaved cotoneaster and common rhododendron currently present on-site, into the wild (i.e. surrounding areas) or elsewhere via construction could constitute an offence. As such it is recommended that the small-leaved cotoneaster and common rhododendron present on-site should 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 hedgerow, grassland, shrubs, 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. **Suggested biodiversity enhancements:** The site could be further enhanced via the provision of native wildflowers or wildflower turf, and the installation of insect hotels and log piles which would provide foraging and sheltering opportunities for invertebrates.
Bats	
Summary of Survey Findings	**European Protected Species Licence (EPSL) data:** 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. No EPSLs are present within a 2km radius of the site. There are no Special Areas of Conservation (SACs) designated for bats within 10km of the site. **Foraging and commuting habitat:** Habitats recorded on site are assessed to provide foraging and commuting opportunities for bats in the form of species-poor grassland, shrubs, and small strips of ornamental hedge. 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 landscape comprises vegetated gardens, woodland, scattered trees, treelines, and ponds 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 is one building on site; the main dwelling with attached garage (B1). No evidence of roosting bats was identified on or within B1 or any of the surveyed trees on-site.

B1 Building description			***Photographs***
Summary B1 double-storey brick-built building with a pitched and gabled roof clad in cement roof tiles. The building has single-storey extensions along both the east and west elevations also clad in cement roof tiles. There are wooden fascias and soffits around B1. The windows and doors are wooden/uPVC framed. The building will be demolished, as part of the proposed works. A few points of ingress were recorded around B1, suitable for both crevice (gaps between roof tiles and bitumen, and under lifted lead flashing) and void-dwelling (gap into soffit) species of bats. No evidence (i.e., droppings, urine stains, smear marks) were recorded along or within the building. The building is unlikely to support a maternity roost. The building has **moderate habitat value**.			
Feature	***Materials***	***Condition/description/suitability***	***Photograph(s)***

Walls	Brick and mortar	**Condition/description:** The brickwork and mortar along the supporting walls are intact and in very good condition without crevices or ingress points. **Suitability/access/evidence of bats:** No suitable features or evidence were recorded.	
Roof	Cement	**Condition/description:** Gabled roof, clad in cement roof tiles. Some gapping was recorded along the tiles near the eaves where missing mortar is present along both the north and south elevations. An area of lifted lead flashing was also recorded along the west extension roof. **Suitability/access/evidence of bats:** Space under tiles and lead flashing could accommodate crevice-dwelling bats, likely of lower numbers, and unlikely to support maternity roosts.	

Eaves	Overhanging wooden soffits	**Condition/description:** Wooden soffits are present along the eaves. They appear to be mostly intact, however, damage was recorded to a section of the wooden soffit along the south elevation with a gap present. **Suitability/access/evidence of bats:** Gap along south elevation soffit provides possible bat access into soffits.	 

Fascia boards	Wooden	**Condition/description:** Drainage covers sections of the fascias, however, where visible, they appear to be intact and tight-fitting. **Suitability/access/evidence of bats:** No suitable features or evidence were recorded.	
Window/door frames	Wooden, uPVC, and glazed	**Condition/description:** The window and door frames appear tight fitting without suitable features. **Suitability/access/evidence of bats:** No suitable features or evidence were recorded.	

Internal voids	Timber rafters and ridge beam. Open floor to ridge in loft void. Unlined.	**Condition/description:** The main internal loft void measures approx. ~11m long, ~7m wide, floor to ridge height approx. ~2.5m. The roof structure of the void is lined throughout with bitumen, which is intact, so no daylight fills the space. No suitable crevices were recorded internally of the void suitable for hibernation. The floorspace is partly boarded and partly covered in fibre wool membrane. Hornet's nests are present within the space. Some of the roof tiles were inspected internally behind the bitumen, and very shallow gaps were recorded, with most sealed with mortar. However, these gaps are suitable crevice-dwelling features. No ingress opportunities into the loft space were recorded for void-dwelling species of bats. ▪ Temperature reading: 18.2°C ▪ Humidity reading: 65.6% **Suitability/access/evidence of bats:** No bat evidence was recorded internally of the loft space; however, evidence may be concealed between the roof lining and roof tiles.	 

T1 description	***Photographs***
Summary T1 is a eucalyptus tree located southeast of the site (approximate grid reference: SK 30891 99357). The tree has an approximate DBH of ~51cm and a height of ~10m. No suitable roost features were recorded along this tree. As such the tree is concluded as being **NONE** (i.e. no roosting features present). The tree may be removed as part of the proposed works.	
T2 description	***Photographs***
Summary T2 is a cotoneaster tree located along the east boundary of the site (approximate grid reference: SK 30893 99361). The tree has an approximate DBH of ~24cm and a height of ~8m. No suitable roost features were recorded along this tree. As such the tree is concluded as being **NONE** (i.e. no roosting features present). The tree may be removed as part of the proposed works.	
T3 description	***Photographs***

T3 is a sour cherry tree located west of the site (approximate grid reference: SK 30863 99373). The tree has an approximate DBH of ~16cm and a height of ~6m. No suitable roost features were recorded along this tree. As such the tree is concluded as being **NONE** (i.e. no roosting features present). The tree may be removed as part of the proposed works.	
Foreseen Impacts	**<u>Roosting habitat:</u>** **B1:** The proposed development will result in the demolition of this building. This could result in the destruction of any bat roosts present and could cause disturbance, death, or injury to bats. **T1:T3:** These trees may be pruned/felled to facilitate the development. No features were identified on these trees and as such, there are unlikely to be any impacts to bats as a result of their pruning/felling. **Off-site trees:** Given the high number of off-site trees, the off-site trees were not subject to a roost inspection, however, some of the trees were noted to contain potential bat roost features (i.e., ivy, cavities). **<u>Foraging and commuting habitat:</u>**

	The proposed development will result in the loss of a small amount of vegetative habitat (i.e., <0.102ha grassland and shrubs) 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 on surrounding habitats. Without mitigation, this may disturb commuting bats.
Recommendations	**Roosting habitat:** **B1:** Two bat emergence surveys are required during the active bat season (optimal May to August, suboptimal September) to confirm presence or likely absence of a bat roost in the building. Both of the surveys should be completed during the optimal survey period mid-May to August inclusive and surveys should be spread at least three weeks apart. Infra-red cameras should be used as an aid. Five surveyors are required to provide full coverage of the building. If bat roosts are confirmed in the building additional surveys may be required to characterise the roost and to inform an EPSL application to Natural England. Surveys should be a minimum of three weeks apart. The EPSL application requires that surveys have been undertaken within the most recent active bat season and planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission. **T1:T3:** In the unlikely event that a bat or evidence of bats is discovered during the development all work must stop and a bat-licenced ecologist contacted for further advice. **Off-site trees:** In the event of pruning/felling of any adjacent, off-site trees, a separate Ground Level Tree Assessment (GLTA), should be undertaken for off-site trees due to be impacted by the proposed works.

	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:** Enhancements are dependent on the outcome of further surveys.
Birds	
Summary of Survey Findings	**Nesting birds:** No bird nests were identified within the vegetation/building on-site; however, the hedgerow, trees, and building 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 the building will be demolished as part of the proposed works. **<u>Barn owls:</u>** None foreseen. **<u>Overwintering birds:</u>** None foreseen.
Recommendations	**<u>Nesting birds:</u>** **Demolition of the building and any tree/hedge removal should be undertaken outside the period 1st March to 31st August.** If this timeframe cannot be avoided, a close inspection of the trees 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. **<u>Barn owls:</u>** None required. **<u>Overwintering birds:</u>** None required. **<u>Suggested biodiversity enhancements:</u>** The installation of a minimum of a bird box on each new dwelling will provide additional nesting habitat for birds e.g. ▪ Vivara Pro WoodStone Swift Nest Box (buildings)

	▪ House Sparrow Terrace FSC Nest Box (buildings) ▪ Swallow Nest Bowl (buildings) (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:** There are some suitable habitats present on-site for reptiles including ornamental hedge and short sward grassland. However, given the site is mostly surrounded by urban development (i.e. roads and buildings) (suboptimal for reptile migration) reptiles are considered unlikely to migrate from any nearby suitable habitats to the development site. As such it is unlikely that reptiles are present at the site.
Foreseen Impacts	Although a low amount of vegetation (i.e., <0.102ha grassland and shrubs) will likely be lost 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. 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: • Grassland 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. **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 Great Crested Newts (GCN) within 2km of the site. Furthermore, no positive class survey licence returns or DLL historic survey data (2017 – 2019) were present within 2km of the site. **<u>Aquatic habitat suitability (including ponds within 500m):</u>**

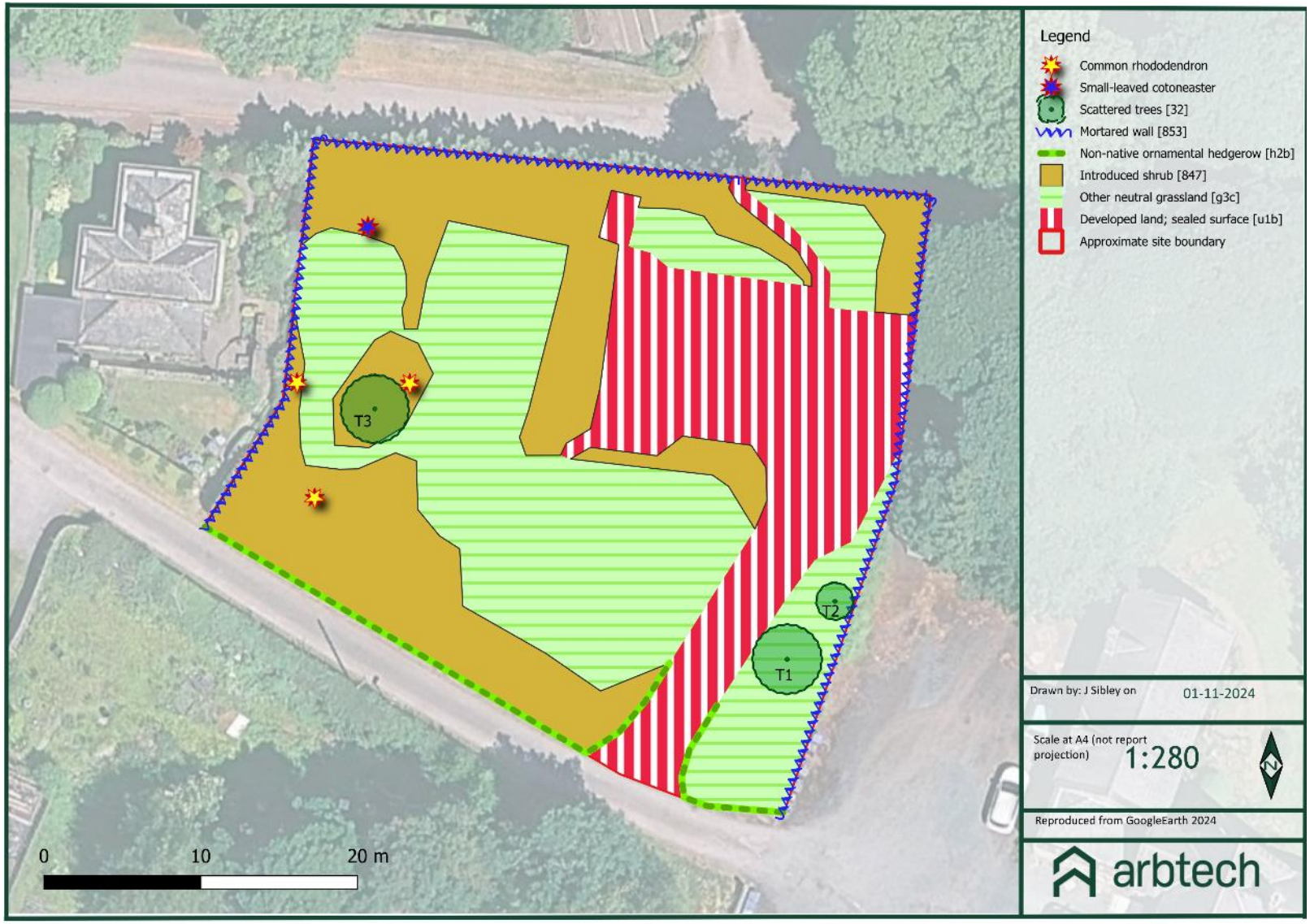
	GCN exist in metapopulations and are known to utilise ponds and their connecting terrestrial habitat during their life cycle; GCN are typically found within terrestrial habitats up to 500m from breeding ponds (Langton et al. 2001). There are no ponds on-site, but a review of the MAGIC.gov.uk database indicates the presence of two ponds within 500m of the site. P1 is located ~230m east of the site, and P2 is located ~321m southeast of the site. There do not appear to be any barriers between these ponds and the site which would disrupt GCN dispersal from the ponds to the site. **Terrestrial habitat suitability:** The site contains grassland and hedgerow which provide good terrestrial opportunities for GCN and other more common amphibians for foraging and refuge. The presence of GCN and other more common amphibians within the site cannot be discounted given the suitable habitats present and the connectivity of possible GCN breeding ponds.
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 <0.056ha of grassland. If GCN are present within the pond ~230m to the east 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**.
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: • Grassland vegetation will be maintained at a short sward (5cm) to discourage amphibians. • Best practice pollution prevention measures will be implemented to minimise impacts to nearby aquatic habitats that amphibians could use. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.

	• If any common amphibians are found in the working area these should be allowed to disperse of their own accord or, if at immediate risk, should be moved by hand to a sheltered, vegetated area away from disturbance. **In the unlikely event that a GCN is identified during construction, 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 the creation of amphibian hibernacula using rubble and logs. 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.
Foreseen Impacts	None foreseen.
Recommendations	**Basic precautionary mitigation during works are 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>**

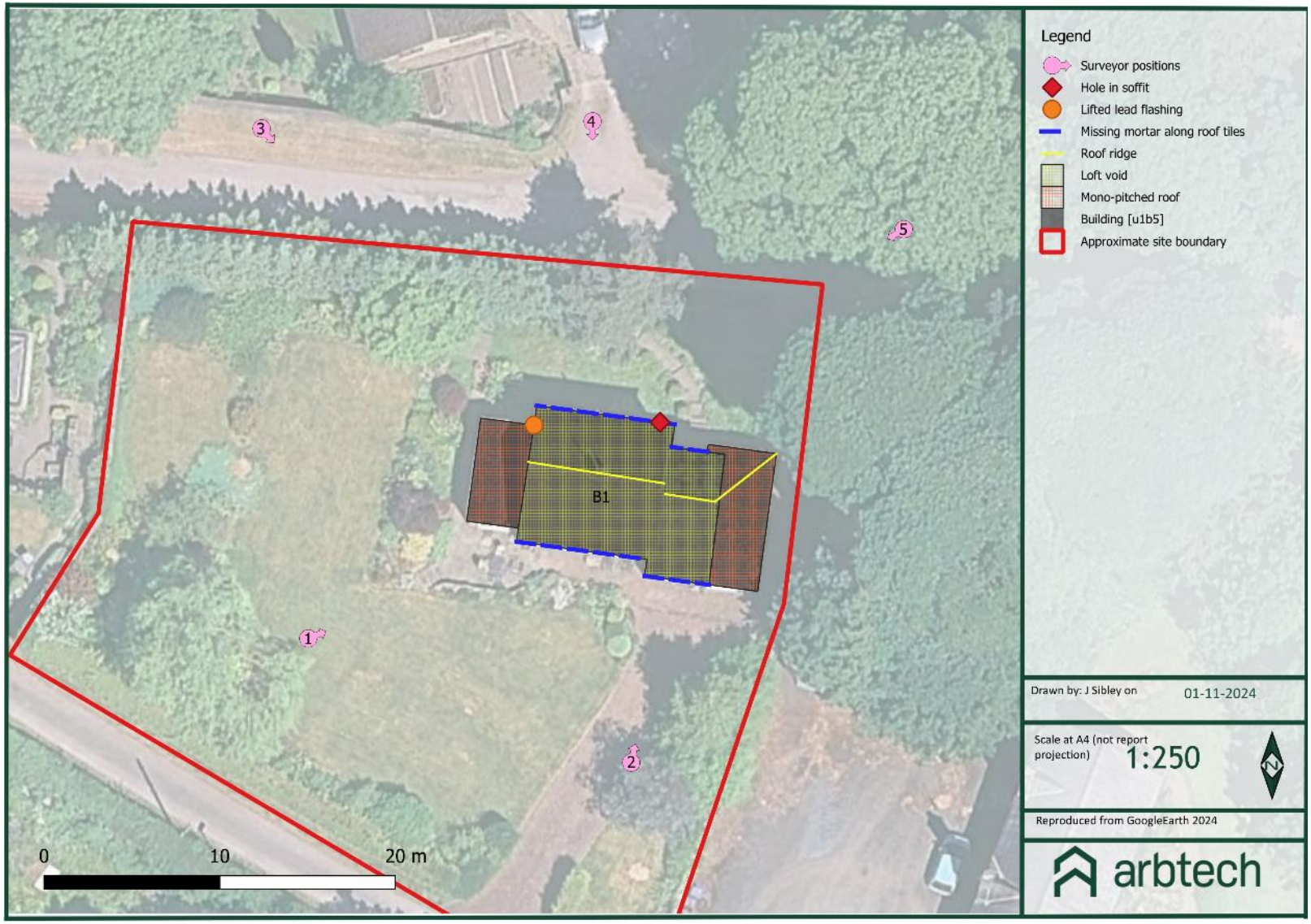
	The site could be enhanced for badgers by planting bramble and damson *Prunus domestica subsp. insititia*, as well as planting fruit-bearing trees to increase foraging opportunities for badgers.
Riparian animals	
Summary of Survey Findings	**EPSL data:** A review of the MAGIC database returned no granted EPSL records for otters or water voles within 2km of the site. **Habitat suitability:** There are no watercourses 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 foreseen.
Other e.g. hedgehog	

Summary of Survey Findings	The hedgerow, shrubs, and grassland on-site provide foraging, commuting, and refuge opportunities for hedgehogs.
Foreseen Impacts	<0.102ha of grassland and shrubs will be lost during construction. The impact on such habitats is likely to be inconsequential to local hedgehog populations owing to the presence of more extensive habitat locally. However, construction activities could 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.** **<u>Suggested biodiversity enhancements:</u>** 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: Habitat map



Appendix 2: PRA map



Appendix 3: Location map



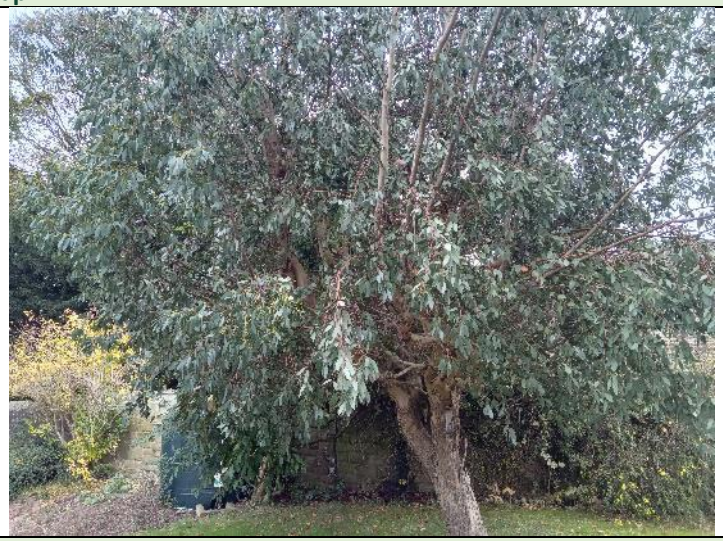
Appendix 4: Proposed plan



Appendix 5: Habitat Photos

Developed land; sealed surface	
Photograph	**Description**
 	**Figures 1 and 2:** On-site dwelling and drive, facing northeast and south, respectively.

Other neutral grassland	
Photograph	**Description**
	**Figure 3:** On-site grassland – facing west.
Introduced shrubs	
Photograph	**Description**
	**Figure 4:** On-site shrubs – facing west.

Scattered trees	
Photograph	**Description**
	**Figure 5:** On-site scattered trees along the east boundary.
Non-native ornamental hedgerow	
Photograph	**Description**
	**Figure 6:** On-site ornamental hedge along the south boundary.

Small-leaved cotoneaster and common rhododendron	
Photograph	**Description**
 	**Figures 7 and 8:** Small-leaved cotoneaster and common rhododendron present on-site, respectively.

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	01/11/2024
Final	1.0	Jessica Sibley BSc (Hons) MSc, Consultant Ecologist	03//11/2024