

Ecological Impact Assessment

Goose Green, Binsted

Produced for Mr Chandler



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Summary

The Chandler family have commissioned an Ecological Impact Assessment of proposals at the existing property known as Goose Green, Binsted (*SU 99355 05146, hereafter referred to as 'the site'*). A Preliminary Ecological Appraisal, Preliminary Bat Roost Assessment and Phase 1 Habitat Survey of the site was carried out on the 5th August 2021. Phase 2 bat emergence surveys were carried out between August-September 2021.

The proposal area is of low ecological value, consisting of existing buildings, hard surfaces, ephemeral / short perennial vegetation and improved grassland. Surrounding off-site habitats including broadleaved plantation woodland, marshy grassland and reedbed are of moderate -high value but will not be affected by the proposals.

The proposals are not anticipated to have any significant impact upon ecology; the further surveys discovered a day roost of two brown long-eared bats, two soprano and two common pipistrelle bats within the dwelling. An occasional feeding perch was also found within an outbuilding. With mitigation measures the proposals stand a 'negligible' chance of disturbing bats or their roosts, whilst enhancements would result in a positive impact upon bats.

There is potential for nesting birds to be disturbed by the proposals, and a low risk of amphibians and reptiles being disturbed or harmed. Mitigation has been proposed to avoid these harms and to replace any lost habitat.

The owners propose to embark on a range of ecological enhancements at the site, including pond creation and enhancement and hedgerow planting. When mitigation and enhancements have been taken into account, the proposals are not considered to have a negative impact upon habitats or protected species and would result in a net gain, in accordance with planning policy.

1.0 Introduction

- 1.1 The Chandler family have commissioned an Ecological Impact Assessment of proposals at the existing property known as Goose Green, Binsted (*SU 99355 05146, hereafter referred to as 'the site'*).
- 1.2 A Preliminary Ecological Appraisal, Preliminary Bat Roost Assessment and Phase 1 Habitat Survey of the site was carried out on the 5th August 2021., and the following preliminary ecological appraisal report completed by George Sayer (*BSc (Hons) Environmental Sciences, PgDip Endangered Species Recovery, MA ArborA, MCIEEM, NE Licence Holder – Bats Level 2 and GCN - Ecologist*). This appraisal consisted of a site visit to identify existing habitats on site; the habitats have been categorised broadly following the JNCC Phase 1 Habitat Survey Guidelines. In addition, an assessment of habitats and structures on the site was made to determine their potential for protected species. Following this an on-site and desktop assessment was undertaken, of the likelihood of National or European Protected Species being present on or near site, and the constraints these may pose on the development proposals.
- 1.3 Based on the results of the appraisal, recommendations for further protected species surveys, and potential ecological enhancements were provided.
- 1.4 Phase 2 bat emergence and re-entry surveys were undertaken between August-September 2021 in accordance with the BCT Survey Guidelines (2016).

Site Description and Surrounding Area

- 1.5 The site consists of an existing large, detached house, surrounded by extensive grounds and accompanied by a stable, wooden sheds and access drive. The remainder of the site is laid to grassland and is lined with coniferous trees and defunct treelines.
- 1.6 The site is to the south of the small, dispersed village of Binsted, south-west of Arundel in the Arun District of West Sussex. To the west lies another dwelling and then arable farmland, to the south lies further arable farmland, to the north lies large pastoral paddocks and the east lies areas of grassland water meadow surrounding a stream.
- 1.7 There are numerous waterbodies within 500.0 m of the site, as determined by OS mapping; 5no. reservoirs 440-500m to the south-east; a small dew-pond c.40m south; a small farm pond 250m north; a small oxbow lake 500m north; a farm pond 320m west; a stream 90m east and numerous land drains. The immediate surroundings are lightly-wooded, with the large expanse of ancient woodland, deciduous woodland and woodpasture of Binsted Woods beginning 500m north.

Proposals

1.8 The proposals are for a planning application for the following:

- *Demolition of existing house and construction of a new house slightly further to the south-west;*
- *Extension of the existing stable building;*
- *Demolition of all other outbuildings;*
- *New sand school to the east of the stable;*
- *Landscaping works to the wooded area.*

2.0 Scope of Appraisal

1. *Identify the habitats and vegetation on site and display this in a habitat plan;*
2. *Provide lists of the vegetation species identified;*
3. *Identify habitat which may have potential for protected species;*
4. *Identify whether any signs of protected species are present on-site;*
5. *Recommend whether further surveys are required, or whether there are any relevant constraints with regards to protected species;*
6. *Identify impacts of the proposed development and set out appropriate avoidance, mitigation and compensation measures;*
7. *Provide suggestions as to how the site and proposals could be enhanced with regards to protected species and habitats.*

2.1 This appraisal and assessment is deemed to be relevant for a maximum of two years due to the possibility of changes in the habitats on-site. Should the site or proposals alter, the ecologist should be consulted to confirm that the appraisal is still valid.

3.0 Planning Policy and Legislation

National Planning Policy

- 3.1 The National Planning Policy Framework (NPPF) 2021 sets out the government planning policies for England and how they should be applied. 'Chapter 15: Conserving and Enhancing the Natural Environment' states that development should be 'minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.'
- 3.2 The Government Circular 06/2005, which is referred to by the NPPF, provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

Local Planning Policy

- 3.3 The site is within the Arun District; the proposals should be assessed against the Arun District Local Plan 2011-2031.
- 3.4 Local Planning Policy relevant to this site include; Policies ENV DM3 and ENV DM5 of the Arun Local Plan 2011 – 2031 (currently under review) which state that planning permission will only be granted where:
- *The proposals have no adverse impacts upon the international, national and local designated sites (statutory and non-statutory) within the district;*
 - *Development schemes seek to achieve a net gain in biodiversity and protect existing habitats on site;*
 - *Proposals incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not);*
 - *Development schemes should provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement;*
 - *Sites have been screened for their potential to support protected species. Where there is evidence of a protected species on a proposed development site, planning applications include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. Developments must take into account Natural England's Standing Advice with regards protected species.*

Legislation

- 3.5 Legislation relating to wildlife and biodiversity of particular relevance to this EclA includes:
- The Conservation of Habitats and Species Regulations 2017;
 - The Wildlife and Countryside Act 1981 (as amended);
 - The Natural Environment and Rural Communities (NERC) Act 2006;
 - The Hedgerow Regulations 1997;
 - The Protection of Badgers Act 1992;
 - The Protection of Mammals Act 1996.
- 3.6 All species of bat and their roosts are protected under The Conservation of Habitats and Species Regulations 2017 and The Wildlife and Countryside Act 1981. It is an offence to intentionally kill, injure or handle a bat, to possess a bat (live or dead), disturb a roosting bat, or sell or offer a bat for sale without a licence. It is also an offence to damage, destroy or obstruct access to any place used by bats for shelter, whether they are present or not.
- 3.7 All UK bird species are protected against disturbance whilst occupying a nest under the Wildlife and Countryside Act 1981. Developments that could predictably disturb, kill or injure nesting birds could result in an offence. Furthermore, a number of bird species are targets of UK and Local Biodiversity Action Plans and listed as Species of Principle Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. This obligates local authorities to have regard to the purpose of conserving biodiversity with particular emphasis on targeted species.
- 3.8 Dormice are protected under the Conservation of Habitats and Species Regulations 2017, making it an offence to deliberately capture, injure or kill hazel dormice, damage or destroy a dormouse resting place or breeding site, deliberately or recklessly disturb a hazel dormouse while it's in a structure or place of shelter or protection, block access to structures or places of shelter or protection, possess, sell, control or transport live or dead hazel dormice, or parts of hazel dormice. Dormice are also a 'Species of Principal Importance for the conservation of biodiversity' listed under section 41 of the Natural Environment and Rural Communities Act 2006 (NERC).
- 3.9 All widespread reptiles are protected against killing and injury under the Wildlife and Countryside Act 1981, with rarer reptiles receiving further protection under EU regulation. Reptiles must also be given consideration under the NERC Act 2006 as part of the planning process.
- 3.10 Great crested newts (GCN) are protected under The Conservation of Habitats and Species Regulations 2017. It is an offence for anyone to intentionally kill, injure or disturb a GCN or to damage, destroy or block access to areas of suitable habitat.

- 3.11 Badgers are protected under the Protection of Badgers Act 1992. It is an offence to harm badgers or disturb badgers and their setts.
- 3.12 Water voles are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 and is a priority conservation species. It is an offence to intentionally capture, kill or injure water voles, damage, destroy or block access to their places of shelter or protection (on purpose or by not taking enough care), disturb them in a place of shelter or protection (on purpose or by not taking enough care), possess, sell, control or transport live or dead water voles or parts of them (not water voles bred in captivity).
- 3.13 All other mammals receive general protection against cruelty, inhumane killing or injuring under the Protection of Mammals Act 1996.

4.0 Methodology

Desktop Study

- 4.1 A desktop study was conducted using the government 'MAGIC' Map GIS tool; a search was carried out for all statutory sites within 12.0 km of the site, and non-statutory designated sites and priority habitats within 2.0 km of the site. These have been summarized below and their significance considered in the context of the development proposals. A search was also carried out to identify features of ecological interest in the area, such as water bodies and ancient woodland. Given the overall scale and nature of the site and the proposals, a full data search from SxBRC was not considered appropriate. This is in accordance with CIEEM current guidance for such projects.

Site Visit

- 4.2 A site visit was conducted on 5th August 2021, and habitats on-site were categorized in a manner broadly conforming to the JNCC Phase 1 Habitat Survey Guidelines. These habitats have then been drawn onto the associated Site Habitat Plan (Reference: GS040.GooseGreenBinsted.SHP).
- 4.3 During the survey any constraints with regard to protected species were considered; the site was considered for their potential for protected species even when signs of these species were not noted at the time of survey.
- 4.4 Points of interest for protected species have been plotted into the Site Habitat Plan (Reference: GS040.GooseGreenBinsted.SHP).
- 4.5 Trees were inspected for features conducive to bat and bird roosting, including knot holes, limb failures, cavities and heavy ivy cover; any identified bird nests have been recorded.

- 4.6 The buildings on site were assessed by an experienced, licenced bat surveyor for its potential to hold roosting bats; roof voids were assessed where relevant, and access points identified. Any evidence of bats such as grease marks, bat droppings, urine splashes were noted. The bat roost assessment was conducted following the Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines (2016) with buildings being assessed as of 'negligible', 'low', 'moderate', or 'high' bat roost potential, or a confirmed roost.
- 4.7 Due to the site visit being carried out over one day, it is possible that some signs of protected species may not be apparent within this short timeframe. This is a constraint recognised within the Phase 1 Habitat Survey Guidelines and all reasonable effort has been made to identify evidence of protected species.

Habitat Suitability Assessment

- 4.8 The Habitat Suitability Index (HSI) was developed by Oldham et al (2000) as a way of providing a numerical index allowing a direct comparison to be made between different water bodies. This index assesses ponds against ten different criteria, each of which have a bearing on the likelihood of great crested newts (GCN) being present in the pond under consideration. The ten attributes against which ponds are assessed are:

1. *Geographic Location;*
2. *Pond Area (at its highest water level);*
3. *Permanence;*
4. *Water Quality;*
5. *Perimeter Shading;*
6. *Numbers of Wildfowl;*
7. *Numbers of Fish Present;*
8. *Pond Count (within a 1.0km radius);*
9. *Terrestrial Habitat (within 250.00m);*
10. *Macrophyte Coverage.*

- 4.9 The HSI results in a score between 1 and 0; with 1 being optimal conditions and 0 being unlikely to support a population. However, the index merely gives an indication as to whether a pond has the potential to support GCNs and is not a substitute for more detailed presence / absence surveys for protected species of amphibian. The evaluation criteria is shown in *Table No. 01* below.

Table 1: HSI Evaluation Criteria

<i>HSI Score</i>	<i>Pond Suitability</i>
<i><0.5</i>	<i>Poor</i>
<i>0.5-0.59</i>	<i>Below Average</i>
<i>0.6-0.69</i>	<i>Average</i>
<i>0.7-0.79</i>	<i>Good</i>
<i>>0.8</i>	<i>Excellent</i>

Bat Emergence and Re-entry Surveys

- 4.10 Bat Emergence and Re-entry Surveys were undertaken of the dwelling, stable and outbuildings in accordance with the Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines (2016).
- 4.11 Dusk emergence surveys began 15 minutes before sunset and continued until 15 hours after. The dawn re-entry survey began 1.5 hours before sunrise and ended 15 minutes after sunrise. A summary of the surveys is provided below:

Table 1 - Summary of Bat Surveys

<i>Date</i>	<i>Buildings Surveyed</i>	<i>Survey Type</i>	<i>Sunrise/Sunset</i>	<i>Start Time</i>	<i>End Time</i>	<i>Temp.</i>	<i>Weather</i>
16.08.21	B01	Dawn	05:50	05:20	06:05	16	Light cloud, dry, WF0
28.08.21	B02	Dusk	19:57	19:40	21:30	18	Overcast, dry, WF0
31.08.21	B01, B05	Dusk	19:55	19:40	21:25	18	Overcast, dry, WF2-3
20.09.21	B01	Dusk	19:07	18:50	20:40	19	Clear, dry, WF0

- 4.12 Four experienced surveyors were used to survey the buildings, with infrared cameras and illuminators to improve coverage. Infrared footage was subsequently reviewed after the survey. As such all aspects of the building were thoroughly covered and the likelihood of bats being missed is low. All surveys were lead by a licenced bat ecologist (George Sayer 2018-34434) with 9 years' experience, with all assistants having at least two years' experience each.
- 4.13 Bat detection was carried out using Echo Meter Touch 2 Pro, Peersonic RPA3, Batscanner and Batlogger detectors, with analysis carried out on Kaleidoscope software. The results of the surveys have then been drawn onto the associated Survey Results Plan.

- 4.14 Bat droppings taken from B01 were sent for DNA analysis to Surescreen Scientifics to confirm species.

Ecological Impact Assessment

- 4.15 The methodology for Ecological Impact Assessment (EclA) follows best practice guidelines set by the Chartered Institute of Ecology & Environmental Management (CIEEM): 'Guidelines for Ecological Impact Assessment' (CIEEM, 2018). This includes identifying the baseline conditions on the site and subsequently rating the potential effects of the development based on the sensitivity and value of the resource affected, combined with the magnitude, duration and scale of the impact (or change). This is initially assessed without mitigation measures, and then assessed again after allowing for the proposed mitigation measures; this provides the residual effects. The assessment is divided into construction effects and longer-term operational effects.
- 4.16 Each ecological feature within the site has been considered within a defined Geographic context such as:
- International and European;
 - National;
 - Regional;
 - County;
 - District;
 - Local;
 - Site Level;
 - Negligible.
- 4.17 Based upon CIEEM guidance, value was determined with reference to the following factors:
- Its inclusion as a Designated Site or other protected area;
 - The presence of habitat types of conservation significance, e.g. Habitats of Principal Importance (NERC 2006);
 - The presence (or potential presence) of species of conservation significance e.g. Species of Principal Importance (NERC 2006);
 - The presence of other protected species e.g. those protected under The Wildlife and Countryside Act 1981;
 - The sites social and economic value.

- 4.18 The ecological impacts resulting from the proposals were then described according to a defined set of characteristics as defined within 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (CIEEM, 2018). This assessment considers residual impacts (once all mitigation has been taken into account), with any significant effects highlighted. A significant effect is defined as "an effect which either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general".

5.0 Baseline Ecological Conditions and Protected Species Assessment

Desktop Study

Designated Sites and Habitats within 12.0km

- 5.1 The following is a summary of all protected and notable wildlife sites, with sites of local and national importance recorded within 2.0km of the site and sites of international importance within 12.0 km. These are divided into statutory and non-statutory; those with full legal protection and those without, but which the Local Planning Authority should still consider when deciding on planning policy and applications. These sites are summarized in tables 1 and 2 below. A description of locally designated sites is also made below.
- 5.2 This information is included so that the site can be considered within the ecological context of the surrounding area, guiding decisions related to habitat change and protected species; these sites are not necessarily representative of the habitat on or surrounding the site and may not be influenced by the proposals.
- 5.3 The site is located within the Impact Risk Zone of Arundel Park SSSI, however the proposals do not meet the criteria which would require consultation with Natural England. The site is within a Nitrate Vulnerable Zone (Eutrophic Water) – given the number of properties is not increasing, it is considered unlikely that the proposals would need to achieve nitrate neutrality although this should be confirmed with the LPA.
- 5.4 Having considered the designated sites below and the local context of the site, it is not considered that the proposals will have any negative impact upon protected sites. The site is already used as a residential dwelling, and the proposals do not significantly alter the nature or the scale of development and do not significantly increase the extent of hard surfacing. The proposals would not significantly increase indirect pressures on local designated sites, as the overall scale and use of the site is not being altered.

Table 2: Statutory Protected Designated Sites

Site Name	Reason for designation	Distance from site
South Downs National Park	1,600km ² of high-value lowland landscape, including farmland, river valleys, ancient woodland and lowland heaths containing a number of small villages and market towns.	0.5 km N
Solent and Dorset Coast SPA	Designated for breeding colonies of, and open sea foraging habitat for internationally important colonies of: • common tern • Sandwich tern • little tern	4.7 km S
Duncton to Bignor Escarpment SAC	An example of mature beech <i>Fagus sylvatica</i> woodland located on the steep scarp face of the South Downs. The site has developed over chalk which is overlain in places by a clay-with-flints capping. Beech dominates in a mosaic with ash <i>Fraxinus excelsior</i> woodland, scrub and grassland. Much of the beech woodland is high forest but with some old pollards. Rare plants present include white helleborine <i>Cephalanthera damasonium</i> , yellow bird's nest <i>Monotropa hypopitys</i> , green hellebore <i>Helleborus viridis</i> and limestone fern <i>Gymnopcarpium robertium</i> . The woods also have a rich mollusc fauna.	8.0 km N
Arun Valley SAC, SPA, Ramsar	An area of alluvial grazing marsh adjacent to the River Arun is of national importance for wintering birds. Designated for presence of ramshorn snail, breeding populations of Bewick's swan, teal and shoveler.	8.6 km NE

5.5 The following non-statutory designated sites are within 2.0 km of the proposal site.

Table 3: Statutory Protected Designated Sites

Site Name	Reason for designation	Distance from site
Binsted Woods	Ancient woodland and woodpasture, with ponds and water meadows.	c.500.0 m N

Habitats

Desk Study

- 5.6 Within 2.0km of the site there are Priority Habitats of; Coastal and Floodplain Grazing Marsh, Deciduous Woodland, Ancient Woodland, Traditional Orchard, Woodpasture and Parkland. There are numerous ponds and hedges locally, and the River Arun, also Priority Habitats. To the north, the Binsted Woods contain extensive areas of ancient woodland and veteran trees. To the rear of the garden is a lower section of meadow, designated as part of a much larger area of coastal and floodplain grazing marsh. The extreme rear of the garden before this habitat is designated in places as 'restorable habitat' and 'network enhancement zone 1'.

Site Assessment

- 5.7 The proposal area is given over to the existing buildings, improved grassland, ephemeral / short perennial, tall ruderal and hard surfaces, habitats of low value which are discussed further below. As described above, adjacent habitats are recorded for context and to assess potential impacts.

Buildings and Structures

- 5.8 The structures affected by the proposals consist of: a large detached house; a small wooden barn; a brick stable with slate roof; a small blockwork outbuilding, and a series of timber outbuildings. The buildings of themselves offer negligible ecological value. The potential for the buildings to support protected species is discussed further below.

Hard Surfaces

- 5.9 The access drive and a series of paths consist of tarmac and concrete, with several bare earth and gravel tracks also present. These are of negligible ecological value.

Improved Grassland

- 5.10 To the east the land is dominated by relatively coarse, improved grassland. The vegetation appears regularly mown with a sward height of c.10cm currently. The sward is dominated by coarse and common grasses including Yorkshire fog (*Holcus lanatus*), red fescue (*Festuca rubra*) and patches of perennial ryegrass (*Lolium perenne*) and meadow fescue (*Schedonorus pratensis*). Common forbs include abundant creeping buttercup (*Ranunculus repens*), frequent white clover (*Trifolium repens*) and yarrow (*Achillea millefolium*). The habitat is of low ecological value at the site level only.

Marshy Grassland (off-site)

- 5.11 Beyond the improved grassland, just off-site, is a sunken area which abuts a stream. The area is cut annually for hay and is considered to be a water meadow. Species such as hairy sedge (*Carex hirta*) and rushes (*Juncus spp.*) were noted. Forbs included abundant silverweed (*Argentina anserina*), and frequent red clover (*Trifolium pratense*) and redshank (*Persicaria maculosa*). The area is designated as priority habitat coastal and floodplain grazing marsh, which the current assessment accords with. There is some potential for enhancement through alteration of the cutting regime and retention of longer margins. The habitat is of moderate ecological value at the local level.

Reedbeds (off-site)

- 5.12 Just outside the north-eastern, eastern and south-eastern boundaries are small ditches and a stream. These appear in good condition with a thin reedbed habitat, formed of reedmace (*Typha latifolia*), common reed (*Phragmites australis*), and wetland forbs such as purple loosestrife (*Lythrum salicaria*). As reedbeds these areas are priority habitats, albeit relatively small ones of limited connectivity. The habitat is of moderate ecological value at the local level.

Tall Ruderal

- 5.13 A main access track is lined with mixed tall ruderal vegetation, consisting of common species such as nettle (*Urtica dioica*). A patch of ground to the east of the buildings is overgrown almost entirely with burdock (*Arctium minus*). The habitat is of low ecological value at the site level only.

Ephemeral / Short Perennial

- 5.14 An old sand school to the north of the site has been lightly colonised with a number of small forbs and sparse grasses. Of note are a number of marsh cudweed (*Gnaphalium uliginosum*) whilst most other species are common forbs such as broad-leaved willowherb (*Epilobium montanum*), prickly sow-thistle (*Sonchus asper*) and catsear (*Hypochaeris radicata*). The habitat is of low ecological value at the site level only.

Scattered Trees and Treelines

- 5.15 Several large coniferous treelines, consisting of Leyland cypress (*Cupressus x leylandii*) line the northern and western boundaries. The treelines are of low ecological value at the site level only.
- 5.16 An old hedgeline to the eastern boundary contains a number of scattered oaks (*Quercus robur*) and ash (*Fraxinus excelsior*). The treeline is a mature landscape feature of moderate value at the local level.

Broadleaved, Plantation Woodland

- 5.17 The southern section of the site lies in a small depression, around and within which a number of trees have self-seeded or been planted. The dominant trees are willows (*Salix sp.*) with several silver birch (*Betula pendula*), horse chestnut (*Aesculus hippocastanum*), ash and more rarely oak. The understorey is mostly bare, with some landscaping works having been recently undertaken to remove scrub. Several hawthorn (*Crataegus monogyna*), hazel (*Corylus avellana*) and cherry laurel (*Prunus laurocerasus*) shrubs are present. A small area of standing water and a dry ditch are present within the woodland. The trees are generally of poor form and the area is of low ecological value at the site level only.

Standing Water

- 5.18 Within the above woodland is a small patch of standing water, of c.4sqm. The water was covered in duckweed and appeared stagnant. The water was likely covered in scrub until recent landscaping works revealed it. The water is not considered a priority habitat pond, but offers 'high' potential for enhancement.

Defunct, Species-poor Hedge

- 5.19 The north-eastern boundary is lined with an old hawthorn hedge, now formed of sparse scattered trees. This boundary has recently been replanted with new hedging whips, yet to establish. The south-eastern boundary and south western boundary are lined in places with a defunct hedge, now generally formed of individual hazel stools. The hedges are old but offer limited habitat and poor connectivity and are too gappy to be considered a priority habitat. The hedges are of low value at the site level, with good potential for enhancement through gapping-up and connecting to other habitats.

6.0 Protected Species Assessment

Bats

Desk Study

- 6.1 A total of fourteen species of bat have been recorded within the nearby Binsted woods, including Annex II species of Bechstein's bat (*Myotis bechsteinii*) and Barbastelle (*Barbastella barbastellus*). Many of these are also likely to use the nearby water meadows.

Site Assessment

- 6.2 There are five structures on the site, which have been assessed for their bat roost potential as per the table below:

Table 4: Bat Roost Assessment of Buildings

<i>Building ID</i>	<i>Description</i>	<i>Bat Roost Potential</i>	<i>Results of Phase 2 Surveys</i>
<i>B1 - Dwelling</i>	<i>A large detached house, believed to date from the 1930s. The building has been extended several times, most recently with a large flat roofed extension to the east. The building exhibits a complex tiled roof, with several dormer windows with small areas of hanging tiles. A number of tiles were noted to have slipped resulting in potential access points. Internally, the loft was lined with a combination of felt in more modern sections, and timber sarking in older sections. Access into the two modern loft sections was not full possible due to the size of the opening, but inspection with high powered torch did not reveal any obvious large accumulations of droppings. The main loft contained a reasonable scattering (c.50) of bat droppings, likely to be either Myotis sp. or long-eared bat.</i>	<i>High / Confirmed Roost</i>	<i>Confirmed Roost – 2no. brown long-eared (species confirmed by DNA analysis), 2no. common pipistrelles and 2no. soprano pipistrelle (species confirmed by echolocation calls)</i>
<i>B2 – Stable</i>	<i>A rendered brick single storey-stable, with a hipped slate roof. Externally the building is well-sealed, with only one access point noted to the corner of a soffit. Internally the roof is felted and open to the roof. No bat droppings or feeding remains were found inside. It is unlikely the building is used by bats, but the single access point may allow bats access to the soffit box.</i>	<i>Low</i>	<i>No roost detected</i>
<i>B3 – Barn</i>	<i>A small timber barn, with timber panelled single-skin walls and corrugated roof. Part of the roof is lined with polystyrene insulation. Several windows and a broken door make the building very bright and draughty internally. A little owl family were recorded using the barn at times. O evidence of bats was recorded.</i>	<i>Negligible</i>	<i>No further survey</i>

<i>B4 – Blockwork Outbuilding</i>	<i>Derelict blockwork barn, with a corrugated panel roof. Several skylights and lack of a door make the building bright internally. No evidence of bats was recorded.</i>	<i>Negligible</i>	<i>No further survey</i>
<i>B5 – Timber stables</i>	<i>Several timber stables with half-open stable doors. Internally the buildings are relatively bright and damp.. A little owl family were found to move between the buildings. Within one stable were several droppings and moth wings, indicative of an occasional feeding perch, likely for a long-eared bat.</i>	<i>Low (likely feeding perch)</i>	<i>No bat activity recorded – likely occasional or rarely-used feeding perch</i>

6.3 The trees on site have been assessed for their bat roost potential as per the table below:

Table 4: Bat Roost Assessment of Trees

<i>Building Descriptor</i>	<i>Description</i>	<i>Bat Roost Potential</i>
<i>T01</i>	<i>The woodland area. No trees exhibited particular features of note, but by their dense nature full inspection was difficult and trees may hold small unseen cavities suitable for individual bats.</i>	<i>Low</i>
<i>T02</i>	<i>Mature oak with no discernible features but sufficiently old to support a small bat roost.</i>	<i>Low</i>
<i>T03</i>	<i>Mature oak with several deadwood features which could support small bat roosts.</i>	<i>Moderate</i>
<i>T04</i>	<i>Mature oak with large tear-outs which could support small bat roosts.</i>	<i>Moderate</i>
<i>T05</i>	<i>Small ash with a single, shallow, low cavity of low suitability for bats.</i>	<i>Low</i>
<i>T06</i>	<i>Mature oak with no discernible features but sufficiently old to support a small bat roost.</i>	<i>Low</i>
<i>T07</i>	<i>Mature oak with a large, low but shallow cavity and several higher deadwood features.</i>	<i>Moderate.</i>

- 6.4 The site consists of a variety of habitats. The majority of the site consists of improved grassland, buildings, hard surfaces and ephemeral vegetation which is considered to offer low potential to foraging and commuting bats. The defunct, species-poor hedges, treelines, reedbeds, marshy grassland and woodland are strong vegetative features of moderate potential and likely of local value.
- 6.5 The bat emergence and re-entry surveys identified three small day roosts within the dwelling B01:
- 2no. soprano pipistrelles roosting within hanging tiles of the southern dormer;
 - 2no. common pipistrelle (roosting to north-west and south-east under roof tiles); and
 - 2no. brown long-eared bats (most likely roosting in the main roof and emerging from the south-east corner).
- 6.6 A number of species of bat were recorded foraging and commuting through the site during the bat emergence and re-entry surveys. The following species were confirmed:
- Common Pipistrelle
 - Soprano Pipistrelle
 - Brown Long-eared
 - Noctule
 - Serotine
 - Myotis sp.
 - Barbastelle
- 6.7 Bat activity consisted mainly of foraging common and soprano pipistrelles and brown long-eared bats, foraging along the edges of treelines and over the grassland once sufficiently dark. The presence of other bat species supports the assumption that the higher-quality habitats are likely of local value, but given only a single possible barbastelle call, and a limited number of myotis calls were recorded, the site is not considered to be well-used by the rarer species present in Binsted Woods and is therefore not any higher than this.

Birds

Desk Study

- 6.8 Numerous bird species are present in the local area, including a number of water bird species which likely use the nearby River Arun, grassland birds such as skylark (*Alauda arvensis*) and numerous woodland birds. Birds relevant to the proposals which are present locally include swallow (*Hirundo rustica*) and house sparrow (*Passer domesticus*) which may use the buildings on-site.

Site Assessment

- 6.9 Several birds' nests were noted in B2, B4 and B5 indicative of swallows, which were noted foraging over the grassland. An active pigeon nest with squabs was noted within B5. A family of little owl (*Athene noctule*) were recorded using B3 and B5 with numerous pellets noted and the birds recorded flying between the two.
- 6.10 The improved grassland offers 'low' potential for ground nesting birds, due to frequent mowing, with the marshy grassland offering 'moderate' potential. The trees, woodland and treelines offer 'high' potential for nesting birds. The off-site reedbeds offer 'high' potential for water birds such as moorhen (*Gallinula chloropus*).
- 6.11 During bat emergence surveys, large numbers of swallow were noted foraging over the grassland, marshy grassland and high above the buildings during late summer. The site is likely of local value to these migratory birds.

Reptiles

Desk Study

- 6.12 Low numbers of records of grass snake (*Natrix Helvetica*) common lizard (*Zootoca vivipara*) and slow worm (*Anguis fragilis*) are present locally.

Site Assessment

- 6.13 The improved grassland offers 'low' potential for reptiles due to frequent mowing and relatively short sward length. The patches of tall ruderal are partially suitable, but very limited in extent and connectivity and as such unlikely to harbour sustained populations. A large pile of logs and rubble by B05 would offer potential hibernation and basking opportunities.

Amphibians

Desk Study

- 6.14 No survey licence returns or records of mitigation licences for great crested newts (GCN) are recorded within 2.0 km of the site. GCN are considered to be present within ponds at Binsted Woods to the north, and are recorded further east at Lyminster and 2.0 km west to the south of Walberton.

Site Assessment

- 6.15 The buildings, hard surfaces, ephemeral vegetation are considered completely unsuitable for GCN although they may traverse these habitats rarely. The improved grassland is partially suitable for occasional foraging and commuting, but regular mowing likely means that GCN cannot shelter in this habitat. Tall ruderal and woodland habitats are suitable for GCN foraging and shelter.

- 6.16 The small area of water was subject to HSI assessment as below. A further pond to the south was not accessible for survey:

Table 5: HSI Assessment of Pond On-site

<i>SI Criteria</i>	<i>Score – P1</i>
<i>Geographic Location;</i>	1
<i>Pond Area (at its highest water level);</i>	0.05
<i>Permanence;</i>	0.5
<i>Water Quality;</i>	0.01
<i>Perimeter Shading;</i>	1
<i>Numbers of Wildfowl;</i>	1
<i>Numbers of Fish Present;</i>	1
<i>Pond Count (within a 1.0km radius);</i>	1
<i>Terrestrial Habitat (within 250.00m);</i>	1
<i>Macrophyte Coverage.</i>	0.3
<i>HSI Score</i>	<i>0.39</i>
<i>Pond Suitability</i>	<i>Poor</i>

- 6.17 The small dew pond to the south may support GCN. In this case, should the GCN be able to cross the southern boundary ditch and forage in the grassland, and hibernate in the woodland. The site is likely of low potential due to the isolated nature of this pond.

Dormice

Desk Study

- 6.18 There are very numerous records of dormice in the vicinity, particularly in Binsted Woods where the population is regularly monitored.

Site Assessment

- 6.19 The site is largely unsuitable for dormice. The hedges are defunct and too poorly connected to be suitable for dormice. The woodland contains too little understorey to support commuting or foraging dormice. The coniferous treelines are slightly scrubby but offer no more than 'low' potential for occasional commuting.

Water Vole

Desk Study

- 6.20 Water Vole are well-recorded locally within networks of ditches and rife.

Site Assessment

- 6.21 The site is largely unsuitable for water vole. The nearby off-site ditches were considered highly suitable for water voles, with abundant suitable vegetation. A water vole survey in the form of an insulation sheet pontoon was noted to the east, which appeared to display water vole droppings. The standing water in the site is stagnant, shallow and exposed with no marginal vegetation, and as such is unsuitable for water vole.

Other

- 6.22 No potential for or evidence of any other protected species was recorded. No evidence of badger such as setts or latrines was recorded. Several mammal holes to the north indicate rabbit or fox presence. There is high potential for hedgehogs to be present in the grassland.

7.0 Evaluation of Impacts and Mitigation

Designated Sites

Potential Impacts

- 7.1 In the absence of mitigation, impacts upon designated sites could include dust, noise, air, water and light pollution. The site is located within the Impact Risk Zone of Arundel Park SSSI, however the proposals do not meet the criteria which would require consultation with Natural England. The site is within a Nitrate Vulnerable Zone (Eutrophic Water) – given the number of properties is not increasing, it is considered unlikely that the proposals would need to achieve nitrate neutrality although this should be confirmed with the LPA. The site is relatively close to Binsted Woods SNCI, but the proposals would be unlikely to result in any direct impacts upon the site. Impacts upon the bats using the woods is considered highly unlikely given the lack of rarer species recorded during surveys.
- 7.2 Having considered the designated sites below and the local context of the site, it is not considered that the proposals will have any negative impact upon protected sites. The site is already used as a residential dwelling, and the proposals do not significantly alter the nature or the scale of development and do not significantly increase the extent of hard surfacing. The proposals would not significantly increase indirect pressures on local designated sites, as the overall scale and use of the site is not being altered.

Mitigation and Compensation

- 7.3 No specific mitigation requires.

Residual Impacts

- 7.4 Negligible impacts.

Habitats

Potential Impacts

- 7.5 Low quality habitats of hard surface, building, tall ruderal and improved grassland would be removed. Moderate value habitats of trees, treelines and broadleaved, plantation woodland, and high value habitat of marshy grassland and reedbed/ditches may also be impacted. In the absence of mitigation, impacts to these habitats would include dust, noise, air and light pollution.
- 7.6 The proposals do not generally alter the use of the site and seek to replace and enlarge existing buildings. The likelihood of impacts is moderate but would be of low magnitude. Impacts would not extend beyond the site itself.
- 7.7 The proposals seek to significantly enhance some of the habitats on-site, notably the woodland and hedges. These works would result in positive impacts.

Mitigation and Compensation

- 7.8 All construction will be undertaken in accordance with best practice advice with regards to control of dust, noise and emissions. Any chemicals or fuel shall be stored appropriately and on existing hard surfaces, and at least 10.0 m from the woodland, marshy grassland and ditches. Appropriate debris netting will be used as determined necessary to prevent any debris from harming the trees, woodland and treelines. Trees shall be protected in accordance with BS5837 with protective measures as appropriate.

Residual Impacts

- 7.9 Once mitigation is taken into account, the impacts will be negligible and non-significant with enhancements resulting in a net positive impact.

Bats

Potential Impacts

- 7.10 The building contains a day roost of two brown long-eared bats and three soprano pipistrelles. An occasional feeding perch is also found within an outbuilding. Nearby trees offer bat roost potential. In the absence of mitigation, impacts would include destruction of a bat roost and a feeding perch, dust, noise and light pollution onto surrounding habitats and disruption of bat commuting corridors and foraging habitats along the site boundaries from damage to vegetation. Given the habitats, and the nature of the proposals, impacts would be of moderate magnitude and likely to occur.
- 7.11 The proposals include new landscape features and enhancements, to include bat feeding and perching opportunities within the extended stable, and enhanced woodland area, which will result in positive impacts for bats.

Mitigation and Compensation

- 7.12 The trees offering bat roost potential are proposed to be protected in accordance with BS5837 with protective measures as appropriate; a detailed tree package accompanies this application.

7.13 A licence to disturb the roost on-site shall be required. This would be undertaken in the following manner:

- Once planning permission is obtained, a licence shall be sought from Natural England to disturb the roost;
- Two temporary bat boxes will be installed to a nearby tree, in case the bats are discovered during the works;
- The access points and other suitable roost features such as hanging tiles shall be manually removed under ecological watching brief;
- Ridge and hip tiles shall be manually removed to make internal spaces too bright and unsuitable for bats;
- The building shall be left for 48 hours to allow any remaining bats to leave;
- Should the bat be discovered during works, it will carefully be moved to the temporary bat box;
- Works will aim to minimise disturbance to the roost, with no working 30 minutes before sunset until 30 minutes after sunrise.

7.14 A sensitive lighting scheme will be employed for all buildings and surroundings, with any new lighting kept to the minimum levels in accordance with BCT/ILP Guidance Note 08/18.

Residual Impacts

7.15 The overall impact of the scheme will be non-significant, with the proposed mitigation resulting in a likely net gain over time as bats are better able to colonise the roost features provided as an enhancement.

Nesting Birds

Potential Impacts

- 7.16 Swallow and pigeon nests, and a family of little owls were found within the buildings on-site. There is high potential for nests to be destroyed or disturbed during clearance. Impacts would be of moderate magnitude and relatively likely to occur.
- 7.17 The proposals include enhancements such as new hedge planting and bird boxes, which will likely increase the bird foraging and nesting resource on the site.

Mitigation and Compensation

- 7.18 Adjacent trees, woodland and treelines are proposed for retention and protection in accordance with BS5837. Any clearance and building demolition shall be timed to avoid the bird nesting season (*March-August inclusive*) or immediately following a check to ensure no active bird nests are present.
- 7.19 Replacement provision for the little owls and swallows shall be provided through a new roost box for little owls within the treelines, and nesting opportunities within the altered stables.

Residual Impacts

- 7.20 The overall impacts of the scheme will be negligible, provided avoidance and mitigation measures are undertaken. The proposed enhancements will result in a net benefit for birds.

Reptiles and Amphibians

Potential Impacts

- 7.21 The improved grassland and tall ruderal offer 'low' reptile potential; a relatively small area of this habitat would be removed. The habitats impacted by the proposals consist of hard surfaces, buildings, ephemeral / short perennial and a small area of improved grassland. These habitats are largely unsuitable for GCN and it is considered unlikely they would be impacted. In the absence of mitigation, impacts would include killing or injuring of widespread amphibians and reptiles commuting through the site. Impacts would be of low magnitude and limited to the site area.
- 7.22 A new pond is proposed which would result in an enhancement for amphibians.

Mitigation and Compensation

7.23 Log and debris piles shall be annually removed and checked for any amphibians and reptiles. Any found shall be relocated to the woodland area where new log piles will be created. The grassland shall be maintained low to prevent it becoming more suitable for amphibians and reptiles. The likelihood of encountering GCN during the works is unlikely and as such, Reasonable Avoidance Measures shall be implemented to reduce the risk of an offence to 'negligible'. Such measures shall include:

- Storage of all materials on hard surfaces or well-mown grassland, with the surroundings of the construction area kept regularly mown to make them unsuitable for sheltering GCN.
- No night working when GCN are likely to be mobile
- No clearance of habitat during the GCN hibernation period (November-March)
- Checking of all footings and excavations daily for GCN

Residual Impacts

7.24 The overall impact of the scheme will be negligible.

Dormice

Potential Impacts

7.25 The habitats on and adjacent the construction area offer 'low' potential for dormice. Breaking of connectivity for dormice or harming of individual dormice is considered highly unlikely.

7.26 The proposals include for gapping-up of currently defunct hedges. As such they may result in improvements for dormice, providing new foraging habitats and connecting up sections of the site.

Mitigation and Compensation

7.27 Adjacent trees and treelines are proposed for retention and protection in accordance with BS5837. Any shrubs proposed for removal shall be manually removed. Methods are proposed above for protecting the adjacent ancient woodland habitats.

Residual Impacts

7.28 The overall impact of the scheme will be negligible.

Water Voles

Potential Impacts

- 7.29 The off-site ditches are sufficiently distant that no impact upon water voles are predicted. Poor containment of chemicals etc. or alterations to site drainage might impact upon the nearby ditches and reedbeds which are used by water voles. The impacts would be moderate but unlikely to occur. Enhancements to the on-site standing water may result in a new habitat for water voles to use occasionally.

Mitigation and Compensation

- 7.30 All chemicals, liquids, fuels etc. should be stored in bunded containers at least 15.0 m from the ditches. The surface water drainage should be designed such that it does not negatively impact the ditches, e.g. through water surges or transferral of contaminants such as car fuels or car washing detergents into the ditches.

Residual Impacts

- 7.31 The overall impact of the scheme will be negligible.

Hedgehogs

Potential Impacts

- 7.32 Impacts might involve loss of hibernating or foraging habitat and harm to individual hedgehogs.

Mitigation and Compensation

- 7.33 Log and debris piles shall be manually removed and checked for any hedgehogs. Any found shall be relocated to the woodland area where new log piles will be created.

Residual Impacts

- 7.34 The overall impact of the scheme will be negligible.

8.0 Ecological Enhancements

8.1 The proposals should seek to result in ecological enhancement of the site in accordance with the Arun Local Plan and BS42020:2013. The following have been agreed to provide a net biodiversity gain to the proposals:

- Additional bat boxes to trees and buildings above those needed for mitigation; a hibernation box would be a significant enhancement;
- Addition of hedgehog houses to the site;
- Addition of further log piles and reptile hibernacula;
- Conversion of the improved grassland to the margins to a wildflower meadow, ideally using species of local provenance;
- Alterations to the management of the marshy grassland, for example by making the hay cut later in the summer, allowing flowering plants and rushes to thrive and making the habitat more distinct from the improved grassland;
- Provision of new bird nesting opportunities in the woodland and trees;
- Understorey and groundcover planting in the woodland to benefit a range of species;
- Enhancement of the pond, through de-silting, marginal planting, reduction of shade and enlargement to create a permanent wildlife feature;
- Infill planting to the defunct hedges to provide more continuous habitat.

9.0 Conclusions

- 9.1 Overall the proposals are considered to represent a 'low' impact upon ecology. The construction area is of low ecological value. Surrounding off-site habitats are of moderate-high value and distinctiveness and should be retained, protected and enhanced.
- 9.2 There is a day roost of brown long eared and soprano pipistrelle bats in the dwelling. Proposals shall require a Natural England licence to proceed. Hypothetical mitigation (subject to licence) is provided above to ensure that bats are not harmed and roosts are not damaged. There is potential for nesting birds, hedgehogs, and very minor potential for GCN, water voles and reptiles to be disturbed by the proposals. Mitigation has been proposed which would avoid this disturbance.
- 9.3 Once avoidance and mitigation measures have been taken into account, the impacts of the planned development upon biodiversity will be negligible, with proposed ecological enhancements resulting in a net gain in biodiversity in line with local and national planning policy guidance.

10.0 References

MAGIC Interactive Map Tool (Accessed 27th August 2021): www.magic.gov.uk

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CIEEM (2018) Guidelines for Ecological Impact Assessment, 1st edition. Chartered Institute of Ecology and Environmental Management, Winchester.

Table 5: Target Notes

<i>Note</i>	<i>Description</i>
<i>TN01</i>	<i>Water Vole survey pontoon with droppings.</i>
<i>TN02</i>	<i>Small area of standing water</i>
<i>TN03</i>	<i>Area of log pile and tall ruderal suitable for reptiles</i>
<i>TN04</i>	<i>Bat droppings within the loft of B01</i>

11.0 Appendix 1 – Site Photos

Photo 1 – View of the dwelling from the north-west.



Photo 2 – View of the dwelling from the north-east.



GS040.GooseGreenBinsted.EclA.V2.0

Photo 3 – View of the loft of B1.



Photo 4 – View of bat and mouse droppings within the loft of B1.

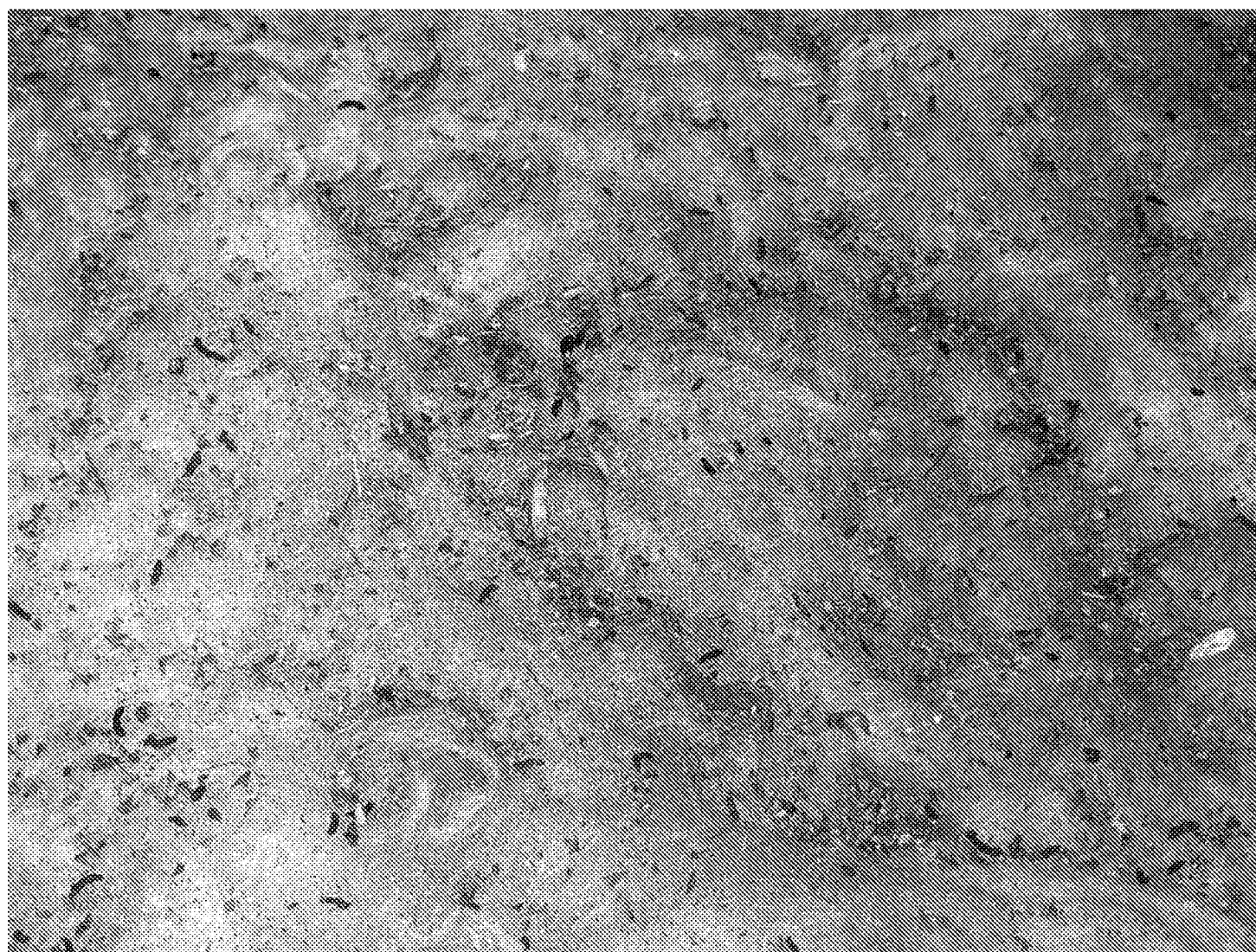


Photo 6 - The building B2, viewed from the north-west.



Photo 7 - View inside B3.

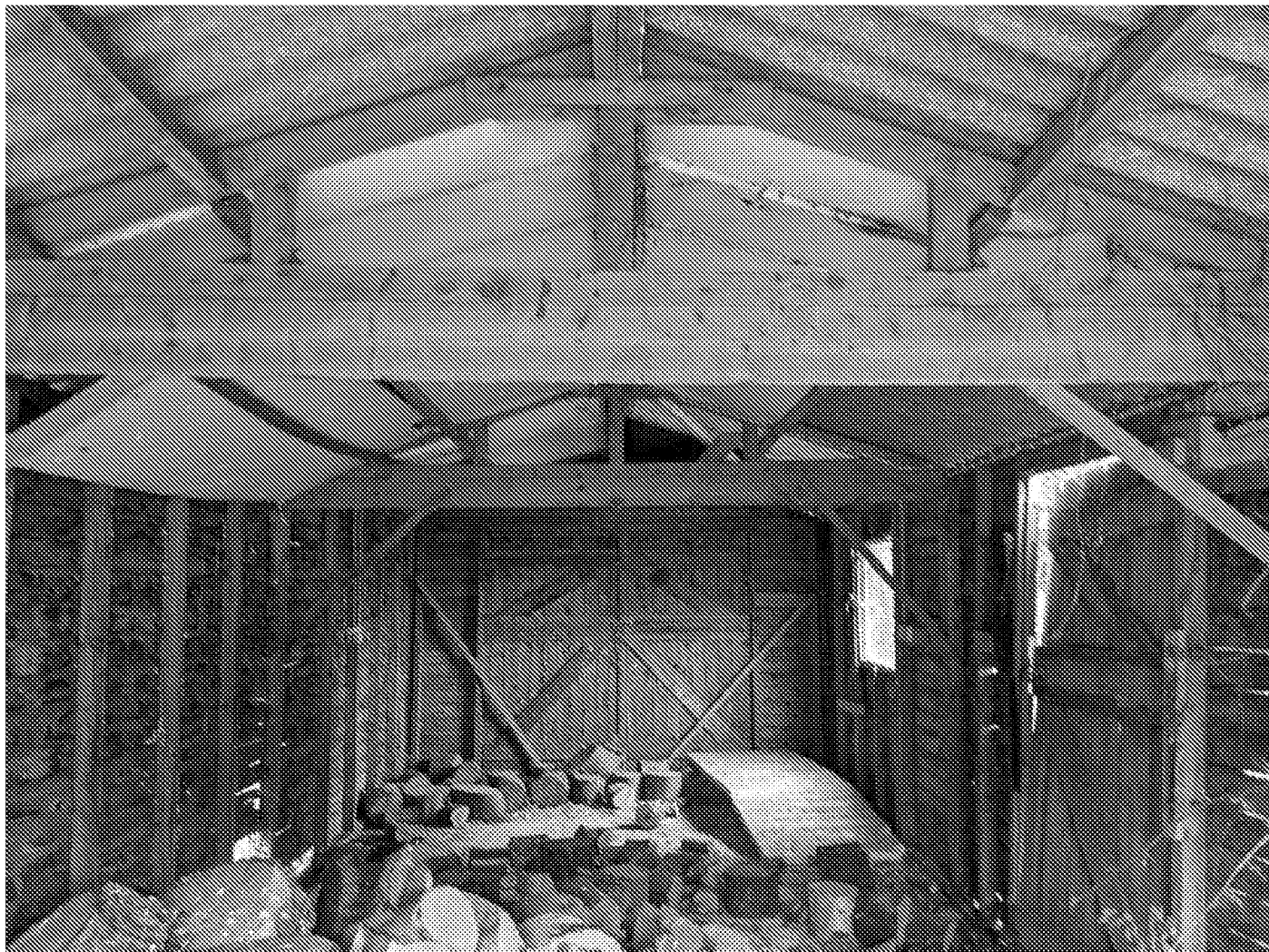


Photo 8 – View of B4.



Photo 9 – View of B5.



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Photo 10 – Pigeon nest with squabs in B5.



Photo 11 – Feeding remains, and several bat droppings suggest an infrequently-used bat feeding perch.

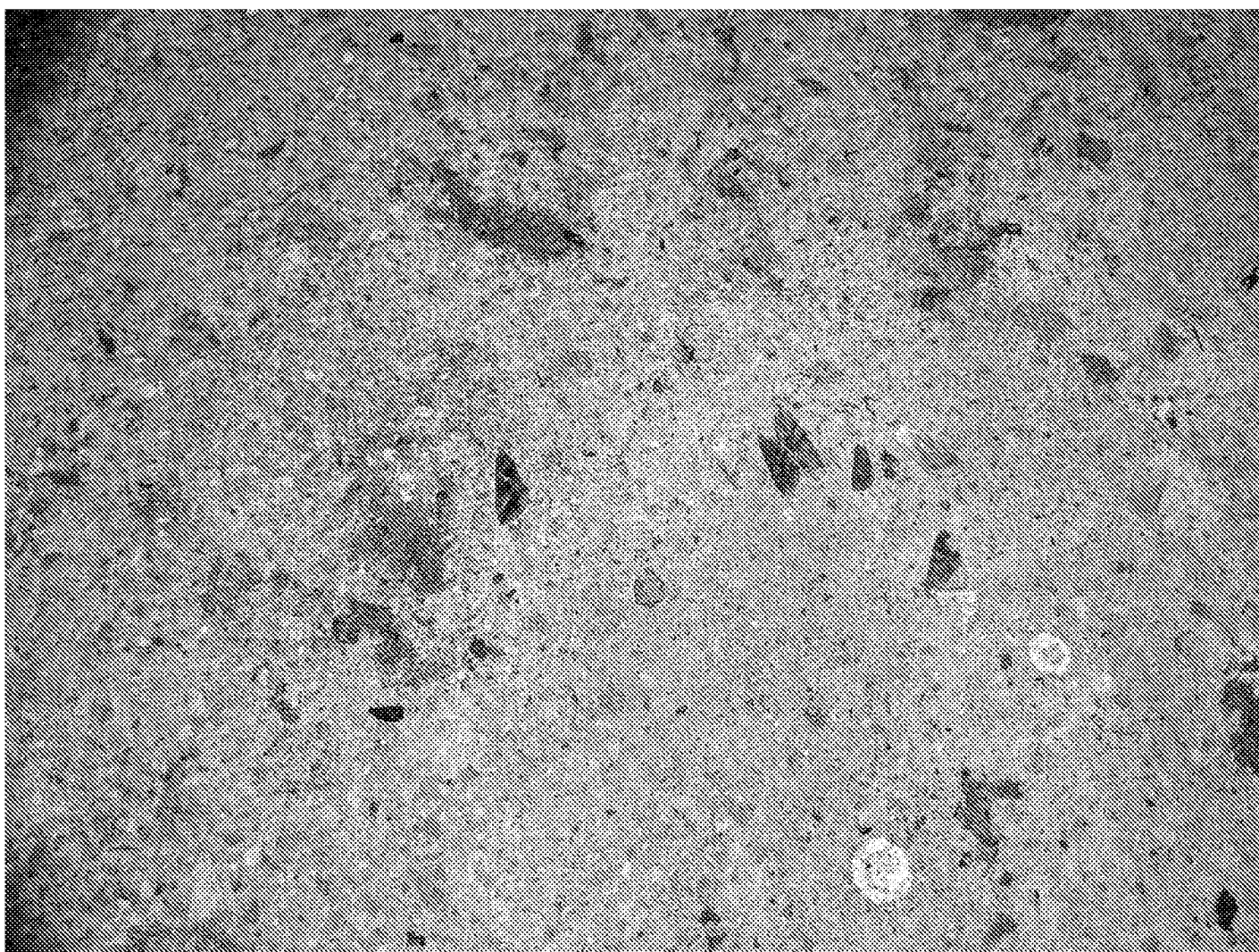


Photo 12 - The eastern ditch/reedbed off-site with water vole survey.



Photo 13 - standing water in the woodland offers 'negligible' potential for water voles and GCN



Photo 14 – the broadleaf, plantation woodland, currently lacking understorey and groundcover.



Photo 15 – Defunct hedges suitable for infill planting

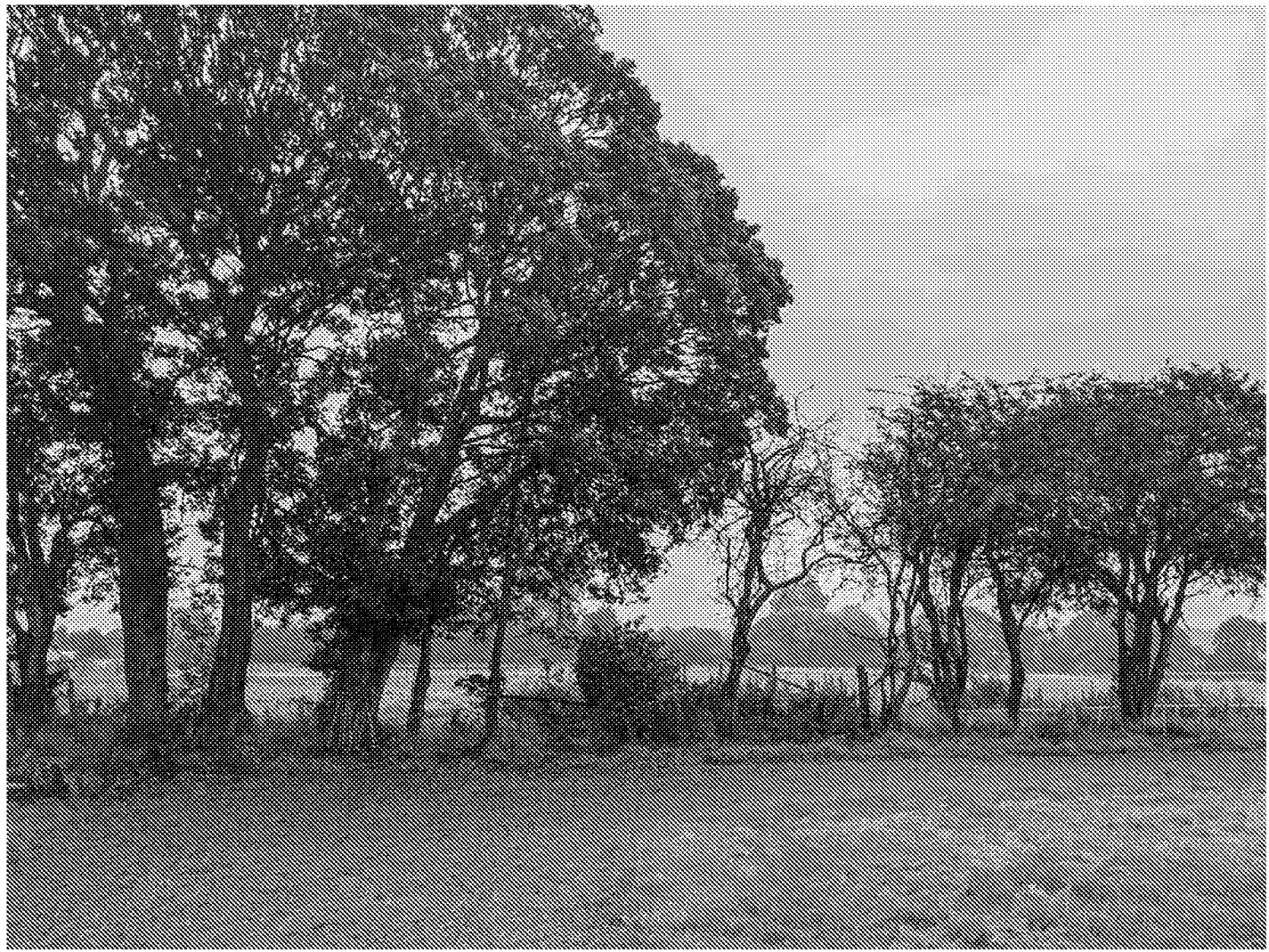


Photo 16 – Improved grassland forming much of the site.



Photo 17 – patches of tall ruderal and log/debris piles offer limited suitability for reptiles in small areas.



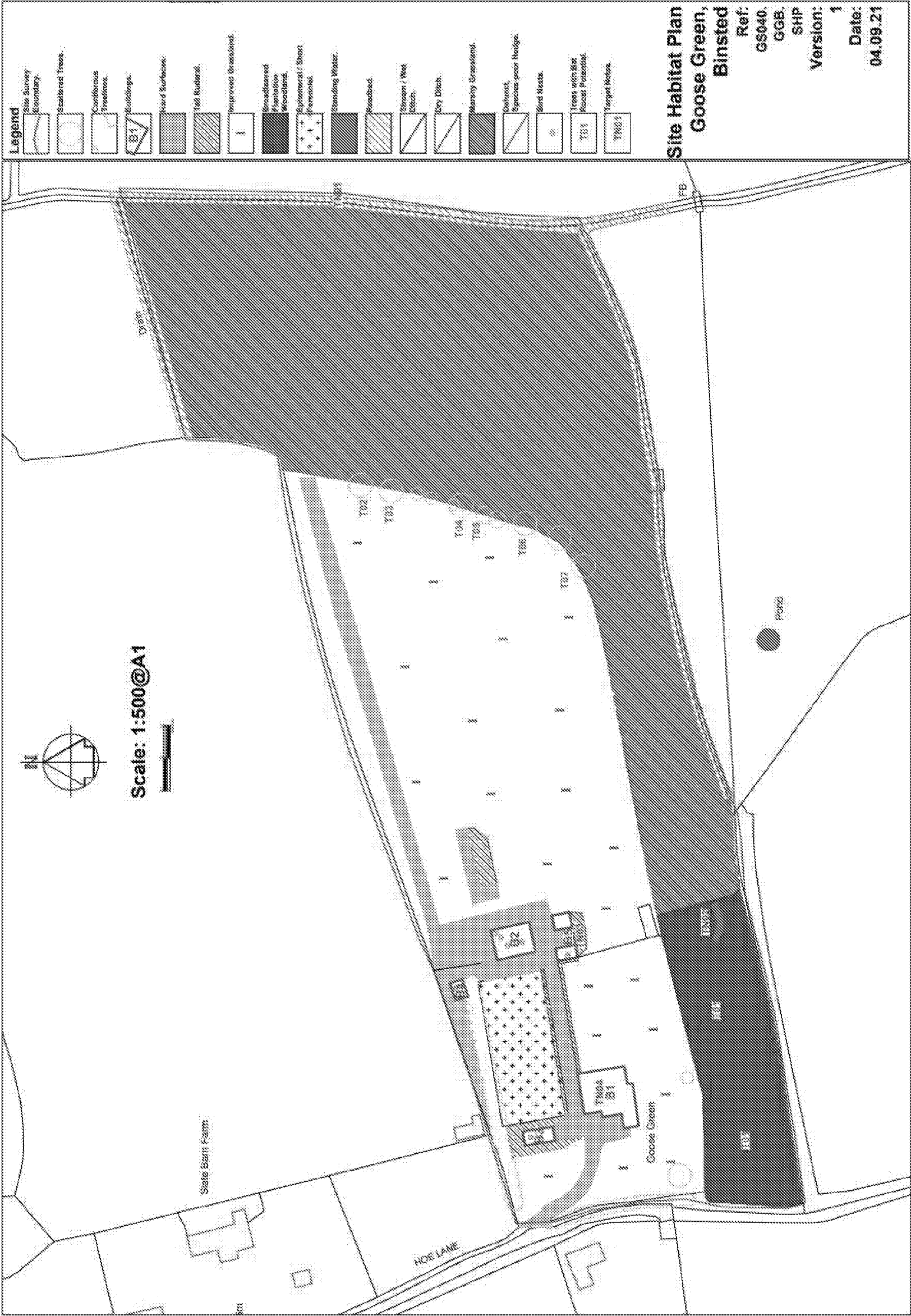
Photo 18 - Off-site marshy grassland, looking west with the site area beyond the trees.



Photo 19 -Several trees to the east offer bat roost potential but shall not be impacted.



12.0 Site Habitat Plan



13.0 Bat Survey Results Plan

