MKA
ECOLOGY

Preliminary Ecological Appraisal

Land off Limekiln Road

Site	*Land of Limekiln Road, Cherry Hinton, Cambridge, CB1 8NQ*
Project number	*122221*
Client name / Address	[redacted]

Version number	**Date of issue**	**Revisions**
1.0	*10 December 2021*	*Original*

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Declaration of compliance

This Preliminary Ecological Appraisal has been undertaken in accordance with British Standard 42020:2013 "Biodiversity, Code of practice for planning and development". The information which we have provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

MKA Ecology Ltd is a CIEEM Registered Practice. This means that MKA Ecology Ltd are formally recognised for high professional standards, working at the forefront of our profession.

Validity of data

Unless stated otherwise the information provided within this report is valid for a maximum period of 24 months from the date of survey. If works at the site have not progressed by this time an updated site visit may be required in order to determine any changes in site composition and ecological constraints.

CONTENTS

1. EXECUTIVE SUMMARY

In December 2021 MKA Ecology Limited was commissioned to undertake a Preliminary Ecological Appraisal of Land off Limekiln Road. The appraisal included a habitat survey, protected species scoping survey and desktop study of protected and notable sites and species in the area. A site visit was undertaken on 07 December 2021.

The Site currently consists of modified grassland bordered by dense bramble dominated scrub and mature treelines. The proposed development includes the creation of fourteen residential units and an access track leading onto Limekiln Road. The client wishes to submit the Site for consideration within the Greater Cambridge Partnership Local Plan.

Within the Local Plan review the Site has been highlighted as red for Biodiversity and Geodiversity by the Local Planning Authority due to the close proximity of Cherry Hinton Chalk Pit Special Site of Scientific Interest and Limekiln Close and West Pit and East Pit Local Nature Reserve. The Local Planning Authority states that the additional recreational pressure associated with the development would have a significant detrimental effect on these protected areas and that the development will result in the loss of important habitats e.g. Habitats of Principal Importance.

The following ecological constraints were identified at the Site with recommendations made as follows;

- **Offsite habitats**: The development is likely to result in increased recreational pressure on adjacent protected areas. It is recommended that areas of natural green space are incorporated within the new development to compensate for these pressures. Due to the small size of the Site off-site compensation may need to be explored such as the creation of a park or similar green space. This may also include improving the Sites connectivity to other areas of greenspace or financial contributions to aid in managing increased visitor pressures on the adjacent sites.
- **Onsite habitats**: The mature trees have been highlighted as important ecological features within the Site, these should be retained within the development plans. No habitats of principal importance were identified during the survey.
- **Plants**: Due to the Sites location and its history of chalk extraction there is a low likelihood that the Site may support protected or notable plant species. Due to the sub-optimal survey conditions, it is recommended that a full botanical survey is completed to establish the presence or absence of these species.
- **Reptiles:** Suitable habitat for reptiles was identified within the tussocky grassland. It is recommended that reptile surveys are undertaken to establish the presence or likely absence of reptile species on site (March to September with the optimal months of April, May and September).

- **Bats**: Multiple mature trees are present within the Site that may be used by roosting bats. It is recommended that these are retained within the new development. A ground level tree assessment is recommended to assess the potential impacts of these trees being isolated from green corridors within the new development.
- **Birds**: Suitable breeding bird habitat is present on site, including the mature trees and scrub but the site is very unlikely to support a significant bird assemblage in isolation. Peregrine are known to regularly breed in close proximity and a breeding survey of the site and neighbouring habitat is recommended to ascertain any potential impacts with this species. Standard measures to ensure that site clearance does not take place between March and August are also required to ensure that bird nests are not disturbed in the breeding season.
- **Badger**: No badger setts were identified onsite. It is likely that badgers use the Site for foraging, therefore, it is recommended that a Construction Ecological Management Plan is produced outlining best practice guidelines for preventing injury to mammals during the construction phase.
- **Hedgehogs**: Suitable hedgehog habitat is present on site within the scrub and grassland. It is recommended that provisions for this species are made post-development, including hedgehog highways and domes.

Opportunities exist to enhance the biodiversity on the Site post-development. These include the enhancement of existing treelines and the creation of areas of species rich calcareous grassland. Provision of bird and bat boxes and hedgehog domes are also recommended. The creation of bare chalk banks with neighbouring nectar and pollen resources for invertebrates will also aid in enhancing the Site for a range of species. Simple enhancements to increase biodiversity are also recommended such as the inclusion of bee lawn and deadwood features. These enhancements are in line with Cambridge City Council's Adopted Local Plan (2018) and the National Planning Policy framework, which aims for "no net loss" of biodiversity in the development process.

2. INTRODUCTION

2.1. Aims and scope of Preliminary Ecological Appraisal

In December 2021 MKA Ecology Limited was commissioned to undertake a Preliminary Ecological Appraisal at land of Limekiln Road by [redacted] in order to support the promotion of the site within the Greater Cambridge Partnership Local Plan.

The aims of the Preliminary Ecological Appraisal were to:

- Undertake a desktop study to identify the extent of protected and notable species and habitats within close proximity of the Site;
- Prepare a habitat map for the Site;
- Identify evidence of protected species/species of conservation concern at the Site;
- Assess the potential impacts of the proposed development, using existing plans;
- Detail recommendations for further survey effort where required; and
- Detail recommendations for biodiversity enhancements.

2.2. Site description and context

The survey area is shown in Figure 1. Within this report this area is referred to as the Site or land of Limekiln Road. It is located to the east of Limekiln Road and is bordered by Cambridge Cherry Hinton Caravan and Motorhome club to the south and residential housing situated along Queen Edith's Way to the north. The Site falls under the authority of Cambridgeshire City Council and currently consists of modified grassland bordered by dense bramble dominated scrub and mature trees.

2.3. Proposed development

The proposed development includes the creation of fourteen residential units and an access track leading onto Limekiln Road. The client wishes to submit the Site for consideration within the Greater Cambridge Partnership Local Plan.

The Local Planning Authority has commented on the application:
"The site is directly opposite the Cherry Hinton Chalk Pits SSSI and residential development is likely to significantly impact on the recreational pressure on these Local Nature Reserves. All new housing developments will require assessment of increased visitor pressure on nearby SSSI. Grassland, hedges and wooded boundaries on site that are likely to have ecological value and may qualify as Habitats of

Principle Importance/be of high ecological value and support protected and/or notable species. The site is currently a natural green space which forms part of a key green corridor on the edge of the chalk slope, offering opportunities for enhanced management for biodiversity.

Development of the site would have a detrimental impact on designated sites, or those with a regional or local protection which cannot be reasonably mitigated or compensated as appropriate."

2.4. Legislation and planning policy

This Preliminary Ecological Appraisal has been undertaken with reference to relevant wildlife legislation and planning policy.

Relevant legislation considered within the scope of this document includes the following:

- The Wildlife and Countryside Act 1981 (as amended);
- The Conservation of Habitats and Species Regulations 2017 (as amended);
- Natural Environment and Rural Communities (NERC) Act 2006;
- The Countryside and Rights of Way (CRoW) Act 2000;
- Protection of Badgers Act 1992; and
- Wild Mammals (Protection) Act 1996.

Further information is provided in Appendix 1, including levels of protection granted to the species considered in Section 3.3.

In addition to obligations under wildlife legislation, the revised National Planning Policy Framework (NPPF) updated on 20th July 2021 requires planning decisions to contribute to conserving and enhancing the local environment. Further details are provided in Appendix 1.

Cambridge City Council has produced an adopted local plan (2018) which covers a number of policies relating to biodiversity and habitat conservation, including:

- *Policy 8:* Proposals where the primary objective is to conserve or enhance biodiversity will be supported.
- *Policy 31:* Development will be permitted provided that: any flat roof is a green or brown roof, providing that it is acceptable in terms of its context in the historic environment of Cambridge. Green or brown roofs should be widely used in large-scale new communities.
- *Policy 57:* High quality new buildings will be supported where it can be demonstrated that they: include an appropriate scale of features and facilities to maintain and increase levels of biodiversity in the built environment.

- *Policy 59:* Existing features including trees and natural habitats that positively contribute to the quality and character of an area are to be retained and protected. Species should be selected to enhance biodiversity through the use of native planting.
- *Policy 69:* Where development is permitted, proposals must include measures: a) to minimise harm; b) to secure achievable mitigation and/or compensatory measures; and c) where possible enhance the nature conservation value of the site affected through habitat creation, linkage and management.
- *Policy 70:* Development will be permitted which: 1) protects priority species and habitats; and 2) enhances habitats and populations of priority species. Proposals that harm or disturb populations and habitats should: minimise any ecological harm and secure achievable mitigation and/or compensatory measures, resulting in either no net loss or a net gain of priority habitat and local populations of priority species.
- *Appendix J: Biodiversity:* Biodiversity opportunities within the built fabric are particularly valuable in the city environment. Provision of artificial sites is required due to the lack of opportunities in modern building design.

Where relevant these are discussed in further detail in Section 5.

3. METHODOLOGIES

This Preliminary Ecological Appraisal has been undertaken in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal, 2nd edition (CIEEM, 2017).

3.1. Desktop study

A data search was conducted for the Site and the surrounding area within 2km. Data was retrieved from the sources listed in Table 1.

Table 1: Sources of data for desktop study

Organisation	Data collected	Date collected
Multi-agency Geographic Information for the Countryside (MAGIC) www.magic.gov.uk	Information on local, national and international statutory protected areas.	09/12/2021
Cambridgeshire and Peterborough Environmental Records Centre	Information on protected and notable sites and species within 2km of the Site (TL 48343 55928)	09/12/2021
Ordnance Survey maps and aerial photography	Information on habitats and connectivity between the Site and the surrounding landscape	09/12/2021
Plantlife Important Plant Areas Buglife Important Invertebrate Areas	Information on important plant and invertebrate areas within 2km of the Site (TL 48343 55928).	07/12/2021

Cambridgeshire City Council planning portal was also referred to in order to understand the scope of further development surrounding the Site.

These applications largely relate to the extension of existing houses located within Queen Edith's Way. Two applications of relevance are 16/1919/FUL and 17/0260/FUL which relates to the erection of three, four-bedroom houses and one, four-bedroom house within the adjacent plot of land located to the north-east of the site. These developments were in active construction at the time of the survey.

3.2. UK Habitat Classification

Habitats were surveyed using the standardised UK Habitat classification and mapping methodology (UK Habs) (Butcher et al, 2020). Data were recorded onto field maps and then transferred onto a Geographic Information System (GIS) following the UK Habs Colour Mapping Pallet for ArcGIS.

Dominant plant species were observed and recorded within each habitat type. The plant species nomenclature follows that of Stace (2019).

The DAFOR scale is used to describe the relative abundance of species. The scale is shown in Table 2. It is important to note that where a species is described as rare this description refers to its relative abundance within the Site and is not a description of its abundance within the wider landscape. Therefore, a species with a rare relative abundance within the Site may be common within the wider landscape.

Table 2: DAFOR scale

DAFOR code	Relative abundance
D	Dominant
A	Abundant
F	Frequent
O	Occasional
R	Rare

3.3. Protected and notable species scoping survey

As part of the Preliminary Ecological Appraisal, an assessment of the potential for the habitats on site to support protected or notable species was made. This assessment was based on the quality, extent and interconnectivity of suitable habitats, along with the results of the desktop study detailed in Section 3.1. This includes Species of Principal Importance as listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006), and Red and Amber listed Birds of Conservation Concern (BoCC) as per Stanbury *et al.*, 2021 (see Appendix 1).

Protected and notable species considered within the protected species scoping survey for land off Limekiln Road include the following:

- Plants and fungi: Cornflower *Centaurea cyanus*, Jersey Cudweek *Gnaphalium luteoalbum* and white helleborine *Cephalanthera damasonium.*
- Invertebrates: small blue *Cupido minimus*, green hairstreak *Callophyrys rubi* and Adonis' Ladybird *Hippodamia variegate*.
- Fish: European eel *Anguilla anguilla*, river lamprey *Lampetra fluviatilis*, brown trout *Salmo trutta subsp. fario*.
- Amphibians: Natterjack toad *Epidalea calamita*, great crested newt *Triturus cristatus* and common toad *Bufo bufo*.

- Reptiles: Adder *Vipera berus*, common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix natrix helvetica*.
- Birds: With special reference to species listed under Schedule 1 of The Wildlife and Countryside Act 1981 (as amended) and Species of Principal Importance.
- Mammals: Badger *Meles meles*, bats (all species), water vole *Arvicola amphibius*, otter *Lutra lutra*, hazel dormouse *Muscardinus avellanarius*, hedgehog *Erinaceus europaeus*, brown hare *Lepus europaeus*, harvest mouse *Micromys minutus* and polecat *Mustela putorius*.

In each case the likelihood of presence of these protected species at the Site was classified as being either confirmed, high, moderate, low or negligible.

Confirmed: The species is confirmed on the site during the Preliminary Ecological Appraisal, previous survey effort or recent records.

High: Habitats are available onsite which are highly suitable for this species and there are records within the desktop study. The surrounding areas also provide widespread opportunities for the species which are well connected to the Site.

Moderate: Some suitable habitat available on site for the species although not of optimum quality. Species is present with the desktop study.

Low: Some suitable habitat available on site for the species but this is low value and possibly of small scale or with poor connectivity. No, or very few, records returned in the desktop study.

Negligible: No suitable habitat available for the species, or very little poor-quality habitat.

This protected species scoping survey is designed to assess the *potential* for presence or absence of a particular species or species group, and does not constitute a full survey for these species.

3.4. Surveyor, author and reviewer

The survey was undertaken, and report written, by Megan Stigling, Graduate Ecologist at MKA Ecology Limited. Megan has over one years' experience completing Preliminary Ecological Appraisals and the authoring of corresponding reports. The report has been reviewed by Marcus Kohler MCIEEM, Director at MKA Ecology Ltd. Marcus has over twenty-five years' experience as a consultant ecologist.

3.5. Date, time and weather conditions

See Table 3 below for details of the date, time and prevailing weather conditions recorded during the site visit for the Preliminary Ecological Appraisal.

Table 3: Date, time and weather conditions of survey visit

Date	Time of survey	Weather conditions*
07/12/2021	10:00	Wind: 5/12 Cloud: 6/8 Temp: 4°C Rain: Light rain

*Wind as per Beaufort Scale / Cloud cover given in Oktas.

3.6. Constraints

A single visit cannot always ascertain the presence or absence of a protected species. However, an assessment is made of the likelihood for protected species to occur based on habitat characteristics and the ecology of each species. Where there is potential for protected species, additional survey work may be required to ascertain their presence or absence.

Data on species records obtained from local biological records centres are sometimes only available at low spatial resolutions and are constrained by the voluntary nature of the contributions and what has been chosen to be submitted as records. While these records provide a useful indication of species recorded in the local area, in particular protected or notable species, the data is not necessarily an accurate reflection of species assemblages or abundance in the vicinity.

The assessment was undertaken outside the optimum period of April to the end of September. However, within the scope of the study it was possible to identify key habitats present and assess their likelihood of supporting a greater range of species. As the Site has previously been used to extract chalk it is considered to have remnant calcareous soils thus we would expect plant species indicative of this. However, as the survey was completed sub-optimally within December it is not possible to identify a full inventory of plant species which may be present onsite.

4. RESULTS

4.1. Desktop study

An ecological desktop study was completed for the Site and the surrounding 2km. Data provided by Cambridgeshire and Peterborough Environmental Records Centre identified some UK and European protected species, Species and Habitats of Principal Importance (as listed under Section 41 of the NERC Act 2006), and species of conservation concern within 2km of the Site. It should be noted that this is not a comprehensive list of the distribution or extent of the local flora and fauna of conservation importance. These species records are discussed in greater detail in the protected species scoping survey section (Section 4.3 below).

Details of statutorily designated sites identified as part of the desktop study are displayed in Table 4 below. These consist of three Sites of Special Scientific Interest (SSSI) and three Local Nature Reserves (LNR).

Table 4: Statutorily designated sites within 2km of Land off Limekiln Road

Site name	Area (ha)	Distance and direction	Reasons for selection
Cherry Hinton Pit SSSI	8.62ha	0.5km S	The SSSI encompasses both the East and West Pit LNR and is designated for its abundance of moon carrot *Seseli libanotis*.
Gogo Magog Golf Course SSSI	88.4ha	1.2km SE	An area of calcareous grassland noted for its rich floral diversity including upright brome *Bromus erectus*, red fescue *Festuca rubra* and the nationally rare moon carrot and the locally rare perennial flax *Linum perenne*.
Roma Road SSSI	3.46ha	1.5km SE	A species rich stretch of chalk grassland which runs from Cambridge to Great Chesterford. Species include: Lady's bedstraw *Galium verum*, greater knapweed *Centaurea scabiosa*, agrimony *Agrimonia eupatoria* and horseshoe vetch *Hippocrepis comosa*.
East Pit LNR	12.94ha	0km	Similar to Limekiln Close and West Pit LNR the site was previously used as a quarry site for chalk, limestone and cement. The Site now contains exposed chalk and scrub which provides nesting sites for over 60 species of bird.

Site name	Area (ha)	Distance and direction	Reasons for selection
Limekiln Close and West Pit LNR	2.86ha	0.07km E	Previously a quarry site the area is now designated as a LNR containing chalk grassland species such as meadow cranesbill *Geranium pratense*. The Site is largely designated due to the presence of the moon carrot.
The Beechwoods LNR	9.76ha	1km S	A small beech woodland located on the chalk ridge above Cambridge. This area is notable for helleborine orchid *Epipactis helleborine*.

Details of non-statutorily designated sites identified as part of the desktop study are displayed in Table 5 below. These consist of two County Wildlife Sites (CWS) and two Road Side Verges (RSV).

Table 5: Non-statutorily designated sites within 2km of Land off Limekiln Road

Site name	Area (ha)	Distance and direction	Reasons for selection
Lime Kiln Hill Reservoirs CWS	3.36	0.2km S	Supports high numbers of neutral grassland and calcareous grassland indicator species. Contains areas of broadleaved woodland, fisherman's club and arable fields.
Netherhall Farm Meadow CWS	0.51	1.3km W	Contains high numbers of calcareous grasses and a high diversity of calcareous flora.
Wort's Causeway RSV	1.66	1km E	Designated for its variety of calcareous indicator species.
Cherry Hinton RSV	0.2	0.8km S	Species rich calcareous grassland with several red list species

The Site was located to the east of Limekiln Road which is located to the south of Cherry Hinton. The Site is bordered to the north by residential housing and to the south by various parcels of arable field. Cherry Hinton Chalk pits SSSI and Limekiln Close and East Pit LNRs are all located directly east of the Site (separated by Limekiln Road). There are no areas within 2km of the Site that are designated as Important Plant Areas by Plantlife or Important Invertebrate Areas by Buglife.

Cherry Hinton pits SSSI comprised of 9ha of high-quality chalk grassland spread across three sites. The Site is thought to have been quarried up until around 200 years ago since which the area has developed into an abundance of wildflowers and grasses which have colonised the bare chalk surfaces. The rare moon carrot is found here which is one of only three known locations in the country.

The Site lies just on the edge of Gog Magog Hills Priority Area which encompasses several SSSI and LNRs including Cherry Hinton Chalk Pits and Gog Magog Golf Course both of which are within 2km of the Site. The protected sites within Gog Magog Priority Area are predominantly high-quality chalk grassland habitat which contribute significantly to the variable green space within the outskirts of Cambridge. This includes Lime Kiln Reservoirs, Roman road, Wandlebury, Beechwood reserve and Fleam Dyke. A great deal of the biodiversity is closely associated with these chalk grasslands including rare chalk grassland flora and both chalk-hill blue and small blue butterfly.

The Cambridge Nature Network document also outlines that during peak seasons there is already high visitor demands within these well used areas particularly within Cherry Hinton Chalk Pits. Increased visitor pressure has increased the amount of biking, dog walking and picnicking within these areas which are not aiding in the long-term management and conservation of these chalk grassland areas. Excessive dog fowling, trampling of flora and littering are all major problems that result from increased recreational pressures.

The Site lies within Natural England SSSI Impact Risk Zones (Natural England, 2019) relating to the above SSSI and LNRs.

4.2. UK Habitat Classification

The Site was found to comprise of modified grassland, dense scrub, bare ground and broadleaved woodland. More detailed species lists, along with their relative abundance, can be found in Appendix 2. The UK habitat classification survey map is provided in Figure 1, at the end of this section. Descriptions of the habitat types present along with dominant species compositions are provided below.

g4 Modified grassland

The grassland area although based on chalk soil lacked classic indicator species of calcareous grassland. Instead, due to the sites history of horse grazing the species composition consists of those associated with disturbed ground. This was dominated by cock's foot *Dactylis glomerata*, false brome *Brachypodium sylvaticum*, annual meadow-grass *Poa annua* and perennial rye-grass *Lolium perenne*. Other species occasionally recorded consisted of ground ivy *Glechoma hederacea*, ragwort *Senecio jacobaea*, creeping cinquefoil *Potentulla reptans*, spear thistle *Cirsium vulgare*, bristly oxtongue *Helminthotheca echioides*, ribwort plantain *Plantago lanceolata* and common dock *Rumex obtusifolius*.

w1g6 Line of trees

A line of mature trees were present along the northern and western boundaries. Field maple *Acer campestre* was the dominant species although hornbeam *Carpinus betulus* and ash *Fraxinus excelsior* were also noted throughout.

w1 Broadleaved mixed and yew woodland

A circle of mature broadleaved trees are present within the centre of the Site. These are of a similar species composition to the line of trees identified bordering the Site. Two bird boxes are present on a mature field maple within the centre of the woodland with several broken boxes also hanging on other trees (Target note 1). A large patch of buddleia *Buddleja davidii* is present to the north of the woodland and a single willow *Sallix* sp. to the south.

Dense scrub (h3h)

Dense scrub was present within the understory of the trees and was particularly dense along the eastern boundary. This was dominated by bramble *Rubus fruticousus* with occasional areas of immature hornbeam, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*. Privet *Ligustrum* sp. was also noted along the edge of several areas of scrub which is often only found on calcareous soils.

Bare ground (73)

A large area of bare ground is present to the south east of the Site where excess soil from the development to the east has been stored.

Figure 1: UK Habitat Classification map of Land off Limekiln Road

Target notes: TN1: Bird boxes within woodland, **TN2:** Badger hair

4.3. Protected species scoping survey

Plants and fungi

The data search returned records of protected or notable plant species within the search area. These included Species of Principal Importance listed under Section 41 of the NERC Act (2006) and those red-listed for Great Britain or Cambridgeshire Addition Species of Interest. This included: Cornflower *Centaurea cyanus*, Jersey Cudweek *Gnaphalium luteoalbum* and white helleborine *Cephalanthera damasonium*.

The site is not in close proximity to a Plantlife Important Plant Area. No invasive, non-native species listed on Schedule 9 of the Wildlife and Countryside Act (1981, as amended) were noted. The survey was completed outside of the optimal season for identifying protected or notable plant species. Due to the calcareous soil and history of chalk extraction, the site may contain an increased botanical diversity in the summer months. Although no protected or notable plants were identified during the survey, given the potential for the site to support calcareous plant species and the proximity of local protected sites, the risk of these species being present is considered to be **moderate**.

Invertebrates

The data search returned a number of protected or notable invertebrates within the search area. These are species listed under Section 41 of the NERC Act (2006) and Schedule 5 of the Wildlife and Countryside Act 1981. Species included: small blue *Cupido minimus*, green hairstreak *Callophyrys rubi* and Adonis' Ladybird *Hippodamia variegate*.

The habitats present on Site are not considered likely to support protected or notable invertebrate species or significant assemblages of common invertebrate species. Small areas of suitable habitats are present such as within the scrubland and woodland area and within the disturbed ground to the north-east of the Site. Several areas of rotten wood were identified within the central woodland area which combined with the scrub may be used by invertebrates as areas of shelter.

The Site does not fall into an Important Invertebrate area and the reduced floral diversity within the Site reduces the likelihood that protected or notable invertebrates are present. Therefore, there is a **low** likelihood that protected or notable invertebrates are present onsite.

Fish

No records of fish were returned from the data search. No suitable waterbodies were identified onsite thus it is considered that the likelihood of the Site supporting protected or notable fish species is **negligible** and as such fish are not considered further within this report.

Amphibians

The data search returned 36 records of common frog and 16 records of common toad. Two records of great crested newt were recorded (2010) 1.8km east of the Site.

A search of Defra's MAGIC website returned no European Protected Species Licences granted for great crested newt within 2km of the Site. An Ordnance Survey map and aerial photographs were consulted for the presence of suitable waterbodies within 500m of the Site boundary and one suitable waterbody was found 300m north-east of the Site. However, Cherry Hinton Road and several residential houses intersect between these areas which is likely a significant barrier for colonisation of the Site.

The Site contains areas of tussocky grassland which are suitable for great crested newts. Areas of deadwood and dense scrub were also present which may be used as areas of shelter or as hibernacula. However, the absence of historic records of great crested newts and absence of suitable waterbodies within 500m of the Site boundary reduces the likelihood of this species being present onsite. There is therefore a **negligible** risk of this species being present onsite.

Reptiles

The data search returned four records of reptiles within 2km of the Site. This included two records of common lizard (2007) and two records of grass snake (2015). The closest record relates to a single common lizard recorded 0.8km north of the Site. The Site contained areas of tussocky grassland which are suitable for common reptile species which combined with the smaller areas of scrub and woodland could provide suitable habitat for reptiles during all stages of their life history. Multiple deadwood piles were noted throughout the woodland area which could provide both suitable resting and hibernation places. The site has a **moderate** suitability for reptiles.

Birds

Ten species were recorded during the site visit. Three of these species are listed on the BoCC Red or Amber list which are shown in Table 6 below, a full species list can be found in Appendix 2. It is important to note that this is not a full inventory of species for the site.

Table 6: Bird species recorded during site visit at Land off Limekiln Road

Common name	Systematic name	S1 W&CA[1]	BoCC[2] Status	S41 SPI[3]	Local PrSp[4]
Woodpigeon	*Columba palumbus*	-	Amber	-	-
Black-headed gull	*Chroicocephalus ridibundus*	-	Amber	-	-
Wren	Troglodytes troglodytes	-	Amber	-	-

[1] Schedule 1 of The Wildlife and Countryside Act 1981 (see Appendix 1)
[2] Birds of Conservation Concern (see Appendix 1)
[3] Section 41 (NERC Act 2006) 'Species of Principal Importance' (see Appendix 1)
[4] Local Priority Species

Some passerine birds listed on the data search including house sparrow *Passer domesticus*, starling *Sturnuss vulgaris*, dunnock *Prunella modularis* and song thrush *Turdus philomelos* (which are listed as Red or Amber on the BoCC Red List) have the potential to utilise the Site for breeding and overwintering, although only in low numbers.

Two records of black redstart *Phoenicurus ochruros* were recorded within 2km of the Site. Notably, the presence of Peregrine falcon *Falco peregrinus* has been noted within the data search and is a regular breeding bird in close proximity to the site. It is one of two territories within central Cambridge and is specially protected under Schedule 1 of the Wildlife and Countryside Act 1981

The Site contains mature trees, dense scrub and tussocky grassland which provides suitable nesting habitat for a range of bird species. The hedgerow and scrub were comprised of largely berry producing species including hawthorn and blackthorn which provide suitable winter food resources for resident bird species such as robin, song thrush and blackbird as well as winter migrant species such as redwing and fieldfare.

Both wren and wood pigeon were recorded onsite which are listed as amber on the BoCC species list due to continued population declines. Both may use the dense vegetation and mature trees for nesting and breeding although house sparrow do generally prefer nesting in holes/ crevices in buildings.

Overall, the potential of the site to support breeding birds is **high** and the potential of the site supporting regionally or nationally important breeding bird populations is considered to be **low. However, the presence of a sensitive Schedule 1 breeding species in close proximity to the site requires consideration as a potential impact**

Bats

The data search returned 75 records of bats including Daubenton's bat *Myotis daubentoniid,* barbastelle *Barbastella barbastellus,* brown long-eared bat *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus* and noctule *Nyctalus noctula*.

A search of Defra's MAGIC website returned one European Protected Species Licence granted for the destruction of a common pipistrelle non-breeding roost (licence period October 2017 – October 2018) within 2km of the Site. The licence has been granted 500m north of the Site.

The boundary of the Site includes multiple mature trees which are likely to contain roosting opportunities for bats within crevices and cracked sections of bark.

The grassland habitat onsite is likely to support a number of common invertebrate prey providing suitable foraging habitat for bats.

The boundaries of the Site also provide a green corridor which appears to connect the residential housing to the north of the Site to the adjacent SSSI and local nature reserves. Larger species of bat such as brown long-eared bat will often feed along hedgerows and utilise them as commuting lines to navigate through the landscape while smaller bats such as common pipistrelle rely on these features for protection from weather conditions such as strong winds while in flight. A Barbastelle roost has also been recorded 1km south-west of the Site and the species has previously been recorded within the chalk pits by MKA Ecology ltd. Barbastelle are nationally rare species listed as a Cambridgeshire and Peterborough Priority Species.
These are likely to be important features for bats within the context of the Site and due to its proximity to the adjacent nature reserves is likely to provide important commuting routes within the local area.

Overall, the potential of the Site supporting roosting bats is considered **moderate** and the likelihood of the Site supporting foraging or commuting bats is deemed **moderate** due to the Sites connectivity to adjacent SSSI and LNR.

Badgers

Three records of badgers were returned from the data search. The Site contained suitable foraging habitat within the grassland and bramble scrub for badgers. Multiple mammal trails were identified within the north of the Site leading into the residential gardens. A tuft of badger fur was also found attached to an area of barbed wire fence leading into a garden confirming their presence onsite. However, no setts were identified within the Site boundary and it is likely that the area is solely used for foraging. In several areas these mammal paths lead into the dense scrub which was not accessible during the survey. Although the likelihood of regular presence of badgers onsite is **confirmed** there is a **low** chance that badgers use the site for sett building.

Hedgehog

The data search returned 33 records of hedgehog within 2km of the Site. The Site contains suitable hedgerow habitat and multiple deadwood piles which could be used for shelter or hibernation. The Site is also well connected to the residential area to the north of the Site which is likely to be used by hedgehog. The Site has a **moderate** likelihood for supporting hedgehog.

5. ECOLOGICAL CONSTRAINTS, OPPORTUNITIES AND RECOMMENDATIONS

This section outlines key ecological issues for consideration, recommendations for further work and ecological enhancements where appropriate.

Off-site habitats

The Site is situated within Natural England Impact Risk Zones and is directly adjacent to Limekiln Close and East Pit LNR and Cherry Hinton Chalk Pits SSSI. Although there will be no direct impacts from the development on the conservation features of these Sites it is likely that increased recreational pressure will have a detrimental impact on these areas.

The LPA assessment has given the Site a RED status in regards to Biodiversity and Geodiversity due to:

"The site is directly opposite the Cherry Hinton Chalk Pits SSSI and residential development is likely to significantly impact on the recreational pressure on these Local Nature Reserves. All new housing developments will require assessment of increased visitor pressure on nearby SSSI.

Development of the site would have a detrimental impact on designated sites, or those with a regional or local protection which cannot be reasonably mitigated or compensated as appropriate."

The development will inevitably cause increased recreational pressure on the adjacent designated sites. It is advised that areas of greenspace are included within the development itself to allow for recreational pressures to be absorbed within the development. However, due to the small size of the Site this will only compensate for a small portion of recreational pressure.

Options should be explored as to other locations within the surrounding area that can be turned into open green space for the public such as the creation of a local dog park or the addition of a community play area. Additional options may also include increasing the Sites connectivity to alternative greenspaces or the provision of financial contributions to manage the increased recreational impacts on these sites.

Recommendation 1

It is recommended areas of greenspace are incorporated into the new development to reduce recreational pressures on nearby protected sites. Alternative measures for the creation of additional areas of greenspace within close proximity to the site, increasing the Sites connectivity to other greenspaces or financial contributions should be explored.

On-site habitats

The grassland on site has potential to be of red of ecologically value but cannot be appropriately assessed at this time of year. The mature trees are of high ecological value within the Site.

The LPA has assessed that the development will result in:

"Grassland, hedges and wooded boundaries on site that are likely to have ecological value and may qualify as Habitats of Principal Importance/be of high ecological value and support protected and/or notable species. The site is currently a natural green space which forms part of a key green corridor on the edge of the chalk slope, offering opportunities for enhanced management for biodiversity."

The tree lines are of high ecological value within the Site. The woodland within the centre of the Site has a tree protection order and will be incorporated into the new design. Currently it is proposed that the treelines are removed and a small number of trees replanted into the development. It is likely that the treelines creates a green network that connects the SSSI and LNR to the wider landscape.

The mitigation hierarchy should be followed to reduce impact of development and avoidance of key habitats such as the aforementioned treelines would significantly reduce the impact of the development footprint. The proposed access road into the Site is already present as the adjacent development has been using areas of the Site for soil storage. The protection of these areas will ensure that green routes are maintained within the development and that key commuting, foraging and areas of shelter are retained within the development. They will also act as a buffer between the Site and the protected areas of land reducing both light and noise pollution from spilling out from the development.

Recommendation 2

Retain the mature trees along the boundary of the Site to ensure that key green corridors are maintained within the new development. (Local Plan Policies 59 and 70, 2018).

Whilst it has not been possible due to the time of year to fully assess the value of grassland habitat present within the development footprint its loss is unlikely to be as high as that of the treelines. The creation of species rich calcareous grassland within the new development, particularly within amenity areas will aid in reducing the impact of the loss of modified grassland. The area of proposed grassland surrounding the coppice of trees and along the proposed access route could all be used to create these areas further enhancing the site.

Recommendation 3

Use areas of proposed grassland to create pockets of species rich calcareous grassland.

Plants

Due to the survey being completed in winter it is not possible to fully assess whether the Site supports protected or notable plant species. As the Site is located on an area previously used as a chalk pit, there is the potential for protected or notable species to be present. It is recommended that a botanical survey is completed within the optimal season (May and June with suboptimal surveys completed between April and September).

Recommendation 4

Complete a full botanical survey during the optimal season (May to June) to assess the potential for protected or notable plant species.

Reptiles

Suitable habitat for common species of reptile is present within the Site, in particular within the grassland area. Suitable habitat for breeding and hibernation are also present within the site boundaries and deadwood-piles. The Site is well connected to the garden habitat of the residential housing to the north and the large area of greenspace associated with the caravan site to the west. Limekiln road acts as a potential barrier to reptiles that may be present access to and from suitable habitat located within the SSSI and LNR located to the east of the Site.

All UK reptile species are protected under Schedule 5 of the Wildlife & Countryside Act (1981), and are listed as Species of Principal Importance under the NERC Act (2006). It is an offence to intentionally kill or injure individuals of these species (see Appendix 1 for more information).

It is recommended that survey work is completed in order to determine the presence or absence of reptiles on Site and establish the potential impacts of these species. These surveys involve placing artificial refugia throughout the Site (which reptiles use to bask and hide) in the active season (March to October). The optimum survey times are April, May and September. Following best practice seven visits should be conducted during suitable weather as published by Froglife (1999).

Recommendation 6

Further reptile surveys should be undertaken between April and September to establish the presence or absence of reptiles.

Birds

Suitable breeding habitat was identified within the treeline bordering the Site and within the central woodland area. Due to the size of the Site and the habitat types present it is unlikely to support large numbers of protected or notable species. The 2021 bird survey guidelines (Bird survey and assessment steering group 2021) state that bird surveys should always be undertaken unless robust justification can be provided as to why they are not required. The small size, limited habitat mosaic and semi-urban nature of this site would normally exclude the need for further survey as it will not support a significant

bird assemblage in isolation. However, the presence of a regular peregrine falcon breeding site close to the development footprint means that the need for further survey cannot be ruled out. There should be an assessment of both breeding and wintering bird activity on site, to include the neighbouring breeding site of this species

Recommendation 7
Undertake breeding and wintering bird assessment of site in the context of its relationship with neighbouring specially protected species and assessing any likely impacts upon this species

All wild birds, their active nests and eggs are protected under The Wildlife and Countryside Act 1981 (as amended), which makes it an offence deliberately, or recklessly, to kill or injure any wild bird or damage or destroy any active birds' nest or eggs.

Scheduling vegetation removal works between the months of September and February inclusive (i.e. outside of the bird season) would avoid impacts on breeding birds.

Where vegetation clearance works are required during the breeding bird season (between the months of March and August inclusive), such works can only proceed following the completion of a nesting bird check undertaken by an experienced ornithologist. Any active birds' nest identified during this check must be protected from harm until the nesting attempt is complete. This will require a buffer to be left around the nest, the size of which will depend upon the species involved (as a general rule, this will be 10m in all directions around the nest). Any buffers established as a result of the initial nesting bird check must be subjected to a second check after the original nesting attempt is completed, before such areas can be removed during the breeding bird season.

Recommendation 3
Schedule vegetation and building clearance works between the months of September and February inclusive to avoid impacts on breeding birds. Where this timing is not feasible works should be preceded by a nesting bird check. (Local Plan Policy 70, 2018, WACA 1981).

It is strongly recommended that any potential nesting bird habitat is cleared outside the breeding bird season in order to avoid potentially lengthy delays if nests are found during nesting bird checks.

Bats

The Site contained multiple mature trees within the boundary and the central portion of woodland. These are likely to contain features which may be used by roosting bats and as such it is recommended that they are retained within the proposed development. This will aid in maintaining key green corridors connecting the site to the SSSI and local nature reserves and create a green buffer around the Site. The central coppice may become isolated within the development footprint if green corridors are not

maintained within the Site. This could have detrimental impacts on roosting bats if present within this area.

All bat species are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019; (see Appendix 1). Bats are also Species of Principal Importance listed on Section 41 of the NERC Act (2006). It is an offence to deliberately disturb a bat, damage or destroy a bat roost, intentionally or recklessly disturb a bat at a roost, or obstruct access to a roost.

It is recommended that a ground level tree assessment is completed to establish whether trees with bat roosting potential will become isolated within the proposed development.

Recommendation 4

Retain mature trees within the development. Complete a ground level tree assessment to establish if suitable trees will become isolated within the new development (Local Plan Policies 59 and 70, 2018).

Bat roosting behaviour, commuting and foraging activity can additionally be dramatically affected by artificial lighting (BCT, 2018). It is strongly recommended that any proposed exterior lighting on the new buildings/access roads is designed and managed appropriately to ensure that the area remains suitable for foraging bats. A sensitive lighting scheme should be developed to allow suitable roosting and foraging areas for bats. The borders of the Site and the central coppice of trees should all remain unlit.

Recommendation 5

Light pollution from any lighting should be minimised both during and after the construction phase. A sensitive lighting scheme should be developed and secured through a planning condition to allow for suitable roosting and foraging areas for bats within the site with maximum use of appropriate luminaries and directed lighting.

Badgers

Although no setts were identified onsite, it is thought that badgers regularly use the site for foraging. All mammals are protected by the Wild Mammals (Protection) Act 1996 under which it is an offence to cause unnecessary suffering to wild mammals.

It is recommended that a method statement is created to ensure that no mammals are injured while construction is undertaken, this should be detailed in a Construction Ecological Management Plan (CEMP). If a badger sett is identified onsite, works must stop and an ecologist consulted immediately.

Recommendation 6

Create a method statement outlining safe methods of works to prevent unnecessary suffering to mammals onsite. This should be outlined in a CEMP.

Hedgehog

The grassland habitat and scrub provide suitable habitat for hedgehog. Hedgehogs are a Species of Principal Importance. It is recommended that provisions are made for this species post-development. This should include the installation of two hedgehog dome close to existing hedgerow habitat.

Recommendation 11

Install two hedgehog domes close to existing habitat (Local Plan Policy 8 and 70, 2018).

The installation of boundary fences between gardens can impact on hedgehogs through loss of habitat connectivity. At least one 13cm x 13cm hole should be installed at the bottom of each boundary fence (with a focus on fences separating residential gardens, and excluding fences adjacent to roads), in order to maintain connectivity for hedgehogs between properties. These 'hedgehog highways' (PTES, 2018) should have appropriate signage installed to indicate their purpose and stipulate that they should remain open.

Recommendation 12

Maintain habitat connectivity for hedgehog through the installation of at least one 13cm x 13cm hole at the bottom of each boundary fence (with a focus on fences separating residential gardens, and excluding fences adjacent to roads). These should be accompanied with appropriate signage indicating their purpose and stipulating that they should remain open. (Local Plan Policy 8 and 70, 2018).

Opportunities for biodiversity enhancement

Following the issue of the National Planning Policy Framework (NPPF; see Appendix 1), all planning decisions should aim to maintain and enhance, restore or add to biodiversity and geological conservation interests. Ecological enhancements should aim to deliver biodiversity gains for the proposed development site.

Planting of native species or those with a known attraction or benefit to local wildlife is recommended in landscape proposals. This will help to increase native plant species diversity, provide more ecologically valuable habitats, and result in a greater diversity of other dependent taxonomic groups.

As stated above the incorporation of areas of calcareous grassland will increase the botanical diversity found within the Site. Cambridge Nature Network proposes to create 5 to 6 stepping stones of chalk grassland and other associated habitats, within a distance of no more than 1 Km from core areas. The Site could aid in this goal due to its proximity to Cherry Hinton SSSI thus the creation of chalk grassland is key in increasing the connectivity of similar habitats within the local area.

Where possible further tree planting within the development will also aid in enhancing the Site. The Site does not have areas of hedgerows which could be incorporated within boundary fences and the proposed access road. These should aim to replicate species within the scrub that are to be lost

ensuring that fruiting species are used. This will ensure that provisions are made to maintain the species currently found within the site post-development.

Recommendation 13

It is recommended that native British species are incorporated within the planting scheme for the final landscaping design in order to enhance the overall value of the site for biodiversity, in line with the requirements of the NPPF.

A number of simple measures to improve biodiversity at the Site can be implemented. The amenity grassland habitat onsite provides an opportunity to create a bee lawn that can act as an important resource for bumblebees and other insect pollinators, which in turn provides benefits for other species within the ecosystem, including reptiles and bats. A bee lawn can be created by over-seeding the lawn with suitable plants such as selfheal *Prunella vulgaris* or bird's-foot-trefoil *Lotus corniculatus* and by reducing the mowing height and frequency. For more detailed information about the creation of a bee lawn please refer to Appendix 2.

The calcareous soils provide an opportunity to create areas of bare chalk banks with neighbouring nectar and pollen resources for invertebrates. Additionally, the creation of deadwood features at the site will be particularly valuable for invertebrates as a foraging resource, which in turn benefits a range of other species such as hedgehogs and reptiles. This could include rotting roots or tree stumps spread around various locations. The drilling of holes or cutting of notches can add even more value for invertebrates.

Recommendation 14

Incorporate simple biodiversity enhancement measures at the site, including the creation of a bee lawn and provision of deadwood features.

Enhanced opportunities for breeding birds should be incorporated into the design scheme. Bird boxes should be mounted on trees, fences and built structures at the site It is recommended that these include provisions for house sparrow *Passer domesticus,* swift *Apus apus* and house martin *Delichon urbica* together with the provision of generalist bird boxes. The further bird surveys should inform the species-specific nest box scheme and

the location and number of bird boxes should be outlined within a Landscape Ecological Management Plan (LEMP). This will include information on the correct instalment and management practices.

Recommendation 15

Bird boxes should be installed within the Site likely to include provisions for house sparrow, starling and swift. But to be informed by further bird survey This should be detailed within a LEMP (Local Plan Policy 57).

The wider landscape has the potential for use by foraging bats. With this in mind, enhanced opportunities for roosting bats should also be provided at the site through installation of bat boxes. It is recommended that these are also detailed within the Landscape Ecological Management Plan.

Recommendation 16

Provisions should be made for roosting bats at the site post-development, to include a minimum of one integrated or wall mounted bat bricks or bat boxes per proposed house and boxes mounted in trees at the site. This will also be detailed within the LEMP.

Summary of recommendations

Table 7 below summarises the recommendations made within this report, and specifies the stage of the development at which action is required. Colour coding of cells within the table is as follows:

Key:

No action required for this species group at this stage

Action required (see notes for details)

Level of action required will be determined following the further survey work

Table 7: Summary of recommendations at Land off Limekiln Road

Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Off- site habitats	Consultation with LPA about resolving recreational pressure on SSSI and LNR. This should explore all options for offsetting visitor pressure on these areas.	TBC	TBC	TBC
On-site habitats	Retention of mature trees. Incorporate native planting and habitat creation into design scheme.	No	Buffer around mature trees	Creation of calcareous grassland, wildflower planting, hedgerow planting.

Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Plants	No	Further botanical survey to establish protected presence of important calcareous species.	TBC	TBC
Reptiles	Further survey work to ascertain presence/absence	TBC	TBC	TBC
Birds	Bird boxes and native planting Breeding and overwintering bird surveys should be completed between April-June.	No	Timing of works for vegetation removal OR further survey work Incorporate integrated bird boxes into new buildings	Bird boxes and native planting
Bats	Ground level tree assessment	TBC	TBC	TBC
Badgers	No	Method statement for protection of wild mammals.	No	No
Hedgehog	Hedgehog domes. Hedgehog highways.	No	No	Hedgehog domes. Hedgehog highways.

Table 8: Summary of further surveys recommended at Land off Limekiln Road

Species/species group	Purpose of survey	Survey period (inclusive unless otherwise stated)
Plants	Identify whether any rare plants in adjacent designated areas are also found onsite.	Apr-Oct
Reptiles	Confirm presence/absence	Apr, May, Sep
Breeding bird survey (all species)	Assessing the breeding bird assemblage and any relationship with key local species	Mar-Jul
Wintering birds	Assessing the wintering bird assemblage and any relationship with key local species	Oct-Mar

6. CONCLUSIONS

A Preliminary Ecological Appraisal was completed at Land off Limekiln Road on the 07 December 2021 on behalf of [redacted]. The client wishes to submit the Site for consideration within the Greater Cambridge Partnership Local Plan with the intension of creating fourteen residential units and an access track leading onto Limekiln Road.

The application has been highlighted as red for Biodiversity and Geodiversity by the Local Planning Authority due to the close proximity of Cherry Hinton Chalk Pit SSSI and Limekiln Close and West Pit and East Pit LNR. The LPA states that the additional recreational pressure associated with the development would have a significant detrimental effect on these protected areas.

The Site currently consists of modified grassland bordered by dense bramble dominated scrub and mature treelines. The mature trees have been highlighted as important ecological features within the Site, these should be retained within the development plans.

The potential protected species constraints that were identified in the Preliminary Ecological Appraisal relate to plants, breeding birds, badger, hedgehogs and bats. Works must be timed sensitively to avoid impacts on active birds' nests. Due to the Sites location and its history of chalk extraction further surveys have been recommended for protected or notable plant species. It is likely that badgers use the Site for foraging therefore it is recommended that a CEMP is produced outlining best practice guidelines for preventing injury to mammals during construction. Wintering and breeding bird surveys should be undertaken due to the presence of breeding Peregrine in the immediate area.

There are a range of measures to promote biodiversity within the Site. These include the enhancement of existing treelines and the creation of areas of species rich calcareous grassland. Provision of bird and bat boxes and hedgehog domes are also recommended. Simple measures such as the creation of bee lawns, exposed chalk mounds and deadwood features will also contribute to ensuring a sustainable development to achieve both local and national biodiversity targets.

The development is likely to result in increased recreational pressure on adjacent protected areas. It is recommended that areas of natural green space are incorporated within the new development to compensate for these pressures. However, due to the size of the Site it is difficult to absorb these pressures within the development itself. Measures must be put in place to either manage visitor pressure or to redirect residents to other areas of natural green space. Consideration should be made to other large scale residential schemes within the area as the combined increase in usage of sensitive sites will have severe detrimentally impacts on these areas. The removal of mature trees is likely to impact on important green corridors which is especially detrimental due to the sites links to Cherry Hinton SSSI, Gog Magog Hills Priority Area and the surrounding landscape. To compensate for these

impacts significant onsite enhancements will be required to ensure that connectivity is maintained and that key habitats are not lost.

7. REFERENCES

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8. APPENDICES

8.1. Appendix 1: Relevant wildlife legislation and planning policy

Please note that the following is not an exhaustive list, and is solely intended to cover the most relevant legislation pertaining to species commonly associated with development sites.

Subject	Legislation (England)	Relevant prohibited actions
Amphibians		
Great crested newt *Triturus cristatus* Natterjack toad *Epidalea calamita*	Schedule 2 of Conservation of Habitats and Species Regulations (2017) Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	• Deliberately capture or kill, or intentionally injure; • Deliberately disturb or recklessly disturb them in a place used for shelter or protection; • Damage or destroy a breeding site or resting place; • Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection; and • Possess an individual, or any part of it, unless acquired lawfully.
Reptiles		
Common lizard *Zootoca vivipara* Adder *Vipera berus* Slow-worm *Anguis fragilis* Grass snake *Natrix helvetica helvetica*	Part of Sub-section 9(1) of Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill or injure individuals of these species (Section 9(1)).

Subject	Legislation (England)	Relevant prohibited actions
Sand lizard *Lacerta agilis* Smooth snake *Coronella austriaca*	Full protection under Section 9 of Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	• Deliberately or intentionally kill, capture (take) or intentionally injure; • Deliberately disturb; • Deliberately take or destroy eggs; • Damage or destroy a breeding site or resting place or intentionally damage a place used for shelter; or • Intentionally obstruct access to a place used for shelter.
Birds		
All wild birds	Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill, injure, or take any wild bird or their eggs or nests.
'Schedule 1' birds	Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)	• Disturb any wild bird listed on Schedule 1 whilst it is building a nest or is in, on, or near a nest containing eggs or young; or • Disturb the dependent young of any wild bird listed on Schedule 1.
Mammals		
Bats (all UK species)	Schedule 2 of Conservation of Habitats and Species Regulations (2017)	• Deliberately capture, injure or kill a bat; • Deliberately disturb a bat (disturbance is defined as an action which is likely to: (i) Impair their ability to survive, to breed or reproduce, or to rear or nurture their young; (ii) Impair their ability to hibernate or migrate; or (iii) Affect significantly the local

Subject	Legislation (England)	Relevant prohibited actions
	Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	distribution or abundance of the species); • Damage or destroy a bat roost; • Intentionally or recklessly disturb a bat at a roost; or • Intentionally or recklessly obstruct access to a roost. In this interpretation, a bat roost is "*any structure or place which any wild [bat]...uses for shelter or protection*". Legal opinion is that the roost is protected whether or not the bats are present at the time.
Badger *Meles meles*	Protection of Badgers Act 1992	Under Section 3 of the Act: • Damage a sett or any part of it; • Destroy a sett; • Obstruct access to, or any entrance of, a sett; or • Disturb a badger when it is occupying a sett. A sett is defined legally as any structure or place which displays signs indicating current use by a badger (Natural England 2007).
Hazel dormouse *Corylus avellana*	Schedule 2 of Conservation of Habitats and Species Regulations (2017)	• Intentionally or deliberately capture or kill, or intentionally injure;

Subject	Legislation (England)	Relevant prohibited actions
	Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	• Deliberately disturb or intentionally or recklessly disturb them in a place used for shelter or protection; • Damage or destroy a breeding site or resting place; • Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection; and • Possess an individual, or any part of it, unless acquired lawfully.
Otter *Lutra lutra*	Schedule 2 of Conservation of Habitats and Species Regulations (2017) Section 9(4)(b) and (c) of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	• Deliberately capture, injure or kill an otter; • Deliberately disturb an otter in such a way as to be likely to significantly affect the local distribution or abundance of otters or the ability of any significant group of otters to survive, breed, rear or nurture their young; • Intentionally or recklessly disturb any otter whilst it is occupying a holt; • Damage or destroy or intentionally or recklessly obstruct access to an otter holt.
Water vole *Arvicola amphibius*	Section 9 of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill, injure or take water voles; • Possess or control live or dead water voles or derivatives; • Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection; or • Intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose.

Subject	Legislation (England)	Relevant prohibited actions
Crustaceans		
White-clawed crayfish *Austropotamobius pallipes*	Section 9(1) of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill, injure or take white-clawed crayfish by any method.

The Conservation of Habitats and Species (Amendment) Regulations 2017

Full legislation text available at: The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2017 (legislation.gov.uk)

The Wildlife and Countryside Act 1981 (as amended)

Full legislation text available at: http://www.legislation.gov.uk/ukpga/1981/69/contents.

Countryside and Rights of Way Act 2000

Full legislation text available at: http://www.legislation.gov.uk/ukpga/2000/37/contents

Protection of Badgers Act 1992

Full legislation text available at: http://www.legislation.gov.uk/ukpga/1992/51/contents

Section 41 of Natural Environments and Rural Communities (NERC) Act 2006

Full legislation text available at: http://www.legislation.gov.uk/ukpga/2006/16/section/41

Many of the species above, along with a host of others not afforded additional protection, are listed on Section 41 of the NERC Act 2006.

Section 41 (S41) of the Natural Environment and Rural Communities (NERC Act 2006) requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The list (including 56 habitats and 943 species) has been drawn up in consultation with Natural England and draws upon the UK Biodiversity Action Plan (BAP) List of Priority Species and Habitats.

The S41 list should be used to guide decision-makers such as local and regional authorities to have regard to the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006. The duty applies to all local authorities and extends beyond just conserving what is already there, to carrying out, supporting and requiring actions that may also restore or enhance biodiversity.

Schedule 9 of Wildlife and Countryside Act 1981 (as amended)

In addition to affording protection to some species, The Wildlife and Countryside Act 1981 (as amended) also names species which are considered invasive and require control. Section 14 of the Act prohibits the introduction into the wild of any animal of a kind which is not ordinarily resident in, and is not a regular visitor to, Great Britain in a wild state, or any species of animal or plant listed in Schedule 9 to the Act. In the main, Schedule 9 lists non-native species that are already established in the wild, but which continue to pose a conservation threat to native biodiversity and habitats, such that further releases should be regulated.

Wild Mammals (Protection) Act 1996

Full legislation text is available at: http://www.legislation.gov.uk/ukpga/1996/3/contents

Under this legislation it is an offence to cause unnecessary suffering to wild mammals, including by crushing and asphyxiation. It largely deals with issues of animal welfare, and covers all non-domestic mammals including commonly encountered mammals on development sites such as rabbits, foxes and field voles.

Birds of Conservation Concern (BoCC)

This is a quantitative assessment of the status of populations of bird species which regularly occur in the UK, undertaken by the UK's leading bird conservation organisations. It assesses a total of 245 species against a set of objective criteria to place each on one of three lists – Green, Amber and Red – indicating an increasing level of conservation concern. There are currently 70 species on the Red list, 103 on the Amber list and 72 on the Green list. The classifications described have no statutory implications, and are used merely as a tool for assessing scarcity and conservation value of a given species.

National Planning Policy Framework (NPPF)

Full text is available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2

The revised NPPF was updated on 20 July 2021 setting out the Government's planning policies for England and the process by which these should be applied. The policies within the NPPF are a material consideration in the planning process. The key principle of the NPPF is a presumption in favour of sustainable development, with sustainable development defined as a balance between economic, social and environmental needs.

Policies 174 to 188 of the NPPF address conserving and enhancing the natural environment, stating that the planning system should:

- Contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes;
- Recognise the wider benefits of ecosystem services; and
- Minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

Furthermore, there is a focus on re-use of existing brownfield sites or sites of low environmental value as a priority, and discouraging development in National Parks, Sites of Specific Scientific Interest, the Broads or Areas of Outstanding Natural Beauty other than in exceptional circumstances.

Where possible, planning policies should also

"Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity".

8.2. Appendix 2: UK Habitat Classification species list

Please note that these lists are intended to be incidental records and do not constitute a full botanical survey of the site. Relative abundance is given using the DAFOR scale. Please see Table 2 for details.

Modified grassland – g4

Common Name	Systematic Name	Relative abundance
Annual meadow-grass	*Poa annua*	D
Cock's foot	*Dactylis glomerata*	D
False brome	*Brachypodium sylvaticum*,	D
Perennial rye-grass	*Lolium perenne*	D
Cleavers	*Galium aparine*	A
Clover sp.	*Trifolium sp.*	A
Creeping cinquefoil	*Potentulla reptans*	A
Ground ivy	*Glechoma hederacea*	A
Ragwort	*Senecio jacobaea*	A
Bristly oxtongue	*Helminthotheca echioides*	F
Broad-leaved dock	*Rumex obtusifolius*	F
Creeping thistle	*Cirsium arvense*	F
Clematis	*Clematide* sp.	O
Dandelion	*Taraxacum sp.*	O
Daisy	*Bellis perennis*	O
Groundsel	*Senecio vulgaris*	O
Ribwort plantain	*Plantago lanceolata*	O
Spear thistle	*Cirsium vulgare*	O
Common buckthorn	*Rhamnus cathartica*	R
Common dock	*Rumex obtusifolius*.	R
Common mouse-ear	*Cerastium fontanum*	R
Cow parsley	*Anthriscus sylvestris*	R
Hellibourn sp	*Helleborus sp*	R

w1g6 Line of trees

Common Name	Systematic Name	Relative abundance
Field maple	*Acer campestre*	D
Blackthorn	*Prunus spinosa*	A
Hawthorn	*Crataegus monogyna*	A
Privet	*Ligustrum* sp	A
Ash	*Fraxinus excelsior*	O
Hornbeam	*Carpinus betulus*	R
Willow	*Salix* sp.	R

w1 Broadleaved mixed and yew woodland

Common Name	Systematic Name	Relative abundance
Field maple	*Acer campestre*	D
Hornbeam	*Carpinus betulus*	O
ash	*Fraxinus excelsior*	O
willow	*Salix* sp.	R
Oak	*Quercus robur*	R
Blackthorn	*Prunus spinosa*	A

Dense scrub (h3h)

Common Name	Systematic Name	Relative abundance
Bramble	*Rubus fruticousus*	D
Hornbeam	*Carpinus betulus*	A
Hawthorn	*Crataegus monogyna*	A
Blackthorn	*Prunus spinosa*	A
Ivy	*Hedera helix*	A
Ragwort	*Senecio jacobaea*	O
Ground ivy	*Glechoma hederacea*	O
Common nettle	*Urtica dioica*	O
Privet	*Ligustrum* sp	R
Rose	*Rosa*	R

Buddleia	*Buddleja davidii*	R
Hellibourn sp	*Helleborus sp*	R

Bird species recorded during site visit at land off Limekiln Road

Common name	Systematic name	S1 W&CA[1]	BoCC[2] Status	S41 SPI[3]	Local PrSp[4]
Woodpigeon	*Columba palumbus*	-	Amber	-	-
Magpie	*Pica pica*	-	Green	-	-
Robin	*Erithacus rubecula*	-	Green	-	-
Carrion crow	*Corvus corone*	-	Green	-	-
Green woodpecker	*Picus viridis*	-	Green	-	-
Pheasant	*Phasianus colchicus*	-	Green	-	-
Wren	Troglodytes troglodytes	-	Amber	-	-
Blackbird	*Turdus merula*	-	Green	-	-
Blue tit	*Cyanistes caeruleus*	-	Green	-	-
Black-headed gull	*Chroicocephalus ridibundus*	-	Amber	-	-

[1] Schedule 1 of The Wildlife and Countryside Act 1981 (see Appendix 1)
[2] Birds of Conservation Concern (see Appendix 1)
[3] Section 41 (NERC Act 2006) 'Species of Principal Importance' (see Appendix 1)
[4] Local Priority Species

8.3. Appendix 3: Site photographs

Photograph 1: Bare ground (soil storage)

Photograph 2: Access route into adjacent development

Photograph 3: Dense scrub along southern boundary

Photograph 4: Tussocky grassland to the south-west

Photograph 5: Central coppice

Photograph 6: Bird boxes within central coppice

Photograph 7: Dense scrub along northern boundary

Photograph 8: Treeline to the north

Photograph 9: Badger fur caught in wire

Photograph 10: Eastern boundary

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