LUXUS HOMES

ECOLOGYSOLUTIONS

Part of the ES Group

LAND AT PINES HILL, STANSTED MOUNTFITCHET

Ecological Assessment

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ecology solutions for planners and developers

PROTECTED SPECIES

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1. INTRODUCTION

1.1. Background & Proposals

1.1.1. Ecology Solutions was commissioned in February 2022 by Luxus Homes to undertake an assessment of the potential ecological constraints of the Land at Pines Hill, Stansted Mountfitchet, Uttlesford, Essex, hereafter referred to as the 'application site' (see Plan ECO1). A suite of protected species surveys were subsequently undertaken, followed by an ecological assessment of the site and development proposals.

1.2. Application Site Characteristics

1.2.1. The application site is located to the south-west of the village of Stansted Mountfitchet, Essex. The application site is bordered to the north by a road (Stoney Common Road) and by existing residential and commercial development beyond, to the west by a larger road (B1383 Pines Hill Road), and to the south by a number of residential properties with gardens. The eastern side of the application site is bounded by scrub beyond which lies an access road and railway line.

1.2.2. The application site itself predominantly comprises mixed scrub and neutral grassland, along with bare and unvegetated ground, tree lines and a small number of other habitats.

1.3. Development Proposals

1.3.1. The development proposals are for the creation of 31 residential dwelling along with associated landscape and infrastructure.

1.4. Ecological Assessment

1.4.1. This document assesses the ecological interest of the Land at Pines Hill, Stansted Mountfitchet, Essex. The importance of the habitats within the application site are evaluated with due consideration given to the current guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM)[1].

1.4.2. Where necessary mitigation measures are recommended so as to safeguard any significant existing ecological interest within the application site. Specific enhancement opportunities that are available for habitats and wildlife within the application site are detailed where appropriate, with reference to the 'UK Post-2010 Biodiversity Framework'[2]. Finally, conclusions are drawn.

[1]CIEEM (2017) *Guidelines for Ecological Report Writing.* Chartered Institute of Ecology and Environmental Management, Winchester.
[2] JNCC and Defra (on behalf of the Four Countries' Biodiversity Group) (2012) *UK Post-2010 Biodiversity Framework. July 2012.* http://jncc.defra.gov.uk/page-6189

2. SURVEY METHODOLOGY

2.1. The methodology utilised for the survey work can be split into three areas, namely desk study, habitat survey and faunal survey. These are discussed in more detail below.

2.2. Desk Study

2.2.1. In order to compile background information on the application site and the surrounding area, data was obtained from Essex Field Club (EFC).

2.2.2. Further information on designated sites from a wider search area was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC)[3] database. This information is reproduced at Appendix 1 and where appropriate on Plan ECO1.

2.3. Habitat Survey Methodology

2.3.1. An initial site walkover was carried out in February 2022 to ascertain the general ecological value of the land contained within the boundaries of the application site and to identify the main habitats present.

2.3.2. A subsequent site visit was undertaken in May 2022 in order to update these habitat classifications during the optimal botanical surveys season.

2.3.3. The application site was surveyed based around extended Phase 1 survey methodology[4], as recommended by Natural England, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.

2.3.4. Using the above method, the application site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified.

2.3.5. The application site was also surveyed based around the UK Habitat Classification system[5] in order to identify and map habitats and inform biodiversity impact assessments.

2.3.6. All the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent at different seasons. Nonetheless, the timing of the surveys included the optimal period for the habitats present and it is considered that an accurate and robust assessment has been made of the botanical interest.

[3] magic.defra.gov.uk
[4] Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.
[5] UK Habitat Classification Working Group (2018). *UK Habitat Classification User Manual*.

2.4. **Faunal Survey**

2.4.1. Obvious faunal activity, such as birds or mammals observed visually or by call during the course of the surveys, was recorded. Specific attention was paid to any potential use of the application site by protected species, species of principal importance (Priority Species), or other notable species.

2.4.2. In addition, specific surveys were undertaken in relation to Badgers *Meles meles,* Reptiles, Bats, Hazel Dormice *Muscardinus avellanarius* and Birds.

2.4.3. Experienced ecologists undertook the faunal surveys with regard to established best practice and guidance issued by Natural England. Details of the methodologies employed are given below.

Badgers

2.4.4. Specific surveys for Badgers were carried out in May 2022.

2.4.5. The surveys comprised two main elements. Firstly, searching thoroughly for evidence of Badger setts. For any setts that were encountered standard survey practice would record the location of each sett entrance, even if the entrance appeared disused. The following specific information was recorded where appropriate:

i) The number and location of well used or very active entrances; these are clear of any debris or vegetation and are obviously in regular use and may, or may not, have been excavated recently.

ii) The number and location of inactive entrances; these are not in regular use and have debris such as leaves and twigs in the entrance or have plants growing in or around the edge of the entrance.

iii) The number of disused entrances; these have not been in use for some time, are partly or completely blocked and cannot be used without considerable clearance. If the entrance has been disused for some time all that may be visible is a depression in the ground where the hole used to be together with the remains of the spoil heap.

2.4.6. Secondly, any evidence of Badger activity such as well-worn paths, run-throughs, snagged hair, footprints, latrines and foraging signs was recorded so as to build up a picture of the use of the application site by this species.

Bats

2.4.7. Specific survey work was undertaken in relation to potential roosting features within the application site as well as general bat activity. Further detail on the methodologies used for each element are set out below.

Trees

2.4.8. Field surveys were undertaken within the application site with regard to best practice guidelines issued by Natural England 2004[6], the Joint Nature Conservation Committee (2004[7]) and the Bat Conservation Trust (2016[8]).

2.4.9. All trees within the application site were assessed for their potential to support roosting bats. Features typically favoured by bats were searched for, including:

- Obvious holes, e.g. rot holes and old Woodpecker holes;
- Dark staining on the tree, below the hole;
- Tiny scratch marks around a hole from bat claws;
- Cavities, splits and or loose bark from broken or fallen branches, lightning strikes etc; and
- Very dense covering of mature Ivy *Hedera helix* over trunk.

2.4.10. The habitats were also assessed for their potential to support foraging and commuting bats, and as a result of these findings, a suite of activity surveys were undertaken.

Activity survey

2.4.11. Transect surveys were undertaken to determine the use of the site and adjacent habitats by bats, and their distribution across the area.

2.4.12. Transects were designed to cover all features within the site which had the potential to support foraging and commuting bats.

2.4.13. These transects were surveyed each season and, after each, static detectors were left at locations along the route for at least 5 nights. The data from these was analysed and is included in Section 4 and at Appendix 2.

Hazel Dormice

2.4.14. The survey technique involves the erection of nest tubes within all scrub and tree lines considered to be species-rich or of potential value to Dormice.

2.4.15. Nest tubes were placed in accordance with the guidance provided by the Mammal Society and Natural England[9] and as recommended in the Dormouse Conservation Handbook[10]. Tubes were placed within scrub at approximately 10 metre intervals where suitable locations were identified. The nest tubes were attached with wire ties underneath suitably sturdy horizontal branches and positioned on average at approximately 1.5 metres above ground level.

[6] Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.
[7] Mitchell-Jones, A.J. & McLeish, A.P. (Eds.) (2004). *Bat Workers' Manual*. 3rd edition. Joint Nature Conservation Committee, Peterborough.
[8] Bat Conservation Trust (2016). *Bat Surveys for Professional Ecologists – Good Practice Guidelines 3rd Edition*. Bat Conservation Trust, London.
[9] Chanin P. & Woods M. (2003). Research Report 524, *'Surveying Dormice Using Nest Tubes – Results & Experiences from the South West Dormouse Project'*. English Nature, Peterborough.
[10] Bright, P, Morris, P. & Mitchell-Jones, T. (2006). *The Dormouse Conservation Handbook*. Second Edition. English Nature, Peterborough.

2.4.16. Following deployment, monitoring surveys were undertaken.

2.4.17. The surveys can be scored for effort according to the method developed from the South West Dormouse Project (Chanin and Woods 2003). The system used provides an overall score that reflects the chances of Dormice being discovered if present, and thus provides an indicator of 'thoroughness' of a survey. This score is calculated based on the number of tubes used and the number of months the tubes were in place.

2.4.18. The months of the year are weighted according to the likelihood of recording dormice as set out below.

Month	Weighting
April	1
May	4
June	2
July	2
August	5
September	7
October	2
November	2

Table 1: Monthly Score Weighting (Chanin & Woods 2003)

2.4.19. A score of 20 (or above) is deemed a thorough survey, and a score of 15 to 19 may be regarded as adequate where circumstances do not permit more time or more tubes (particularly if other survey methods have also proved negative).

Reptiles

2.4.20. Specific surveys to identify the presence or absence of reptiles within the application site were undertaken throughout September and October 2021.

2.4.21. Following an initial assessment to identify areas of suitable reptile habitat within the application site, refugia surveys were undertaken. A total of 64 'tins' (0.5 x 0.5 metre squares of heavy roofing felt which are often used as refuges by reptiles) were distributed throughout all suitable reptile habitat within the application site in August 2021.

2.4.22. These tins were left in place for two weeks to 'bed in' and subsequently surveyed for reptiles beneath or upon the tins during suitable weather conditions.

2.4.23. Suitable weather conditions to carry out surveys are when the air temperature is between 9 and 18°C. Heavy rain and windy conditions should be avoided.

2.4.24. The tins provide shelter and heat up quicker than the surroundings in the morning and can remain warmer than the surroundings in the late afternoon. Being ectothermic (cold blooded), reptiles use them to bask and raise their body temperature which allows them to forage earlier and later in the day.

Birds

2.4.25. A focused survey to assess the site's suitability to support birds, particularly any which might nest within the site, was undertaken on 1st July 2022.

2.4.26. The survey was undertaken in line with the British Trust for Ornithology's Common Bird Census methodology. A transect around the site was walked from 4:30am until 6:30am.

2.4.27. All birds in song or exhibiting breeding behaviour were accurately mapped. In addition, all species overflying the site or otherwise using the site without exhibiting any breeding behaviour were also noted.

3. ECOLOGICAL FEATURES

3.1. A detailed habitat survey was undertaken within the application site in May 2022.

3.2. The following main habitat / vegetation types were identified within the application site:

- Mixed scrub;
- Neutral Grassland;
- Unvegetated/unsealed surfaces;
- Bare Ground;
- Bramble Scrub;
- Coniferous Woodland;
- Broadleaved Woodland;
- Lines of Trees; and
- Native Hedgerow with Trees

3.3. The locations of these habitats are shown on Plan ECO2.

Mixed scrub

3.4. The majority of the application site comprises mixed scrub. This areas is largely covered by shrubs and young trees including Hawthorn *Crataegus monogyna*, Silver Birch *Betula pendula*, Ash *Fraxinus excelsior*, Scots Pine *Pinus Sylvestris*, Pedunculate Oak *Quercus Robur*, Laurel *Laurus nobilis*, Buddleia *Buddleja davidii*, Elder *Sumbucus nigra*. Growing through this is a large amount of Bramble *Rubus fruticosus* and Traveller's Joy *Clematis vitalba*. The ground is covered by patches of grass and flowering plants including Yorkshire Fog *Holcus Lanatus*, Cock's-foot *Dactylis Glomerata*, Cleavers *Galium aparine*, Meadow Buttercup *Ranunculus acris*, Wild Strawberry *Fragaria vesca*, Common Field Speedwell *Veronica persica*, Dandelion *Taraxacum o*fficinale, Primrose *Primula vulgaris*, Spear Thistle *Cirsium vulgare*, Oxeye Daisy *Leucanthemum vulgare*, Nettle *Urtica dioica*, Daisy *Bellis perennis*, Gooseberry *Ribes uva-crispa* Herb-Robert *Geranium robertianum*, Ground Ivy *Glechoma hederacea*, Forget-me-not *Myosotis repens*, Common Vetch *Vicia sativ*a, Red Clover *Trifolium pratense* and Ragwort *Jacobaea Vulgaris*.

3.5. Structurally the scrub is fairly diverse with glades and sheltered areas, however ‘sub-optimal’ species such as Nettle and Buddleia are prevalent throughout.

Neutral grassland

3.6. To the west of the application site lies an area of neutral grassland. This primarily comprise Yorkshire Fog and Cock's-foot. Other species present in these areas include Cleavers, Meadow Buttercup, Wild Strawberry, Common Field Speedwell, Dandelion, Primrose, Spear Thistle, Oxeye Daisy, Daisy, Herb-Robert, Ground Ivy, Forget-me-not, Common Vetch and Ragwort.

3.7. The size of this parcel of habitat combined with the widespread and common species which it supports suggests that it is ineligible for selection through the local wildlife site criteria. A tall rank sward supresses the diversity of flowering plants and this doesn’t appear to be a rare or significant habitat type in the local area.

Bare ground

3.8. An area of bare ground extends from the access road into the western side of the area of mixed scrub. Fallen trees cover part of the area, and it shows little evidence of recolonisation. Bare ground is also found under several of the treelines.

Bramble scrub

3.9. A small area of Bramble scrub has recolonised the abandoned access road running along part of the southern boundary of the application site. This area is heavily shaded by the line of trees which overhang it and is solely vegetated by Bramble.

Broadleaved woodland

3.10. Running along the western edge of the application site is a narrow band of trees. This comprises several species including Beech *Fagus sylvatica*, Ash, Pedunculate Oak, Holly *Ilex aquifolium*, Hazel *Corylus avellana*, Sycamore *Acer pseudoplatanus*, Pine and Yew *Taxus baccata*. These trees are part of a longer band which runs to the north and south of the site. Together they form a dense canopy some 10-15m from the ground and a combination of this shade and lack of moisture in the soil leads to a species poor ground flora dominated by Ivy. This area has been categorised as broadleaved woodland on a precautionary basis, however the size of the parcel and condition of the associated flora indicate that this is not a good example of this habitat type.

Coniferous woodland

3.11. Several parcels of coniferous woodland can be found within the site. These exist as fragments of a previously planted stands of coniferous species. A small area of coniferous plantation is found in the northeastern corner of the site and is connected to a larger band running to the south, while a further fragment is found to the west of the access road. A small number of coniferous species create a dense canopy, reducing light and moisture below and leading to a lack of understorey or ground vegetation.

Lines of trees

3.12. Tree lines surround much of the application site. Leylandii are the dominant species in the coniferous tree lines, while the mixed tree lines include Norway Spruce *Picea abies*, Sitka Spruce *Picea sitchensis* and Sycamore.

Native Hedgerow with trees

3.13. Running along the northern boundary of the application site, adjacent to Stoney Common Road, is a native hedgerow. This primarily comprises Hawthorn with other incidental species such as blackthorn and elder. Above this grows a number of trees including Norway Spruce, Sitka Spruce and Sycamore.

Unvegetated/Unsealed Surface

3.14. The access route crossing the application site is regularly disturbed and covered in areas with a layer of gravel. This has led to it being classified as unvegetated/unsealed surface as the disturbance prevents recolonisation by any of the surrounding habitats.

Background Records

3.15. **Background records:** The data search undertaken with EFC returned a small number of records for plants within the site boundary (records from 1997, 2000 and 2007). These species include Deadly Nightshade *Atropa belladonna*, Brown Sedge *Carex disticha*, Many-leaved Sedge *Carex divulsa subsp. leersii*, Common Sedge *Carex nigra*, Greater Tussock-sedge *Carex paniculata*, Early Marsh-orchid *Dactylorhiza incarnata*, Dwarf Spurge *Euphorbia exigua*, Russian-vine *Fallopia baldschuanica*, Fen Bedstraw *Galium uliginosum*, Bluebell *Hyacinthoides non-scripta*, Blunt-flowered Rush *Juncus subnodulosus*, Venus's-looking-glass *Legousia hybrida*, Wild Marjoram *Origanum vulgare* and Stream Water-crowfoot *Ranunculus penicillatus subsp. Pseudofluitans*.

3.16. Several other species were recorded around the site. Many of these records are historical, however for the sake of completeness the species recorded include Fool's Parsley *Aethusa cynapium subsp. agrestis*, Rye Brome *Bromus secalinus*, Butterfly-bush *Buddleja davidii*, Clustered Bellflower *Campanula glomerata*, Harebell *Campanula rotundifolia*, Small Toadflax *Chaenorhinum minus*, Opposite-leaved Golden-saxifrage *Chrysosplenium oppositifolium*, Lesser Calamint *Clinopodium calamintha*, New Zealand Pigmyweed *Crassula helmsii*, Common Spike-rush *Eleocharis palustris subsp. palustris*, Nuttall's Waterweed *Elodea nuttallii*, Japanese Knotweed *Fallopia japonica*, Common Cudweed *Filago vulgaris*, Wild Strawberry *Fragaria vesca*, Goat's-rue *Galega officinalis*, Field Scabious *Knautia arvensis*, Least Duckweed *Lemna minuta*, Corn Mint *Mentha arvensis*, Early Forget-me-not *Myosotis ramosissima*, Scots Pine *Pinus sylvestris*, Flattened Meadow-grass *Poa compressa*, Fiddle Dock *Rumex pulcher*, Meadow Saxifrage *Saxifraga granulata*, Rue-leaved Saxifrage *Saxifraga tridactylites*, Pepper-saxifrage *Silaum silaus*, Canadian Goldenrod *Solidago canadensis*, Unbranched Bur-reed *Sparganium emersum*, Lesser Chickweed *Stellaria pallida*, Sulphur Clover *Trifolium ochroleucon*, Lesser Bulrush *Typha angustifolia*, Stingless Nettle *Urtica dioica subsp. galeopsifolia*, Vervain *Verbena officinalis*, Common Vetch *Vicia sativa subsp. Sativa* and Common Vetch *Vicia sativa subsp. Segetalis*.

3.17. It is worth noting that several of these species are included in schedule 9 of the Wildlife and Countryside act (1981). It is illegal to propagate these species or allow them to grow in the wild. The schedule 9 species returned by the data search are Nuttall's Waterweed, New Zealand Pigmyweed and Japanese Knotweed.

4. WILDLIFE USE OF THE SITE

4.1. General observations were made during the surveys of any faunal use of the site, with specific attention paid to the potential presence of protected species. Specific surveys were undertaken with regard to Badgers, Bats, Reptiles, Dormice and Birds.

Badgers

4.2. An initial survey for Badgers were undertaken in May 2022, with no evidence of Badgers being recorded within the site.

4.3. Mammal pathways were recorded elsewhere within the application site and extensive evidence of rabbits including burrows and droppings were recorded throughout the scrub habitat. It is considered the scrub, and to a lesser extent the grassland, offers suitable foraging opportunities for Badgers.

4.4. **Background Records**. A data search undertaken with EFC returned a small number of records for badgers from the surrounding area. The closest record was returned from a location within 0.2km of the application site and dated from 2009, this was also the most recent record.

Bats

Tree Surveys

4.5. Two trees within the application site were initially identified as having developed features suitable to support roosting bats. These were subsequently subject to detailed elevated inspection.

4.6. Tree T1 is an Oak in the west of the application site. It has a single potential roost feature which has developed from a dropped limb on its southern side. Closer inspection of the tree and this potential roost feature recorded no evidence of bats making use of this feature and therefore the tree is considered to have negligible potential to support roosting bats.

4.7. T2 is a Beech in the west of the application site. It has three potential roost features which have developed from dropped limbs. All three were surveyed in detail and no evidence of bats making use of the features was observed. The highest feature contained evidence of previous use by nesting birds. Overall, therefore, it is considered that this tree offers negligible potential for roosting bats.

Activity Surveys

4.8. A series of bat activity surveys were undertaken during the 2022 surveys season. Detailed results of these surveys can be found at Appendix 2.

4.9. Patterns of activity were broadly similar across surveys, with the primary species recorded being Common Pipistrelle *Pipistrellus pipistrellus* and Soprano Pipistrelle *Pipistrellus pygmaeus*. These were present in low numbers during each survey, with a peak count of 36 registrations for Common Pipistrelle and 18 registrations for Soprano Pipistrelle during the October activity survey. In

addition, a single pass by a Noctule *Nyctalus noctule* was recorded during the summer survey.

4.10. Distribution of bat activity across the site was fairly uniform, indicating that no areas of the site are of particular significance to the bats commuting or foraging in this area.

4.11. The patterns of activity recorded by the statics detectors broadly mirrored the results of the transect surveys, with the majority of registrations being for Common Pipistrelle and Soprano Pipistrelle. In addition, other species recorded in markedly lower abundance included Barbastrelle *Barbastella barbastellus*, Serotine *Eptesicus serotinus*., Myotis species *Myotis spp*., Noctule *Nyctalus noctula* and, Brown Long-eared Bat *Plecotus auritus*. In view of the numbers of registrations for these species it is not considered that the application site is of any particular significance to these species.

4.12. **Background Records**. The data search undertaken with EFC returned a small number of records of bats. None of these were located within the application site, with the closest being records for Common Pipistrelle, Soprano Pipistrelle and Noctule. These records date from 2013. Other species recorded within 2km of the application site include Natterer's Bat *Myotis nattereri*, and Brown Long-eared Bat Plecotus auritus.

Hazel Dormice

4.13. It is considered that the scrub throughout the site offers potentially suitable habitat for dormice.

4.14. 100 Dormouse tubes were placed throughout suitable habitat across the site on 30/06/22. These were then re-checked every subsequent month and the results of these surveys are shown below in Table 3.

Date	Observations
22/07/22	No Observations
18/08/22	No Observations
28/09/22	No Observations
24/10/22	No Observations
14/11/22	No Observations

Table 3: Dormice observed during the site surveys

4.15. No Dormice, or evidence of the presence of Dormice such as nests or feeding remains, have been recorded within the application site during any of the survey work undertaken to date. The 50 tubes recommended by best practice guidance have been doubled and consequently the scoring for each month has also been double. This returns a score of 32 and therefore it is considered that there has been sufficient survey effort to detect Dormice, had they been present within the site.

4.16. **Background Records**. The data search undertaken with EFC returned no records of Dormice from the surrounding area.

Reptiles

4.17. It is considered that the areas of grassland and sparse scrub offer potentially suitable habitat for reptiles. Specific surveys to gather data on the presence of reptiles was conducted during September and October 2021.

4.18. Following placement of the reptile tins, several surveys were carried out, and the results of these surveys are shown below in Table 3.

Survey	Findings
Survey 1	5 Slow Worms (3 adults, 1 juvenile, 1 unidentified)
Survey 2	4 Slow Worms (2 adults and 2 juveniles) 4 Common Lizards (3 adults and
Survey 3	11 Slow Worms (9 adults and 2 juveniles) 3 Common Lizards (2 adults and 1 juvenile)
Survey 4	12 Slow Worms (9 adults and 3 juveniles) 1 Common Lizard (adult)
Survey 5	9 Slow Worms (8 adults and 1 juvenile)
Survey 6	5 Slow Worms (adults)
Survey 7	6 Common Lizards

Table 3: Reptiles observed during the site surveys

4.19. As can be seen from Table 3, and based on the HGBI reptile population size class assessment, there is a 'low' population density of both Slow Worms *Anguis fragilis* and Grass Snakes *Natrix helvetica* within the application site.

4.20. **Background Information**. The data search undertaken with EFC returned a small number of records for reptiles. No records were returned from locations within the application site. The closest record was for Grass Snake and was returned from a location approximately 0.4km from the application site. The only other species recorded was Slow Worm.

Birds

4.21. It is considered that the trees and scrub throughout the site offer suitable nesting and foraging opportunities for a range of birds.

4.22. During the survey undertaken in May 2022, a limited number of common bird species was recorded within the application site, including Woodpigeon *Columba palumbus*, Collared Dove *Streptopelia decaocto*, Jay *Garrulus glandarius*, and Goldcrest *Regulus regulus*. Several fledglings were observed, namely Jay and Goldcrest, indicating that areas within or close to the site are used by nesting birds.

4.23. In view of the potential importance of the site for breeding birds, a further dedicated survey was undertaken. The focused survey identified a small number of birds exhibiting territorial behaviour within the application site. These included Woodpigeon, Blackbird *Turdus merula*, Song Thrush *Turdus philomelos*, Robin *Erithacus rubecula*, Dunnock *Prunella modularis*, Wren *Troglodytes troglodytes*, Blackcap *Sylvia atricapilla* and Chiffchaff *Phylloscopus collybita*. Notable was a lack of finches of any kind.

4.24. Fledged family parties of Long-tailed Tit, Coal Tit and Blue Tit were observed, these may or may not have bred within the site. Additionally, three large stick nests were observed within Norway Spruce, two of which were identified as having been constructed by Magpie, with the other likely having been constructed by Carrion Crow.

4.25. **Background Records**. The data search undertaken with EFC returned a number of records for birds. Only two species records were returned from locations within the application site, these were for Grey Wagtail *Motacilla cinerea* and Starling *Sturnus vulgaris*.

4.26. Other species recorded within 2km of the application site include Sparrowhawk *Accipiter nisus*, Skylark *Alauda arvensis*, Swift *Apus apus*, Little Owl *Athene noctua*, Yellowhammer *Emberiza citrinella*, Reed Bunting *Emberiza schoeniclus*, Marsh Tit *Poecile palustris* and Barn Owl *Tyto alba*.

Amphibians (Primarily Great Crested Newts)

4.27. No ponds are located within or adjacent to the application site. The closest water feature to the application site is a fast-flowing stream beyond the railway line to the east. The closest ponds identified by aerial imagery and mapping are a collection of small waterbodies approximately 0.6km to the east of the application site at the closest point. These are separated from the application site by substantial residential development.

4.28. It is considered highly unlikely that Great Crested Newts are dependent upon, or present within, the application site.

4.29. **Background Information.** The data search undertaken with EFC returned a small number of records for amphibians. The closest was for Great Crested Newt Triturus cristatus and was returned from a location approximately 1km from the application site and dated from 2004. The only other species recorded was Pool From Rana lessonae.

4.30. Overall, it is considered that Great Crested Newts will not be affected by the proposed development and no further consideration is given to this species within this assessment.

Invertebrates

4.31. Given the habitats present it is likely an assemblage of common invertebrate species would be present within the application site.

4.32. **Background Records**. The data search undertaken with EFC returned a number of records of invertebrates. No records were returned from locations

within the application site. A number of Priority Species of moth were returned from locations within 2km of the application site including Knot Grass *Acronicta rumicis*, August Thorn *Ennomos quercinaria* and Brindled Beauty *Lycia hirtaria.*

4.33. Foodplants for these moths include a range of trees and wildflowers. As such, it is considered that the treelines, scrub and grassland within the application site offer potentially suitable opportunities for the above species, although it is not considered any of these species would be reliant on the habitats present within the application site.

Other Mammals

4.34. It is considered the that the grassland and hedgerow habitats within the application site offer some suitable habitat for Brown Hare *Lepus europaeus*, while the hedgerows also offer some suitable opportunities for Hedgehog *Erinaceus europaeus* (a Priority Species), although is not considered that either of these species would be reliant on the habitats within the application site.

4.35. Given the lack of aquatic habitats within the application site, and the significant barrier (railway) separating the application site from the nearby watercourse, it is not considered that the application site offers any suitable habitat for Water Vole.

4.36. **Background Records**. The data search undertaken with EFC returned a small number of records for terrestrial mammals. None of these were returned from location within or adjacent to the application site. The closest record of Brown Hare was returned approximately 0.4km from the application site in 2010, the closest record of Hedgehog was returned approximately 0.9km from the application site in 2016. Other species recorded include Chinese Muntjac *Muntiacus reevesi* and Western Polecat *Mustela putorius*.

4.37. It should be noted that the Chinese Muntjac is listed on schedule 9 of the Wildlife and Countryside Act 1981, prohibiting its release into the wild.

5. ECOLOGICAL EVALUATION

5.1. The Principles of Ecological Evaluation

5.1.1. The latest guidelines for ecological evaluation produced by CIEEM propose an approach that involves professional judgement, but makes use of available guidance and information, such as the distribution and status of the species or features within the locality of the project.

5.1.2. The methods and standards for site evaluation within the British Isles have remained those defined by Ratcliffe[11]. These are broadly used across the United Kingdom to rank sites so priorities for nature conservation can be attained. For example, current sites of Special Scientific Interest (SSSI) designation maintains a system of data analysis that is roughly tested against Ratcliffe's criteria.

5.1.3. In general terms, these criteria are size, diversity, naturalness, rarity and fragility, while additional secondary criteria of typicalness, potential value, intrinsic appeal, recorded history and the position within the ecological / geographical units are also incorporated into the ranking procedure.

5.1.4. Any assessment should not judge sites in isolation from others, since several habitats may combine to make it worthy of importance to nature conservation.

5.1.5. Further, relying on the national criteria would undoubtedly distort the local variation in assessment and therefore additional factors need to be taken into account, e.g. a woodland type with a comparatively poor species diversity, common in the south of England, may be of importance at its northern limits, say in the border country.

5.1.6. In addition, habitats of local importance are often highlighted within a local Biodiversity Action Plan (BAP). The Essex BAP currently lists a number of BAP habitats and species.

5.1.7. Levels of importance can be determined within a defined geographical context from the immediate site or locality through to the International level.

5.1.8. The legislative and planning policy context are also important considerations and have been given due regard throughout this assessment.

5.2. Designated Sites

5.2.1. **Statutory Sites:** There are no statutory designated sites of nature conservation value located within or immediately adjacent to the application site. The nearest Site of Special Scientific Interest (SSSI) is Hall's Quarry SSSI, which is located approximately 3.6km to the north of the application site. Hall's Quarry SSSI is designated for geological reasons on account of the presence of glacial silts, gravels and till deposits. Located a little further from the site, approximately 3.8km to the south-east, lies Hatfield Forest

[11] Ratcliffe, D A (1977). *A Nature Conservation Review: the Selection of Study areas of Biological National Importance to Nature Conservation in Britain*. Two Volumes. Cambridge University Press, Cambridge.

which is designated as both a SSSI and a National Nature Reserve. This area is designated for the woodland present which has strong historical continuity and a high recorded species diversity. In addition to this the forest includes a lake which is used by breeding wildfowl, areas of grassland with a rich herbal diversity, and a number of badger setts. To the north of this area is located Flitch Way Local Nature Reserve (LNR) which is manged to maintain a patchwork or grassland and woodland.

5.2.2. The SSSIs and LNRs are separated from the application site by roads, residential development, woodlands and extensive open countryside, and as such, it is not considered that any development proposals would have the potential to have any adverse impacts on Hall Quarry SSSI or Hatfield Forest SSSI/NNR.

5.2.3. **Non-statutory Sites**: There are no non-statutory designations of conservation value within the application site. The nearest Local Wildlife Site (LoWS) is The Mount, Stansted LoWS which lies approximately 0.1km to the southeast of the application site. This is an area of grazed grassland supporting a range of herbal and botanical species. It is considered that any impacts on this site can be avoided through the creation of an appropriate mitigation management plan. For the sake of completeness, the other Local Wildlife Sites located within 1km of the application site are Stanstead Marsh and Parsonage Spring.

5.2.4. A number of additional statutory and non-statutory sites are located in the wider area, but it is not anticipated that there will be adverse effects on any of these as a results of the proposals.

5.3. Habitat Evaluation

Overview

5.3.1. As set out above the site predominantly comprises scrub and grassland. The scrub is considered to be in moderate condition due to its favourable diversity, both in terms of its species composition and structure, whilst the grassland is considered to be poor due to its lack species richness of a diverse sward.

5.3.2. Small areas of other habitat are located within the site including parcels of coniferous plantation, deciduous trees which (as set out above) have been classified on a precautionary basis as broadleaved woodland, as well as areas of bramble scrub and bare ground which are of negligible ecological value.

5.3.3. The boundary features are of ecological interest, particularly the native hedgerow with trees which is located on the site's northern boundary.

Impacts

5.3.4. The development proposals will see the large-scale loss of habitats within the application site, with the majority of grassland and scrub lost to facilitate development.

5.3.5. Where access is required into the site from the west this will involve the removal of trees. All treelines/hedgerows which are to be retained, however, will be safeguarded during construction and are included as part of landscaping proposals.

Mitigation

5.3.6. As previously stated much of the habitat currently present within the site will be lost to facilitate development. Any areas which can retained around the periphery, however, will be protected. This will include the native hedgerow along the site's northern boundary. Furthermore, whilst it is anticipated that much of the site's current habitats will be lost in the short-term, a number of offsetting measures are set out below.

5.3.7. **Enhancement / creation of grassland on site.** In order to enhance retained grassland, a sensitive over-seeding exercise will take place using a locally sourced (or suitably similar) species-rich grassland seed-mix.

5.3.8. Where new areas of grassland will be created (following initial loss after enabling works), these will be seeded with the same species-rich mix. In combination these measures will deliver a qualitative enhancement in the grassland present within the site.

5.3.9. **Enhancement / creation of hedgerow on site.** To prevent the risk of accidental encroachment or damage, protective fencing shall be installed where appropriate prior to the commencement of physical construction to protect retained linear habitats. Fencing shall be undertaken in accordance with the current British Standard (BS 5837:2012) to protect roots from compaction and shall be installed at canopy width from retained trees. This shall ensure that direct impacts and severance / asphyxiation of roots are avoided.

5.3.10. In addition to the above, proposed development and construction works will be mindful of Root Protection Zones (RPZ), in order to assure no negative impacts on retained trees in the long-term.

5.3.11. Furthermore, and by way of enhancement is considered that there is scope for the hedgerow to be subject to both immediate and longer-term management. This would include a range of measures designed to promote healthy and vigorous growth as well as to increase overall habitat diversity such as supplementary planting which would increase the species richness of the hedgerow and improve its value for local fauna.

5.3.12. With regards to longer-term management, cutting of this hedgerow should occur no more than once annually, and on a rotational basis where possible to enhance structure and value to faunal species. Cuts should typically be undertaken as late into the Autumn / Winter period as possible, in order to ensure that these features provide as much of a food resource as possible for birds. However, if management is required between March and July this will be preceded by a survey by an ecologist to check for nesting birds.

5.3.13. Additionally, native hedgerows will be created throughout the development, delineating gardens and surrounding properties.

5.3.1. **Tree retention / creation**. Matures trees present within the band on the western site boundary will be retained where possible, and as above appropriate protection will be ensured through the use of fencing. To offset any losses, new trees will be created throughout the development footprint. It is recommended that new trees to be planted within areas of open space throughout the development comprise native species of local provenance wherever possible, or species of benefit to wildlife.

5.3.2. **Off-site habitat creation**. In addition to the on-site measures set out above, the proposals will also deliver a 6 acre area of land which will be enhanced from arable use to wildflower meadow.

5.3.3. This habitat creation will deliver a betterment for a diverse range of species in the wider area and offset losses which cannot be mitigated by the on-site habitat retention, enhancement and creation.

5.3.4. This off-site habitat creation will be secured by way of a Section 106 legal agreement, with further details set out in the Biodiversity Net Gain section below and in the Offsite Habitat Creation and Management Plan at Appendix 4.

Biodiversity Net Gain

5.3.5. The Environment Act 2021 reached Royal Assent on 9th November 2021. The Environment Act includes provisions relating to nature and biodiversity. This includes the requirement for the biodiversity gain objective to be met in relation to development. The objective is met where biodiversity value attributable to the development exceeds the pre-development biodiversity value of the onsite habitat by at least the relevant percentage. The current relevant percentage is set at 10%.

5.3.6. However, provisions relevant to nature and biodiversity are yet to come into force as set out at paragraph 147 where it lists Part 6 of the Act (nature and biodiversity) as coming into force:

"…on such day as the Secretary of State may by regulations appoint —"

5.3.7. No such regulation has yet to be brought forward by the Secretary of State.

5.3.8. Notwithstanding the above, to further inform this report a Biodiversity Net Gain (BNG) assessment has been undertaken that identifies and evaluates the potential effects the development proposals may have on ecology. The process involves the use of a metric as a proxy for recognising the negative impacts on habitats arising from the development and calculating how much new or restored habitat, and of what type is required to deliver sufficient net gain. The metric approach provides a useful guide to demonstrate, on a quantitative basis, whether a net gain in biodiversity can be achieved. The approach involves comparing the baseline scenario to that of the proposed Development.

5.3.9. In order to deliver a net gain as part of the proposals it was found that following on-site initiatives, off-site offsetting would also be required. Land was identified at Dowsetts Farm, Ware which is suitable for this process. This land is currently arable but is suitable for enhancement to species-rich

grassland. This enhancement will deliver benefits for a wide range of faunal species and deliver a significant overall net gain.

5.3.10. Whilst not located within the application site's immediate vicinity, it should be noted that application site and mitigation site lie within the same National Character (NCA), NCA 86 - South Suffolk and North Essex Clayland. As set out in the BNG User Guidance[12], off-site habitat provision can be undertaken at a distance from the development site. In order to encourage offsetting within a reasonable radius of the 'impact site', however, off-site habitat creation is penalised if it is deemed to be too far from this location. The 'spatial risk multipliers' are applied based on local planning authority area, National Character Area or Marine Plan Area for intertidal habitats. Table 5-7 of this guidance states that for "compensation inside LPA or NCA of impact site" the multiplier is 1 (ie. unpenalised).

5.3.11. Further details regarding this off-site offsetting can be found in the Offsite Habitat Creation and Monitoring Plan OHCMP at Appendix 3, and headline results of the BNG assessment incorporating this land can be found at Appendix 4.

5.3.12. Whilst a gain in linear units is delivered entirely on-site, following delivery of the on-site habitats illustrated in Plan ECO3 an off-site solution was required in order to deliver an overall net gain. Once implemented as set out in the OHCMP the development proposals will deliver a significant net gain, specifically an increase of +87.07% in area units and +29.76% in linear units.

5.3.13. The metric includes 'trading rules' which are designed to inform habitat creation and landscape design. Whilst the trading rules within the metric are not satisfied for these proposals, it should be noted that the loss of small areas of woodland and scrub, which as noted above are at best moderate examples of their habitat type, are to be more than offset by the creation of both various on-site habitats and a large area of BNG-focused species-rich grassland.

5.3.14. These gains represent a significant increase in ecological value being delivered by the proposals. It is noted that in a recent appeal decision (APP/A2280/W/20/3259868) the Secretary of State gave substantial weight to a lower net gain than is associated with these proposals, stating that *"Indeed, one of the suggested conditions secures at least 20% biodiversity net gain. I consider that the benefits secured in this regard attract substantial weight."*

5.3.15. Should future proposals come forward then banking of units may be considered. This is the process by which excess units delivered by a previous development can be used to contribute to a future scheme. This would, however, be subject to future re-assessment and further detailed agreement.

[12] STEPHEN PANKS A, NICK WHITE A, AMANDA NEWSOME A, MUNGO NASH A, JACK POTTER A, MATT HEYDON A, EDWARD MAYHEW A, MARIA ALVAREZ A, TRUDY RUSSELL A, CLARE CASHON A, FINN GODDARD A, SARAH J. SCOTT B, MAX HEAVER C, SARAH H. SCOTT C, JO TREWEEK D, BILL BUTCHER E AND DAVE STONE A 2022. Biodiversity metric 3.1: Auditing and accounting for biodiversity – User Guide. Natural England

5.4. Faunal Evaluation

Badgers

5.4.1. **Legislation**. The Protection of Badgers Act 1992 consolidates the previous Badgers Acts of 1973 and 1991. The legislation aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain, with particularly high populations in the southwest.

5.4.2. As well as protecting the animal itself, the 1992 Act also makes the intentional or reckless destruction, damage or obstruction of a Badger sett an offence. A sett is defined as "any structure or place which displays signs indicating current use by a Badger"[13]. "Current use" of a Badger sett is defined by Natural England as "how long it takes the signs to disappear", or more precisely, to appear so old as to not indicate "current use".

5.4.3. In addition, the intentional elimination of sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence by constituting 'cruel ill treatment' of a Badger.

5.4.4. **Site usage**. No evidence of badgers present on site was observed during the survey in May 2022, however information received from EFC indicates that Badgers are known around the application site.

5.4.5. **Mitigation and Enhancements**. Given the possible presence of badgers on site, and the areas of ground which it has not been possible to check for setts on account of the dense scrub, it is necessary to undertake a number of measures to safeguard any Badgers that may be present within the site, particularly in regard to disturbance and other related issues.

5.4.6. Principally it is recommended that a watching brief is maintained by a qualified ecologist during clearance of any scrub on site. Should evidence of badgers be found such as setts or latrines work should halt until further investigation has been conducted and additional measure have been agreed to safeguard any badgers present on site.

5.4.7. Furthermore, given the potential presence of badgers in the area, consideration will need to be afforded to them during construction with precautionary steps undertaken.

5.4.8. These should include any trenches or deep pits that are to be left open overnight being provided with a means of escape should a Badger or other terrestrial mammal enter. This could simply be in the form of a roughened plank of wood placed in the trench as a ramp to the surface. This is particularly important if the trench fills with water.

5.4.9. Any trenches/pits should be inspected each morning to ensure no Badgers have become trapped overnight. Should a Badger get stuck in a trench it will likely attempt to dig itself into the side of the trench, forming a temporary

[13] Protection of Badgers Act 1992 (as amended). Guidance on 'Current Use' in the definition of a Badger Sett http://www.naturalengland.org.uk/ourwork/regulation/wildlife

sett. Should a trapped Badger be encountered, the project ecologists should be contacted immediately for further advice.

5.4.10. Species-rich grassland created as part of the proposals will deliver foraging habitat for badgers, whilst the retention and enhancement of linear features such as the native hedgerow on the site's northern boundary will provide navigating and sheltering opportunities for the species.

Bats

5.4.11. **Legislation.** All bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and included on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations"), as amended. These include provisions making it an offence:

- Deliberately to kill, injure or take (capture) bats;
- Deliberately to disturb bats in such a way as to: -
  - (i) be likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or to hibernate or migrate; or
  - (ii) affect significantly the local distribution or abundance of the species to which they belong;
- To damage or destroy any breeding or resting place used by bats;
- Intentionally or recklessly to obstruct access to any place used by bats for shelter or protection.

5.4.12. While the legislation is deemed to apply even when bats are not in residence, Natural England guidance suggests that certain activities such as re-roofing can be completed outside sensitive periods when bats are not in residence provided these do not damage or destroy the roost.

5.4.13. The words deliberately and intentionally include actions where a court can infer that the defendant knew that the action taken would almost inevitably result in an offence, even if that was not the primary purpose of the act.

5.4.14. The offence of damaging or destroying a breeding site or resting place (which can be interpreted as making it worse for the bat) is an absolute offence. Such actions do not have to be deliberate for an offence to be committed.

5.4.15. European Protected Species licences are available from Natural England in certain circumstances, and permit activities that would otherwise be considered an offence.

5.4.16. Licences can usually only be granted if the development is in receipt of full planning permission and it is considered that:

(i) The activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety;
(ii) There is no satisfactory alternative; and
(ii) The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

5.4.17. Seven species of bat are Priority Species, these are Barbastelle *Barbastella barbastellus*, Bechstein's *Myotis bechsteinii*, Noctule, Soprano Pipistrelle, Brown Long-eared, Greater Horseshoe *Rhinolophus ferrumequinum,* and Lesser Horseshoe *Rhinolophus hipposideros*.

5.4.18. **Site Usage.** Common Pipistrelle and Soprano Pipistrelle were recorded using the site in low numbers. Occasional registrations for a number of other species were also recorded, however at levels which suggested that the site is not of particular significant to them in the local context.

5.4.19. Data from EFC suggests that a small number of species are present in the surrounding area.

5.4.20. **Mitigation and Enhancements.** Mature trees will be retained wherever possible as part of the proposals. In the event that any of the trees already bearing potential roost features need to be lost, given their negligible potential to support roosts, a soft felling methodology for removal should be employed.

5.4.21. The creation of species-rich grassland, and the creation and enhancement of native hedgerows and trees will ensure continuity of what limited foraging and navigating opportunities currently exist for bats within the site.

5.4.22. If deemed necessary, a sympathetic lighting regime associated with any proposals would minimise light spillage into key areas, such as retained hedgerows and trees, which would maintain foraging and navigational opportunities in these areas in the form of 'dark corridors'. Such a strategy can involve the use of warm white LED lights, which produce less light spillage than other types of lighting and have low / no UV content, or UV-filtered lights. In addition, the spillage of the light can be reduced further through use of low-level lights and the employment of lighting 'hoods' which will direct light below the horizontal plane, preferably at an angle less than 70 degrees.

5.4.23. As an enhancement, it is recommended that bat boxes (see Appendix 5 for suitable examples) are erected on suitable retained trees within the tree lines within the development site, and that these are positioned out of reach of opportunistic predators. These models of bat box are known to be attractive to a number of the smaller bat species, including Pipistrelle (known from the local area). This measure will provide enhanced roosting opportunities within the application site.

Reptiles

5.4.24. **Legislation**. All six British reptile species receive a degree of legislative protection that varies depending on their conservation importance.

5.4.25. Smooth Snake Coronella austriaca and Sand Lizard *Lacerta agilis* receive 'full protection' under the Wildlife and Countryside Act 1981 as well as protection under the Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations"). These receive protection from:

- killing, injuring, taking;

- possession or control (of live or dead animals, their parts or derivatives);
- damage to, destruction of, obstruction of access to any structure or place used for shelter or protection;
- disturbance of any animal occupying such a structure or place;
- selling, offering for sale, possession or transport for purposes of sale (live or dead animal, part or derivative).

5.4.26. Neither species would be present within the application site given the lack of suitable habitat and geographic location and were not recorded during the surveys.

5.4.27. Common Lizard *Zootoca vivipara*, Grass Snake *Natrix helvetica*, Slow Worms and Adder *Vipera berus* are often termed ‘common reptiles’ and are only 'partially protected' under the Wildlife and Countryside Act 1981 (as amended) and as such only receive protection from:

- deliberate killing and injuring;
- being sold or other forms of trading.

5.4.28. The habitat of common reptiles is therefore not directly protected. However, because of their partial protection, disturbing or destroying their habitat while they are present may lead to an offence. Therefore, mitigation measures undertaken prior to development that avoids killing or injuring common reptiles will ensure that an offence is avoided.

5.4.29. **Site Usage.** ‘Low’ populations of Slow Worms and Common Lizards were recorded during specific survey work. They are considered to primarily be present in the rough grassland and edges of the scrub within the site.

5.4.30. **Mitigation and Enhancements.** Habitat suitable for reptiles will be lost to the development proposals in the form of grassland and scrub margins.

5.4.31. In order to safeguard reptiles during the habitat clearance process, a sensitive habitat manipulation exercise carried out at a suitable time of year reptiles (typically mid-March to late September/early October) should be undertaken.

5.4.32. This process involves undertaking an initial cut of the vegetation to a height of no less than 15cm under the supervision of an ecologist. Cuts shall be undertaken in a systematic manner, working outwards from the centre of the habitat parcel to be lost to encourage reptiles to disperse into the wider area, particularly the suitable habitat to the east of the site. Upon completion of the first cut, vegetation shall subsequently be removed to ground level which will provide an opportunity for any reptiles to move away safely. Any potential refugia which are to be removed will be checked by the supervising ecologist before carefully being removed by the contractor under supervision.

5.4.33. Given the potential challenges presented by clearing scrub in this way, this habitat manipulation will be followed by a translocation exercise. The aim of this translocation exercise will be to remove any reptiles remaining within the application site.

5.4.34. This exercise will be undertaken in the following way. First exclusion fencing will be erected around the site to prevent reptiles from re-entering the development footprint either during the translocation exercise or during construction, with temporary herptile fencing being used. This will be of 1mm semi-permanent HDPE type. Following erection of this fencing reptile refugia 'tins' would be placed throughout the application site and checked daily during suitable weather conditions. Should reptiles be found using the refugia they will be placed in cloth bags providing them with a soft, darkened environment in which they will be temporarily held until the trapping round is completed. Trapped reptiles will be moved directly to suitable habitat outside the exclusion fencing and released into suitable dense cover. Animals will be kept in bags for the minimum amount of time necessary with repeated trips undertaken to release reptiles into the receptor locations as required throughout each site visit. This will continue for at least 15 days, and until five clear days (ie. days without reptiles being found) have elapsed.

5.4.35. The reptile fencing will be monitored throughout the translocation exercise and the wider construction period. Any breaks in the herpetofauna fencing will be promptly repaired. Reptile fencing shall remain in place throughout the translocation exercise and construction period and will only be removed once construction works have been completed. This will ensure that reptiles are protected from harm and in due course will allow them to recolonise open spaces within the site.

5.4.36. It is considered that this hybrid approach will be sufficient to ensure no reptiles are harmed during any vegetation clearance works and construction.

5.4.37. Any creation of grassland will provide habitat suitable for reptiles, as well as other wildlife, while the provision of any new log piles or hibernacula would also provide new shelter and hibernation opportunities for reptiles.

Hazel Dormice

5.4.38. **Legislation.** The legislative and licensing provisions for Dormice, which is a scarce UK species, are the same as for bats (see previous). Dormice are also a Priority Species.

5.4.39. **Site Usage**. No evidence of Dormice was recorded within the application site during a suite of focused surveys. Additionally, EFC did not return any local records as part of the data search.

5.4.40. **Mitigation and Enhancements.** The retained hedgerow will be bolstered with new native planting to improve its structure, while the inclusion of species such as Hazel could provide enhanced foraging and shelter opportunities for Dormice should they colonise the site in the future. One of the key requirements for Common Dormice is a good range of different trees and shrubs within a small area to provide a readily available source of food throughout the seasons. Hazel, Oak, Honeysuckle and Bramble are key food sources for Hazel Dormouse[14].

[14] English Nature (1996), Dormouse Conservation Handbook-Species Recovery Programme, English

Other Mammals

5.4.41. **Site Usage.** It is considered that while the current condition of the application site offers suitable habitat for other mammals including brown hares and hedgehogs, there is limited connectivity of the habitats on-site to the surrounding habitat, and therefore these species are not considered to be reliant on the application site.

5.4.42. **Mitigation and Enhancements.** The creation of any new areas of grassland and enhancement of native hedgerows will provide opportunities for other mammals.

Birds

5.4.43. **Legislation.** Section 1 of the Wildlife and Countryside Act 1981 (as amended) is concerned with the protection of wild birds, whilst Schedule 1 lists species that are protected by special penalties. All species of birds receive general protection whilst nesting.

5.4.44. **Site Usage.** A small number of common bird species were recorded within the application site during the surveys, and it is considered that the hedgerows, scrub and trees within the application site offer suitable foraging and nesting opportunities for a range of birds. A small number of species were recorded nesting within - and flying over - the application site during the focused bird survey.

5.4.45. **Mitigation and Enhancements**. Suitable habitat such as hedgerows and treelines should be retained wherever possible with any losses being offset through new hedgerow and tree planting. It is also recommended that the planting of any new hedgerow and trees throughout the application site comprise native species wherever possible, or species of benefit to wildlife. In addition, it is recommended that berry/fruit-bearing species are included, which would provide seasonal foraging resources for birds.

5.4.46. It is recommended that clearance of any suitable nesting vegetation, including tree felling, be undertaken outside the bird nesting season (March to August inclusive) to avoid any potential offence. Should the above timing constraints conflict with any timetabled works, it is recommended that works commence only after a suitably qualified ecologist has undertaken checks to ensure no nesting birds are present. If nesting birds are found to be present during checks then clearance would need to be delayed until young have fledged.

5.4.47. Simple enhancement measures could ensure additional ornithological interest within the application site, for example though the erection of nest boxes on retained trees and new buildings. Using nest boxes of varying designs would maximise the species complement attracted to the application site and, where possible, these could be tailored to provide opportunities for Red Listed / Priority Species known from the local area (see Appendix 6 for suitable examples).

Invertebrates

5.4.48. **Site Usage.** It is considered that a range of common invertebrate species would be present within the application site.

5.4.49. **Mitigation and Enhancements.** The creation of any new areas of wildflower grassland and planting of any new native hedgerows, orchard and trees would provide new opportunities for a range of invertebrates. The creation of any log piles would also be beneficial to saproxylic species, while the creation of any new wetland features would diversify the habitats present within the application site and provide new opportunities for a range of invertebrate species.

6. PLANNING POLICY CONTEXT

6.1. The planning policy framework that relates to nature conservation at Land at Pines Hill, Stansted Mountfitchet is issued at two main administrative levels: nationally through the National Planning Policy framework (NPPF), and locally through the Uttlesford Local plan 2005 and the Stansted Mountfitchet Neighbourhood Plan. The proposed development will be judged in relation to the policies contained within these documents.

6.1. National Policy

National Planning Policy Framework (2021)

6.1.1. The National Planning Policy Framework (NPPF) sets out the Government's requirements for the planning system and was adopted on 27th March 2012 and subsequently revised on the 24th July 2018, 19th February 2019 and 20th July 2021.

6.1.2. The key element of the NPPF is that there should be "*a presumption in favour of sustainable development*" (paragraphs 10 to 11).

6.1.3. The revised NPPF is comparable to previous versions (which it replaces), including reference to minimising impacts on biodiversity and provision of net gains to biodiversity where possible (paragraph 179) and ensuring that Local Authorities place appropriate weight to statutory and non-statutory nature conservation designations, protected species and biodiversity.

6.1.4. The NPPF also considers the strategic approach that Local Authorities should adopt with regard to the protection, maintenance and enhancement of Green Infrastructure, priority habitats and ecological networks, and the recovery of priority species.

6.1.5. Paragraph 180 of the NPPF comprises a number of principles which Local Authorities should apply, including:

- encouraging opportunities to incorporate biodiversity in and around developments;
- provision for refusal of planning applications if significant harm cannot be avoided, mitigated or, as a last resort, compensated for; and
- the provision for the refusal for developments resulting in the loss or deterioration of 'irreplaceable' habitats unless the need for, and benefits of, the development in that location clearly outweigh the loss.

6.1.6. National policy therefore implicitly recognises the importance of biodiversity and that with sensitive planning and design, development and conservation of the natural heritage can co-exist and benefits can, in certain circumstances, be obtained.

6.2. **Local Policy**

Uttlesford Local Plan 2005

6.2.1. The Uttlesford Local Plan was adopted in January 2005. A draft Local Plan was published in 2019 however was subsequently withdrawn. A new local plan is expected by summer 2024.

6.2.2. The Uttlesford Local Plan 2005 contains several policies that are of relevance to nature conservation, policies ENV3, ENV7, ENV8 and GEN7.

6.2.3. Policy **ENV3** refers to the protection of open spaces and trees, stating that *"The loss of traditional open spaces, other visually important spaces, groups of trees and fine individual tree specimens through development proposals will not be permitted unless the need for the development outweighs their amenity value."*

6.2.4. Policy **ENV7** focuses on the protection of designated sites, stating that development that adversely affects Sites of Special Scientific Interest, National Nature Reserves, County Wildlife Sites, Ancient Woodland, wildlife habitats, and sites of ecological interest will not be permitted unless the need for development outweighs the particular importance of the nature conservation value of the site.

6.2.5. Policy **ENV8** relates to features of nature conservation importance such as hedgerows and grassland. This policy states that development will only be permitted if certain criteria are met, namely that the need for development outweighs the importance of the given features for wild flora and fauna, and that mitigation measures are provided which would compensate for the harm and reinstate the nature conservation value of the locality.

6.2.6. Policy **GEN7** lays out the requirements regarding sites which include or may include habitats or features suitable to support protected species. It states that *"development that would have a harmful effect on wildlife or geological features will not be permitted unless the need for the development outweighs the importance of the feature to nature conservation. Where the site includes protected species or habitats suitable for protected species, a nature conservation survey will be required. Measures to mitigate and/or compensate for the potential impacts of development, secured by planning obligation or condition, will be required. The enhancement of biodiversity through the creation of appropriate new habitats will be sought."*

Stansted Mountfitchet Neighbourhood Plan

6.2.7. The Stansted Mountfitchet Draft Neighbourhood Development Plan is currently seeking community consultation. It contains several policies of relevance to ecology and nature conservation, however broadly mirrors policy at other levels. Draft policies include the requirement to deliver overall benefits for biodiversity, produce an ecological assessment, and protect notable trees.

6.3. **Discussion**

6.3.1. The application site lies within the 14.6km Zone of Influence for Hatfield Forest Site of Species Scientific Interest. It has been indicated that residential developments in excess of 50 units will be expected to contribute towards Strategic Access Management and Monitoring Strategy (SAMMS) in order to compensate for increased recreational pressure on Hatfield Forest. It should be noted that this threshold is not crossed in the case of these proposals and therefore SAMM contributions are not considered to be required.

6.3.2. As discussed previously The Mount LoWS lies approximately 0.1km to the southeast of the application site. It is considered that any impacts on this site can be avoided through the creation of an appropriate mitigation management plan.

6.3.3. Following the species survey results, mitigation, and off-site compensation as set out within this report, it is considered the development proposals will deliver net gains for species present in the locality and therefore accord with local policy.

6.3.4. In conclusion, implementation of the measures set out in this report would enable development of the application site to accord with national, regional and local planning policy for ecology and nature conservation.

7. SUMMARY AND CONCLUSIONS

7.1. Ecology Solutions was commissioned in February 2022 by Luxus Homes to undertake an assessment (including a full suite of protected species surveys) of the Land at Pines Hill, Stansted Mountfitchet, Essex.

7.2. Habitat surveys were carried out in February 2022 and May 2022 to ascertain the general ecological value of the land contained within the boundaries of the application site and to identify the main habitats and associated plant species.

7.3. Obvious faunal activity, such as birds or mammals observed visually or by call during the course of the surveys, was recorded. Specific attention was paid to any potential use of the application site by protected species, species of principal importance (Priority Species), or other notable species. In addition, specific surveys were undertaken in relation to Badgers, Reptiles, Bats, Dormice and Birds.

7.4. It is not considered that there will be any significant adverse effects on any statutory or non-statutory sites of nature conservation interest as a result of the development proposals.

7.5. Habitat losses will be extensive within the main site, with large areas of the scrub and grassland present throughout the site requiring clearance to facilitate development. On site mitigation will be implemented where possible, and to support this off-site offsetting land has been secured which - in combination with the development proposals - will secure a significant betterment to biodiversity as a whole.

7.6. Indeed, the Biodiversity Net Gain calculations tool identifies that the development proposals, including the offsetting land, will deliver a net gain of 87.07% in habitat units and 29.76% in linear units.

7.7. No evidence of Badgers being present within the site was recorded although it is considered that the hedgerows, scrub and to a lesser extent the grassland within the application site offer suitable foraging opportunities for Badgers. Recommendations have been made for a precautionary approach to be undertaken during construction with regards to Badgers, while the creation of any areas of wildflower grassland and new native planting will provide new and enhanced foraging navigating opportunities for Badgers.

7.8. Following an elevated inspection of the trees within the application site, all were found to have negligible potential to support roosting bats. A small number of bat species were recorded using the site for foraging and commuting. It is not considered that the site is of particular significance to any of these species given the local context. As a betterment, the provision of bat boxes will deliver new roosting opportunities across the site.

7.9. Surveys for Dormice did not record any evidence of their presence within the site. The planting of new, native hedgerows and the retention of the hedgerow along the site's northern boundary will ensure opportunities for this species are present should they colonise the site in the future.

7.10. A number of bird species were recorded during surveys, with activity within the site limited to common and widespread species. The retention and provision of

hedgerow and trees throughout the site will provide retained and new foraging and nesting opportunities for birds. Furthermore, the erection of bird boxes would also provide new nesting opportunities. Safeguards for nesting birds during vegetation clearance have also been recommended.

7.11. The grassland and scrub offer some suitable opportunities for common reptiles and low populations of Grass Snake and Slow Worm have been recorded during specific surveys. Given the small populations it is considered that a habitat manipulation exercise followed by translocation exercise will ensure that no reptiles are harmed during the vegetation clearance or construction periods.

7.12. In conclusion, through the implementation of the safeguards and recommendations set out within this report it is considered that the development proposals will accord with planning policy with regard to nature conservation at all administrative levels.

PLANS AND APPENDICES

PLANS

PLAN ECO1

Site Location & Ecological Designations

Site Boundary

Local Nature Reserve

Site of Special Scientific Interest

National Nature Reserve

Ancient and Semi-natural Woodland

N

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10486: PINES HILL, STANSTED MOUNTFITCHET

PLAN ECO1: SITE LOCATION AND ECOLOGICAL DESIGNATIONS

Rev: A

May 2022

PLAN ECO2

Ecological Features

KEY:

- SITE BOUNDARY
- MIXED SCRUB
- NEUTRAL GRASSLAND
- UNVEGETATED/UNSEALED SURFACE
- CONIFEROUS WOODLAND
- BROADLEAVED WOODLAND
- BRAMBLE SCRUB
- BARE GROUND
- LINE OF TREES (CONIFEROUS)
- LINE OF TREES (MIXED)
- NATIVE HEDGEROW WITH TREES

N

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10486: PINES HILL,
STANSTED MOUNTFITCHET

PLAN ECO2:
ECOLOGICAL FEATURES

Rev: C

Feb 2023

PLAN ECO3

Proposed Habitats

KEY:

- SITE BOUNDARY
- DEVELOPED LAND; SEALED SURFACE
- VEGETATED GARDEN
- MODIFIED GRASSLAND
- URBAN TREE (RETAINED)
- URBAN TREE (NEW)
- HEDGEROW WITH TREES (RETAINED)
- NATIVE GARDEN HEDGES (CREATED)

N

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10486: PINES HILL
STANSTED MOUNTFITCHET

PLAN ECO3:
POST-DEVELOPMENT
HABITATS

Rev: C

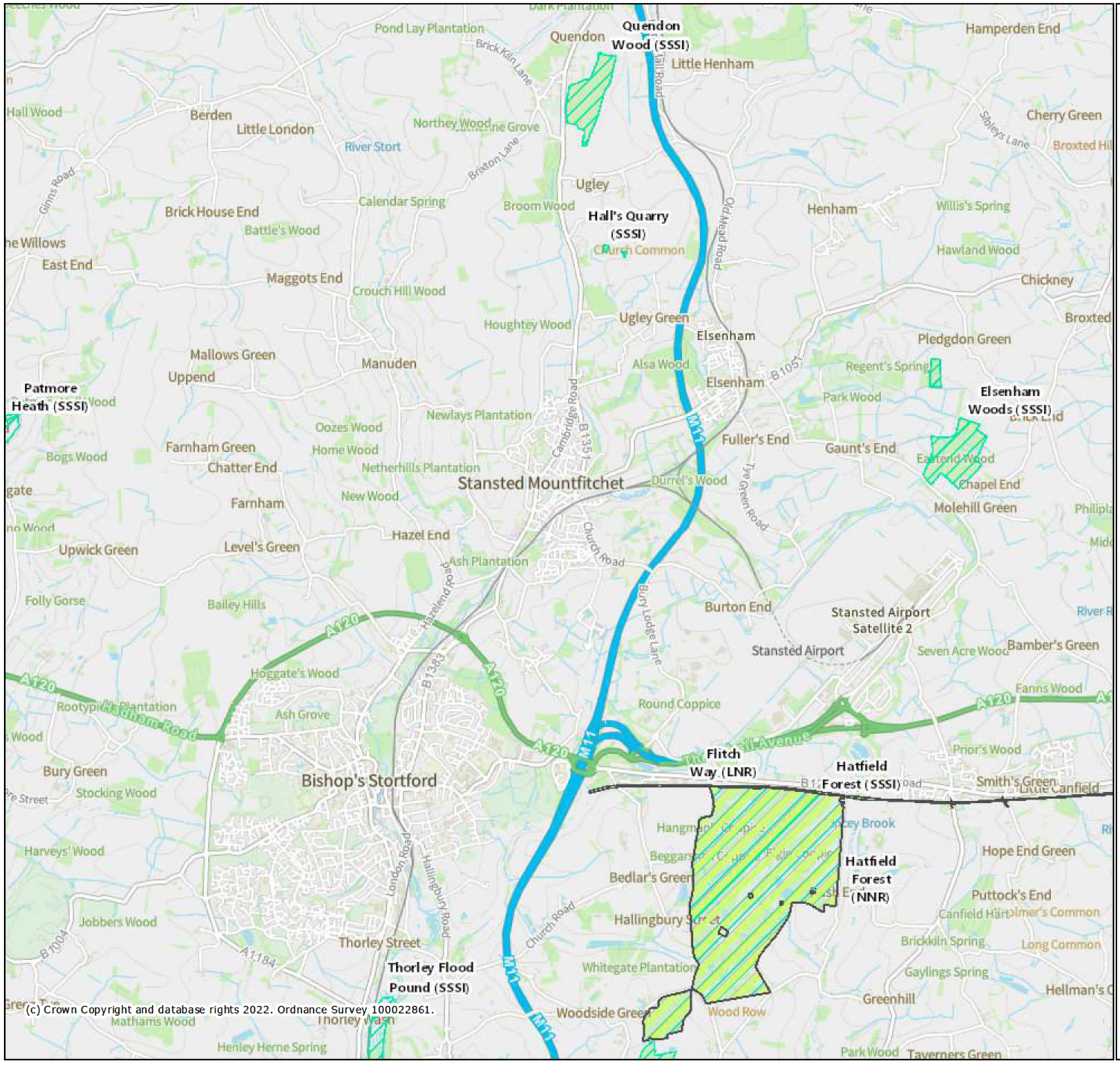
Mar 2023

APPENDICES

APPENDIX 1

Information downloaded from MAGIC

Magic Map



Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Sites of Special Scientific Interest (England)

Projection = OSGB36
xmin = 537800
ymin = 217700
xmax = 564700
ymax = 231200

0 1 2
km

Map produced by MAGIC on 18 May, 2022.

APPENDIX 2

Detailed Results of Bat Activity Surveys

10486 Pines Hill bat results/report

The site was assessed for its suitability to support bat species in Spring 2022. As part of this survey, assessment of all trees on site was undertaken in addition to an evaluation of the quality of habitats present within site for foraging and commuting bats.

All field surveys were undertaken within the site with regard to best practice guidelines issued by the Joint Nature Conservation Committee (2004) and the Bat Conservation Trust (20162).

Activity and Automated (static) Surveys

Due to the results of the initial site assessment which categorised the site as having low suitability for foraging and commuting bats in relation to the BCT guidance, seasonal bat activity surveys were undertaken between May – October 2022. Surveys involved surveyors walking dedicated transects across the site, recording bat data (using EMT2 detectors) and noting visual observations. Evening bat transect surveys commenced approximately 15 minutes before sunset and continued for a minimum of 2 hours after sunset. Dawn activity surveys commenced approximately 2 hours before sunrise and continued until just after sunrise.

During each survey, static SongMeter4 FS (SM4) and SongMeter MINI bat detectors were also deployed within strategic locations across the site. The detectors were left to record for a minimum of five nights.

This data was subsequently analysed using Kaleidoscope Pro bat sound analysis software. This survey method aimed to identify the level of foraging, the species present within the site and any areas of potentially high importance for foraging / commuting bats. The dates and weather conditions for the activity surveys are outlined in **Table 1**.

Date	Survey type	Timing	Weather conditions
30/05/22	Dusk activity	20:54-23:06	11C, clear, dry, light winds
08/08/22	Dusk activity	20:24-22:12	23C, clear, dry, light winds,
24/10/22	Dusk activity	17:29-19:38	14C, mostly cloudy, dry, light winds

Table 1: Weather conditions for 2022 transect surveys

Results

Activity results

The application site offers potential foraging and commuting opportunities for bats, and as such seasonal activity surveys were undertaken between May and October 2022. These involved bat activity surveys and static monitoring surveys, in line with the relevant methodologies and timings outlined in the aforementioned sections above.

The results of these surveys are outlined below, as well as being summarised in monthly tables. It is important to note that the detectors record only the number of passes by each species of bat, therefore even a high number of passes could relate to a single or small number of bats foraging for a sustained period.

May 2022

Results for the May dusk transect survey are summarised in **Table 2** below. During the survey, bat activity was concentrated around the site's peripheral tree lines. Registrations were mainly limited to Common Pipistrelle *Pipistrellus pipistrellus* and Soprano Pipistrelle *Pipistrellus pygmaeus* with one pass by a Noctule *Nyctalus noctula* recorded.

	Number of Registrations	
Species	Registrations per	First Registration After Sunset (20:36)
Common Pipistrelle	10	21 minutes
Soprano Pipistrelle	12	47 minutes
Noctule	1	139 minutes
Total	**23**	

Table 2: Results for May transect survey

Following the transect surveys, two static detectors (SM4-S and SM4-T) were deployed for a period of eight consecutive nights. The results from each individual static detector are summarised in the **Table 3** below with average nightly registrations per static detectors displayed in brackets**.** Activity was generally higher in the west of the site, however total registrations were still relatively low average around 200 per night.

Static detectors SM4-S was located in a patch of scrub in the centre of the western section of the application site. Static detector SM4-T was located in a small tree to the east of the application site.

	Number of Registrations (average nightly totals)		
Species	**SM4-S**	**SM4-T**	**Total**
Common Pipistrelle	1127 (40.9)	109 (13.6)	**1236 (154.5)**
Soprano Pipistrelle	434 (54.3)	41 (5.1)	**475 (59.4)**
Noctule	13 (1.6)	29 (3.6)	**42 (5.3)**
Brown Long-eared	10 (1.3)	4 (0.5)	**14 (1.8)**
Myotis species	2 (0.3)	8 (1)	**10 (1.3)**
Serotine	4 (0.5)	2 (0.3)	**6 (0.8)**
Total	**1590 (198.8)**	**193 (24.1)**	**1783 (222.9)**
Number of Nights	**8**		

Table 3: May static detector results

August 2022

Results for the August dusk transect survey are summarised in **Table 4** below. During the transect survey bat activity was mostly concentrated around the scrub and treelines in the western section of the site with minor activity occurring to the east. Only low numbers of common and widespread species were recorded.

	Number of Registrations	
Species	Ipad 28	First Registration After Sunset (20:36)
Common Pipistrelle	35	6 minutes
Soprano Pipistrelle	8	18 minutes
Total	**43**	

Table 4: Results for August transect survey

Following the transect surveys, two static detectors (SM4-FM and SM4-Q) were deployed for a period of eleven consecutive nights. The results from each individual static detector are summarised in the **Table 5** below with average nightly registrations per static detectors displayed in brackets**.** As with the previous survey, activity levels were relatively low with an average nightly total of registrations for both detectors between 150 and 200. Barbastelle was recorded for the first time, although with only 13 total registrations between the two detectors.

Static detector SM4-Q was located in an area of scrub on the eastern boundary. Static detector SM4-FM was located in a small tree in the western section of the application site.

	Number of Registrations (average nightly totals)		
Species	**SM4-4FM**	**SM4-Q**	**Total**
Common Pipistrelle	1231 (111.9)	1320 (120)	**2551 (231.9)**
Soprano Pipistrelle	768 (69.8)	339 (30.8)	**1107 (100.6)**
Brown Long-eared	63 (5.7)	7 (0.6)	**70 (6.4)**
Noctule	23 (2.1)	12 (1.1)	**35 (3.2)**
Myotis species	11 (1)	3 (0.3)	**14 (1.3)**
Barbastelle	10 (0.9)	3 (0.3)	**13 (1.2)**
Serotine	6 (0.5)	0	**6 (0.5)**
Total	**2112 (192)**	**1684 (153.1)**	**3796 (345.1)**
Number of Nights	**11**		

Table 5: August static detector results

October 2022

Results for the October dusk transect survey are summarised in **Table 6** below. During the survey, bat activity was concentrated along the application site's peripheral treelines. Registrations were limited to Common Pipistrelle *Pipistrellus pipistrellus* and Soprano Pipistrelle *Pipistrellus pygmaeus*.

	Number of Registrations	
Species	Ipad 2	First Registration After Sunset (17:46)
Common Pipistrelle	36	23 minutes
Soprano Pipistrelle	18	38 minutes
Total	**54**	

Table 6: Results for October transect survey

Following the activity surveys, two static detectors (SM4-H and SM4-MA) were deployed for a period of seven consecutive nights. The results from each individual static detector are summarised in **Table 7** below with average nightly registrations per static detectors displayed in brackets**.** Species recorded were mainly limited to Common Pipistrelle and Soprano Pipistrelle, with minor occurrence of infrequent registrations for a small number of species. Activity levels were the lowest recorded throughout the season with an average of around 100 registrations per night for the western detector, and only 15 for the detector to the east.

Static detector SM4-A was located in an area of scrub on the eastern boundary. Static detector SM4-H was located in a small tree in the western section of the application site.

	Number of Registrations		
Species	**SM4-H**	**SM4-MA**	**Total**
Soprano Pipistrelle	528 (75.4)	23 (3.3)	**551 (78.7)**
Common Pipistrelle	129 (18.4)	72 (10.3)	**201 (28.7)**
Brown Long-eared	26 (3.7)	4 (0.6)	**30 (4.3)**
Noctule	11 (1.6)	0	**11 (1.6)**
Myotis species	4 (0.6)	2 (0.3)	**6 (0.9)**
Total	**698 (99.7)**	**101 (14.4)**	**799 (114.1)**
Number of Nights	**7**		

Table 7: Results for October dusk transect survey

Summary

The majority of bat activity was recorded within the western parcel of the site and surrounding tree lines and scrub, with further hotspots located along the eastern boundary of the application site in particular around the adjacent scrub and treelines.

The species assemblage recorded during the activity surveys revealed that the site is in use by a low number of mostly common and widespread species. The most commonly recorded species during the bat activity transect surveys was the Common Pipistrelle with a peak count of 36 registrations during the October survey. The second most recorded bat species was Soprano Pipistrelle with a peak count of 18 registrations during the same survey.

The results of the static monitoring surveys mirror those results of the transects surveys, indicating that the site is predominantly utilised by mostly common and widespread species, specifically Common and Soprano Pipistrelle. Other bat species recorded in markedly lower abundance include: Brown Long-eared Bat *Plecotus auritus,* Serotine, Myotis species, Noctule, and, Barbastrelle *Barbastella barbastellus*.

APPENDIX 3

Headline Results of Biodiversity Net Gain Metric
Baseline Calculations

Headline Results

Return to results menu

On-site baseline	*Habitat units*	6.93
	Hedgerow units	0.95
	River units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	1.57
	Hedgerow units	1.23
	River units	0.00
On-site net % change (Including habitat retention, creation & enhancement)	*Habitat units*	-77.40%
	Hedgerow units	29.76%
	River units	0.00%
Off-site baseline	*Habitat units*	4.86
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	16.26
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	6.03
	Hedgerow units	0.28
	River units	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	87.07%
	Hedgerow units	29.76%
	River units	0.00%
Trading rules Satisfied?		No - Check Trading Summary ▲

APPENDIX 4

Offsite Habitat Creation and Monitoring Plan

Luxus Homes

ECOLOGYSOLUTIONS

Part of the ES Group

Land at Dowsetts Farm,
Ware

(Associated with
Land at Pines Hill,
Stansted Mountfitchet)

Off-site Habitat Creation And Management Plan (OHCMP)

June 2023
10486.OHCMP.vf4

ecology solutions for planners and developers

PROTECTED SPECIES

This report contains sensitive information
relating to protected species.
The information contained herein
should not be disseminated without the
prior consent of Ecology Solutions.

CONTENTS

PLANS

APPENDICES

1. INTRODUCTION

Background & Proposals

1.1.1 Ecology Solutions Ltd were instructed by Luxus Homes in February 2023 to assist with the Off-site Habitat Creation and Management Plan (OHCMP) for the site known as 'Land at Pines Hill, Stansted Mountfitchet', hereafter referred to as the 'application site'. The application site is located on the western side of Stansted Mountfitchet, Essex.

1.1.2 The proposals for the application site will see the loss of habitat in order to facilitate the development of new housing, associated infrastructure and landscaping.

1.1.3 In order to mitigate these losses of habitats and to ensure a measurable Biodiversity Net Gain (BNG) can be delivered, approximately 2.42ha of off-site land has been identified which would be suitable for the creation of high-value ecological habitats. This off-site land is hereafter referred to as the 'mitigation site'.

1.1.4 The mitigation site consists entirely of agricultural grassland, and is bordered by arable field margins and further existing arable land. Beyond these are hedgerows and streams. The mitigation site is located to the north of Ware, Hertfordshire, with a location plan included at Appendix 1.

1.1.5 Importantly for the purposes of the BNG offsetting exercise it should be noted that both the application site and mitigation site lie within the same National Character (NCA), NCA 86 - South Suffolk and North Essex Clayland. As set out in the BNG User Guidance[1], off-site habitat provision can be undertaken at a distance from the development site. In order to encourage offsetting within a reasonable radius of the 'impact site', however, off-site habitat creation is penalised if it is deemed to be too far from this location. The 'spatial risk multipliers' are applied based on local planning authority area, National Character Area or Marine Plan Area for intertidal habitats. Table 5-7 of this guidance states that for "compensation inside LPA or NCA of impact site" the multiplier is 1 (ie. unpenalised).

1.1.6 The purpose of this OHCMP is to outline high-level habitat creation principles and long-term management that would need to be undertaken at the off-site mitigation land in order to ensure that measurable net gains to biodiversity can be delivered, when considered in combination with the impacts at the main development site.

[1] STEPHEN PANKS A, NICK WHITE A, AMANDA NEWSOME A, MUNGO NASH A, JACK POTTER A, MATT HEYDON A, EDWARD MAYHEW A, MARIA ALVAREZ A, TRUDY RUSSELL A, CLARE CASHON A, FINN GODDARD A, SARAH J. SCOTT B, MAX HEAVER C, SARAH H. SCOTT C, JO TREWEEK D, BILL BUTCHER E AND DAVE STONE A 2022. Biodiversity metric 3.1: Auditing and accounting for biodiversity – User Guide. Natural England

Structure

1.1.7 The contents of this document have been written with reference to published guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM) and with regards to guidance produced by Natural England and Defra in regard to BNG.

1.1.8 The OHCMP is set out as follows:

- Mitigation site baseline;
- Management objectives;
- Monitoring and management responsibilities;
- Biodiversity Net Gain Assessment;
- Results; and,
- Work Programme.

2. MITIGATION SITE BASELINE

2.1. The mitigation site was subject to baseline ecological survey work during February 2023. The site was surveyed based around a combination of extended Phase 1 survey methodology and UK Habitat Classification (UKHab) methodology as recommended by Natural England and Defra, whereby the habitat types present are identified and mapped together with an assessment of the general species composition of each habitat recorded at the time. This technique provides an inventory of the basic habitat types present.

2.2. Although outside the optimal botanical survey season, given the nature of the site it is considered that reliable habitat assessment was still possible.

Results

2.3. The mitigation site measures approximately 2.42 ha and consists of the southern part of a large agricultural field. The mitigation site is bordered to the north by further existing arable land, while to the east, south and west lie arable field margins beyond which are tree lines and a stream to the south.

2.4. In order to allow for BNG analysis, all onsite habitats have been assigned a 'best fit' UkHab category.

2.5. The following main habitat / vegetation type was identified during the survey work:

- Non-cereal Crop

2.6. The location and boundary of this habitat is shown on Plan ECO2. A full description is provided below.

Non-cereal Crop

2.7. All land within the mitigation site currently comprises agricultural grassland, otherwise classified as non-cereal crop. This is currently dominated by dense Perennial Rye-grass *Lolium perenne* cover.

2.8. Physically, the site is open and slopes gently to the south.

2.9. The sward itself is uniform in length and relatively featureless. Vegetation coverage is homogenous and there are no significant areas of bare ground or any other 'micro-habitats'.

3. MANAGEMENT OBJECTIVES

3.1. The aims and objectives of this OHCMP are to outline the methodology of habitat creation and long-term management that will create new ecological opportunities within the mitigation site, bolstering it well above that of its current level.

3.2. The anticipated timescales of delivery and management responsibilities are also outlined within this document.

3.3. The following objectives have been identified:

- Objective 1: Maintain and enhance newly created habitats within the mitigation site; and,

- Objective 2: Increase biodiversity by maximising opportunities for flora and fauna.

3.4. Appropriate management options for achieving these objectives are set out below.

Objective 1: Maintain and Enhance Newly Created Habitats Within the Site

Overview

3.5. The purpose of the habitat proposals will be to create large and continuous areas of high biodiversity value habitats within the identified mitigation site.

3.6. Owing to the location and topography of the mitigation site the creation of a species-rich meadow grassland is anticipated to be the most suitable option for the site as well as being complementary with the surrounding areas.

3.7. Details of both the initial creation programme as well as longer-term management for the mitigation site are outlined below. Whilst it is anticipated that the measures set out within this document will be the primary method of delivery, it is noted that there remains flexibility on the exact and final specifics of any off-site mitigation plan. Notwithstanding this, based on the information held to date, it is considered that all the measures set out within this document remain both appropriate for the site, as well as entirely deliverable.

Species-rich wildflower grassland overview

3.8. The entirety of the site will be used to create a large and continuous area of species-rich meadow grassland (approximately 2.42ha).

3.9. These habitats will include a diverse and native species mix which will be of benefit to a range of faunal species, particularly foraging birds and invertebrates, in addition to being of intrinsic ecological value in its own right.

3.10. The distinction of grassland type has been identified based on the suitability of existing conditions on site and seeks to create a grassland mosaic which is structurally, botanically and genetically diverse, with local colonisation also to be encouraged and aided.

3.11. In order to assist with the creation of the target grassland, the mitigation land will first be prepared for seeding through a nutrient stripping exercise.

3.12. Furthermore, to create a species-rich seed mix suited to the local area, the primary creation exercise will look to utilise a locally sourced seed mix, or an appropriate species-rich seed mix sourced from a seed merchant such as *Emorsgate Standard General Purpose Meadow Mixture EM2 / Emorsgate Special Purpose Meadow Mixture EM3*. This mix should include Yellow Rattle *Rhinanthus minor*, a hemi-parasite of grass species, to ensure that a proper grassland meadow can establish.

3.13. Following the establishment of the grassland, longer-term management will seek to reduce soil fertility over time to encourage a botanically diverse and balanced sward.

3.14. The initial creation and longer-term management prescriptions envisaged for the site are outlined in more detail below.

Nutrient stripping (Year 0)

3.15. Prior to the sowing of the new grassland habitat, it is considered that the mitigation site would benefit from a nutrient stripping exercise in order to create a more optimal growing medium for the target grassland.

Option 1

3.16. Due to the nature of the current arable land and the dominance of undesirable agricultural grass species, at this stage it is considered that nutrient stripping would be best achieved through a total removal of the current vegetation through heavy cuts following by deep ploughing (inversion ploughing). This would invert the typically enriched arable topsoil with the nutrient poor subsoils.

3.17. This process would help create a bare and nutrient poor growing medium, suitable for the establishment of a species-rich grassland.

3.18. In the event that there is any time lapse between the deep plough exercise and grassland seeding the fields should be kept free of any vegetation growth (arable weeds etc.) prior to sowing. This can be accomplished through repeated shallow ploughing and / or spraying, through the sensitive use of glyphosate-based chemicals.

Option 2

3.19. At this stage and given the history of the site, Option 1 is considered the most appropriate and effective methodology in terms of ground preparation.

3.20. Notwithstanding this, in the event further assessment work identifies the need for an alternative and more sensitive strategy, the site could instead be prepared through a heavy scarification exercise, following repeated heavy hay cuts (with all arisings removed from site). This would also reduce the nutrient load of the sward as well as create areas of bare ground suitable for sowing.

Creation / Sowing (Year 0/1)

3.21. Following suitable site preparation (outlined above), the field would be sown with the identified target seed-mix.

3.22. The seed mix mixture should be sown at an appropriate density based on the mix chosen (for most mixes a rate of 4g/m^2 will produce optimal results).

3.23. All sown seeds should be sown during the Autumn ideally, but early-Spring is also acceptable. All sown seeds should be sown on bare and lightly-disturbed ground. The seeds should be rolled following sowing to ensure good contact with the soil.

Establishment (Years 1/2)

3.24. Management of the grassland swards in the first years will involve regular maintenance in order to ensure that seedling development is successful, and that the growth of competitive weed species is controlled. Where required, weeding will be undertaken by hand where possible, however the use of appropriate herbicides to weed wipe or spot treat injurious weeds, invasive non-

native species, nettles or bracken may be required in certain instances. Cuttings should be removed immediately from site. For the first few years, it may be necessary to re-seed areas of wildflower grassland in order to ensure that a sufficient, self-sustainable seed-bank can develop.

3.25. Following sowing, the swards will be kept short (for approx. 6 months) such that light can help germination. Swards should be cut three times in the first two years; once each in March, May and September.

Medium to long term management (Year 3+)

3.26. Once the perennial meadow has established, it will need to be subject to traditional hay meadow management. Assuming that this will be purely through mechanical means (i.e. cutting using a mower), it should be subject to (up to) three cuts per year.

3.27. The first cut should be undertaken during early-Spring (March) to a height of approximately 70mm, and arisings should be removed from site. The grassland will then need to be left alone to grow during the main flowering season between March – August.

3.28. The second cut should involve a heavy main summer 'hay' cut, undertaken during August, after flowering. Grassland should be cut to a height of 70mm and all arisings should be left on site for a period of between 5 – 7 days (to allow seeds to drop). After this point, all arisings should be collected and removed.

3.29. If required, a third cut can then be considered during winter (November – January) to supress any undesirable re-growth and to mimic natural grazing.

3.30. To provide year round structural diversity and sheltering opportunities, field margins should be left-uncut / cut on a two-year cycle.

Grassland Conclusion

3.31. The implementation of new seeding and an appropriate management regime within the grassland, as set out above, would greatly increase the ecological interest of these habitats, well beyond that of the current baseline value.

Objective 2: Increase Biodiversity by Maximising Opportunities for Flora and Fauna.

3.32. The targeted habitat creation and the introduction of a management regime to be provided will ensure that a botanically diverse grassland will remain present within the site post-completion. This will be of benefit to several species / groups.

3.33. Primarily, this will benefit bird, bat and invertebrate species through enhanced foraging / resting opportunities via diversification of the grassland, which will not only be a resource in its own right, but also increase prey availability, primarily for insectivores.

3.34. Additionally, through the safeguarding of the site (for a period of 30-years minimum), it will act as a 'wildlife corridor', connecting other high value habitats in the wider area, thereby increasing dispersal opportunities.

3.35. Whilst the site is currently considered sub-optimal to other species groups, such as amphibians, Badgers, reptiles etc., should they be present in the wider area, it is expected that they will also benefit from the proposed habitat management measures for the site.

Management Considerations

3.36. All initial creation and longer-term management proposed for the site will be mindful of protected species constraints and relevant wildlife legislation. If required, this will be guided by the results of future assessment work. In any event, considering the proposals strictly relate to beneficial wildlife habitat creation, there is considered to be amble scope to optimise final design to ensure all works remain legally compliant.

4. MONITORING AND MANAGEMENT RESPONSIBILITIES

Personnel Responsibility for Implementation of the Plan

4.1. Responsibility for implementation of this OHCMP, as well as for its continuation throughout a 30-year minimum period, will be placed with the land owner who will ensure that management undertaken at the site complies with the prescriptions as set out in this document (or future update documents) in order to ensure proper establishment and long-term condition.

4.2. Where required, Ecology Solutions or another suitably qualified ecologist, will be able to advise on any specific questions or queries in regard to any issues concerning ecology or nature conservation which may arise.

Monitoring and Remedial / Contingency Measures triggered by Monitoring

4.3. In order to assess the effectiveness of habitat creation, establishment and the 'conditions' of habitats post-development, specific ecological monitoring surveys are proposed. It is proposed that these habitat surveys are undertaken in the following years (post-creation): 1, 3, 5, 10, 15, 25 and, 30.

4.4. Habitat monitoring will be based around a combination of extended Phase 1 survey methodology and UK Habitat Classification (UKHab) methodology, as recommended by Natural England and Defra, to allow for the condition assessment of respective habitats.

4.5. Based on the results of the programmed survey works, updated management reports outlining any optimisation (if required) to on-going management can be produced. These reports would be issued to the land owner (ie. to provide remedial advice to ensure habitat targets are met), and to the relevant planning authority at agreed pre-determined intervals, the requirements of which will be agreed in a suitably worded legal obligation.

4.6. Outside of the formal review process outlined above, it is considered that any ad hoc or additional monitoring and remedial works be undertaken on an 'as required' basis and do not need to be undertaken by a qualified ecologist and could instead be undertaken by the Management Body employed to undertake the duties prescribed elsewhere in the OHCMP. These works will primarily highlight any immediate site-specific problems that may need addressing (such as disease or damage to flora or the presence of invasive species).

5. BIODIVERSITY NET GAIN ASSESSMENT

5.1. Based on the recorded baseline of the site, as well as the proposed habitat creation and management measures, a full Biodiversity Net Gain (BNG) assessment using the Defra BNG Metric (Version 3.1) has been applied to the mitigation site.

5.2. Any generated units will then be assigned to the main development site, in order to mitigate any residual impacts of the proposed development and additionally ensure that an overall BNG can be provided when considering both sites.

Methodology

5.3. The methodology for undertaking the BNG assessment is based on the guidance provided within the Technical Supplement and User Guide published by Defra, in addition to the application of professional judgement.

5.4. The Metric works by assigning credits to the habitats located within the Development Site (both baseline and post-development). These credits are then used as a proxy to determine the ecological value of the site.

5.5. The respective credit score of each habitat is gauged by calculating key parameters that influence that habitats reported value. These are as follow:

- Habitat type / distinctiveness;
- Habitat area;
- Habitat condition; and,
- Strategic significance.

5.6. For either created or enhanced habitats, the additional main parameters are applied;

- Habitat target type / distinctiveness;
- Habitat target condition;
- Time till target condition; and,
- Difficulty of creation / enhancement.

5.7. The value for hedgerow / treeline habitats and ditch / watercourse habitats are calculated separately, however follow a similar working methodology as those described for area-based habitats above

5.8. The recorded baseline and development proposals for the site have been assessed against the above identified parameters and most recent Condition Assessment Criteria (CAC) provided by Defra.

5.9. In order to account for the use of UK Habitat Classification system (UKHab) within the Metric, a ‘best fit’ approach has been taken in order to ensure the most representative Phase-1 habitat type is being utilised for both the baseline and post-development habitats within the Metric. This has been determined using the technical supplements provided within the Metric in addition to guidance published by the UK Habitat Classification Working Group.

6. Results

6.1. In line with the above methodology, a BNG assessment using the most recent version of the Defra Metric (v3.1) has been undertaken. The baseline of the mitigation site is described in detail in Section 2 and shown graphically at Plan ECO2, the proposed habitat creation / management measures are described in Section 3, and shown graphically at Plan ECO3.

Strategic / Spatial Significance

6.2. The mitigation site has not been identified as being located within areas of strategic or spatial significance. It does lie within land designated as “Rural Area Beyond the Green Belt” within the East Herts District Plan, however this is primarily of relevance to small-scale development and minimising the expansion of village footprints within the area, and is not considered to denote the ecological significance of the site. Whilst not specifically identified as being high spatial significance, the enhancement proposed for the site will perform functions at the landscape scale including facilitating connectivity and improving the seedbank, thereby aiding colonisation of nearby areas with species of benefit to local wildlife.

Area Based Habitats

			Post-development impacts (ha)			
Baseline Habitat	**Baseline Habitat Condition**	**Baseline area (ha)**	**Enhanced**	**Lost**	**Retained**	**Summary Baseline Condition Notes (see Section 2 for detailed notes)**
Non-cereal crops	*Condition assessment N/A*	**2.4281**	0	2.4281	0	Seeded agricultural / temporary grassland. Very low species diversity and dominated by few grass species (>95% Perennial Rye-grass). Uniform sward, regularly managed / cut. Absence of micro-habitats. Condition assessment is not considered relevant for this habitat type, effectively a condition of low is applied by default.

Table 1. Baseline (area) habitats.

Habitat Type	**Area (Ha)**	**Target Condition**	**Target Condition Notes (see Section 3 for detailed notes)**
Other Neutral Grassland	**2.4281**	*Moderate*	Created species-rich grassland, utilising suitable seed mix / source of local origin, where possible. Site to be prepared prior to sowing with appropriate nutrient stripping measures. Initial management will ensure proper establishment, encouraging both botanical and structural diversity. Long-term management to include traditional hay meadow management through ecologically timed cutting regime. Monitoring of site will be undertaken to ensure target habitat type and condition are met, with any optimisation to management undertaken based on site condition and results. With these measures it is considered that the grassland will support a range of wildflower and herb species throughout its sward, that bracken, invasive species and physical damage will be absent, and that an appropriate proportion of bare ground can be maintained (1% - 5%). It is possible that the sward structure may not always achieve the required diversity and therefore on a precautionary basis an overall condition of moderate has been selected.

Table 2. Created (area) habitats.

Results Summary (mitigation site only)

6.3. The Biodiversity Metric returns the following headlines results for the mitigation site:

BNG Baseline and Post-development Scenarios		
Baseline	**Area**	**Units**
Non-cereal crops	2.4281	4.86
Post-development results	**Area**	**Units**
Other Neutral Grassland	2.4281	16.26
Unit change	+11.40	

Table 3. BNG Results (mitigation site)

6.4. The proposals for the Dowsetts Farm mitigation site will deliver a net gain of 11.40 habitat (area) units.

Relationship with Main Development Site

6.5. These 11.40 units will be used to offset the BNG shortfall associated with the application site (Land at Pines Hill, Stansted Mountfitchet).

6.6. In fact, this number of units significantly exceeds the on-site change and so will deliver an uplift in units far in excess of 10% and ensure that significant net gains to biodiversity can be delivered as part of the development proposals.

7. WORK PROGRAMME (MITIGATION LAND ONLY)

Objective	Receptor	Management Prescription and Commencement	Timing, Frequency and Duration of Works	Extent of Works / Objective
MAINTAIN AND ENHANCE RETAINED AND CREATED HABITATS	**Species-rich Wildflower Grassland**	Ground preparation/Creation/ Establishment Years 0 - 2	Ground preparation step-wise cutting regime and inversion ploughing / or managing and scarification of grassland followed by sowing of suitable species-rich seed mix, during Autumn / Spring. First cut of grassland to take place mid-Summer followed by second cut in mid-Autumn.	To allow successful sward establishment
		Long-term management Year 3+	Once meadow is established, grassland will be subject to ecological management. Cuts will be undertaken during Spring (early), Summer ‘hay cut’ and Autumn/Winter (if required)	To achieve a varied sward.

PLANS

PLAN ECO1

Mitigation Site Boundary and Access

KEY:

SITE BOUNDARY

ACCESS ROUTE

N

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10486: PINES HILL
STANSTED MOUNTFITCHET

PLAN ECO1:
MITIGATION SITE BOUNDARY
& ACCESS

Rev: B

June 2023

PLAN ECO2

Site Baseline Habitats

KEY:

SITE BOUNDARY

NON-CEREAL CROP

N

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STANSTED MOUNTFITCHET

PLAN ECO2:
SITE BASELINE HABITATS

Rev: B

June 2023

PLAN ECO3

Proposed Habitat Creation

KEY:

- SITE BOUNDARY
- OTHER NEUTRAL GRASSLAND

N

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10486: PINES HILL
STANSTED MOUNTFITCHET

PLAN ECO3:
PROPOSED HABITAT
CREATION

Rev: B

June 2023

APPENDICES

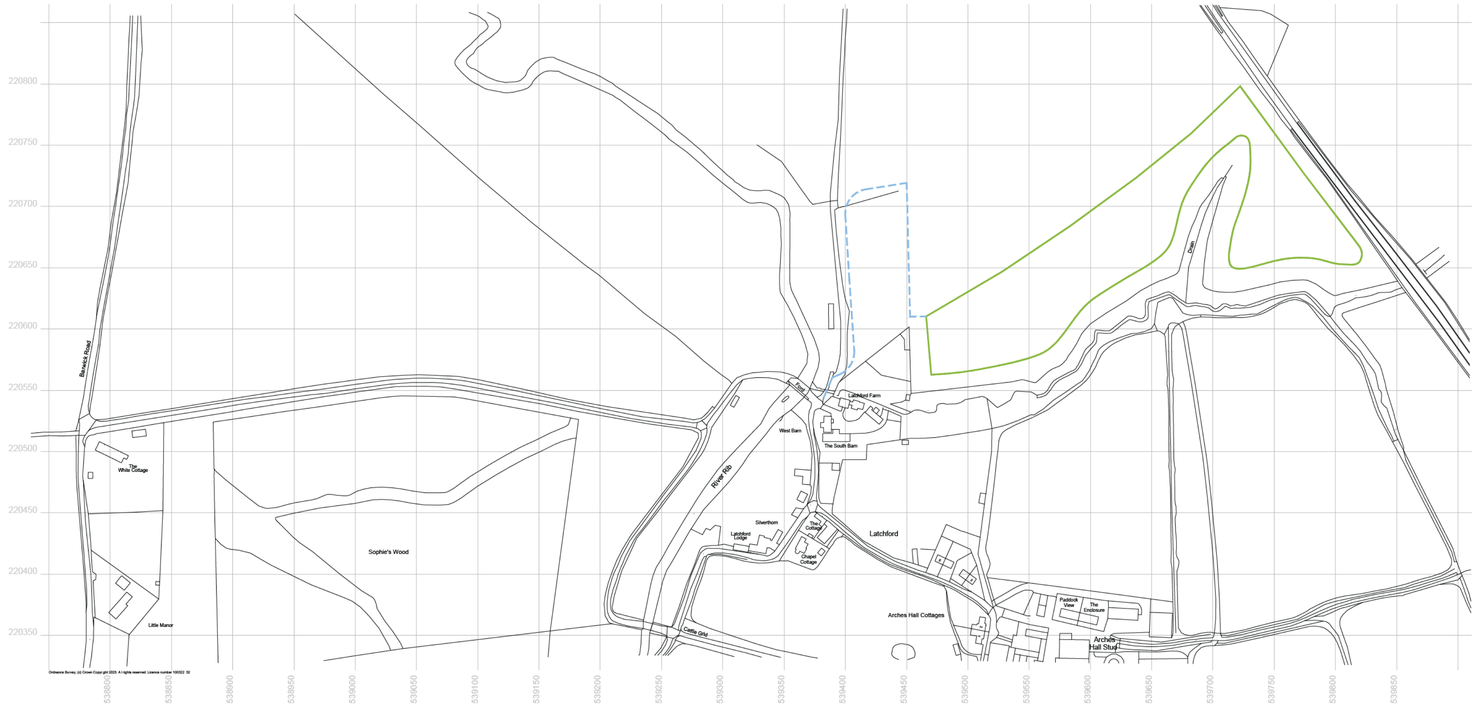
APPENDIX 1

Off-site Offsetting Land Location Plan

Scale:

0 20 60 100 240m

N



Land adjacent to Latchfield Farm, Morley Lane, Standon,
Hertfordshire, SG11 1QZ
TL 39648 20685

Key

Proposed location of off-site land for BNG provision

Proposed access route

Revision Note & Date

Rev	Date	Note	Amended	Checked
P1	06 04 23	Amended in line with comments access route shown	SH	JR

ON ARCHITECTURE

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Project Title
Land at Pines Hill
Stansted Mountfitchet

Clients Details
LUXUS Homes

Drawing Title
Site Location Plan (Off-Site BNG Land)

BIM Number
-

Scale	Date	Drawn	Checked
1:2500@A1	Feb 2023	SH	JR

Drawing Status
Planning

Project No.	Drawing No.	Status	Revision
002.21	002	-	P1

U:\LONDON PROJECT FOLDER\2021 PROJECT FOLDER\002.21 Stoney Common Road, Stansted Mountfitchet\WIP\M2\002.21-002 Site Location Plan (Off-Site BNG Land).dwg

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APPENDIX 5

Suitable Examples of Bat Boxes

Bat Boxes

Schwegler bat boxes are made from 'woodcrete' and have the highest rates of occupation of all types of box.
The 75% wood sawdust, clay and concrete mixture is ideal, being durable whilst allowing natural respiration and temperature stability. These boxes are rot and predator proof and extremely long lasting.
Boxes can be hung from a branch near the tree trunk or fixed using 'tree-friendly' aluminum nails.

1FF Bat Box

The rectangular shape makes the 1FF suitable for attaching to the sides of buildings or in sites such as bridges, though it may also be used on trees. It has a narrow crevice-like internal space to attract Pipistrelle and Noctule bats.

Woodcrete (75% wood sawdust, concrete and clay mixture)
Width: 27cm
Height: 43cm
Weight: 8.3kg

2FN Bat Box

A large bat box featuring a wide access slit at the base as well as an access hole on the underside. Particularly successful in attracting Noctule and Bechstein's bats.

Woodcrete construction, 16cm diameter, height 36cm.

2F Bat Box

A standard bat box, attractive to the smaller British bat species. Simple design with a narrow entrance slit on the front.

Woodcrete construction, 16cm diameter, height 33cm.

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Images and text adapted from manufacturer's website: *https://www.schwegler natur.de/fledermaus/?lang=en*

APPENDIX 6

Suitable Examples of Bird Boxes

Bird Boxes

Schwegler bird boxes have the highest rates of occupation of all types of box.
They are designed to mimic natural nest sites and provide a stable environment with the right thermal properties for chick rearing and winter roosting. Boxes are made from 'Woodcrete'. This 75% wood sawdust, clay and concrete mixture is breathable and very durable making these bird boxes extremely long lasting.

1B Bird Box

This is the most popular box for garden birds and appeals to a wide range of species. The box can be hung from a branch or nailed to the trunk of a tree with a 'tree-friendly' aluminium nail.

Available in four colours and three entrance hole sizes. 26mm for small tits, 32mm standard size and oval, for redstarts.

2H Bird Box

This box is attractive to spotted flycatcher and black redstarts.

Best sited on the walls of buildings with the entrance on one side.

2M Bird Box

A free-hanging box offering greater protection from predators.
Supplied complete with hanger which loops and fastens around a branch.

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Images and text adapted from manufacturer's website: *https://www.schwegler-natur.de/fledermaus/?lang=en*

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