

CIRRUS LAND LIMITED



**ECOLOGY**SOLUTIONS

Part of the ES Group

LAND SOUTH OF VILLA ROAD,  
IMPINGTON

**Ecological Appraisal**

September 2021  
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## **APPENDICES**

APPENDIX 1	Information downloaded from Multi-Agency Geographic Information for the Countryside (MAGIC)
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## **1. INTRODUCTION**

### **1.1. Background and Proposals**

- 1.1.1. Ecology Solutions was commissioned by Cirrus Land Limited in August 2021 to complete an Ecological Appraisal of land south of Villa Road, Impington (see Plan ECO1). Hereafter referred to as the site.
- 1.1.2. Cirrus Land Limited are looking to promote the site for potential development in the future.

### **1.2. Site Characteristics**

- 1.2.1. The site is located north of the A14 around Cambridge and is bound to the north by Villa Road and to the east by residential properties. It is bound to the south and west by agricultural land leased to the National Institute of Agricultural Botany Trust. The land under consideration is approximately 16 acres.
- 1.2.2. The site is dominated by agricultural land and bounded by grassland and established hedgerows to the south and east. There is a mosaic of rough grassland and scrub which dominates a substantial section by the northern boundary and a ditch presides along the western edge.

### **1.3. Ecological Appraisal**

- 1.3.1. This document assesses the ecological interest of the site as a whole. The importance of the habitats within the site is evaluated with due consideration given to the current guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM)<sup>1</sup>.
- 1.3.2. Where necessary additional target surveys are recommended to inform fully the intrinsic value of the site.

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<sup>1</sup> CIEEM (2018). *CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1 – Updated September 2019. Chartered Institute of Ecology and Environmental Management, Winchester.*



## 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 site, and surrounding area Ecology Solutions contacted Cambridgeshire and Peterborough Environmental Records Centre (CPERC), which included data from local bat and mammal groups.

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)<sup>2</sup> database.

2.2.3. This information is reproduced in Appendix 1, and where appropriate on Plan ECO1.

### 2.3. Habitat Survey

2.3.1. Habitat surveys were carried out by Ecology Solutions in August 2021 in order to ascertain the general ecological value of the site and to identify the main habitats and associated plant species.

2.3.2. The site was surveyed based around extended Phase 1 survey methodology<sup>3</sup>, 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 that require further survey. Any such areas identified can then be examined in more detail.

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

2.3.4. 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. The timing of the survey work undertaken was within the optimum season for botanical surveys and hence a good understanding of the nature of the habitats present has been gained.

### 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 site by protected species, priority species or other notable species.

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<sup>2</sup> <http://www.magic.gov.uk>

<sup>3</sup> 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.

- 2.4.2. In addition to general observations of faunal activity, specific surveys were undertaken for Badger *Meles meles* and bats.
- 2.4.3. Experienced ecologists followed established best practice and guidance issued by Natural England to undertake the faunal surveys. Details of the methodologies employed are given below.

#### *Badgers*

- 2.4.4. Specific surveys were undertaken to search for evidence of Badgers within the site in August 2021 and comprised two main elements. The first of these was a thorough search for evidence of Badger setts. For any setts that were encountered, each sett entrance was noted and plotted even if the entrance appeared disused. The following information was recorded:
- 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 and location 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 and the remains of the spoil heap.
- 2.4.5. Secondly, Badger activity such as well-worn paths and run-throughs, snagged hair, footprints, latrines and foraging signs was recorded so as to build up a picture of the use of the site, if any, by Badgers.

#### *Bats*

- 2.4.6. The site was surveyed to assess its potential to support bats in May 2021. The buildings and trees present were subject to external assessments of their suitability for bats.
- 2.4.7. The survey work carried out by Ecology Solutions was undertaken using (where necessary) a ladder, torch, endoscope, mirrors and binoculars. Internally, evidence of the presence of bats was also sought.
- 2.4.8. The probability of a building being used by bats as a summer roost site increases if it:
- is largely undisturbed;
  - dates from pre-20th Century;
  - has a large roof void with unobstructed flying spaces;
  - has access points for bats (though not too draughty);
  - has wooden cladding or hanging tiles; and / or
  - is in a rural setting and close to woodland or water.
- 2.4.9. Conversely, the probability decreases if a building is of a modern or pre-fabricated design / construction, is in an urban setting, has small or cluttered roof voids, has few gaps at the eaves or is a heavily disturbed premises.

- 2.4.10. The main requirement for a winter / hibernation roost site is that it maintains a stable (cool) temperature and humidity. Sites commonly utilised by bats as winter roosts include cavities / holes in trees, underground sites and parts of buildings. Whilst different species may show a preference for one of these types of roost site, none are solely dependent on a single type.
- 2.4.11. All trees within and immediately adjacent to the site were assessed for their potential to support roosting bats in May 2021. Features typically favoured by bats or evidence of past use 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 bats' claws;
  - Cavities, splits and or loose bark from broken or fallen branches, lightning strikes etc.; and
  - Very dense covering of mature Ivy over trunk.
- 2.4.12. The site was also appraised for its suitability for both foraging and commuting bats during the initial survey.
- 2.4.13. All field surveys were undertaken with regard to best practice guidelines issued by Natural England (2004 ), the Joint Nature Conservation Committee (2004 ) and the Bat Conservation Trust (2016 ).

### 3. ECOLOGICAL FEATURES

- 3.1. A habitat survey was undertaken at the site in August 2021.
- 3.2. The following main habitat / vegetation types were identified within the site during the surveys undertaken:

- Scrub;
- Rough grassland;
- Arable;
- Ditch;
- Modified grassland;
- Hedgerows;
- Building and
- Trees.

- 3.3. The location of these habitats, which are described individually below, is shown on Plan ECO2.

#### 3.4. Scrub

- 3.4.1. Elements of dense scrub are present along the northern boundary creating a scrub / grassland mosaic (see grassland section below and Photograph 1).
- 3.4.2. Scrub is generally dense and dominated by Bramble *Rubus fruticosus*. Other species recorded include Hawthorn *Crataegus monogyna*, Elder *Sambucus nigra*, Cherry *Prunus avium*, Hazel *Corylus avellana*, Dog Rose *Rosa canina*, Canadian Goldenrod *Solidago virgaurea* and Hedge Bindweed *Calystegia sepium*.
- 3.4.3. There is additional Bramble scrub along the western boundary which also contains Common Nettle *Urtica dioica* and Creeping Thistle *Cirsium arvense*.
- 3.4.4. Bramble scrub is also present surrounding the Building B1 with Field Scabious *Knautia arvensis*, Hogweed *Heracleum sphondylium*, Common Nettle, Creeping Thistle, Black Bryony *Dioscorea communis*, Mugwort *Artemisia vulgaris*, Yarrow *Achillea millefolium* and Field Horsetail *Equisetum arvense*.
- 3.4.5. The northeast corner of the site is also dominated by dense bramble scrub which was inaccessible to survey. This section is bordered to the south by Plum *Prunus domestica*, Walnut *Juglans regia*, Dogwood *Cornus sanguinea*, Hedge Bindweed, Common Nettle and White Dead-nettle *Lamium album*. Other species in this area include Dwarf Spurge *Euphorbia exigua*, Field Speedwell *Veronica persica*, Poppy *Papaver* sp., Field Bindweed *Convolvulus arvensis*, Mugwort, Nipplewort *Lapsana communis*, Asparagus *Asparagus officinalis*, Bramble, Snowberry *Symphoricarpos* sp., Shepherd's-purse *Capsella bursa-pastoris*, Perennial Sow Thistle *Sonchus arvensis* and Deadly Nightshade *Atropa belladonna*.

#### 3.5. Rough Grassland

- 3.5.1. Rough grassland is dispersed throughout the areas of scrub across the northern boundary, as well as in the northwest corner of the site. This

grassland is species poor, has a tall sward height and is tussocky in nature due to a lack of management. Clear mammal paths can be seen throughout.

- 3.5.2. Species that dominate this habitat include Cocksfoot *Dactylis glomerata* and False Oat-grass *Arrhenatherum elatius*. Creeping Thistle is seen frequently with occasional Mugwort, while both Hogweed and Common Ragwort *Senecio jacobaea* were rarely recorded. Other species recorded include Bristly Oxtongue *Picris echioides*, White Dead-Nettle, Common Nettle, Yarrow, Ground Ivy *Glechoma hederacea*, Field Bindweed *Convolvulus arvensis*, Prickly Lettuce *Lactuca serriola*, Willowherb *Epilobium* sp. and Horse-radish *Armoracia rusticana*.
- 3.5.3. Small stands of Montbretia *Crocosmia x crocosmiiflora* were also noted in this area. This is an invasive species detailed on Schedule 9 of the Wildlife and Countryside Act 1981, that requirements careful management.
- 3.5.4. The rough grassland located in the northwest of the site is of similar structure and characteristic to that found along the northern boundary and contains Cocksfoot, Viper's Bugloss *Echium vulgare*, Ribwort Plantain *Plantago lanceolata*, Common Sow-thistle *Sonchus oleraceus*, Doves' Foot Cranesbill *Geranium molle*, White Dead-nettle, Field Bindweed, Hoary Ragwort *Jacobaea erucifolia*, Yarrow, Bramble, Creeping Cinqufoil, Hogweed, Horse-radish, Common Nettle, Comfrey, Field Bindweed, Agrimony *Agrimonia eupatoria*, Hedge Woundwort *Stachys sylvatica*, Field Scabious and Germander Speedwell *Veronica chamaedrys*. There are also Lime *Tilia platyphyllos x cordata*, Hawthorn, Hazel, Elder and Field Maple *Acer campestre*, as well as Blackthorn *Prunus spinosa* saplings next to the hedgerow.
- 3.5.5. Trees in this section include Walnut, Apple *Malus* sp., Field Maple, Cherry, and Hazel.

### 3.6. Arable

- 3.6.1. A large portion of the centre of the site is arable which comprised, at the time of the survey, mainly Barley *Hordeum* sp., with small areas assigned for the growth of Sweetcorn and Squash varieties (see Photograph 2).

### 3.7. Ditch

- 3.7.1. A ditch (D1) lies along the western boundary of the site and intersects the site (see Photograph 3). The ditch is steep banked, with a gentle flow of water which is approximately 30cm deep. There are signs of recent management and silt removal / dredging for the majority of its length. There are limited quantities of emerging vegetation, though the water surface is partially covered by Duckweed *Lemna* sp. in the northern-most section. Meadowsweet *Filipendula ulmaria*, Field Horsetail and Yellow Iris *Iris pseudacorus* are also present.

### 3.8. Modified Grassland

- 3.8.1. The arable portion of the site has a border of modified grassland which extends to the ditch on the west side and at the base of the hedgerows elsewhere.
- 3.8.2. Grassland associated with the ditch along the western boundary is well-managed and has a short sward height. Species comprise Cocksfoot,

Fescue *Festuca* sp., Common Mallow *Malva sylvestris*, Bristly Oxtongue, Curled Dock *Rumex crispus*, Mugwort, Ribwort Plantain, Cat's-ear *Hypochaeris radicata*, Cow Parsley *Anthriscus sylvestris*, Ground Ivy, Common Nettle, Creeping Thistle, Hogweed and Common Comfrey *Symphytum officinale*.

- 3.8.3. There is a strip of grassland to the north of Hedgerow H1 that runs parallel to the southern boundary of the site. This is lightly managed and with a similar species composition to that recorded along the western boundary. Cat's-ear is more dominant in this area compared to the sections of grassland around the site. Other species in this area include Ribwort Plantain, Perennial Rye Grass *Lolium perenne*, Cocksfoot, Hogweed, Curled Dock, Yarrow, White Clover *Trifolium repens*, Common Speedwell, Field Scabious, Dove's-foot Crane's-bill *Geranium mole*, Field Horsetail, Scentless Mayweed *Tripleurospermum inodorum*, Scarlet Pimpernel *Anagallis arvensis* and Red Bartsia *Odontites vernus*.
- 3.8.4. In the north-western corner of the site, inside the security gate on Villa Road, an area of modified grassland lies between the rough grassland and the road and is regularly managed. Species found here include grass species found within the adjacent rough grassland and herbaceous species such as Creeping Cinquefoil *Potentilla reptans*, Prickly Sow-thistle *Sonchus asper*, Ribwort Plantain and Creeping Thistle.

### 3.9. Hedgerows

- 3.9.1. The hedgerow H1 (see Photograph 4) along the southern boundary of the site appears occasionally managed and stands at approximately 2m tall. The main body of the hedgerow comprises Hawthorn and Bramble, while the ground flora contains Ground Ivy, Common Nettle, Creeping Thistle, Hogweed and Comfrey.
- 3.9.2. The hedgerow (H2) along the eastern boundary comprises similar species to the southern boundary but is less managed and is overgrown. There are also Common Mallow and Red Campion *Silene dioica*.
- 3.9.3. Hedgerow H3 is located in the northwest of the site, forming the boundary of the site in this area. This hedgerow is fairly unmanaged, dense and approximately 3m tall by 2m wide. The hedgerow comprises predominately Blackthorn, with less frequent Elder, Hawthorn and Hazel.

### 3.10. Building

- 3.10.1. A single building (Building B1; see Photograph 5) is present within the southwest corner of the site. This building is two storeys in height, brick built and would appear to be an old pump tower. The building has significant Ivy coverage on its western elevation, however is in a relatively good state of repair.

### 3.11. Trees

- 3.11.1. A number of trees are present around the site, largely associated with the boundaries and areas of rough grassland and scrub.
- 3.11.2. An Ash is located nearby the ditch along the northern boundary with a branched tier on southern elevations.

- 3.11.3. There is a tree line along the eastern edge of the site mainly comprised of Apple, Beech *Fagus sylvatica* and Holly *Ilex aquifolium*.
- 3.11.4. Other species recorded around the site include Ash, Elder, Hazel, Cherry, Apple, Field Maple, Leyland Cypress *Cupressus x leylandii*.

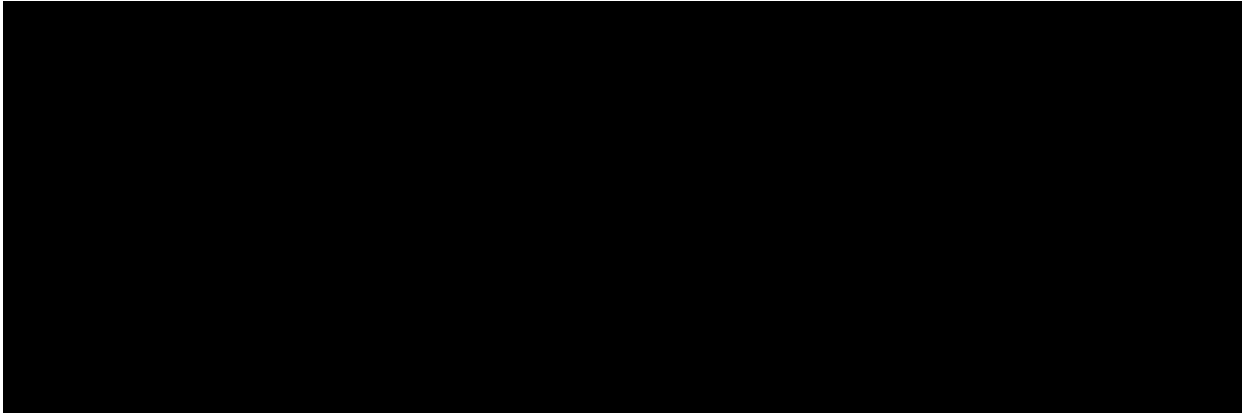
#### *Background Records*

- 3.11.5. A single plant species listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) was returned by the data search from the past 10 years. The closest record for Jersey Cudweed *Gnaphalium luteoalbum* was recorded within approximately 0.7km of the site, whilst the most recent was returned regarding 2015 which refers to a location approximately 1.2km from the site.

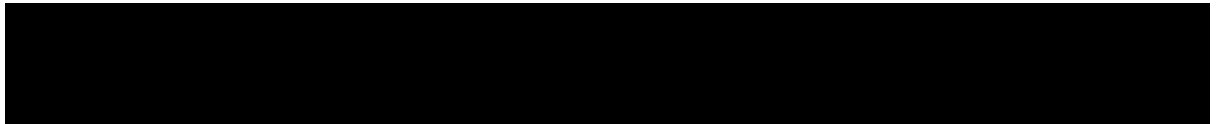
#### 4. WILDLIFE USE OF SITE

4.1. General observations were made during the surveys of any faunal use of the site and wider study area with specific attention paid to the potential presence of protected species. To date initial surveys have been completed with regard to bats and Badgers.

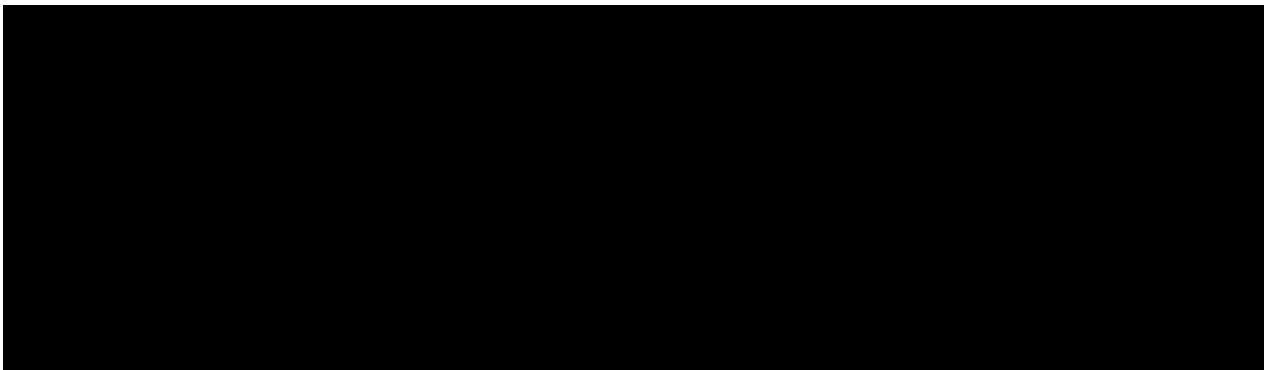
##### 4.2. Badgers



##### *Background Records*



##### 4.3. Bats



4.3.3. The tree line, hedgerows and ditch provide suitable foraging and dispersal grounds for locally present bats species, offering linear features for navigation. The rough grassland and scrub in the north of the site is also likely to offer some foraging opportunities for this group.

##### *Background Records*

4.3.4. A large number of records for bat species were returned by the data search including from the Cambridgeshire Bat Group from the past 10 years. Species included in this list are Common Pipistrelle *Pipistrellus pipistrellus* and bats identified to Pipistrelle *Pipistrellus* sp. which accounts for forty-one records; Soprano Pipistrelle *Pipistrellus pygmaeus* which accounts for fifteen records, Noctule *Nyctalus noctule* which account for six records; Brown Long-eared Bat *Plecotus auratus* which account for six records; Daubenton's Bat *Myotis daubentonii* which account for two records;



Serotine *Eptesicus serotinus* which account for a single record and twenty-seven bats where the species is not known.



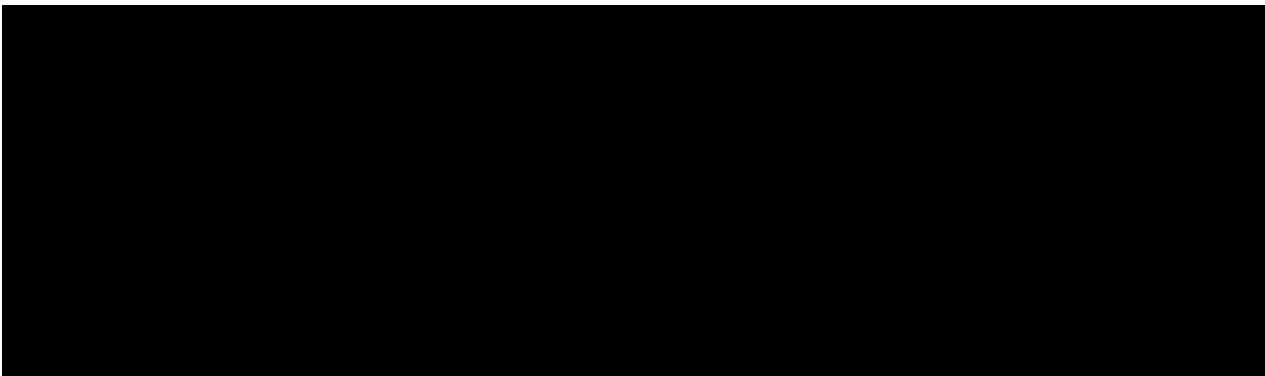
#### 4.4. Otters

- 4.4.1. Ditch D1 has the potential to offer dispersal opportunities for Otter *Lutra lutra* as it is connected to a series of watercourses in the wider landscape. No evidence of holts were recorded during the initial appraisal of the ditch for this species.

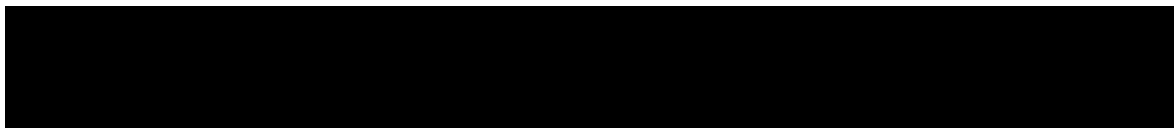
##### *Background Records*

- 4.4.2. No background records were returned for Otters.

#### 4.5. Water Voles



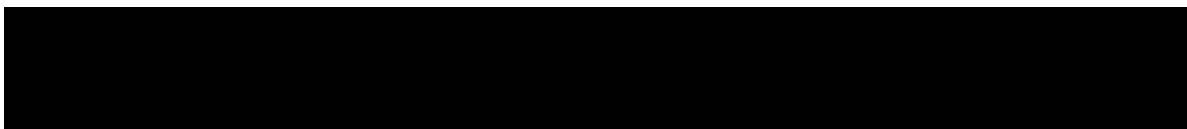
##### *Background Records*



#### 4.6. Other Mammals

- 4.6.1. No evidence of Hedgehog *Erinaceus europaeus* was observed on site during surveys undertaken in August 2021. The site contains suitable habitat for foraging and dispersal as well as hibernation, primarily within the rough grassland and scrub .
- 4.6.2. It is considered that other small common mammal species could make use of vegetation within the site. None of the small mammals are likely to be notable or species of conservation concern.

##### *Background Records*





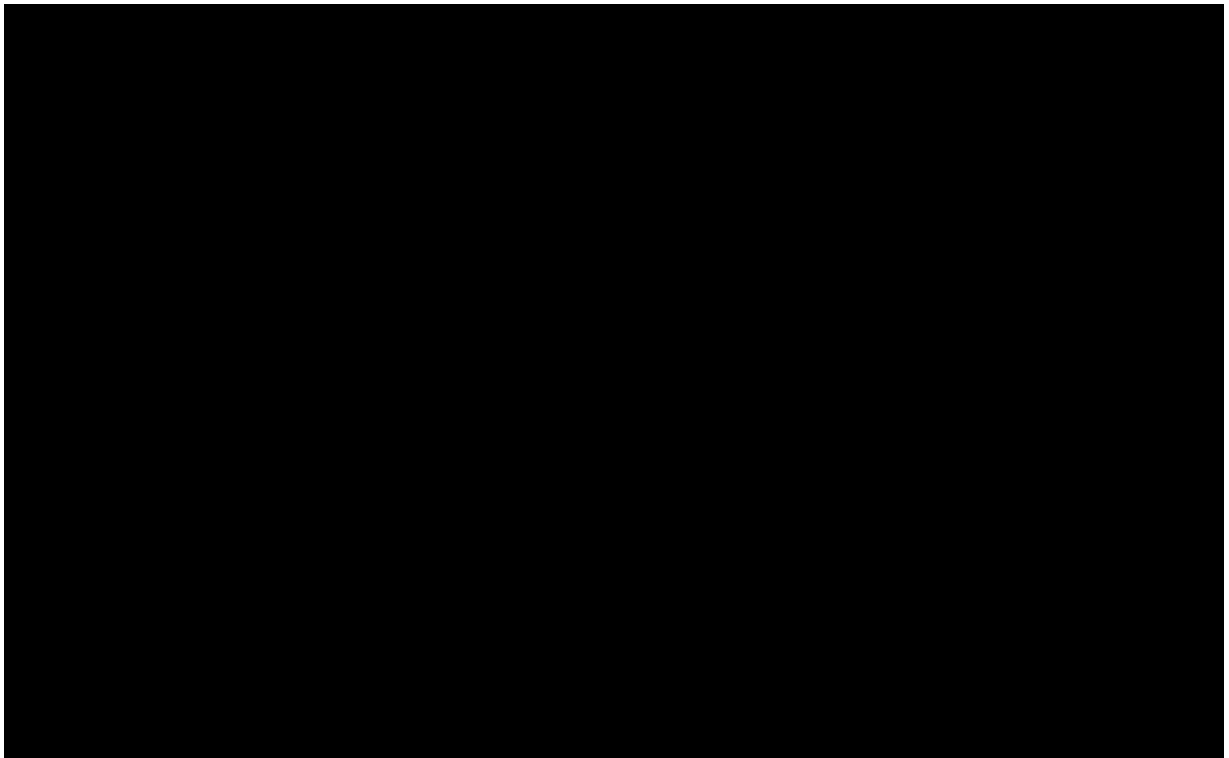
#### 4.7. Birds

4.7.1. A number of common bird species were identified during the survey work, primarily associated with the hedgerow and trees. Bird species recorded by sight or call during the survey include Carrion Crow *Corvus corone*, Blackcap *Sylvia atricapilla*, Wood Pigeon *Columba palumbus* *Columba palumbus*, Blackbird *Turdus merula*, Robin *Erithacus rubecula* and Starling *Sturnus vulgaris*.

4.7.2. The hedgerows, trees and scrub throughout the site offer good nesting and foraging opportunities for birds.

##### *Background Records*

4.7.3. A large number of bird records were returned by CPERC.



#### 4.8. Reptiles

4.8.1. No reptiles were recorded during work undertaken in August 2021 but the site offers habitat commonly preferred by common reptile species within the rough grassland and scrub within the north of the site.

##### *Background Records*

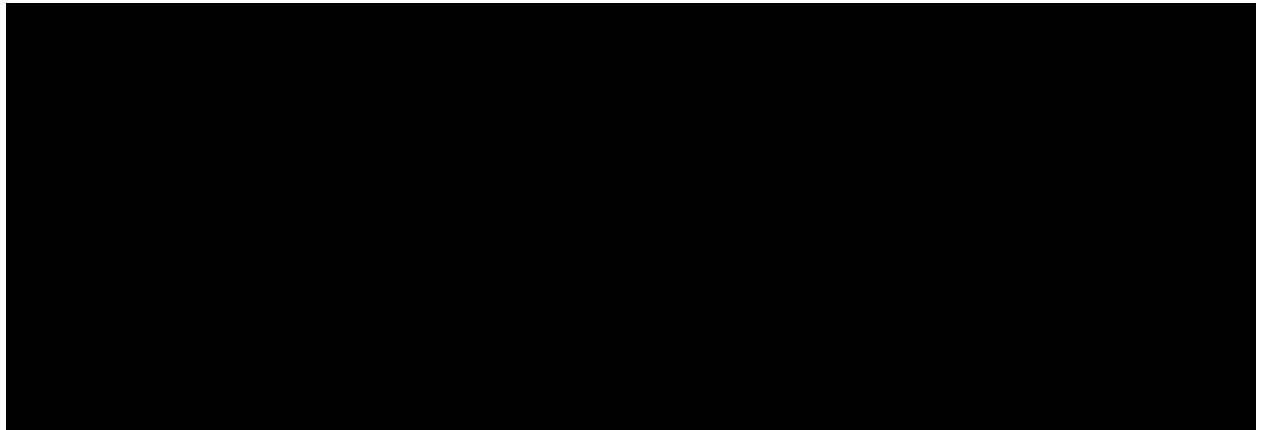


- 4.8.3. The data search returned a single record for Grass Snake *Natrix Helvetica*, which was obtained in 2020 and relates to a location approximately 1km from the site.

#### 4.9. **Amphibians (Great Crested Newt)**

- 4.9.1. No amphibians were recorded during work undertaken in August 2021 but the ditch presents an opportunity for dispersal. The hedgerow, scrub and grassland offer some suitable habitat for amphibians during their terrestrial phase also.

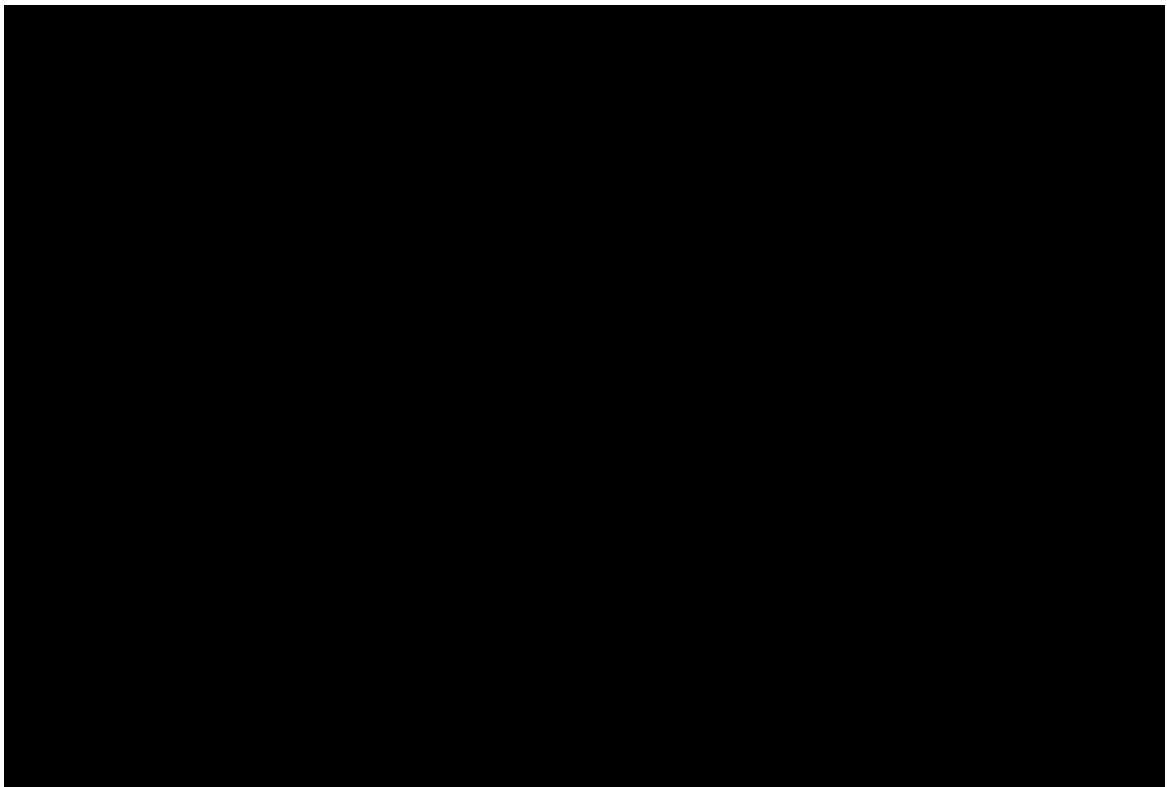
##### *Background Records*



#### 4.10. **Invertebrates**

- 4.10.1. Given the habitats found on the site, it is expected that there would be a reasonable assemblage of common invertebrates present, but there is no evidence to suggest any notable species would be supported by the site.

##### *Background Records*





## 5. ECOLOGICAL EVALUATION

### 5.1. The Principles of Ecological Evaluation

- 5.1.1. The latest guidelines for ecological evaluation produced by CIEEM<sup>4</sup> 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<sup>5</sup>. 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 typicality, 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 and species of local importance are often highlighted within a local Biodiversity Action Plan (BAP). The Cambridgeshire and Peterborough local Habitat Action Plans and local list of Priority Species highlights a number of priority habitats and species. Where these occur within the site they are highlighted.
- 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. Habitat Evaluation

#### *Designated Sites*

- 5.2.1. **Statutory Designations.** There are no statutory designated sites of nature conservation interest within or immediately adjacent to the site (see Plan ECO1).
- 5.2.2. The nearest such designation is Histon Road SSSI, located approximately 1.5km south-east of the site. This site is designated due to its geological

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<sup>4</sup> CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal*. Chartered Institute of Ecology and Environmental Management, Winchester.

<sup>5</sup> Ratcliffe, D A (1977). *A Nature Conservation Review*. Two Volumes. Cambridge University Press, Cambridge.

interest rather than for nature conservation. The deposit on site provides an almost complete record of the second half of the Ipswichian Interglacial.

5.2.3. The closest SSSI designated for ecological reasons is Madingley Woods SSSI, located 4.3km to the southwest, which contains areas of ancient pedunculate oak woodland.

5.2.4. Given the intervening land use and spatial separation there is not likely to be any direct adverse effect as a result of the proposed development on the locally present statutory designated sites.

5.2.5. **Non-statutory Designations.** There are no non-statutory designated sites within or immediately adjacent to the site. The closest listed City Wildlife Site (CWS) is King's Hedges Hedgerow CWS located approximately 1.8km south-east of the site (see Plan ECO1). This non-statutory site supports a hedgerow at least 100m in length and 2m in width at its widest point with four or more woody species.

5.2.6. Given the intervening land use and spatial separation there is not likely to be any direct adverse effect as a result of the proposed development on the locally present non-statutory designated sites.

#### *Habitats*

5.2.7. The site comprised mainly arable with a mix of rough grassland and scrub along the northern boundary and in the northwest corner. There is a ditch along the western edge of the site, which has clear signs of recent management (silt and vegetation removal), and a two-storey brick building surrounded by scrub in the southwestern corner. While some habitats, such as the hedgerows and trees, are of heightened interest within the context of the site, the majority of habitats are of low intrinsic value.

5.2.8. It is recommended that the landscape strategy for the any proposed development of the site incorporates a diverse selection of native species of local provenance, which would have greater benefit for local wildlife. Proposals of the site should aim to maintain and enhance existing hedgerows and trees to retain existing green infrastructure.

5.2.9. The need to achieve a Biodiversity Net Gain will be required as part of any proposals for the site. A Biodiversity Net Gain assessment using the Natural England Metric tool should be undertaken to inform the design of any proposals and to ensure that it adheres to adopted National and local policy as well as emerging legislation.

#### *Non-native Invasive Species*

5.2.10. Small stands of Montbretia were also noted in the north of the site which is a species detailed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to plant or cause Schedule 9 species to grow in the wild. This would need to be removed by a specialist when vegetation is removed in this area.

### 5.3. Faunal Evaluation

#### *Badgers*

- 5.3.1. **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.
- 5.3.2. As well as protecting the animal itself, the 1992 Act also makes the intentional or reckless destruction, damage or obstruction of Badger setts an offence. A sett is defined as, “*any structure or place which displays signs indicating current use by a Badger*”, by current Natural England guidance.
- 5.3.3. In addition, the intentional elimination of sufficient foraging area used 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.
- 5.3.4. Any work that disturbs Badgers is illegal without a licence granted by Natural England. Unlike general conservation legislation, the Badgers Act 1992 makes specific provision for the granting of licences for development purposes, including for the destruction of setts.
- 5.3.5. It should be noted that a licence cannot be issued until the site is in receipt of full and valid planning permission, and that generally licences are not granted between December and June inclusive to avoid disruption to the Badger breeding cycle.
- 5.3.6. **Site Usage.** [REDACTED]
- 5.3.7. At this time [REDACTED] but further monitoring is advisable to determine its full use, along with monitoring of the potential sett along the ditch.
- 5.3.8. **Mitigation and Enhancements.** [REDACTED] These surveys will also inform the necessary mitigation and enhancement required for this species.
- 5.3.9. [REDACTED]
- 5.3.10. [REDACTED]



- 5.3.11. In addition, the potential exists for Badgers to roam into areas where construction is underway and become trapped in trenches and / or excavate new setts in piles of subsoil, or disturb chemicals that may be being used for development. Precautions will therefore need to be implemented during the construction phase of the development to mitigate this risk.

#### *Bats*

- 5.3.12. **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”). These include provisions making it an offence to:

- Deliberately kill, injure or take (capture) bats;
- Deliberately disturb bats in such a way as to:-
  - (i) be likely to impair their ability to survive, to breed or 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;
- 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 (even if bats are not in residence).

- 5.3.13. 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.

- 5.3.14. The offence of damaging (making worse for the bat) or destroying a breeding site or resting place is an absolute offence. Such actions do not have to be deliberate for an offence to be committed.

- 5.3.15. In accordance with the Habitats Regulations the licensing authority (Natural England) must apply the three derogation tests as part of the process of considering a licence application. These tests are that:

1. The activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety;
2. There must be no satisfactory alternative; and
3. The favourable conservation status of the species concerned must be maintained.

- 5.3.16. Licences can usually only be granted if the development is in receipt of full planning permission.

- 5.3.17. **Site Usage.** Scrub and grassland located in the north of site, as well as the tree line and hedgerows are likely to provide suitable foraging and dispersal opportunities for locally present bats species. The site is also likely to be of some interest for foraging and dispersing bats with the ditch and hedgerows being of greatest interest.



- 5.3.18. [REDACTED] was identified as have Potential Roost Features (PRFs) that could support roosting bats. The tree has a large amount of Ivy coverage and possesses knots and a branch tear on the southern side of the tree.
- 5.3.19. [REDACTED] is considered to have medium roost suitability for roosting bats.
- 5.3.20. **Mitigation and Enhancements.** We would recommend that further bat surveys are carried out to gain a better understanding of the use of the site by this protected group and understand on any required mitigation should a likely adverse effect be confirmed.
- 5.3.21. Owing to the suitable foraging and dispersal opportunities on site, bat activity transects should also support any forthcoming planning application for the development of the site. It is considered that three activities would be appropriate for such a site and would need to be undertaken across spring, summer, and autumn. The activity surveys should be supported by the deployment of static bat detectors which would be record for a period of five nights.
- 5.3.22. Where possible any proposals for the site should retain the linear features, such as hedgerows and trees, along the boundaries of the site with new planting aimed at bolstering such habitats to strengthen the green infrastructure post-development. Where lost, compensation planting should be provided, such as new native hedgerows and tree planting. The creation of species-rich habitats, such as wildflower meadows and native scrub, as part of any forthcoming proposals would offer new opportunities for bats.
- 5.3.23. As a further enhancement, bat boxes could be installed on suitable trees retained within the site or on new buildings to offer new roosting opportunities.

#### *Water Voles*

- 5.3.24. **Legislation.** Before 1998 the Water Vole received limited legal protection through its inclusion in Schedule 5 of the Wildlife & Countryside Act 1981. This protection has now been extended, so that the Water Vole is now fully protected. Legal protection makes it an offence to:
- Intentionally kill, injure or take (capture) a Water Vole;
  - Possess or control a live or dead Water Vole, or any part of a water vole;
  - Sell, offer for sale or advertise for live or dead water voles;
  - Intentionally or recklessly damage, destroy, or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place.
- 5.3.25. 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 were not the primary purpose of the act.
- 5.3.26. As of January 2016, The Water Vole Mitigation Handbook<sup>6</sup> specifies that operations where Water Voles are to be trapped or displaced require a

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<sup>6</sup> Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series)*. Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

conservation licence from Natural England. This may be in the form of a Class Licence or a Site-specific licence dependant on whether the proposals meet particular criteria. To obtain either licence the project must deliver a net benefit for Water Voles.

5.3.27. **Site Usage.** [REDACTED]  
[REDACTED]  
[REDACTED]. Local records do highlight the presence of this species within the locality of the site.

5.3.28. **Mitigation and Enhancements.** In order to determine whether Water Voles are present, further survey work is recommended. Typically, two surveys are undertaken to determine presence, one between mid-April and the end of June, and the second between July and September.

5.3.29. Further survey work would inform any necessary mitigation and enhancements that would need to be implanted as part of any forthcoming development of the site.

#### *Otters*

5.3.30. **Legislation.** Otters are fully protected as a European Protected Species (EPS) and is also protected under Schedule 9 and 11 of the Wildlife and Countryside Act 1981 (as amended). Legal protection makes it an offence to:

- Intentionally kill, injure or take (capture) an Otter;
- Possess or control a live or dead Otter, or any part of an Otter;
- Intentionally or recklessly damage, destroy, or obstruct access to any structure or place which otters use for shelter or protection or disturb Otters while they are using such a place.

5.3.31. **Site Usage.** No obvious signs of holts were recorded along the ditch during the initial appraisal, however some use of the ditch by the is species for dispersal purposes is a possibility.

5.3.32. **Mitigation and Enhancements.** A specific survey for evidence of Otters should be undertaken to determine whether the ditch is used by this species. This can be undertaken in conjunction with the Water Vole survey as described above.

5.3.33. The recommended survey work would inform whether any specific mitigation will be required.

#### *Hedgehogs*

5.3.34. **Legislation.** Hedgehogs are not a protected species, but they are a priority species under Section 41 of the NERC Act 2006.

5.3.35. The NERC Act 2006 requires the Secretary of State to:

**...take such steps as appear...to be reasonably practicable to further the conservation of the living organisms and types of habitat included in any list published under this section, or...promote the taking by others of such steps.**

- 5.3.36. **Site Usage.** Hedgehogs were not recorded during survey work. The site contains suitable habitat for foraging and dispersal, as well as hibernation.
- 5.3.37. **Mitigation and Enhancements.** As a precautionary measure, it is recommended that any clearance of log piles or other Hedgehog shelter features during the construction phase be subject to inspection to ensure that Hedgehogs are absent.
- 5.3.38. The development would have scope to provide new habitats for Hedgehogs through the creation of new wildflower meadow grassland, scrub and hedgerow planting. Any forthcoming proposals should seek to retain permeability for hedgehogs by ensuring that any fencing, such as garden fencing, is not impenetrable for small mammals. Hedgehog gateways, a small 13cm x 13cm gap at the base of fencing, can be used to enable movement through the site.

#### *Birds*

- 5.3.39. **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 wild birds receive general protection whilst nesting.
- 5.3.40. **Site Usage.** An assemblage of common bird species was recorded during the course of the habitat surveys. Scrub around the site and the tree line along the eastern boundary, as well as the hedgerow to the south and west offer suitable nesting and foraging opportunities for birds.
- 5.3.41. **Mitigation and Enhancements.** While no farmland birds were recorded during the survey, it would be prudent to review this position during the principal breeding season (April to July) to fully assess the use of the site for this group of birds. If present, then further breeding bird surveys may be warranted.
- 5.3.42. It would be recommended that clearance of any suitable nesting habitat be undertaken outside the bird nesting season (March to July inclusive) to avoid any potential offence. Should the above timing constraints conflict with any timetabled works, it would be recommended that works commence only after a suitably qualified ecologist has undertaken checks to ensure no nesting birds are present, and any confirmed nests left in situ until the young have fledged.
- 5.3.43. It is recommended that existing features of interest for birds, such as the hedgerows and trees, are retained as part of any proposal for the site. New native tree planting would offer replacement and new foraging and nesting opportunities for birds. The planting of berry / fruit-bearing species would also provide enhanced foraging opportunities.
- 5.3.44. The inclusion of bird boxes on retained trees or new buildings within the site would offer new nesting opportunities and provide ecological gains.

#### *Reptiles*

- 5.3.45. **Legislation.** Rare, endangered or declining species receive full protection under the Wildlife & Countryside Act 1981 and the Conservation of Habitats and Species Regulations 2017, equivalent to bats as set out above. Species

that are fully protected are Smooth Snake *Coronella austriaca* and Sand Lizard *Lacerta agilis*.

- 5.3.46. Owing to their abundance in Britain, Common Lizard, Slow Worm *Anguis fragilis*, Grass Snake *Natrix helvetica* and Adder *Vipera berus* are only 'partially protected' under the Wildlife & Countryside Act and as such only receive protection from:
- Intentional killing and injuring; and
  - Being sold or other forms of trading.
- 5.3.47. 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.
- 5.3.48. All reptile species are listed as a Species of Principal Importance under Section 41 of the NERC Act 2006. The NERC Act places responsibility upon public bodies to have regard for the conservation of biodiversity in England.
- 5.3.49. **Site Usage.** There are a number of areas with high reptile suitability in the site, [REDACTED] provides suitable foraging and refugia opportunities.
- 5.3.50. **Mitigation and Enhancements.** It is recommended that presence/absence surveys are undertaken to determine whether reptiles are supported by the site. This work can be undertaken between April and September. Any clearance of rough grassland, log piles or other reptile hibernation features will be subject to the same mitigation measures as Hedgehogs (see above).
- 5.3.51. These surveys will inform any necessary mitigation and enhancements that would be required. Any proposals for the site will have scope to ensure that opportunities for this group are maintained post-development. This could include the establishment of new green infrastructure running through the site, comprising new areas of wildflower meadows and scrub. Further enhancements, such as the provision of log piles and hibernacula, could be incorporated into the design of any development to offer new refugia and hibernation opportunities.

### *Amphibians*

- 5.3.52. **Legislation.** All British amphibian species receive a degree of protection under the Wildlife and Countryside Act 1981 (as amended). The level of protection varies from protection from sale or trade only, as is the case with species such as Smooth Newt and Common Toad, to the more rigorous protection afforded to species such as the Great Crested Newt, which is also 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.
- 5.3.53. Common Toads are also species of principal importance for the conservation of biodiversity under Section 41 (England) of the NERC Act 2006.
- 5.3.54. The NERC Act 2006 requires the Secretary of State to:

**... take such steps as appear... to be reasonably practicable to further the conservation of the living organisms and types of habitat included in any list published under this section, or... promote the taking by others of such steps.**

**Site Usage.**

the slow flow of the water and this species has been recorded within the locale of the site.

- 5.3.55. **Mitigation and Enhancements.** Further survey work on the ditch in the form of eDNA testing is recommended to determine the presence / absence of Great Crested Newts (15 March to 30 July inclusive). If positive, two approaches can be followed.
- 5.3.56. The first would involve undertaking population class surveys to inform a EPS licence application via the traditional Natural England licensing route. These surveys would provide clarity on the size of the population present and inform the necessary mitigation and enhancements that would be required.
- 5.3.57. The second route is via the Natural England District Level Licensing scheme which would not require any further survey work, however this would need to be assessed by Natural England and an appropriate level of financial contribution provided by the developer to go towards the creation of new habitats within the wider landscape.
- 5.3.58. Development of the site could offer new opportunities for amphibians via a biodiversity led design of any drainage features, such as attenuation ponds. The establishment of habitats used during amphibians' terrestrial phase, such as shrub / scrub and wildflower meadow grassland could offer an increase in suitable habitats on site.

*Invertebrates*

- 5.3.59. **Site Use.** Given the habitats present it is likely an assemblage of common invertebrate species is present within the site.
- 5.3.60. **Mitigation and Enhancements.** It is recommended that any proposal for the site include species-rich habitats, such as wildflower grassland, to offer new nectar resources for invertebrates.
- 5.3.61. Further provision of wood piles could be provided in discreet locations to offer a resource for saproxylic species.

## 6. SUMMARY AND CONCLUSIONS

- 6.1. Ecology Solutions was commissioned by Cirrus Land Limited in August 2021 to complete an Ecological Appraisal of land south of Villa Road, Impington.
- 6.2. Cirrus Land Limited are looking to demonstrate the site is deliverable for potential development in the future.
- 6.3. An extended Phase 1 habitat survey was carried out in August 2021.
- 6.4. **Statutory & Non-statutory Sites.** There are no statutory or non-statutory designated sites of nature conservation interest within or immediately adjacent to the site. Therefore, given the intervening land use, spatial separation, and type of proposed development there is not likely to be any direct adverse effect as a result of the proposed development on the locally present statutory designated sites.
- 6.5. **Habitats.** The site comprised mainly arable with a mix of rough grassland and scrub along the northern boundary and in the northwest corner. There is a ditch along the western edge of the site, which has clear signs of recent management (silt and vegetation removal), and a two-storey brick building surrounded by scrub in the southwestern corner. While some habitats, such as the hedgerows and trees, are of heightened interest within the context of the site, the majority of habitats are of low intrinsic value.
- 6.6. It is recommended that the landscape strategy for the proposed development incorporate a diverse selection of native species of local provenance, which would have greater benefit for local wildlife. Where feasible shade tolerant wildlife grassland could be provided at the base of retained hedgerows and trees on the margins of the site. Any proposal for the site should be accompanied by a Biodiversity Net Gain assessment, using Natural England's Metric tool, to ensure that net gains are achieved.
- 6.7. **Badgers.** [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]
- 6.8. Further monitoring surveys are recommended to determine the use of the site by this species. Any future proposals should look to retain and safeguard [REDACTED]  
[REDACTED]  
[REDACTED]. Closure of any sett can only be undertaken between July and November inclusive to avoid the sensitive period for this species.
- 6.9. Safeguarding measures would be required during the construction phase to ensure that no entrapment occurs of any dispersing Badgers.
- 6.10. **Bats.** [REDACTED]  
[REDACTED] are likely to provide suitable foraging and dispersal opportunities for locally present bats species. The site is also likely to be of some interest for foraging and dispersing bats with [REDACTED] being of greatest interest.
- 6.11. It is recommended that further bat activity transect surveys are carried out to gain a better understanding of the use of the site by this protected group and

understand on any required mitigation should a likely adverse effect be confirmed.

- 6.12. [REDACTED] are considered to have moderate roost suitability and should therefore be subject to two emergence / re-entry surveys to determine use by this group.
- 6.13. Where possible any proposals for the site should retain the linear features along the boundary of the site with and new planting aimed at bolstering such habitats to strengthen the green infrastructure post-development. Where lost, compensation planting should be provided, such as new native hedgerows and tree planting. The creation of species-rich habitats, such as wildflower meadows and native scrub, as part of any forthcoming proposals would offer new opportunities for bats.
- 6.14. As a further enhancement, bat boxes could be installed on suitable trees retained within the site or on new buildings to offer an increase in new roosting opportunities.
- 6.15. **Water Voles.** [REDACTED] does hold some suitability for this species and records of this species are present in the wider landscape. [REDACTED], however recent management to the ditch restricted any further evidence being found.
- 6.16. Further survey work is recommended to inform any necessary mitigation and enhancements that would need to be implanted as part of any forthcoming development of the site
- 6.17. **Otters.** No obvious signs of holts were recorded along the ditch during the initial appraisal, however some use of the ditch by the is species for dispersal purposes is a possibility.
- 6.18. A specific survey for evidence of Otters should be undertaken to determine whether the ditch is used by this species. This can be undertaken in conjunction with the Water Vole survey..
- 6.19. **Hedgehogs.** The site does have suitability for this species with the grassland and scrub likely to be of greatest interest. As a precautionary measure, it is recommended that any clearance of log piles or other Hedgehog shelter features during the construction phase be subject to inspection to ensure that Hedgehogs are absent.
- 6.20. The development would have scope to provide new habitats for Hedgehogs through the creation of new wildflower meadow grassland, scrub and hedgerow planting whilst permeability of the site could be maintained through the provision of hedgehog gateways through any impenetrable fencing.
- 6.21. **Birds.** An assemblage of common bird species was recorded during the course of the habitat surveys. Scrub, trees and hedgerows offer suitable nesting and foraging opportunities for birds. Arable may be of interest for farmland birds and it is recommended that a check of the site be undertaken during the main breeding season to determine whether breeding bird surveys are required.
- 6.22. It would be recommended that clearance of any suitable nesting habitat be undertaken outside the bird nesting season (March to July inclusive) to avoid any potential offence.

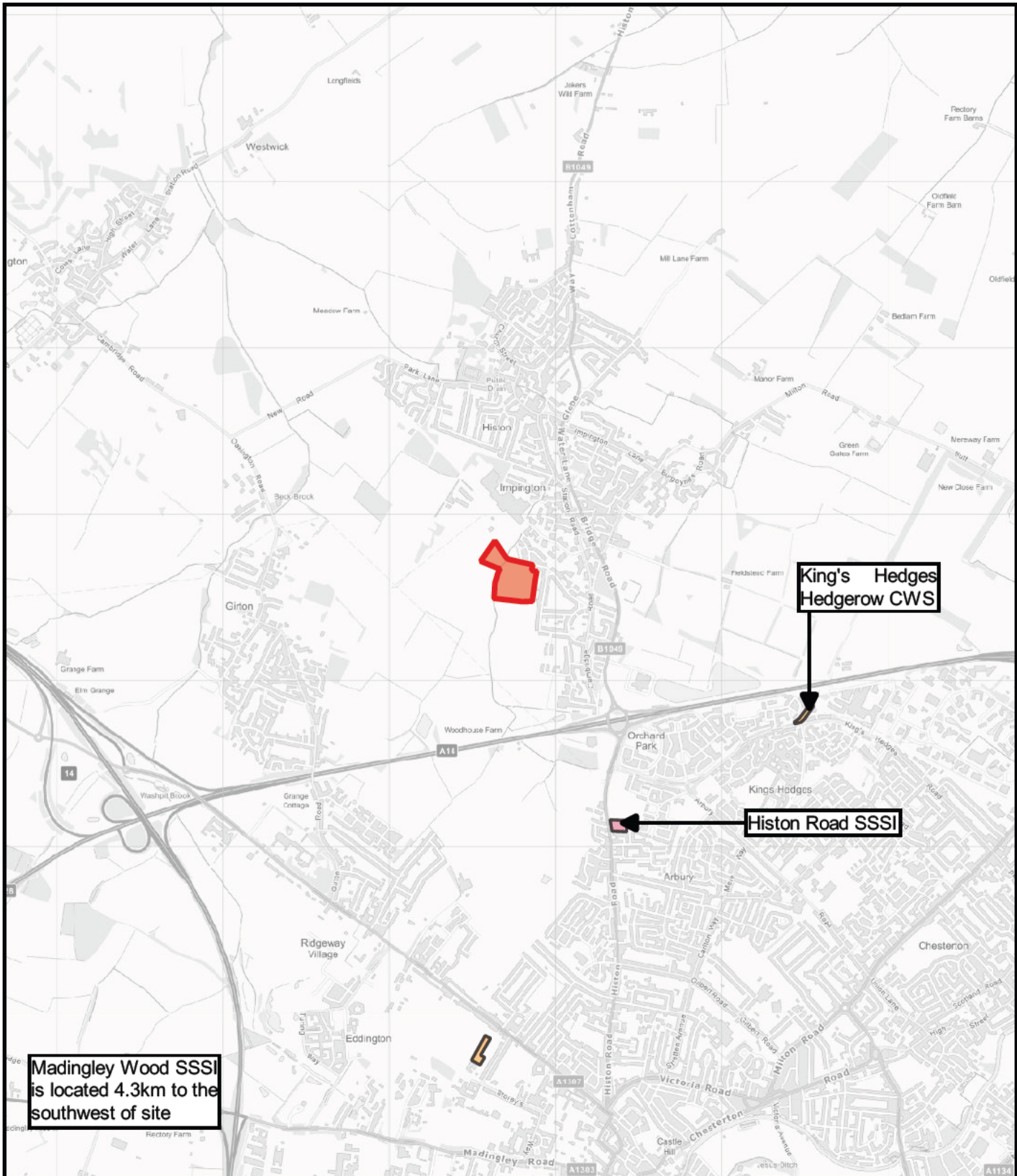
- 6.23. It is recommended that existing features of interest for birds, such as the hedgerows and trees, are retained as part of any proposal for the site. New native tree planting would offer replacement and new foraging and nesting opportunities for birds. The planting of berry / fruit-bearing species would also provide enhanced foraging opportunities.
- 6.24. The inclusion of bird boxes on retained trees or new buildings within the site would offer new nesting opportunities and provide ecological gains.
- 6.25. **Reptiles.** It is recommended that presence/absence surveys are undertaken to determine whether reptiles are supported by the site. This work can be undertaken between April and September. These surveys will inform any necessary mitigation and enhancements that would be required.
- 6.26. **Amphibians.** There is some limited potential for amphibians, such as Great Crested Newts, [REDACTED] and this species has been recorded within the locale of the site. Suitable terrestrial habitat is present on site such as the scrub, grassland and hedgerows.
- 6.27. Further survey work on the ditch in the form of eDNA testing is recommended to determine the presence / absence of Great Crested Newts (15 March to 30 July inclusive). This will inform the mitigation strategy and whether any further survey work and/or application of a Natural England EPS licence is required to facilitate the development of the site.
- 6.28. **Invertebrates.** Given the habitats present it is likely an assemblage of common invertebrate species is present.
- 6.29. Any development of the site has the scope to improve the site for invertebrates through the creation of nectar rich habitats, such as wildflower meadow grassland, and further provision of wood piles could be established in discreet locations to offer a resource for saproxylic species.
- 6.30. In conclusion, subject to appropriate mitigation, there is not considered to be any insurmountable ecological reasons the site could not come forward for development, though further surveys are recommended to assess full ecological impacts. There is significant scope within the site to ensure that ecological enhancements can be achieved and that local and national biodiversity targets are accomplished.



## PLANS




## **PLAN ECO1**

Site Location and Ecological Designations



Madingley Wood SSSI is located 4.3km to the southwest of site

**KEY:**

-  SITE LOCATION
-  SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
-  CITY WILDLIFE SITE (CWS)



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IMPINGTON

PLAN ECO1: SITE LOCATION AND  
ECOLOGICAL DESIGNATIONS

Rev: A  
Sep 2021

## **PLAN ECO2**

Ecological Features



## **PHOTOGRAPHS**



PHOTOGRAPH 1: Scrub / grassland mosaic along the northern edge



PHOTOGRAPH 2: Arable





PHOTOGRAPH 3: Ditch D1 (southern facing view)



PHOTOGRAPH 4: Hedgerow H1





PHOTOGRAPH 5: Building B1



[REDACTED]

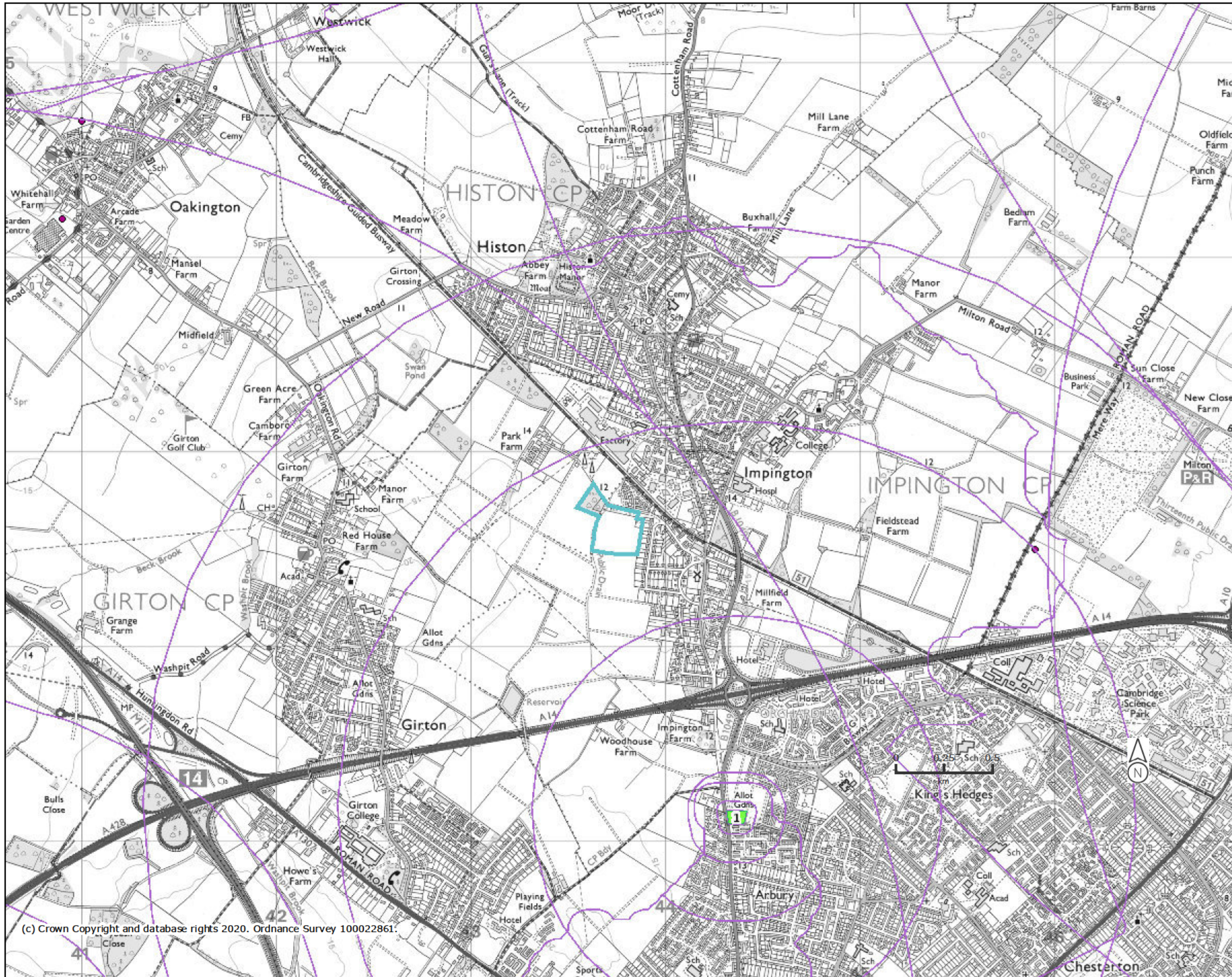
[REDACTED]

## **APPENDICES**

## **APPENDIX 1**

Information downloaded from Multi-Agency  
Geographic Information for the Countryside (MAGIC)





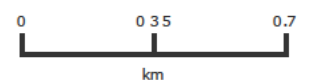
**Legend**

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Ramsar Sites (England)
- Proposed Ramsar Sites (England)
- Sites of Special Scientific Interest Units (England)**
- Favourable Condition
- Unfavourable Recovering
- Unfavourable no change
- Unfavourable Declining
- Part Destroyed
- Destroyed
- Not Assessed
- SSSI Impact Risk Zones - to assess planning applications for
- 1 key impacts on SSSIs/SACs/SPAs & Ramsar sites (England)
- Special Areas of Conservation (England)
- Possible Special Areas of Conservation (England)
- Special Protection Areas (England)
- Potential Special Protection Areas (England)
- Ancient Woodland (England)**
- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland
- Great Crested Newt Class Survey
- Licence Returns (England)

**Great Crested Newt Pond Surveys 2017 - 2019**

- 10 FIG present
- 10 FIG absent
- 10 FIG inconclusive
- 8 FIG present
- 6 FIG present
- 4 FIG present
- 4 FIG absent
- 4 FIG inconclusive

Projection = OSGB36  
 xmin = 540400  
 ymin = 261200  
 xmax = 547100  
 ymax = 264400



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