Viola Hill, Ashford Lane, Steep GU32 1AA

Preliminary Ecological Appraisal

Prepared on behalf of

Robert Camping

Final Report

5 September 2022

Viola Hill, Ashford Lane, Steep GU32 1AA

Preliminary Ecological Appraisal

Report Release Sheet

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Report Prepared for Issue by: ……
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Provided no significant changes are made to the proposals or on the site (e.g. significant changes to management practices or habitats present) subsequent to the report's issue; this report can be considered valid for 18 months from the date of issue.

As part of membership to our professional body (CIEEM) we are required to provide our biological results to applicable biological record centres. As such, it is our intention to supply biological data collected as part of this assessment to the relevant centre unless directly instructed in writing not to do so by the client.

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Preliminary Ecological Appraisal

SUMMARY

Cherry Tree Ecology was commissioned by Robert Camping to conduct a Preliminary Ecological Appraisal at Viola Hill, Ashford Lane, Steep GU32 1AA. This survey is to support a planning application for a landscape proposal to provide a swimming lake.

The site comprised poor semi-improved grassland with limited calcareous indicators, some areas of grassland which were more disturbed with ruderals present, as well as artificial grassland and bare ground patches. Adjacent to the access road is a broadleaved tree line/ overgrown hedge. These habitats are considered to be of no more than site/local level importance.

The East Hampshire Hangers SAC and associated SSSI and NNR with it's Priority broadleaved ancient woodland is located 80m to the north of the site within the zone of influence and construction mitigation is given in Section 4.

The grassland has some potential to support common reptiles, mitigation recommendations are given in Section 4.

There is bird nesting habitat within the affected grassland for ground nesting species. Mitigation has been recommended to maintain legal compliance regards nesting birds.

In line with the National Planning Policy Framework and Local Plan Policy, the construction of the natural lake will in its own right provide biodiversity net gains with native planting which will support invertebrates, amphibians, water source for mammals etc, in addition recommendations have been given to manage the lake and grassland for wildlife and construct log pile refugia.

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Preliminary Ecological Appraisal

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Preliminary Ecological Appraisal

1. INTRODUCTION

Background to the study

1.1 Cherry Tree Ecology was commissioned by Robert Camping to conduct a Preliminary Ecological Appraisal at Viola Hill, Ashford Lane, Steep GU32 1AA (Grid reference SU7455026819). This survey is to support a planning application for a landscape proposal to provide a swimming lake (Planning ref: SDNP/20/03440/FUL).

Site description

1.2 Viola Hill (formerly The Butts) is located within a rural area north of the village of Steep in East Hampshire. The area is surrounded by farmland, with large areas of woodland to the north and Ashford Stream and ponds further to the south. The house is to the north east and a small copse is located to the west.

Scope

1.3 The purpose of the Preliminary Ecological Appraisal (PEA) was to identify the habitats currently present within and around the site (to Phase 1 standard) in order to obtain baseline ecological information for the site. The Appraisal also assessed the potential for the site and adjoining habitats to be used by species that receive legal protection (at a UK level) and species that are otherwise notable including Species of Principal Importance and Birds of Conservation Concern.

1.4 The PEA comprises two main elements: 1) A desktop review of the ecological and policy context; and 2) a field survey of the development site and where possible any other areas likely to be affected.

1.5 Where relevant, legislative and policy considerations are highlighted, including:

The Conservation of Habitats and Species Regulations 2017 (as amended);

The Wildlife and Countryside Act (WCA) 1981 (as amended);

The Countryside and Rights of Way (CROW) Act 2000;

The Natural Environment and Rural Communities (NERC) Act 2006;

The Protection of Badgers Act 1992;

Hedgerow Regulations 1997;

Wild Mammals (Protection) Act 1996;

The National Planning Policy Framework (NPPF) (2019);

East Hampshire District Council Local Plan, Part 1, Joint Core Strategy (2014);

East Hampshire District Council Draft Local Plan (2019); and

South Downs National Park Authority (2019) The South Downs Local Plan.

1.6 In addition to the above, biodiversity objectives detailed in the following documents have been considered:

Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services; and

Biodiversity Action Plan for Hampshire.

2. METHODOLOGY

2.1 This Ecological Appraisal was undertaken in line with guidance in the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal (2017) and Guidelines for Ecological Impact Assessment in the UK (2018).

Zone of Influence

2.2 The study area encompassed the Zone of Influence of the Project. The Zone of Influence is defined as "… the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities" (CIEEM, 2018).

2.3 The Zone of Influence of the Project encompasses different areas in respect of each important ecological feature depending on its location and sensitivity, and the spatial extent of the relevant biophysical change (e.g. light, noise, habitat loss).

2.4 However, the majority of the activities and resultant biophysical changes listed in Table 1 are unlikely to have an effect beyond the site and the immediate surrounding area. The exceptions to this include birds and bats due to their highly mobile nature, potentially 5-7km for birds and up to 6km for bats (based on barbastelle bats, Bat Conservation Trust Core Sustenance Zones, 2016), and activities such as uncontrolled discharges of pollutants, changes to ground and surface water drainage, air pollution and the increased demand for recreational activities when the site is occupied, which might extend beyond the immediate surroundings of the site in some instances; for the majority of designated sites in the area this is up to 5km.

2.5 Therefore, the Zone of Influence, and the study area, is broadly considered to extend across the site or just beyond the site boundary in most cases and potentially up to or exceeding 5km with regards to designated sites.

Table 1: Summary of predicted changes and Zone of Influence

Predicted Change	Zone of Influence
Vegetation/habitat clearance	Site
Demolition of structures	Site
Generation of dust during site clearance and construction	Site and immediate surrounds (200m)
Acoustic disturbance and vibration from construction activities	Site and immediate surrounds (Typically up to 300m)
Increased traffic-related air pollution and potential to impact upon sensitive habitats during both construction and operational phase	Habitats within 200m or so of affected roads
Lighting (during construction and in long term)	Site and immediate surrounds
Changes to local hydrology, including surface water runoff and groundwater	Likely to include watercourses that receive surface water

	discharges, and downstream habitats
Increased recreational demand and associated effects including disturbance, trampling and eutrophication from dog fouling	Typically up to around 5km from Site, but further for particularly attractive 'destination' sites
Landscape planting and habitat creation / Green Infrastructure creation	Site

Desk Study

2.6 The Multi-Agency Geographical Information for the Countryside (MAGIC) website was used to assess the presence of statutory designated sites within a 5km radius of the site. A request for data was made to Hampshire Biological Information Centre (HBIC) for information they hold on protected and notable species records within a 1km radius of the site.

Field Study

Vegetation

2.7 The standard Phase 1 habitat survey methodology (JNCC, 2010) was adopted whereby habitats are mapped using colour codes (see Appendix 1). A detailed walkover survey was undertaken on 23rd August 2022 by Lisa Malter, directly searching for legally protected and invasive species of plant, and categorising any habitats of ecological value that were encountered. A general description of the vegetation was also noted, listing species encountered and scoring their abundance using the DAFOR scale:

Dominant (D)

Abundant (A)

Frequent (F)

Occasional (O)

Rare (R)

Local (L, used as a prefix to any of the above)

Protected Species Assessment

2.8 Habitats and features were assessed for their potential to support protected species. In many cases determining the presence, distribution and population size of protected species will require additional, specialist surveys.

Amphibians

2.9 Consideration was given to the presence of habitat potentially suitable for supporting amphibians including water bodies (ponds, ditches), woodland, scrub, rough grassland and features such as log piles that might provide hibernation areas. Where appropriate, effort to

gather direct evidence of amphibians was undertaken using a preliminary search for eggs by examining vegetation within reach of the margins of water bodies, and for resting animals on land by looking under potential refuges such as stones, wood and rubbish near to water bodies.

2.10 Great crested newts are known to forage up to at least 500m from their breeding water bodies and suitable habitats that fall within 250m must be considered even in situations where the breeding site itself will not be affected.

Reptiles

2.11 Habitat considered potentially suitable for supporting reptiles was recorded. This includes areas providing basking and foraging areas, hibernation and breeding sites such as rough grassland and scrub, banks, burrows, rubble piles, compost heaps, hedge banks and water bodies.

Birds

2.12 Any birds seen whilst carrying out the survey were recorded and the type and quality of habitats available for birds was considered, including vegetation suitable for nesting and habitat with the potential to support valued species including breeding and wintering birds.

Bats

2.13 Bats often roost in trees. Features such as old woodpecker holes, splits, cavities and rot holes, loose or flaking bark and ivy creepers will be exploited by bats to roost. Any trees present on site were therefore assessed for their potential to support roosting bats by searching for such features. The presence of roosting bats can be spotted through signs such as accumulations of moth or butterfly wings, staining, bat droppings, or bats themselves. The absence of these cannot, however, be treated as conclusive evidence that bats are not present, and therefore an assessment was made of the potential of the trees to support bats based on the scale presented in Table 1 below, adapted from the *Good Practice Guidelines* (Collins, 2016):

Table 1: Criteria for assessing bat roosting potential of trees

Confirmed Roost	Evidence of bat occupation found
High Roosting Potential	Trees with multiple, highly suitable features capable of supporting larger roosts or with evidence of bat occupation found
Moderate Roosting Potential	Trees with definite bat potential, supporting fewer suitable features than high roosting potential trees or with potential for use by single bats
Low or Negligible Roosting Potential	Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found or the tree supports some features which may have limited potential to support bats or trees with no potential to support bats

2.14 A direct search for evidence of bats was therefore conducted on the 23rd August 2022 by Lisa Malter.

2.15 A preliminary evaluation was also undertaken of the habitat on the site for the quality of potential commuting and foraging habitat for the local bat populations. Bats navigate using linear features in the landscape such as hedgerows and these can be important features for local roosts. The site itself may also provide important foraging habitat and support local bat roosts.

Badgers

2.16 Consideration was given to the presence of habitat potentially suitable for supporting badgers including woodland, scrub and grassland. Potential evidence of the presence of badgers was noted including earthworks that might be badger setts, signs such as dung pits, mammal pathways through ground vegetation and under fences and hairs on fences.

Dormouse

2.17 The habitat on the site was assessed for the potential to support dormice which are found in habitats such as woodlands, scrub and hedgerows with good connectivity and suitable food plants. Satellite images were used to assess the connectivity of any suitable habitat present on the site to other areas of woodland and hedgerow networks.

Constraints

2.18 There were no constraints on the survey, although the survey was done too late in the year to record early gentian if present as this flowers May to June.

3. RESULTS

Designated sites

Statutory sites

3.1 There are two internationally important designated sites within the search area. East Hampshire Hangers Special Area of Conservation (SAC) located 80m north. Wealden Heaths Phase II Special Protection Area (SPA), 4.2km to the north east.

3.2 East Hampshire Hangers SAC is designated for its beech woodland, small-leaved lime woodland associated with the sandstone cliffs with rare bryophyte flora, calcareous grassland and scrub, and yew woodlands as well as supporting populations early gentian.

3.3 Wealden Heaths Phase II SPA is designated for its breeding populations of heathland birds; nightjar, woodlark and dartford warbler, which nest either on or close to the ground, and which are consequently vulnerable to increases in recreational pressure.

3.4 There are two Sites of Special Scientific Interest (SSSIs) within 5km of the site: Wealden Edge Hangers SSSI, Rake Hanger SSSI, Upper Greensand Hangers: Empshott to Hawkley SSSI, Noar Hill SSSI, Woolmer Forest SSSI. The closest is Wealden Edge Hangers SSSI (part of the East Hampshire Hangers SAC) is also 80m north of the site. The SSSI is a wooded easterly facing escarpment, with a wide range of woodland types. Bryophyte and lichen flora is extremely rich.

3.5 Ashford Hangers National Nature Reserve (NNR), part of the East Hampshire Hangers SAC is also 80m north of the site. Ashford Hangers NNR is a part of the mainly wooded escarpment where the Hampshire chalk plateau meets the lower Weald.

3.6 There are four Local Nature Reserves (LNRs) in the search area: Liss Riverside Railway Walk (South) LNR, Liss Riverside Railway Walk (North) LNR, Rotherlands LNR, and Wealden Edge Hangers LNR. The closest is Wealden Edge Hangers LNR, 1.4km north west.

3.7 Given, the close proximity to the East Hampshire Hangers SAC and associated SSSI and NNR, whilst they are uphill from the site, they are considered to be within the zone of influence for construction impacts. Recommendations have been made within Section 4.

3.8 The size and type of the proposal (i.e. non–residential) and the distance of the other statutory sites means none of these are considered to be within the zone of influence and no further recommendations have been made.

Non-Statutory sites

3.9 There are 18 Sites of Importance for Nature Conservation (SINCs) within 1km of the site. These comprise ancient semi-natural woodlands, woodland with a significant element of ancient semi-natural woodland surviving, agriculturally unimproved grasslands and some semi-improved grasslands which retain a significant element of unimproved grassland. They support species such as common dormice, green hellebore, Italian lords-and-ladies, violet helleborine, spreading meadow-grass and herb-paris.

3.10 The closest is Jack's Meadow SINC, semi-improved grassland,140m north west. This site would be within the zone of influence and is discussed in Section 4, the others are all sufficient distance to be outside of the zone of influence.

Habitats

3.11 Descriptions of the habitats recorded on site are given below, a map of the habitats is given as Appendix 1, with photographs in Appendix 2.

Hardstanding

3.12 An area of hardstanding was present for the site access road. This area is considered to be of limited ecological significance.

Bare ground

3.13 On the western side of the road towards the northern end was a mound of disturbed earth. This was covered with artificial grass, some of which was rolled up. The sides of the mound were mostly bare chalky soil which was being colonised by some of the surrounding vegetation such as abundant black medick, frequent smooth sow thistle, with occasional small flowered crane's-bill, and common couch.

3.14 Further to the north was a strip of bare earth, with a small hawthorn tree and a semi-mature horse chestnut adjacent. In this area supported locally dominant creeping thistle, abundant cock's-foot, dandelion, with frequent smooth sow thistle, occasional good king Henry, ribwort plantain, scented mayweed, with rare occurrences of fumitory.

3.15 Bare ground within this chalk soil type often supports rare plant species, however these areas appeared to be new, ruderal dominated and no plants of conservation concern were noted. The habitat is of no more than site level importance.

Semi-improved grassland

3.16 Along the road on the western side was semi-improved grassland with dominant creeping bent, abundant ribwort plantain and frequent smooth hawk's-beard, occasional hoary plantain, shepherd's purse, red fescue and red clover, and rare occurrences of groundsel and meadow buttercup.

3.17 The meadow to the west of the road had a moderate sward length and was dominated by creeping bent and perennial rye-grass with abundant timothy, frequent cock's-foot, smooth sow thistle, musk thistle, rough meadow-grass and occasional red fescue, broad leaved dock, ragwort, ribwort plantain, white clover with rare occurrences of bladder campion.

3.18 Surrounding the mound was an area of semi-improved grassland with ruderal species. This included locally dominant creeping bent, perennial rye-grass, and cock's-foot, with abundant timothy, ribwort plantain, black medick, creeping thistle, frequent common nettle, smooth sow thistle, musk thistle, equal leaved knot grass, with occasional red shank, field bindweed, petty spurge, two-rowed barley and rare occurrences of black nightshade, scarlet pimpernel, meadow buttercup, common and opium poppy, yarrow, burdock, daisy and groundsel.

3.19 Whilst the semi-improved grassland on site did contain some calcareous indicator species, its fairly disturbed with locally dominant ruderals. The grassland is considered to be of no more than local level significance but may support fauna such as foraging birds which is discussed below.

Tree line

3.20 Along the access road on the eastern site boundary was a row of trees and shrubs. This may have been a hedge which has been left to develop into trees. There was a break of approximately 5 m in the tree line about half-way up the road.

3.21 These included abundant blackthorn, traveller's joy, dandelion, with frequent field maple, ivy, hawthorn, occasional pedunculate oak, hazel, elder, rosa species, ground ivy, curled dock, honesty, creeping cinquefoil, creeping thistle, with rare occurrences of stinking iris, violet, primrose, and common sorrel.

3.22 This treeline contains more than five woody species within a 30m stretch and is considered species rich but the condition is unfavourable. This is more a tree line than hedgerow and is not therefore considered to be Priority hedgerow habitat, but may support nesting birds, dormice and roosting bats which is discussed more below.

Copse (adjacent off-site)

3.23 There was a copse of deciduous trees adjacent to the western side of the survey area. The trees were ash, beech, sycamore, Norway maple, lime and oak. Both of the oak trees were in the centre of the copse and were in very poor condition. The copse was surrounded by a barbed wire fence with frequent common nettles and occasional hogweed. The understory was mostly leaf litter with fallen branches, locally frequent common nettles, occasional wood avens, self-heal, smooth hawk's-beard, cock's-foot, and false brome.

Protected species

Plants

3.24 There are a number of records for protected or notable plants from the search area, however none were noted during the survey. No invasive non-native plants were noted on site during the survey.

3.25 Jack's Meadow SINC has records for the NERC Priority species fly orchid. Whilst the SINC is in close proximity the habitats within that meadow have more unimproved elements than the grassland on site and it is considered unlikely that this species is present within the works area.

3.26 Early gentian grows within the nearby SAC, it is a species occurring on calcareous grassland, mainly on steep, south-facing slopes. It grows on bare ground or thin turf. Whilst some areas of bare ground were present and the survey was undertaken later in the year than the early gentian flowering period it is thought unlikely that this species would have been present given the recent nature of the habitat.

Invertebrates

3.27 There are records for small heath, grizzled skipper and dingy skipper (NERC Priority species), as well as the protected chalk hill blue butterflies for the area. Whilst the site does contain grassland with some calcareous indicators the specific food plants for these butterflies or correct habitat was not noted (horseshoe vetch; short sparse sward etc).

Amphibians

3.28 The site was assessed for its suitability to support great crested newts and other amphibians - in its current state the semi-improved grassland is considered to provide limited suitable terrestrial habitat, whilst it does provide some protective cover and foraging opportunities there is a lack of vegetative complexity.

3.29 HBIC did provide a single record for common toad from 2009. A small pond is present 220m west offsite, the hardstanding and buildings associated with the farm is between the pond and the site forming some barrier to amphibian movement.

3.30 It is considered unlikely that great crested newts are present within the site and no further survey is recommended.

Reptiles

3.31 There were no records of reptiles provided by HBIC for the search area.

3.32 As with amphibians above, the grassland offers limited cover and foraging but is poor quality habitat, the tree line base provides more suitable habitat for common reptiles.

3.33 As there is limited potential for reptiles within the area to be cleared for the lake, some low level mitigation has been recommended in Section 4.

Birds

3.34 There were several bird records for the 1km search area, of those relevant ones to the site included the RSPB's Birds of Conservation Concern (BOCC) Red listed linnet, starling, song and mistle thrush, as well as the Red listed and NERC Act Section 41 species yellowhammer.

3.35 The tree line and scattered trees offer potential nesting opportunities, whilst the grassland offers good foraging opportunities. There were no records of ground nesting species such as skylark from HBIC for the area but the grassland would provide suitable nesting habitat.

3.36 Further recommendations for mitigation and enhancements have been made in Section 4 below.

Bats

3.37 There are limited Natural England roost mitigation licenses present within the vicinity, the closest being 1km west for common pipistrelle and brown long-eared bats. There were number of records for bats within 1km, including records of serotine, noctule, Myotis species, brown long-eared, soprano pipistrelle and common pipistrelle bats, the most recent records were from 2018.

3.38 Several mature trees with heavy ivy cover which may offer suitable bat roosting features were noted within the tree line. This area will not be impacted by the proposals.

3.39 The tree line would offer foraging and commuting opportunities and does link northwards into the ancient woodland of the SAC. The grassland and adjacent copse would also offer moderate quality foraging habitat for the local bat assemblage.

3.40 No impacts are anticipated on bats from the application and therefore no further survey or mitigation is recommended.

Badger

3.41 No records of badgers were provided by HBIC within the search area.

3.42 No evidence of badger was recorded during the site visit. The tree line and grassland would offer suitable foraging habitat for badgers.

3.43 Badger is a species that is abundant and widespread in most areas and it is very unlikely that any population present would be of ecological importance. Low level mitigation is given to prevent injury to badgers during construction in Section 4.

Dormice

3.44 There are records of dormice within the search area and dormice listed as present within one of the local SINC. There are Natural England dormice licenses for 1.9km to the south at Steep.

3.45 Given the species composition with suitable food plants it is considered possible that dormice could be present within the tree line. There is connectivity into the wider ancient woodland habitat to the north.

3.46 No impacts are anticipated on dormice from the application and therefore no further survey or mitigation is recommended.

4. CONCLUSIONS

4.1 The creation of a natural pond/lake for swimming with native planting will benefit a variety of wildlife species in the local area, invertebrates, amphibians and reptiles, drinking water for mammals and foraging for species such as bats.

4.2 The design includes a variable depth with shallow sections on the sides at 0.2m and a large area of open water to 2.4m depth. The sides of the pond will be gently sloping to allow animals to easily exit the pond. The planting will be native species which provide nectar for invertebrates, egg laying substrate for amphibians and nesting opportunities for birds, species include yellow flag iris, purple loosestrife, floating water plantain, flowering rush, marsh marigold, ragged robin and water forget-me-knot.

4.3 The lake will be maintained to maximise biodiversity. This will involve the removal of plant species should over 50% of the open water becomes covered in plant material and the targeted removal of any invasive species should they be identified within the lake, for the period of this management plan

4.4 Barley straw bales will be added to the lake should the water become excessively murky, or to control any blanket weed.

Designated Sites and Priority Habitat

4.5 There is Section 41 of the 2006 NERC Act Priority broadleaved woodland approximately 80m north off-site and 140m south, parts of which are ancient woodland. This area is also part of East Hampshire Hangers SAC and associated SSSI and NNR. Jack's Meadow SINC is also within the zone of influence, 140m north west.

4.6 The South Downs National Park Habitats Regulations Assessment (AECOM, 2018) lists the key vulnerabilities to the East Hampshire Hangers SAC as nutrient run-off leading to eutrophication, disease outbreaks affecting beech trees and appropriate woodland management.

4.7 Given the distance, the habitat could be impacted by the construction phase through dust and pollution. However, impacts from nutrient run-off have been ruled out given the designated sites and associated habitats are up hill from the site and the proposals are seeking to increase water catchment with no increase in nutrient input into the land.

4.8 The production and implementation of a Construction Method Statement (CMS) will be put into place prior to the beginning of the construction phase. This will set out detailed methods of construction to avoid impact to the habitats:

> Details of how materials / chemicals will be stored and controlled on-site to avoid pollution (for example - all plant will be fitted with drip trays in order to avoid potential pollution incidents and no re-fuelling will take place on the site).
>
> Details on the proposed construction methodology including factors such as construction access, methods of construction, timing of work and working hours.
>
> Standard dust and noise suppression methodology.

4.9 The implementation of the above mitigation will ensure no adverse effects on the Protected Sites either alone or in combination.

Breeding birds

4.10 The grassland offers foraging and nesting habitat for ground nesting species of bird.

4.11 All vegetation clearance should be conducted outside of the bird nesting season which is considered to run from March to September. Where this is not possible a suitably qualified ecologist should check potential nesting habitat immediately prior to clearance. Where nesting birds are encountered clearance must be postponed until the nestlings have fledged.

Reptiles

4.12 As there is limited potential for common reptiles to be present within the grassland which will be cleared for the creation of the lake, the following Mitigation Strategy will be adhered to during the habitat manipulation and destructive search:

All vegetation clearance works will be undertaken when reptiles are likely to be fully active, from March to October inclusive;

The vegetation clearance will only be undertaken when the weather is sufficiently warm for reptile activity to occur, this is typically when night time temperatures are 8°C or greater;

Vegetation clearance will be undertaken in phases, moving directionally towards retained habitat from the centre outwards. The clearance will result in the vegetation being cut to a height of <5cm over two stages, the first cut to 10cm and the second cut at least a day later to ground level;

All cuttings will be raked and removed the same day to avoid creating additional reptile refuge features within the cleared areas;

Following removal of vegetation suitable to provide shelter for reptiles, the remaining vegetation should be maintained short to discourage reptiles from returning during works and prevent reptiles from entering the construction footprint. A buffer strip of cleared ground will be maintained between the retained habitat and the construction footprint to prevent individuals moving into the working area.

Badgers

4.13 As badgers may be foraging within the site during construction, the lake hole will have an earth ramp installed on steep/deep sections in order to prevent any wildlife becoming trapped overnight.

Opportunities for Biodiversity Gain

4.14 Recommendations for ecological enhancements to provide net gains for biodiversity across the site have been made in line with the National Planning Policy Framework (2019), and Local Plan Policy:

The embankment around the lake will be seeded with a native species-rich calcareous grassland seed mix such as Emorsgate EM6 – Meadow Mixture for Chalk And Limestone Soils. There will be no additional fertilisers added,

A traditional meadow management regime will be implemented. This will involve a main “hay” cut in late August, cutting the “hay” back to approximately 50mm. The 'hay' is left to dry and seeds to shed for 1-7 days before removal into a compost pile in a corner of the site. The re-growth should be mowed back to 50mm in the winter, and again in the spring if this is required. No cutting should be undertaken between spring and late July to August in order to give the mix a chance to flower.

The aim will be to maintain a mosaic but primarily short sward with some bare patches as this will provide the most opportunities for the rare plants and invertebrates associated with calcareous grassland.

Several small log piles of approximately 2 m x 1 m x 0.5 m will be created around the edge of the lake/ on the embankment. These will provide valuable habitat for many species of invertebrate, as well as creating shelter for amphibians and basking areas for reptiles. Preference should be given to logs of native broadleaved species rather than species such as pines or cypresses.

The adjacent copse is listed as an Ecological Networks- network opportunities area. Woodland wildlife primarily exists due to past management systems and to maintain it, it is necessary to re-instate management practices. The copse would benefit from active management to open up the woodland and encourage an understorey of ground flora, shrubs and new trees to develop, whilst maintain dead wood habitats vital for invertebrates.

5. REFERENCES

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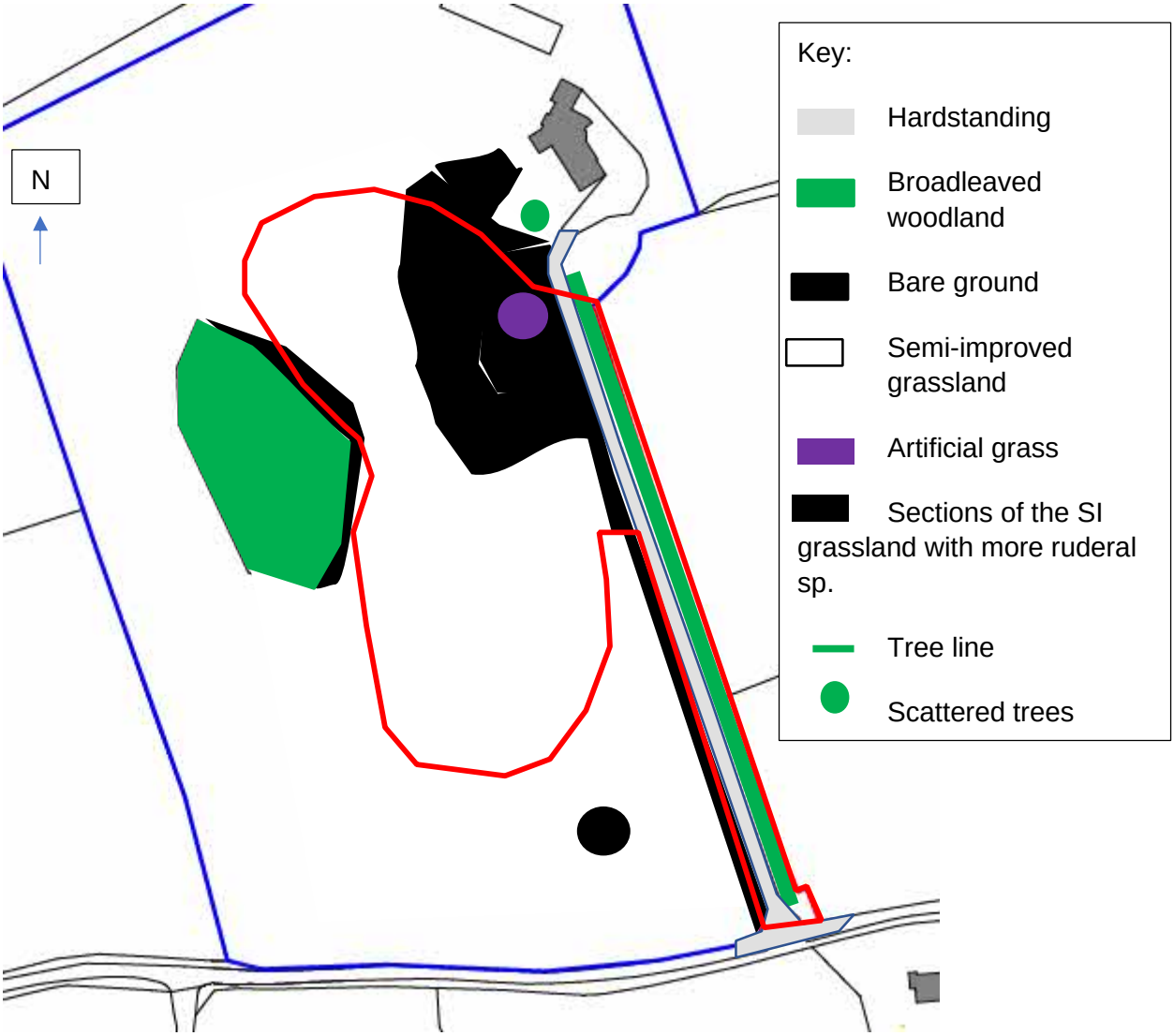
Ministry of Housing, Communities and Local Government (2019), *National Planning Policy Framework.*

Multi-Agency Geographical Information for the Countryside (MAGIC) Website at www.magic.gov.uk

South Downs National Park Authority (2019) South Downs Local Plan (2014-2033)

Appendix 1

Phase 1 Habitat map



Appendix 2
Photographs

Photograph 1: Semi-improved grassland with copse in background

Photograph 2: Hardstanding, bare ground and tree line