



Preliminary Ecological Appraisal

**Land south of Chiswell Green Lane, St
Albans, Hertfordshire**

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LIABILITIES:

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing and whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date.

This report provides a snap shot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated only dominant species maybe recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

1.0 Introduction

Background

1.1 The Ecology Partnership was commissioned by Alban Developments Limited and Alban Peter Pearson, CALA Homes (Chiltern) Ltd and Redington Capital Ltd to undertake a preliminary ecological appraisal (PEA) of land South of Chiswell Green Lane, St Albans, Hertfordshire. This is in support of an outline planning application for the site.

1.2 The key objectives of a PEA (CIEEM 2017) are to:

- Identify the likely ecological constraints associated with a project;
- Identify any mitigation measures likely to be required, following the 'Mitigation Hierarchy' (CIEEM 2016; BSI 2013, Clause 5.2);
- Identify any additional surveys that may be required to inform an Ecological Impact Assessment (EcIA); and
- Identify the opportunities offered by a project to deliver ecological enhancement.

1.3 This report comprises the:

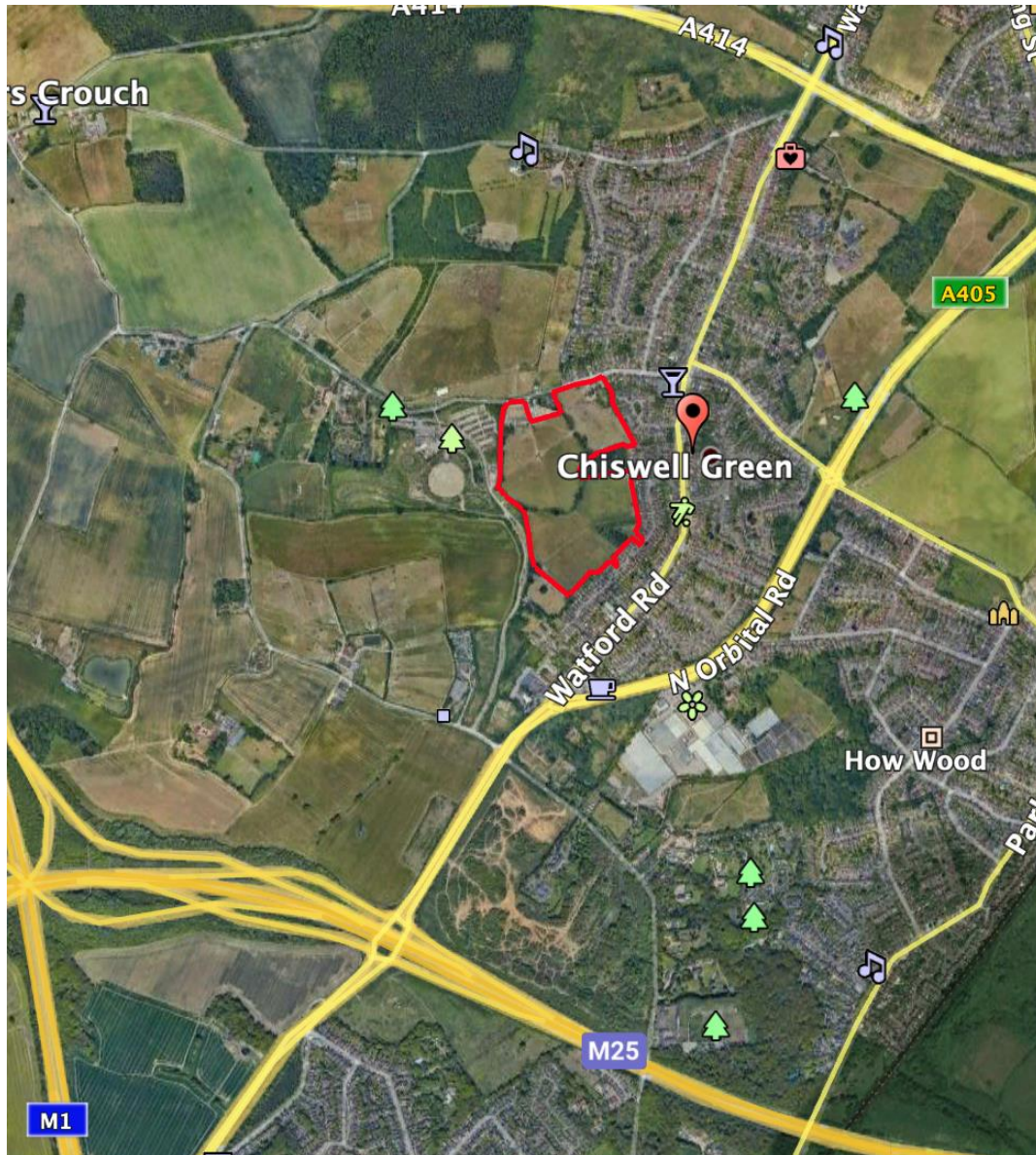
- Legislative and planning context (Section 1);
- Assessment methodologies (Section 2);
- Results (Section 3);
- Implications for development (Section 4);
- An impact assessment (Section 5); and
- Conclusions (Section 6).

Site Context and Status

1.4 The site comprises four distinct areas of fields separated by mature treelines, with a collection of farm buildings in the north-eastern and north-western corners. Fields in the north of the site are intensively grazed by horses, whilst those in the south are currently unmanaged rank grassland. The site is located to the south-west of Chiswell Green, in the St Albans District of Hertfordshire (TL131042). The site is approximately 14.02ha in size, and is bound by Chiswell Green Lane to the north, residential gardens and a small block of woodland to the east and south-east, and, Miriam Lane and

Butterfly World to the west. The wider surrounding area comprises residential areas to the east and, agricultural land to the west.

- 1.5 The extent of the site is shown in Figure 1 below in wider context and in Figure 2, a closer view of the site boundary and survey area.



*Figure 1: Approximate location of the red line boundary showing the wider landscape
Satellite imagery obtained from Google Earth Pro on 09/09/2021*



*Figure 2: Approximate location of the red line boundary
Satellite imagery obtained from Google Earth Pro on 09/09/2021*

Description of the Proposed Development

- 1.6 The demolition of existing structures and construction of up to 391 dwellings (Use Class C3), the provision of land for a new 2FE Primary School, open space provision and associated landscaping and new access arrangements.

Planning Policies

- 1.7 The outline application was assessed against policy guidance provided by the National Planning Policy Framework, as well as relevant planning policies from the St

Albans Local Plan 1994. These policies included the following which are considered relevant to ecology, biodiversity and nature conservation:

- Policy 106: Nature Conservation.

1.8 This report addresses the site in relation to nature conservation and wildlife and indeed to the local planning requirements as well as national planning and nature conservation legislation.

1.9 The site was surveyed to assess its ecological value and to ensure compliance with national and local plan policies. The report has been produced with reference to current guidelines for preliminary ecological appraisal (CIEEM 2017) and in accordance with BS 42020:2013 Biodiversity – Code of Practice for Planning and Development.

2.0 Methodology

Desktop Study

2.1 A desktop study search was completed using an internet-based mapping service (www.magic.gov.uk) for statutory designated sites and an internet-based aerial mapping service (maps.google.co.uk) was used to understand the habitats present in and around the survey area and habitat linkages and features (ponds, woodlands etc.) within the wider landscape. Data for non-statutory sites, and local protected and notable species within 2km of the site was obtained from Herts Environmental Records Centre (HERC).

Preliminary Ecological Appraisal

2.2 An extended preliminary ecological appraisal was undertaken on 15th September 2021 by senior ecologists Matt Pendry BSc (Hons) and Eddie Selwyn BSc (Hons) MSc QCIEEM. The surveyor identified the habitats present, following the standard 'UK Hab' auditing method. The site was surveyed on foot and the existing habitats and land uses were recorded on an appropriately scaled map (JNCC 2010).

Protected Species Assessments

2.3 Any evidence of protected species was recorded. Standard methods of search and measures of presence, or likely presence based on habitat suitability were used for bats

in trees and buildings (Collins 2016), breeding birds¹, dormouse (Bright *et al.* 2006), great crested newt (ARG 2010), reptiles (Froglife 2015), badgers (Creswell *et al.* 1990) and water vole (Strachan *et al.* 2011).

Limitations

2.4 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment. The site was visited over the period of one site visit, as such seasonal variations cannot be observed and potentially only a selection of all species that potentially occur within the site have been recorded. Therefore, the survey provides a general assessment of potential nature conservation value of the site and does not include a definitive plant species list.

2.5 The protected species assessment provides a preliminary view of the likelihood of protected species occurring on-site, based on the suitability of the habitat and any direct evidence on site. It should not be taken as providing a full and definitive survey of any protected species group. The assessment is only valid for the time when the survey was carried out. Additional surveys may be recommended if, on the basis of this assessment it is considered reasonably likely that protected species may be present.

3.0 Results

Desktop Study

3.1 The site does not fall within or adjacent to any nationally or internationally designated sites and there are no internationally designated statutory sites within 10km. A single national statutory nature designation is present within 2km of the site (excluding geological sites of special scientific interest);

- Bricket Wood Common Site of Special Scientific Interest (SSSI) 2km south of the site; designated for its lowland heath habitat.

3.2 In terms of non-statutory designations, there are 21 Local Wildlife Sites (LoWS), within 2km of the site:

¹<https://www.bto.org/our-science/projects/birdatlas/methods/breeding-evidence>

Table 1: Non-statutory designated sites within 2km of the site

Site name	Distance and orientation	Selection criteria
How Wood LoWS	545m south-east	Ancient woodland & ponds
Park Wood LoWS	685m north	Ancient woodland
Birch Wood (near How Wood) LoWS	685m south	Ancient woodland
St Julien's Wood LoWS	730m north-west	Ancient woodland & remnant heath
Long Spring LoWS	910m north-west	Ancient woodland
Birch Wood (near Potters Crouch) LoWS	1,200m north-west	Ancient woodland
Holt Wood LoWS	1,240m south-west	Ancient woodland
Black-green Wood LoWS	1,230m south	Ancient woodland
Potters-crouch section LoWS	1,300m west	Ancient woodland
Moor Mill & Park Street Pits West Grassland LoWS	1,400m south-east	Grassland/scrub mosaic
Frogmore Gravel Pit LoWS	1,540m east	Open habitat mosaic, wet woodland, ponds, great crested newt
Featherbed Lane Copse by Serge Hill LoWS	1,680m west	Ancient Green Lane
Ashdale LoWS	1,700m south	Ancient woodland
Ver Valley Meadows LoWS	1,710m east	Lowland meadows, acid grassland & fen
Appsond Wood LoWS	1,730m north-west	Ancient woodland
Grassland at former Radlett Aerodrome LoWS	1,760m east	Unimproved acid/neutral grassland
Quarry at Former Radlett Aerodrome LoWS	1,780m east	Quarry lagoons, waterfowl & wetland species
Winch Hill Wood LoWS	1,870m south-west	Ancient woodland
Feather-bed Lane Copse by Serge Hill LoWS	1,880m west	Ancient lane
Wellfield Spring LoWS	1,910m west	Ancient woodland
Prae Wood LoWS	1,990m north-west	Ancient woodland

3.3 The site is surrounded by a number of priority habitats (Figure 3), including:

- Small parcels of **ancient woodland**, the closest being Julien's Wood 780 m north-east on the opposite side of the village, and, Scrub's Wood 740m to the north-west.
- An even greater number of priority **deciduous woodland** parcels, most notably a small 0.37ha area adjacent to the site boundary in the centre east of the site. .
- Four areas of traditional orchards priority habitat, the closest two being adjacent to the eastern and south-western site boundaries.

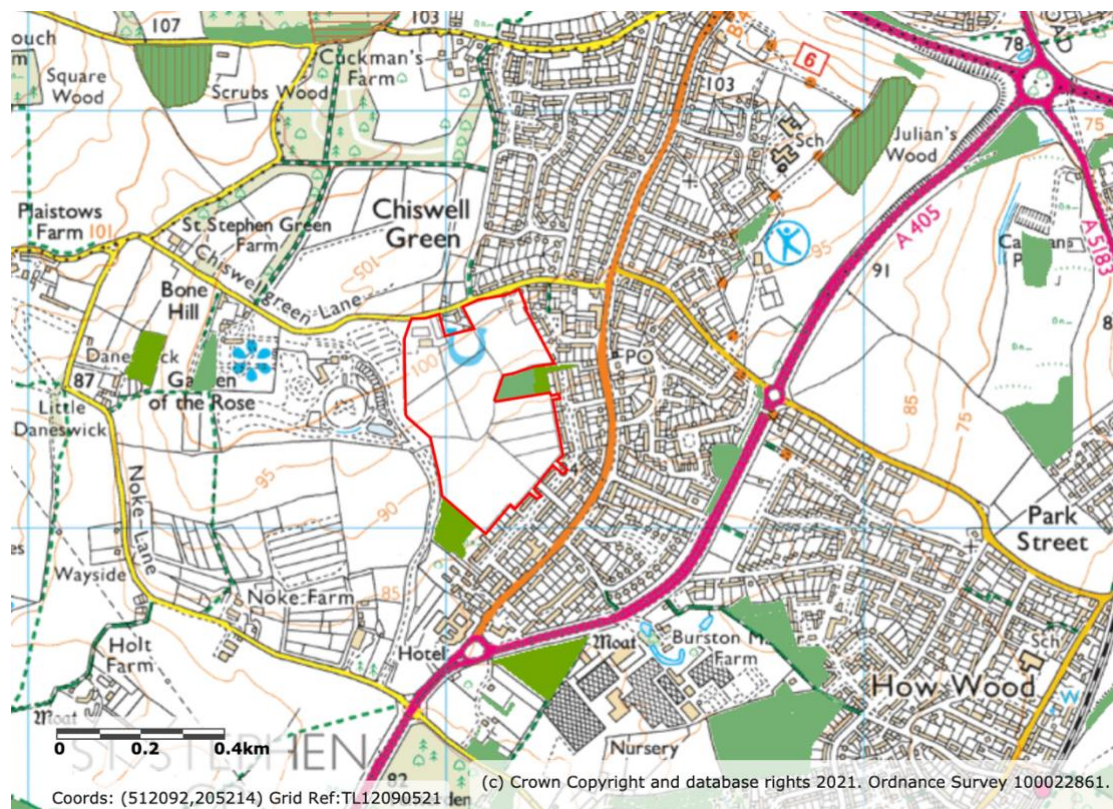


Figure 3: Deciduous Woodland (dull green), ancient woodland (brown vertical hatching), traditional orchard (lime green), and ancient replanted woodland (horizontal brown hatches) in the vicinity of the site

- 3.4 OS mapping found six ponds within 250m of the site, and none within the site itself (See Figure 4 below). These ponds were all located within the now derelict 'Butterfly World' site adjacent to the west of the application site, and recent Google satellite imagery suggests most of these ponds no longer hold water.

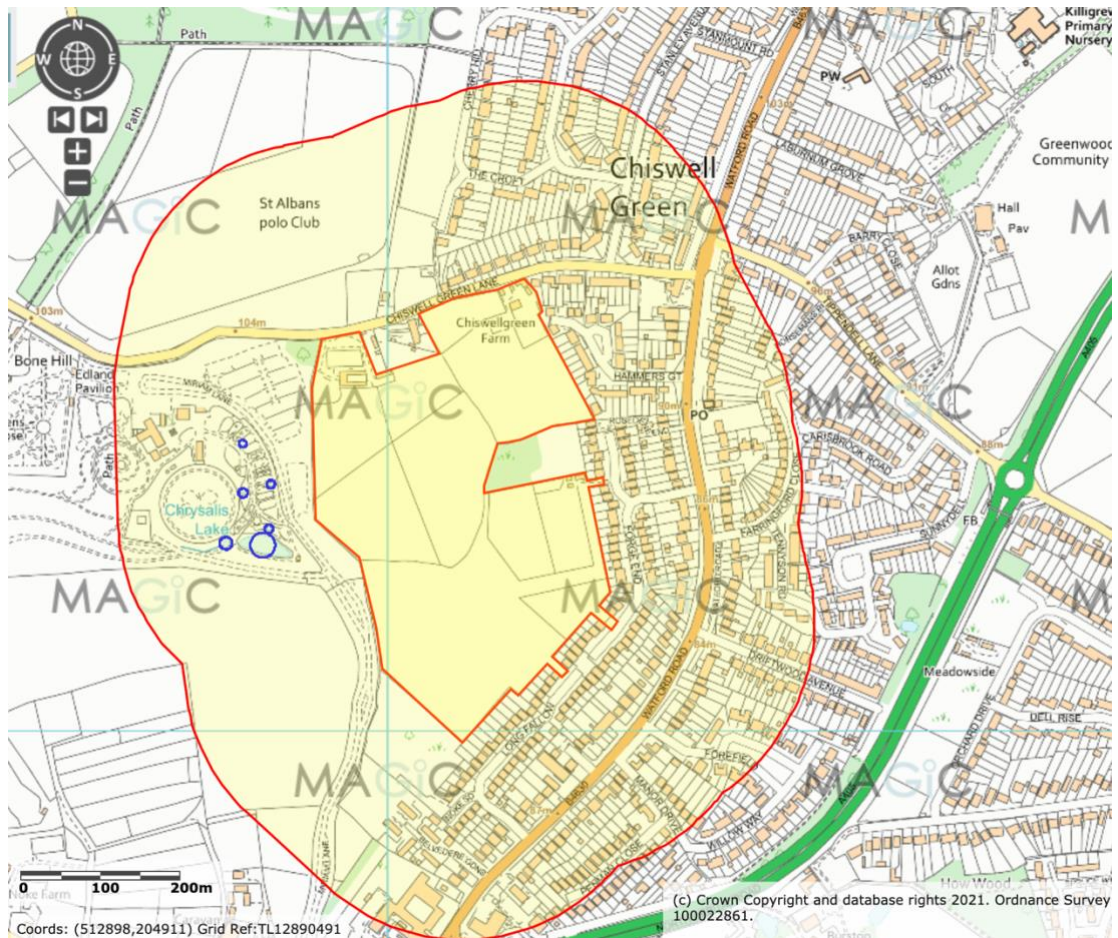


Figure 4: Ponds within 250m of the site circled in blue.

3.5 A search also revealed two European Protected Species Mitigation (EPSM) licences within 2km of the site. These are summarised in Table 2 below:

Table 2: ESPM licences within 2km of the site

Species	Distance from site	Date	Type	Case reference
Common pipistrelle, soprano pipistrelle	415m east	24/09/2014 – 31/10/2014	Destruction of a resting place	2014-3738-EPS-MIT
Common pipistrelle	800m south-east	15/02/2010 – 14/02/2012	Destruction of a breeding and resting place	EPSM2010-1663

3.6 A 2km records search was requested from HERC. The records closest to site, recorded within the last 10 years and relevant to the habitats on site have been included in Table 3 below.

Table 3: Notable species records within 2km of the site in the last 10 years

Species	Status	Distance (closest)	Date (closest)
Blood-vein - <i>Timandra comae</i> (1 record)	NERC Act (2006) Section 41	1.7km south	2014
Brindled Beauty - <i>Lycia hirtaria</i> (9 records)	NERC Act (2006) Section 41	1.7km south	2016
Buff ermine - <i>Spilosoma lutea</i> (43 records)	NERC Act (2006) Section 41	1.7km south	2016
Centre-barred swallow – <i>Atethmia centrago</i> (11 records)	NERC Act (2006) Section 41	1.7km south	2016
Cinnibar - <i>Tyria jacobaeae</i> (24 records)	NERC Act (2006) Section 41	200m west	26/07/2014
Brown-spot pinion - <i>Agrochola litura</i> (4 records)	NERC Act (2006) Section 41	1.7km south	2016
Beaded Chestnut - <i>Agrochola lychnidis</i> (33 records)	NERC Act (2006) Section 41	1.7km south	2016
Dot Moth - <i>Melanchnra persicariae</i> (6 records)	NERC Act (2006) Section 41	1.7km south	2016
Dusky Thorn - <i>Ennomos fuscantaria</i> (9 records)	NERC Act (2006) Section 41	1.7km south	2016
Feathered gothic - <i>Tholera decimalis</i> (4 records)	NERC Act (2006) Section 41	1.7km south	2016
Figure of Eight - <i>Diloba caeruleocephala</i> (1 record)	NERC Act (2006) Section 41	1.7km south	2016
Garden dart - <i>Euxoa nigricans</i> (1 record)	NERC Act (2006) Section 41	1.7km south	2011
Green-brindled Crescent - <i>Allophyes oxyacanthae</i> (27 records)	NERC Act (2006) Section 41	1.7km south	2016
Grey Dagger - <i>Acrionicta psi</i> (10 records)	NERC Act (2006) Section 41	1.7km south	2016
Hedge gothic - <i>Tholera cespitis</i> (2 records)	NERC Act (2006) Section 41	1.7km south	2015
Knot Grass - <i>Acrionicta rumicris</i> (8 records)	NERC Act (2006) Section 41	1.7km south	2016
Large nutmeg - <i>Apamea anceps</i> (2 records)	NERC Act (2006) Section 41	1.7km south	2016
Mottled rustic - <i>Caradrina morpheus</i> (80 records)	NERC Act (2006) Section 41	1.7km south	2016
Mouse Moth - <i>Amphipyra tragopoginis</i> (24 records)	NERC Act (2006) Section 41	1.7km south	2016
Oak hook-tip - <i>Watsonalla binaria</i> (4 records)	NERC Act (2006) Section 41	1.7km south	2016
Rustic - <i>Hoplodrina blanda</i> (over 100 records)	NERC Act (2006) Section 41	1.7km south	2016
Rosy rustic - <i>Hydraecia micacea</i> (10 records)	NERC Act (2006) Section 41	1.7km south	2016
September Thorn - <i>Ennomos erosaria</i> (3 records)	NERC Act (2006) Section 41	1.7km south	2016

Shaded Broad-bar - <i>Scotopteryx chenopodiata</i> (20 records)	NERC Act (2006) Section 41	1.7km south	2016
Shoulder-striped wainscot - <i>Leucania comma</i> (1 record)	NERC Act (2006) Section 41	1.7km south	2012
Small emerald - <i>Hemistola chrysoprasaria</i> (small emerald)	NERC Act (2006) Section 41	1.7km south	2015
White ermine - <i>Spilosoma lubricipeda</i> (50 records)	NERC Act (2006) Section 41	1.7km south	2016
Small heath - <i>Coenonympha pamphilus</i> (32 records)	NERC Act (2006) Section 41	200m west	05/06/2013
Stag beetle - <i>Lucanus cervus</i> (1 record)	NERC Act (2006) Section 41	780m north-east	01/07/2015
Slow worm - <i>Anguis fragilis</i> (1 record)	Wildlife and Countryside Act (1981 as amended) Schedule 5; NERC Act (2006) Section 41	1.9km south-east	15/05/2018
Grass snake - <i>Natrix natrix</i> (2 records)	Wildlife and Countryside Act 1981 (as amended); NERC Act (2006) Section 41	1.8km east	18/08/2019
Western European Hedgehog - <i>Erinaceus europaeus</i> (18 records)	NERC Act (2006)	925m north-east	01/04/2015
Badger - <i>Meles meles</i> (10 records)	Protection of Badgers Act 1992	Within 2km	01/02/2021
Daubenton's bat - <i>Myotis daubentonii</i> (3 records)	Conservation of Habitats and Species Regulations (2017) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	1.85km north-east	01/08/2014
Noctule - <i>Nyctalus noctule</i> (1 record)	As above	760m south-east	09/07/2013
Common pipistrelle - <i>Pipistrellus pipistrellus</i> (5 records)	As above	760m south-east	09/07/2013
Soprano pipistrelle - <i>Pipistrellus pygmaeus</i> (3 records)	As above	760m south-east	09/07/2013

Phase 1 Habitat Survey

3.7 The site was split into two main areas by a central band of scrub and mature trees, running from the western boundary to the small woodland to the east of the site. The northern fields comprised short-sward horse-grazed fields, with several stable buildings in the north-east and west corners. A derelict house and garden was also present in the north-eastern corner of the site. The southern section of the site comprised rank grassland in the east, and hay/silage grassland in the west. Two lines of hybrid poplar in the south of the site bound a small triangle of scattered scrub, trees, grassland, and ruderals, along with several disused modular welfare units and containers.

Arrhenatherum neutral grassland (g3c5)

- 3.8 The southern section of the site comprised species-poor neutral grassland, with two distinct characters of grassland. The north-eastern area was unmanaged, although historic satellite imagery indicates historic horse grazing until sometime between May 2018 and March 2020. These species composition comprised abundant false oatgrass, with frequent red fescue, common bent, Yorkshire fog, cock's-foot, and, common knapweed, with occasional bird's-foot trefoil, lesser stitchwort, yarrow, ragwort, ribwort plantain, common self-heal, meadow buttercup, creeping buttercup, and white clover. The larger south-western area had a shorter sward height and appeared to be occasionally cut for silage/hay. The species composition here was less diverse with abundant ribwort plantain and frequent cat's-ear and white clover alongside the false-oatgrass, and common knapweed and other flowering species reduced to rare occurrences.

Tall ruderal (g3c 16)

- 3.9 Tall ruderal vegetation was frequent along the field edges and was largely dominated by nettles, with frequent creeping thistle, and occasional greater burdock, spear thistle, cleavers, green alkanet, creeping buttercup, broad-leaved dock, and germander speedwell.

Other neutral grassland (g3c)

- 3.10 The garden area to the south of the house in the north-east of the site included an area of neutral grassland dominated by common bent with abundant red fescue, and occasional Yorkshire fog, crested dog's-tail, perennial ryegrass, ribwort plantain, common ragwort, meadow buttercup, creeping buttercup, white clover, common sorrel, yarrow, common selfheal, and autumn hawkbit.

Modified grassland (g4)

- 3.11 The northern fields were all grazed by horses to a short sward height with heavy trampling. The sward composition comprised abundant equal-leaved knotgrass, common bent, perennial ryegrass, and annual meadow grass, with frequent white clover, and occasional timothy, red fescue, Yorkshire fog, crested dog's-tail, creeping thistle, common ragwort, meadow buttercup, and creeping buttercup.

Native hedgerow (h2)

- 3.12 Older hedgerows that may have once divided the fields on site have since grown out beyond 5m in width. However, a small section in the centre of the site was still considered thin enough to qualify as a hedgerow. This 35m section was dominated by hazel, with occasional blackthorn, holly, and hawthorn.

Mixed scrub (h3h)

- 3.13 The boundaries of the fields were largely dominated by mixed scrub comprising abundant bramble, frequent hazel, hawthorn, holly, and elder, and occasional field maple, blackthorn, dogrose, and ivy.

Introduced shrub (h3 1160)

- 3.14 Several small areas of introduced shrub were present around the buildings in the north-east of the site. These included cherry laurel, garden privet, Leyland's cypress, Lawson's cypress, and butterfly bush.

Buildings (u1b5)

- 3.15 Seven buildings were located in the north-east, including the main house (B1), five stable buildings (B2-B6), and a small office building (B7). Three buildings were located in the north-west of the site, comprising a storage building (B8), large stables (B9), and office/storage building (B10). A dilapidated structure was also located in the north-eastern corner of the south-eastern field, and several disused modular welfare units and a cargo container were located between the two treelines in the south-east of the site.

Line of trees (w1g6)

- 3.16 Lines of mature trees were occasional along the boundaries of the fields throughout the site. Pedunculate oak was abundant, with occasional ash and field maple. In the south-east of the site a small triangle of land was bound by mature poplar trees, with some pedunculate oak and a silver birch.

Protected Species***Bats***

- 3.17 The site does have some connectivity to suitable bat habitat within wider landscape, including numerous block blocks of woodland. However, commuting/foraging habitat within the site itself was largely limited to the linear edge habitats. As such, the site is considered to have low potential to provide important commuting and foraging habitat for bats.
- 3.18 The buildings in the north-east of the site displayed numerous potential roost features for bats, largely comprising gaps created by missing/broken clay roof tiles. The full building assessment is presented in the bat survey report (The Ecology Partnership, 2021). This assessment did not find any evidence of bats within the buildings, such as droppings or bats, and found B5 to have high potential, B1, B2, B3, B4 and, B6 to have moderate potential, and B7, B8, B9, and B10 to have negligible potential for roosting bats.
- 3.19 A full tree assessment for bats was not feasible within the scope of this survey, and, will require a more targeted survey once trees to be potentially impacted have been confirmed. However, it should be noted that there are mature trees on the edges of the fields on site and it is likely some are suitable to support roosting bats, and holes were recorded on several ash trees in the centre of the site and hybrid poplars at the south-east of the site.

Dormouse

- 3.20 The site contains suitable linear scrub habitat for dormouse, however, it is largely isolated from suitable dormouse habitat in the wider surrounding area owing to numerous roads. Beyond the local level, the M1, M25 A414 and North Orbital Road create major dispersal barriers between the wider Chiswell Green area and known dormouse populations further afield in Hertfordshire. Furthermore, the data search did not return any records for dormouse, and the nearest EPSM licence is 7.5km to the south. As such, it is considered the site has negligible potential for dormouse presence and they are not mentioned further in this report.

Great crested newt

- 3.21 Scrub edge habitat on site was considered suitable to support great crested newts (GCN). Although no ponds were present on site, OS maps indicated six ponds were locations within 250m of the site. These were all located in the now non-operation 'Butterfly World' site, between 50 and 110m to the west of the site. Satellite imagery dated from 2020, indicates most of these ponds no longer hold water, and would be likely unsuitable to support GCN, however, at least two still appear to hold water. These ponds appeared to have been created in 2009, and, prior to their creation the only ponds in the local area were three ornamental ponds within the gardens of Mansion House to the west, which were created in 2006. With an absence of waterbodies within the local area prior to their creation, it is unlikely GCN would have colonized these ponds once created. Furthermore, no records were returned by the data search, and, the nearest EPSM licence is over 2km away on the opposite side of the M25. As such, the potential for GCN to be present on site is considered negligible.

Badgers

- 3.22 No evidence of badgers was recorded on site. Although, given the amount of scrub cover on site, their presence cannot be ruled out, and a sett was previously recorded on site (Green Environmental, 2018).

Reptiles

- 3.23 The grassland, woodland and scrub edge habitats on site are suitable to support common reptile species. In addition, given that there are records of adder, grass snake, slow worm and common lizard from the site itself, the potential for reptiles to be present on site is considered high.

Breeding birds

- 3.24 Woodland and scrub on site provide suitable nesting habitat for breeding birds, and, taller sward grassland also presents opportunities for ground nesting birds such as skylark. As such, the site is considered to have high potential to support breeding birds.

Other Species

- 3.25 Owing to a lack of suitable habitat on site and within the surrounding area, no potential for any other protected species, such as otters and water voles, was identified within the site.
- 3.26 Due to the suitable hedgerow, scrub and, woodland edge habitat on site, and, records in the local area, the site is considered to have moderate potential to support hedgehog.

4.0 Discussion

- 4.1 The following paragraphs consider the effects of the development on designated sites, priority habitats and protected and priority species. Where the desk study and Phase 1 survey provide sufficient evidence for an assessment of effects on any of these groups to be taken through planning, these are detailed below, the need for additional surveys and when and how these should be completed are summarised, if required.

Effects on designated sites

- 4.2 No international statutory designations sites are located within 10km of the site, and a single national statutory designation relating to ecology is present within 2km: Bricket Wood Common SSSI, 2km to the south. Due to the distance, no direct impacts are anticipated, and, any recreational impacts are likely to be negligible, as the SSSI does not have a car park or an extensive network of footpaths, with visitors limited to bridleways.
- 4.3 A total of 21 LoWS are located within 2km of the site, however, only five are located within a kilometre of the site, the closest being How Wood LoWS 545m south-east. There is potential for minor recreational impacts on some of these sites. However, this could be reduced if sufficient open space for dog walkers is provided within the site itself.

Effects on Priority Habitats and ancient woodland

- 4.4 A small length (35m) of hedgerow priority habitat is present in the centre of the site, however the band of mixed linear scrub and mature treelines either side of this

hedgerow are considered to be supporting features, creating an important green corridor through the centre of the site and along the western site boundary. This provides connectivity between the priority woodland and traditional orchard habitat adjacent to the east of the site and a wide network of scrub, hedgerows, and grassland to the west. Overall, these linear habitats are considered to be of local value. Proposals should seek to retain and protect the function of this habitat. Any breaks to accommodate road or pedestrian access should be minimised and positioned where the existing 15m gap is in the centre.

- 4.5 Offsite priority woodland habitat adjacent to the eastern site boundary should be protected through the use of a 15m buffer from development. This woodland is private with no public access and should remain this way to avoid recreational impact on the woodland.

Effect on other habitats

- 4.6 The semi-improved neutral grassland in the south-eastern fields were in moderate condition, with a higher frequency of flowering plants such as common knapweed. However, it did not have the species composition and species diversity to classify for lowland meadow priority habitat and is considered to be of site value. However, any loss of this habitat may restrict opportunities of biodiversity net-gain without suitable compensatory habitat incorporated into the masterplan elsewhere on site.
- 4.7 Other habitats on site are largely species-poor and common and widespread in the surrounding area, and, of value at the site level only.

Protected Species

Bats

Buildings

- 4.8 The preliminary roost assessment found B5 to have high potential, B1, B2, B3, B4 and, B6 to have moderate potential, and B7, B8, B9, and B10 to have negligible potential for roosting bats. These buildings are likely to be demolished as part of the proposals, therefore it is recommended that further surveys are required to determine the presence or likely absence of a roost. For the moderate potential buildings it is recommended that a least two dusk emergence/dawn re-entry surveys are conducted,

and three surveys recommended for the high potential building in accordance with the Bat Conservation Trust guidelines (2016). This will determine if bats are present in addition to the roost type and number of bats. In line with the guidance, these surveys must be carried out between May and September. However, September is considered a sub-optimal month, and, as such no more than one survey can be carried out in this month, with remaining surveys conducted in the optimal period between May and August.

- 4.9 The first dusk surveys have been conducted on site and their results are presented in the accompanying bat survey report (The Ecology Partnership, 2021a). The second and third surveys for the buildings are scheduled to be conducted in May 2022.

Trees

- 4.10 As stated previously, a full tree assessment for bats was not feasible within the scope of this survey due to the large number of trees on site, however, an ash tree in the centre of the site and a hybrid poplar in the south-east of the site were noted to have features of moderate value to roosting bats. It is likely more trees within the site are also suitable to support roosting bats. As such, it is recommended that a full ground-based tree assessment for bats is carried out of any trees to be potentially impacted by the proposals, once known. Where potential for bats is identified further surveys may be required to establish presence/likely absence of a roost. However, in the first instance, it is recommended that the loss of mature trees on site is avoided.

Bat foraging and commuting potential

- 4.11 The linear habitats on site provide suitable habitat for commuting/foraging bats. However, the fragmented nature of the hedgerows within the wider landscape may limit the abundance of bats utilising these habitats on site. It is recommended that proposals should avoid anything that may significantly impact the sites value for foraging and commuting bats, such as loss of linear habitat features and increased artificial lighting on these habitats.
- 4.12 The Bat Conservation Trust survey guidelines (Collins, 2016) state in table 4.1 that the “*guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, are to be applied using professional judgement*”. It is important that proportionality is employed when recommending further survey work for bat species on a proposed development site. As stated within

section 8.2.7 of these guidelines (Collins 2016), the following points need to be considered with regard to planning activity surveys:

- Likelihood of bats being present;
- Likely species concerned;
- Number of individuals;
- Type of habitat affected;
- Predicted impacts of the proposed development on bats;
- Type and scale of proposed development.

4.13 It is recommended that the development retains the central and western bands of linear scrub, to avoid/minimise impacts on commuting bats. On this basis no bat activity surveys would be required.

4.14 Any proposed lighting scheme as part of the development will have to take into account bats in the surrounding area, as well as on site. All bat species are nocturnal, resting in dark conditions in the day and emerging at night to feed. Bats are known to be affected by light levels which can affect both their roosting behaviour as well as their foraging behaviour. This needs to be taken into account, with a sympathetic lighting scheme for the development, creating dark wildlife corridors which avoid the use of street lighting and only installing lighting if there is a significant need. Recommendations include:

- Lighting should only be installed if there is a significant need;
- Light levels should be kept low, the use of low-pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its ultra-violet filtration characteristics;
- Lighting should be avoided near trees and hedgerows, with light angled away from these areas, bats use linear features such as treelines to commute across the landscape to forage; and
- Lights should have focussed luminance on their target area, preventing light spill and pollution into other areas of the site and local area.

Reptiles

4.15 The scrub/woodland edge habitats and semi-improved grassland in the south of the site were deemed to have a moderate suitability to support reptiles. At the time of

writing, a presence/likely absence reptile survey is being conducted on site, and, will inform any mitigation that may be required (The Ecology Partnership, 2021b).

Nesting Birds

- 4.16 The scrub, woodland, trees, and, tall-sward grassland on site all have the potential to support nesting birds. If the removal of any of these features is to be carried out, this should be done outside of the breeding bird season (March-September inclusive) or immediately after a nesting bird check by a suitably qualified ecologist. If active nests are identified, works in the vicinity of the nest must cease until the birds have fledged the nest.

Badgers

- 4.17 Whilst there was no evidence of badgers on site, it is always recommended that an update badger survey is undertaken prior to any works that may impact a badger sett. This includes works that cause excessive vibration (e.g. piling) or where ground is being broken. If no such works are to undertaken within close proximity of edge habitats then no further survey is required. Otherwise, an update badger survey can be conditioned as part of any planning permission for the site.

Other Species

- 4.18 No potential for any other protected species, such as GCN, dormouse, water voles or otters was identified within the site.
- 4.19 The site has potential to support hedgehog. Whilst receiving no specific legal protection, they are protected from certain forms of harm under the wild mammals (Protection) Act 1996. There is a risk that without mitigation, vegetation clearance on site may result in mutilation or crushing of hedgehog nesting in brash piles. As such, it is recommended that areas of dense vegetation needing clearance are cut in two stages, the first to 300mm, then then the second to ground level after the area has been searched for hedgehog. If any are found, they will be safely move to a suitable brash pile outside the clearance area.

Ecological Enhancements

- 4.20 The site is currently considered to support habitats of ecological value, it is therefore important that considerations are given in the masterplan towards maintaining and

enhancing on-site habitat and connectivity with the wider landscape post-development.

4.21 It is recommended that a detailed mitigation and enhancement strategy is drawn up for the site based on the findings of the Phase 2 protected species surveys and through the review of the proposals. This will include but not be limited to the following:

- Creation of new high distinctiveness habitats such as traditional orchard, and, ponds, and, meadows, to be managed in the long term for biodiversity;
- Installation of specialist bird and bat boxes on retained mature trees within the site, and,
- Creation of log piles and reptile hibernacula to provide safe refuge and hibernation sites for reptiles, amphibians, and, hedgehog.

4.22 A detailed enhancement strategy will be dependent on the results of the phase 2 surveys. This is likely to include the general recommendations above, but also more details recommendations such creation of high distinctiveness habitats.

5.0 **Impact Assessment**

5.1 A full ecological impact assessment is presented in an accompanying report.

6.0 Conclusions

- 6.1 The site was made up of horse grazed fields in the north and both unmanaged and managed (hay) grassland in the south of the site, separated by bands of linear scrub and mature treelines. Numerous stable and storage buildings and a two-storey house are located in the north-eastern and western corners of the site.
- 6.2 The site is located within 2km of a single national statutory designation: Bricket Wood SSSI, 2km to the south. Twenty-one non-statutory designated sites are located within 2km of the site, the closest being How Wood LoWS 545m south-east of the site. Without sufficient mitigation measures, large-scale development of the site could result in a minor increase in recreational pressure on these sites.
- 6.3 Numerous buildings in the north-east of the site had potential to support roosting bats, and require further dusk emergence/dawn re-entry surveys to establish the presence/likely absence of a roost. At the time of writing the first of these surveys are being carried out with the remainder to be carried out once the priority bat season begins in May 2022. Full details and recommendation are summarised in the accompanying interim bat survey report.
- 6.4 Lowland Mixed Deciduous Woodland', and 'Traditional Orchard' priority habitats are located adjacent to the east of the site. These habitats should be protected through use of a 15m buffer from any development. Linear habitat corridors on site, as well as the area of moderate condition neutral grassland were determined to be of local value to wildlife, and it is recommended that the linear habitats function for commuting wildlife is retained, and, any loss of habitat on site is mitigated within any proposals for the site, to ensure biodiversity net-gain.
- 6.5 Mature trees on the edges of the site have potential to support roosting bats, it is recommended that all mature trees are retained and protected within the masterplan. However, should any be scheduled for removal, a targeted bat tree assessment is recommended, once trees to be potentially impacted are determined.
- 6.6 On the basis that the central and western bands of linear scrub are retained, and, a bat sensitive lighting strategy is used, further bat activity surveys are not considered necessary.

- 6.7 Edge habitats within the southern half of the site were considered to have moderate suitability for foraging reptiles. Seven reptile surveys should be undertaken, between late March – early October to identify the presence/absence of reptile species. Artificial refugia (roof felt mats) should be placed on field margins and other suitable habitats.
- 6.8 Trees, and scrub on site have the potential to be used by birds as nesting habitat during the breeding season. The UK breeding season for most bird species takes place between March and September. Ideally, work affecting these areas should be avoided during this period. If unavoidable, it is recommended that any works affecting trees and scrub on site should be carried out under ecological watching brief.
- 6.9 No evidence of badgers was identified on site, however, due to their mobile nature and the presence of suitable habitat for sett creation on site, it is recommended that an update survey be carried out in advance of any works on site that may disturb them.
- 6.10 Recommendations for enhancements have been made within this report, aimed at improving the ecological value of the site post-development.

7.0 References

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The Ecology Partnership (2021a) *Interim Bat Survey Report – Chiswell Green*

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Internet resources:

Google Maps: www.google.co.uk/maps

Magic Interactive Map: www.magic.gov.uk

Appendix 1: Photos

Photograph 1: Southern elevation of B1 in the north-east of the site (Moderate bat potential)



Photograph 2: South-western elevation of B5 in the north-east of the site (high bat potential)



Photograph 3: South-eastern elevations of B2 (left) and B3 (right) in the north-east of the site (Moderate bat potential).



Photograph 4: Large stables (B9) in the north-west of the site (negligible bat potential).



Photograph 5: Horse-grazed modified grassland in the north of the site.



Photograph 6: Dense continuous scrub along western site boundary (key habitat).



Photograph 7: Semi-improved neutral grassland in the east of the site, in moderate condition.



Photograph 8: Poor semi-improved neutral grassland in the south-west of the site, managed for hay/silage.



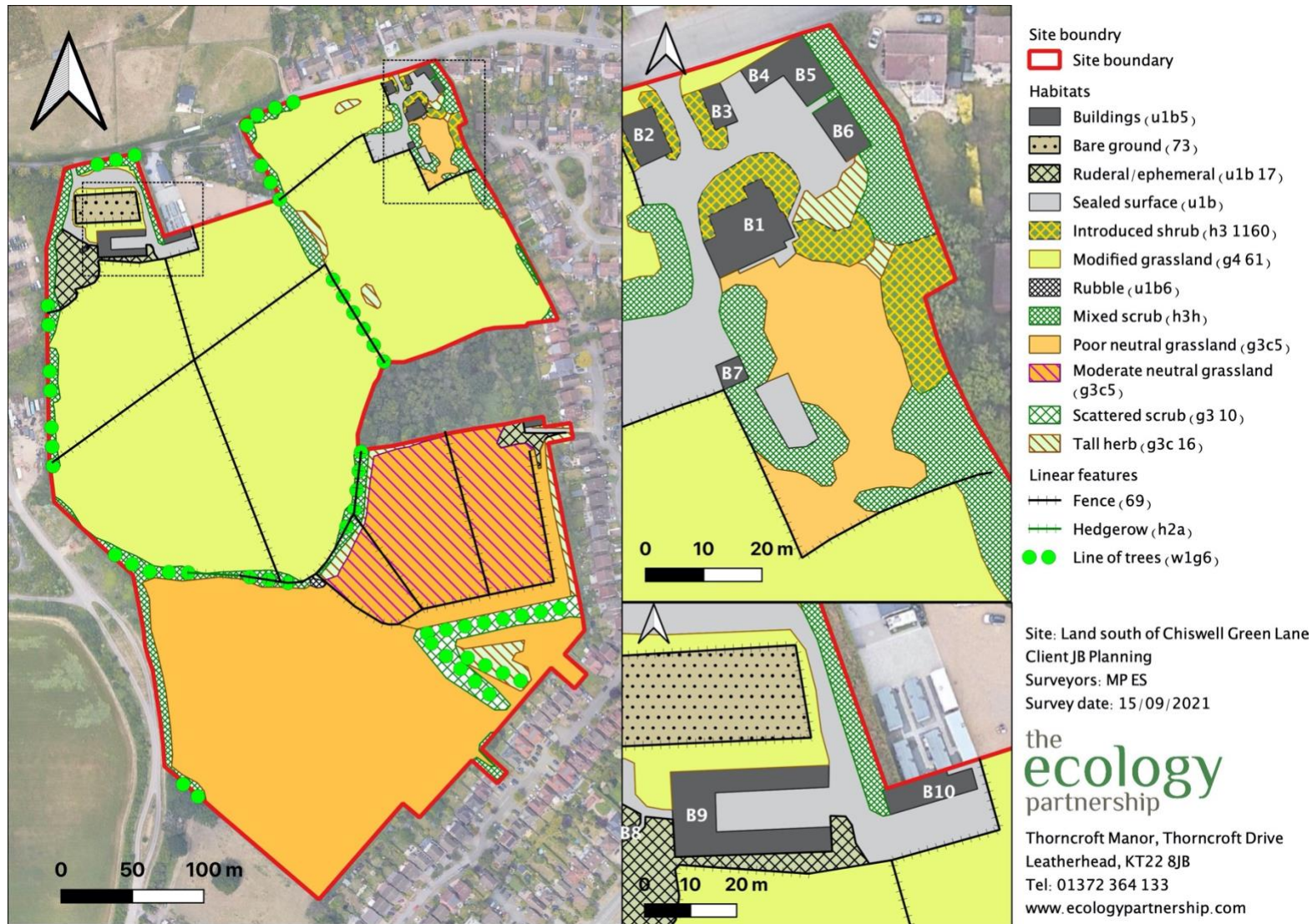
Photograph 9: Mature poplar treeline in the south-east of the site.



Photograph 10: Scattered scrub and grassland between the poplars in the south-east of the site.



Appendix 2: Habitat Map



Appendix 3: Species List

LATIN	ENGLISH	Abundance			
		Grassland	Garden	Horse grazed	South fields moderate
<i>Medicago lupulina</i>	Black medick	-	-	O	-
<i>Stellaria graminea</i>	Lesser stitchwort	-	-	O	-
<i>Daucus carota</i>	Wild carrot	-	-	R	-
<i>Dechampsia cespitosa</i>	Tufted hair-grass	-	-	R	-
<i>Hypericum perforatum</i>	Perforate St John's-wort	-	-	R	-
<i>Malva moschata</i>	Musk mallow	-	-	R	-
<i>Pentaglottis sempervirens</i>	Green alkanet	-	-	R	-
<i>Silene vulgaris</i>	Bladder campion	-	-	R	-
<i>Urtica dioica</i>	Common nettle	-	-	R	-
<i>Convolvulus arvensis</i>	Field bindweed	-	-	R	R
<i>Heracleum sphondylium</i>	Common hogweed	-	-	R	R
<i>Arrhenatherum elatius</i>	False oatgrass	R	-	A	A
<i>Centaurea nigra</i>	Common knapweed	R	-	F	R
<i>Polygonum arenastrum</i>	Equal-leaved knotgrass	-	A	-	-
<i>Agrostis capillaris</i>	Common bent	D	A	F	F
<i>Lolium perenne</i>	Perennial ryegrass	O	A	R	O
<i>Poa annua</i>	Annual meadow-grass	R	A	O	R
<i>Trifolium pratense</i>	White clover	O	F	O	O
<i>Phleum pratense</i>	Timothy	-	O	-	R
<i>Cirsium arvense</i>	Creeping thistle	-	O	R	R
<i>Festuca rubra</i>	Red fescue	A	O	F	F
<i>Holcus lanatus</i>	Yorkshire fog	O	O	F	O
<i>Cynosurus cristatus</i>	Crested dog's-tail	O	O	O	O
<i>Jacobaea vulgaris</i>	Common ragwort	O	O	O	O
<i>Ranunculus acris</i>	Meadow buttercup	O	O	O	O
<i>Ranunculus repens</i>	Creeping buttercup	O	O	O	O
<i>Achillea millefolium</i>	Yarrow	O	O	O	R
<i>Bellis perennis</i>	Daisy	-	R	-	-
<i>Dipsacus fullonum</i>	Teasel	-	R	-	-
<i>Lolium multiflorum</i>	Italian ryegrass	-	R	-	-
<i>Malva neglecta</i>	Dwarf mallow	-	R	-	-
<i>Sonchus asper</i>	Spiny sow thistle	-	R	-	-
<i>Tripleurospermum inodorum</i>	Scentless mayweed	-	R	-	-
<i>Veronica serpyllifolia</i>	Thyme-leaved speedwell	-	R	-	-
<i>Anagallis arvensis</i>	Scarlet pimpernel	-	R	R	-
<i>Artemisia vulgaris</i>	Common mugwort	-	R	R	-
<i>Linaria vulgaris</i>	Common toadflax	-	R	R	-
<i>Trifolium dubium</i>	Lesser hop trefoil	-	R	R	-
<i>Lotus corniculatus</i>	Common birds-foot trefoil	-	R	O	R
<i>Rumex crispus</i>	Curled dock	-	R	R	R
<i>Plantago lanceolata</i>	Ribwort plantain	O	R	O	A

<i>Rumex acetosa</i>	Common sorrel	O	R	O	R
<i>Prunella vulgaris</i>	Common selfheal	O	R	O	R
<i>Leontodon autumnalis</i>	Autumn hawkbit	O	R	R	R
<i>Dactylis glomerata</i>	Cock's-foot	R	R	F	F
<i>Hypochaeris radicata</i>	Cat's-ear	R	R	R	O
<i>Arctium lappa</i>	Greater burdock	R	R	R	R
<i>Cerastium fontanum</i>	Common mouse ear	R	R	R	R
<i>Cirsium vulgare</i>	Spear thistle	R	R	R	R
<i>Geranium molle</i>	Dove's-foot cranesbill	R	R	R	R
<i>Taraxacum officinalis</i> agg.	Dandelion	R	R	R	R
<i>Trifolium arvense</i>	Red clover	R	R	R	R
Shrubs/scrub/tree lines					
<i>Populus sp.</i>	Poplar			LD	
<i>Quercus robur</i>	Pedunculate oak			A	
<i>Rubus fruticosus</i>	Bramble			A	
<i>Corylus avellana</i>	Hazel			F	
<i>Crataegus monogyna</i>	Hawthorn			F	
<i>Ilex aquifolium</i>	Holly			F	
<i>Sambucus nigra</i>	Elder			F	
<i>Acer campestre</i>	Field maple			O	
<i>Fraxinus excelsior</i>	Ash			O	
<i>Glechoma hederacea</i>	Ground ivy			O	
<i>Hedera helix</i>	Ivy			O	
<i>Prunus spinosa</i>	Blackthorn			O	
<i>Rosa canina</i>	Dogrose			O	
<i>Betula pendula</i>	Silver birch			R	
<i>Bryonia alba</i>	White bryony			R	
<i>Buddleja davidii</i>	Butterfly bush			R	
<i>Calystegia sepium</i>	Hedge bindweed			R	
<i>Cupressus × leylandii</i>	Leyland's cypress			R	
<i>Lingustrum ovalifolium</i>	Garden privet			R	
<i>Lonicera periclymenum</i>	Honeysuckle			R	
<i>Platanus × acerifolia</i>	London plane			R	
<i>Prunus laurocerasus</i>	Cherry laurel			R	
<i>Regia juglans</i>	Walnut			R	
<i>Rhamnus cathartica</i>	Purging blackthorn			R	
<i>Salix caprea</i>	Goat willow			R	
<i>Ulmus sp.</i>	Elm			R	
Ruderal/edge habitat					
<i>Urtica dioica</i>	Common nettle			A	
<i>Arrhenatherum elatius</i>	False oatgrass			F	
<i>Cirsium arvense</i>	Creeping thistle			F	
<i>Arctium lappa</i>	Greater burdock			O	
<i>Cirsium vulgare</i>	Spear thistle			O	
<i>Dactylis glomerata</i>	Cock's-foot			O	

<i>Galium aparine</i>	Cleavers	O
<i>Jacobaea vulgaris</i>	Common ragwort	O
<i>Pentaglottis sempervirens</i>	Green alkanet	O
<i>Poa trivialis</i>	Rough meadowgrass	O
<i>Ranunculus repens</i>	Creeping buttercup	O
<i>Rumex obtusifolius</i>	Broad-leaved dock	O
<i>Veronica chamaedrys</i>	Germander speedwell	O
<i>Anagallis arvensis</i>	Scarlet pimpernel	R
<i>Artemisia vulgaris</i>	Common mugwort	R
<i>Ballota nigra</i>	Black horehound	R
<i>Digitalis purpurea</i>	Foxglove	R
<i>Dipsacus fullonum</i>	Teasel	R
<i>Geranium molle</i>	Dove's-foot cranesbill	R
<i>Geum urbanum</i>	Woodavens	R
<i>Heracleum sphondylium</i>	Common hogweed	R
<i>Potentilla reptans</i>	Creeping cinquefoil	R
<i>Rumex crispus</i>	Curled dock	R
<i>Rumex sanguinea</i>	Wood dock	R
<i>Sonchus asper</i>	Spiny sow thistle	R
<i>Stachys sylvatica</i>	Hedge woundwort	R
<i>Stellaria graminea</i>	Lesser stitchwort	R
<i>Verbascum thapsus</i>	Great mullein	R

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