

Preliminary Ecological Appraisal (PEA)

For

Kumari House,
Laxfield Road,
Stradbroke ,
Eye,
Suffolk,
IP21 5JR

For

Mr & Mrs Spindler

February 2024



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The authors and surveyors used to undertake the work are appropriately qualified for the tasks undertaken. The work undertaken while preparing this report has been carried out with due care, skill, and diligence.

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Contents

1. Background to commission	6
1.1 Overview	6
1.2 Aims of study	6
1.3 Site description	6
1.4 Outline of proposed works	7
1.5 Relevant legislation	7
2. Methodology	8
2.1 Desk study	8
2.2 Field survey	8
2.3 Staff competency	9
2.4 Survey limitations	9
3. Desktop results.....	10
3.1 Data search	10
3.1.1 Designated sites data.....	10
3.1.2 MAGIC Map data.....	12
4. Field survey results.....	13
4.1 Habitat	13
4.2 Protected and priority species within the Site	14
4.2.1 Bats	14
4.2.2 Birds	15
4.2.3 Eurasian badger	16
4.2.4 Great crested newt	16
4.2.5 Priority species.....	18
4.2.6 Reptiles.....	18
4.2.7 Other protected and priority species.....	19
4.3 Schedule 9 species.....	19
5. Potential impacts and obligatory recommendations.....	19
5.1 Statutory designated areas.....	20
5.2 Flora and habitats	20
5.3 Protected and priority species.....	20
5.3.1 Bats	20
5.3.2 Birds	21
5.3.3 European badger	21
5.3.4 Great Crested Newts	21
5.3.5 Priority species.....	22
5.3.6 Reptiles.....	22
5.4 Schedule 9 species.....	23
6. Enhancement recommendations.....	23

7. Conclusions	24
8. References	26
9. Appendices	28

Executive Summary

DCS Ecology Ltd was commissioned by Lucy Mobbs to carry out a Preliminary Ecological Appraisal (PEA) at Kumari House, Laxfield Road, Stradbroke, Eye, Suffolk, IP21 5JT, in advance of a Planning Application for the demolition and conversion of an existing extension comprised of a derelict swimming pool room into a residential dwelling.

The site is approximately 0.37ha and is situated 1.4km to the east of the village of Stradbroke, Eye (central grid reference: TM 24795 73648).

The Preliminary Ecological Appraisal was carried out on 29th January 2024 by Jill Wyllie and Oliver Monks of DCS Ecology Ltd, to assess the ecological value of the site.

Within 2km of the site, the desk study found four statutorily designated sites and two non-statutorily designated sites, a number of records of bats, birds, amphibians (including great crested newts), hedgehogs and other mammals such as water vole, otter, badger and water shrew. There were also records of protected plants and invertebrates of note.

The habitats recorded onsite included a residential building with attached swimming pool room, amenity grassland, hardstanding in the form of patio and pea shingle, a small pond, and a compost heap. Habitats within the area of works consisted of the pool hall, with a disused and dilapidated indoor swimming pool partially filled with stagnant water. Adjacent habitats included arable land interspersed with hedgerows, other residential buildings and amenity gardens, deciduous woodland, and a commercial garage to the east

Overall, the habitats on site had low potential to support foraging and breeding great crested newts due to a lack of terrestrial and aquatic habitat, however there were habitats suitable for hibernating GCN. Both the building and swimming pool room had negligible potential for roosting bats. There were opportunities for nesting and foraging birds found onsite, particularly around the site borders. Badgers using the site was unlikely, as the habitats were largely unsuitable, and access was minimal. Hedgehogs could use the site for foraging, although opportunities were sparse, but were more likely to use the compost heap to the south-west for hibernation. Reptiles using the site was considered unlikely, although the compost heap and spoil mound provided potential breeding and hibernation opportunities. No other protected or priority species are considered within this report due to a lack of appropriate habitat or connectivity.

Great crested newt eDNA analysis will be required for the pond onsite.

Guidance has been provided to mitigate impacts upon habitats and species including precautionary methodologies.

Table 1: Validity duration of the data.

Information Source	Date Undertaken	Valid Until	Comments
PEA	29 th January 2024	29 th January 2026	Great crested newt eDNA analysis is required for the pond onsite. There are also precautionary measures to follow.

1. Background to commission

1.1 Overview

DCS Ecology Ltd was commissioned by Lucy Mobbs to carry out a Preliminary Ecological Appraisal (PEA) at Kumari House, Laxfield Road, Stradbroke, Eye, Suffolk, IP21 5JT (hereafter referred to as the site), in advance of a Planning Application for the demolition and conversion of a derelict pool hall into an extension of the residential dwelling.

1.2 Aims of study

This report provides an ecological appraisal and roost assessment of the Site following the completion of a desk study and site visit. The aim of this study was to:

- Provide a description of existing habitat types;
- To determine the existence and location of any ecologically valuable areas;
- To identify the potential (or actual) presence of protected and/or notable species;
- To provide the legislative and/or policy protection afforded to any habitats present, or any species assessed as likely to be associated with the Site; and
- To recommend any further ecological surveys considered necessary to inform mitigation requirements for the application within the Site.

1.3 Site description

The site is approximately 0.37ha and is situated in the hamlet of Barley Green, 1.4km to the east of the village of Stradbroke, Eye (central grid reference: TM 24795 73648). The town of Eye is located approximately 10.2km to the east, and the town of Framlingham lies approximately 10.3km to the south. The site is directly adjacent to Laxfield Road, which runs laterally along the northern boundary of site.

The habitats found onsite consisted of primarily short-mown amenity grassland, hardstanding in the form of pea shingle and flagstone patio, and a brick-built residential building with attached swimming pool room on the western side. The pool room has a derelict indoor swimming pool, containing stagnant water. A Leyland cypress hedge runs along the western and southern boundary of site, with partial wooden and mesh fencing along the bottom of the hedge.

Adjacent habitats consist of other residential buildings with large gardens and related areas of hardstanding. An orchard lies directly adjacent to the north-western boundary of the site. Barley Green Garage is directly adjacent to the eastern boundary of the site, with mainly areas of bare ground/hardstanding surrounding it. There is a wet ditch beyond the south-western corner of the site.

The wider landscape is intensively farmed arable land interspersed with a mix of species-poor and species-rich hedgerows. An area of priority deciduous woodland (approximately 1.65ha) lies to the north of site, on the opposite side of Laxfield Road (minor road B1117).

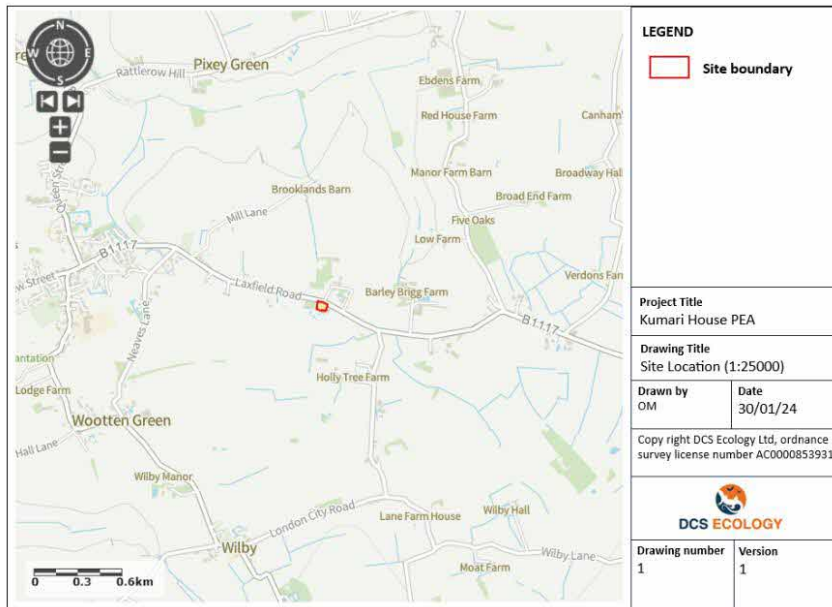


Figure 1. Site location (outlined in red). (1:25000) Based upon Ordnance Survey (c) Crown Copyright under licence AC0000853931.

1.4 Outline of proposed works

This site falls within the Mid Suffolk District Council local planning authority (LPA), and proposed works include the demolition and conversion of the swimming pool room on the western side of the residential building on site. The pool is to be drained and infilled, ready for the construction of an extension on the same footprint and foundations as the pool room, therefore there will be no direct impacts on habitats other than the derelict pool and pool room itself. The extension is proposed to be a single storey building comprising of smooth rendered walls, which will be painted, roofing pantiles to match the existing house, and will include two bedrooms and an open plan kitchen-living room.

Access into the site is already established with a pea shingle driveway, so no temporary access is required.

As the proposed work will have no likely impacts upon the habitats surrounding the existing footprint, and is a householder planning application for an extension on the existing footprint, it does not meet the requirements to be subject to a Biodiversity Net Gain Assessment.

1.5 Relevant legislation

Protected species, as referred to within this report, are taken to be those protected under European Legislation (Conservation of Habitats and Species Regulations 2017, as amended) and UK legislation (Wildlife and Countryside Act 1981; Protection of Badgers Act 1992); and those of principle importance in England as listed in Section 41 of the NERC Act (2006).

The National Planning Policy Framework (NPPF) September 2023 places responsibility on Local Planning Authorities (LPAs) to aim to conserve and enhance biodiversity in and around developments. Section 40 of the NERC Act requires every public body to “have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”. Biodiversity, as covered by the Section 40 duty, is not confined to habitats and species of principal importance but refers to all species and habitats. However, the expectation is that public bodies would refer to the Section 41 list (of species and habitats) through compliance with the Section 40 duty.

Appendix VI details legislation which protects species and groups relevant to the site (birds, bats, small mammals, great crested newts, reptiles).

2. Methodology

2.1 Desk study

Data obtained from the Suffolk Biodiversity Information Service (SBIS) was used to conduct a cross-county standard data search¹, for any information regarding statutory and non-statutory sites such as Sites of Special Scientific Interest (SSSIs) and County Wildlife Sites (CWSs), ancient-veteran-notable trees, and records of protected and priority species within a 2km radius of the Site. The data was received on 2nd February 2024.

A 10km radius search for European Designated Sites, including Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar's was also undertaken using MAGIC (<http://www.natureonthemap.naturalengland.org.uk/>). Past and current EPS licences and GCN pond survey results within a 7km radius were searched for using MAGIC on 30th January 2024.

A variety of existing source material was consulted including:

- Suffolk Biodiversity Information Service website and databases
- Ordnance survey maps
- Google maps satellite imagery
- Multi-Agency Geographic Information for the Countryside (MAGIC)

2.2 Field survey

A Preliminary Ecological Appraisal was carried out by Jill Wyllie and Oliver Monks on 30th January 2024 in accordance with standard best practice methodology for Phase 1 Habitat surveys set out by the JNCC (2010). Weather conditions during the survey were cloudy (100% cloud cover), light breeze (Beaufort scale 2) and a temperature of 10 °C, with good initial visibility, however a light fog developed towards the end of the survey. The Site was traversed slowly by the surveyors, mapping habitats, and making notes on dominant flora and fauna. The survey was extended to

¹ The standard data search identifies designated sites including: - Ramsar; Special Areas of Conservation; Special Protection Areas; Sites of Special Scientific Interest; National Nature Reserves; Local Nature Reserves; County Wildlife Sites; Regionally Important Geological Sites; Ancient Woodland; and protected and priority species identified by the: - Wildlife & Countryside Act 1981 Schedules 1, 5 & 8; Conservation of Habitats & Species Regulations 2017 (as amended) Schedules 2 & 5; Protection of Badgers Act 1992; Bonn Convention Appendix 1 & 2; Bern Convention Annex 1 & 2; Birds Directive Annex 1; Habitats Directive Annex 2, 4 & 5; NERC Act 2006 Section 41; UKBAP (both local and national); IUCN Red List species; Red & Amber Bird List; Nationally Scarce / Rare; Locally Scarce / Rare; and Veteran trees.

identify the presence of invasive species and included an assessment of the potential for the habitats in and around the site to support protected species.

The following specific assessments were undertaken:

Species/ Group	Survey methodology
Hedgerows	Assessment using Hedgerow Regulations 1997 criteria
Bats	Check for signs of potential roost sites including urine stains, droppings, cracks and crevices with smooth rubbing or stain marks, feeding signs or living or dead animals Assessment of potential foraging habitat and commuting routes
Birds	Assessment of nesting habitat, e.g. hedgerows, trees, scrub, buildings likelihood of the presence of species listed within Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), identified as a Bird of Conservation Concern or other significant assemblages
Eurasian badger	Visual search for evidence of the presence of setts, footprints, hairs, latrines, and snuffle marks
Great crested newt	Identification and assessment of any suitable breeding ponds on site and within 500m (where possible) using Habitat Suitability Index (HSI), terrestrial habitat and potential hibernation sites
Priority species	Search for and assessment of habitat for the presence of and potential by species such as brown hare, common toad and hedgehog
Reptiles	Assessment of suitable habitat and potential hibernation sites

2.3 Staff competency

Jill Wyllie BSc Hons, ACIEEM has over seven years' experience as an ecological consultant. Her specialist skills include protected and UK Priority species surveys, habitat assessments and report production. She holds a Natural England Survey Licence for great crested newts WML -CL08 and is Registered under a Class Licence for mitigation by displacement of water voles-CL31. She has a particular interest in water vole ecology and has worked on several complex mitigation schemes with the overall aim of conservation of the species and habitat enhancement.

Oliver Monks BSc Hons is a Wildlife, Ecology, and Conservation Science graduate, with experience in performing Preliminary Ecological Appraisals and bat surveys. Oliver is currently working towards his Level 1 Natural England great crested newt licence and Level 1 Natural England bat survey licence.

2.4 Survey limitations

Seasonal variation and constraints may result in fewer plants identified whilst on site, as during the winter months much of the flora is more difficult to identify to species due to a lack of flowering parts. However, the combination of biological records received from the search from SBIS, and the nature of the site should provide an accurate representation of habitats and species potentially present on and adjacent to the site.

Only one of the ponds within 250m of the site was able to be assessed for GCN with a Habitat Suitability Index assessment (HSI), as access to these ponds was unable to be obtained. It is also a sub-optimal time of year for undertaking HSI assessment.

All habitats and wildlife are subject to change over time, and thus, this survey offers a brief overview of the ecological value of the site at a given time and is considered to be valid only for the time stated in the Executive Summary of this report.

3. Desktop results

The following section details the results of the desk study and field survey. Consideration has been given to species likely to be found in the habitats recorded on site and potential impacts to designated sites within the local area. Several protected species have been 'scoped out' of the report, as the Site was not considered suitable to support them due to isolation or unsuitable habitats. Species scoped out were water vole, otter, white crayfish, and hazel dormouse.

Maps illustrating the following data are included in Appendix IV.

3.1 Data search

The biological records data search showed records of protected and priority species in the area, which could potentially occur on the Site. These are detailed within the relevant individual sections below.

3.1.1 Designated sites data

Within 10km of site there was one LNR and three SSSIs. There were no AONB, NNRs, biosphere reserves, SPA, SAC or Ramsar sites identified within the 10km search.

With regard to non-statutorily designated sites, there are two County Wildlife Sites, and no Roadside Nature Reserves (RNRs) within 2km of the Site.

Table 1. Non-statutorily designated sites within 2km of the Site

Name of site	Designation	Distance/ Direction from site
STRADBROKE CEMETERY (CWS 118)	CWS	1km North-west
Stradbroke Cemetery is situated on the eastern edge of Stradbroke village alongside the surrounded by arable land or semi-improved pasture. The Cemetery is an excellent example of herb-rich neutral grassland on Boulder Clay (biodiversity priority habitat). A number of scarce Suffolk species such as green-winged orchid, adder's tongue fern, purging flax, yellow rattle and quaking-grass have been recorded at this site. Other species typical of this habitat are also present including ox-eye daisy, bugle, pepper saxifrage and cowslip. Stradbroke Cemetery is considered to be one of the most important examples of unimproved herb-rich grassland in the county.		
STRADBROKE MEADOW (CWS 117)	CWS	1.15km North-west
This site consists of a remnant of unimproved grassland and has been incorporated into the g adjacent property. The grassland is enclosed on two sides by mature hawthorn hedges and is regularly mown to maintain a short sward. A range of species typically found in an old unimproved meadow have		

Commented [JW1]: When considering designated sites, they should be listed in order of distance from site. (As in theory, the ones closest are likely to be impacted the most)

been recorded here previously, including oxeye daisy, cowslip, common mouse-ear, cuckoo flower, meadow buttercup and green-winged orchid.

Table 2. Statutorily designated sites within 10km of the Site

Name of site	Designation	Distance/ Direction from site
THE PENNINGS, EYE	LNR	9.6km West
The Pennings is a 2.7-hectare local nature reserve, most of the site is managed as a 'hay meadow' and in the summer months there are abundant flowers and insects to be seen. A small pond has been recently restored. The river dove flows nearby, which kingfisher and water vole are regular visitors of, with otter being rarer to spot.		
CHIPPENHALL GREEN	SSSI	4.2km North-east
Chippenhall Green is a large area of common land on calcareous clay soil. It is made up of species-rich unimproved neutral grassland and supports a variety of grasses and herbs including an outstanding population of green-winged orchids <i>Orchis morio</i> . The grass sward contains a mixture of species, including sweet vernal grass <i>Anthoxanthum odoratum</i> , meadow foxtail <i>Alopecurus pratensis</i> , red fescue <i>Festuca rubra</i> and smooth-stalked meadow grass <i>Poa pratensis</i> . Flote grass <i>Glyceria fluitans</i> and tufted hair-grass <i>Deschampsia cespitosa</i> are dominant in wet areas.		
HOXNE BRICK PITS	SSSI	7.9km North-west
Hoxne Brick Pit is a world-famous geological site, and one of the most important Pleistocene sites in Britain.		
METFIELD MEADOW	SSSI	8.3km North-east
Metfield Meadow is an example of a species-rich unimproved meadow, situated on a disused airfield and still surviving within an intensively farmed arable landscape. The turf is dominated by a mixture of crested dog's tail <i>Cynosurus cristatus</i> , cocks foot <i>Dactylis glomerata</i> , red fescue <i>Festuca rubra</i> , and carnation grass <i>Carex flacca</i> . A dense hedge runs along the northern boundary which is rich in woody species and adds further interest to the site.		

3.1.2 MAGIC Map data

Table 3. MAGIC Map system EPS licence applications within a 7km radius (see map in Appendix IV)

EPS licence number	Species on the licence	Damage/ destruction of breeding site	Damage/ destruction of a resting place	Grid Reference	Nearest Location
EPSM2009-905	Great Crested Newt	N	N	TM29407259	Laxfield
2018-34097 -EPS -MIT	CPIP, SPIP, BLE	N	Y	TM19507330	Denham Green
2019-41995 -EPS -MIT	CPIP, SPIP, BLE	N	Y	TM30497501	Cratfield
2020-45931 -EPS -MIT	CPIP, NATT	N	Y	TM27807480	Silverley's Green
2020-45931 -EPS -MIT-1	CPIP, SPIP, BLE, NATT, BARB	Y	Y	TM27807480	Silverley's Green
2020-45931 -EPS -MIT-2	CPIP, SPIP, BLE, NATT, BARB	Y	Y	TM27807480	Silverley's Green
2020-48462 -EPS -BDX	SPIP	Y	Y	TM31007510	Cratfield
2020-48956 -EPS -MIT	CPIP, BLE, NATT, BARB	N	Y	TM27867133	Laxfield
2014-3925 -EPS -MIT	CPIP, SPIP, NATT, BARB	N	Y	TM28317548	Silverley's Green
2015-18425 -EPS -MIT	SPIP	N	Y	TM21416801	Newtown

The MAGIC data search returned nine records of past and current EPS licences for bats within a 7km radius, including common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auritus*), Natterer's bat (*Myotis nattereri*), and western barbastelle (*Barbastella barbastellus*). The nearest record to site was a series of granted EPS 3.2 km north-east of site near Silverley's Green (2020-45931 -EPS -MIT, 2020-45931 -EPS -MIT-1, and 2020-45931 -EPS -MIT-2), which allowed for the destruction of a common pipistrelle, soprano pipistrelle, Natterer's bat, brown long-eared bat, and western barbastelle resting place and breeding site.

There was one great crested newt (GCN) EPS licence record, 11 GCN class survey licence returns (confirming GCN presence) at 10 locations, and four pond survey records within a 7km radius of the site. The nearest record to the site was a survey licence return confirming the presence of GCN 3.5 km north of site.

There were no records returned in the 2km SBIS data search for ancient, notable, or veteran trees.

MAGIC map searches showed that there is priority deciduous woodland habitat within 250m of the site, located approximately 100m to the north, bordering Lime Tree Farm.

4. Field survey results

4.1 Habitat

The main habitats found onsite were short-mown amenity grassland, hardstanding in the form of pea shingle and flagstone patio, and a brick-built residential building with an attached pool room. The amenity grassland was primarily perennial rye-grass (*Lolium perenne*), with other common grassland species scattered throughout, including clover species (*Trifolium spp.*), creeping buttercup (*Ranunculus repens*), herb Robert (*Geranium robertianum*), common dandelion (*Taraxacum officinale*), broad leaved dock (*Rumex obtusifolius*), and shining cranes-bill (*Geranium lucidum*). In the northern section of amenity grassland, individual hornbeam (*Carpinus betulus*) and cherry (*Prunus sp.*) trees were identified, which were young and isolated from other vegetation. For a full list of flora identified whilst on site please refer to Appendix III.

A raised mound was found to the south-west of the building on site, which was likely to be the spoil heap from the excavation of the indoor pool or pond. Maturer scattered scrub was found on this mound as regular mowing does not occur, which allowed the flora to develop further. Species found on the spoil heap included laurel (*Prunus laurocerasus*), common box (*Buxus sempervirens*), and hazel coppice (*Corylus avellana*).

An area of pea shingle hardstanding access lies to the east/northeast of the residential building and runs along the east edge of the site. A flagstone patio is found to the south of the building and surrounds a small pond with an area of approximately 20m². A Habitat Suitability Index assessment (HSI) was performed whilst on site, results and a detailed pond description can be found in section 4.2.4.

Along the western and southern boundaries of the site, a Leyland cypress (*Cupressus x leylandii*) hedge with partial mesh and wooden fencing separates the site from other residential amenity gardens and buildings, and a wet ditch lies just beyond the site boundary. Which increases connectivity between the pond located on site and five other ponds identified within 250m of the site (refer to *Figure 3* in Appendix IV). Along this same section of boundary, there was a compost heap in the south-western corner, that could provide habitat to various invertebrate species, as well as hibernation and shelter opportunities for small mammals, reptiles, and amphibians (including great crested newts).

More details and target notes can be found in Appendix I and II. (See Target notes map in Appendix IV for locations).

The desk study highlighted several species of rare plants have been previously recorded within 2km of the site, such as dwarf spurge (*Euphorbia exigua*), and sulphur clover (*Trifolium ochroleucon*). Which are both listed as 'Vulnerable' on the England Red List. There was one record of a sub-species of both spotted St John's wort (*Hypericum maculatum subsp. Obtusiusculum*), and fine-leaved water-dropwort (*Oenanthe aquatica*), which have been identified as being rare plants to the county of Suffolk.

The desk study also highlighted multiple orchid species within 2km of the site, including green-winged orchid (*Anacamptis morio*), pyramidal orchid (*Anacamptis pyramidalis*), and southern-marsh orchid (*Dactylorhiza praetermissa*). Of which the green-winged orchid is listed as 'Vulnerable' on the England Red List, and 'Near Threatened' on the Great Britain Red List.

No orchids or other notable plant species were identified whilst on site.

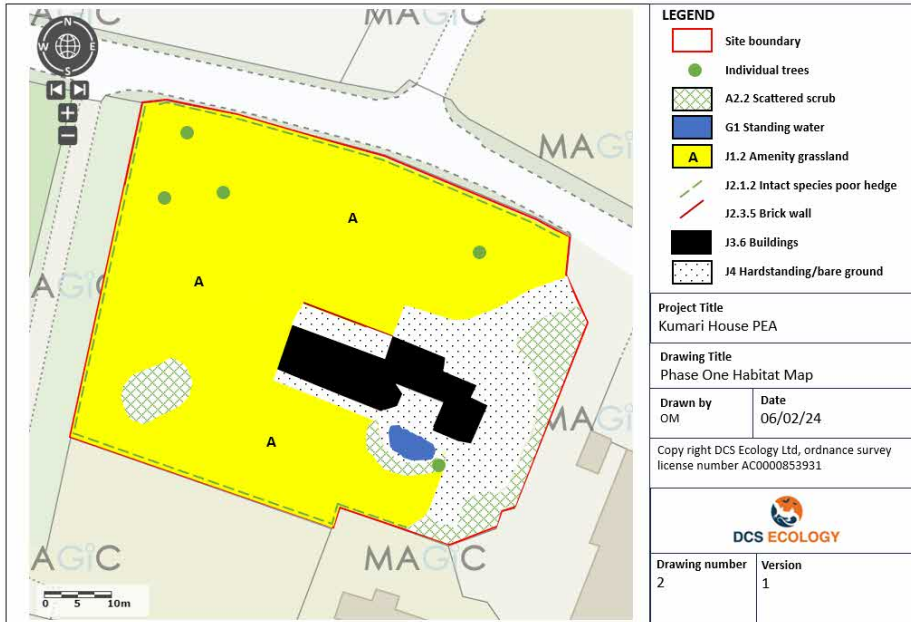


Figure 2: JN CC Phase 1 habitats map.

4.2 Protected and priority species within the Site

4.2.1 Bats

The data search returned 103 records of bats within 2km of the Site including common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared (*Plecotus auritus*), serotine (*Eptesicus serotinus*), western barbastelle (*Barbastella barbastellus*), Daubenton's bat (*Myotis daubentonii*), Natterer's bat (*Myotis nattereri*), noctule (*Nyctalus noctula*), and Nathusius's pipistrelle (*Pipistrellus nathusii*) species. As well as records of unidentified myotis (*Myotis*), pipistrelle (*Pipistrellus*), and bat (*Chiroptera*) species. The closest record was 30m to the south-west of site, and included western barbastelle, Natterer's bat, common pipistrelle, soprano pipistrelle, brown long-eared, and unidentified myotis and pipistrelle species.

Roosting habitat

The residential building and swimming pool room onsite were the only structures that could potentially provide roosting habitat for bats, as there were only a few mature trees onsite, of which none had any significant potential roosting features (PRFs). The residential building didn't appear to have any features that would allow bats to enter the loft space, as the roofing tiles were all aligned, and the roofing soffits were well sealed. Therefore, it was considered unlikely that there would be bats roosting in this building.

The swimming pool room onsite had features that could allow bats entry, including cracking in the fascia and gaps in the brickwork below the guttering. However, the room itself has negligible potential for roosting bats, as the interior was very light due to the PVCu panelling letting large amounts of light in, and bats prefer roosting in darker environments.

Adjacent areas have habitat more suitable for roosting bats. Deciduous woodland to the north, an orchard to the west, and various other residential and farm buildings all provide bats preferable roosting places to the buildings onsite, which are closer in proximity to more suitable foraging areas.

This site is likely to have negligible potential for roosting bat species.

Foraging and commuting habitat

Foraging habitat on site was considered minimal, as there was a lack of dense vegetation cover over the majority of site. The Leyland cypress hedging, and small sections of ornamental planted vegetation could provide some opportunities for foraging bats, however these were isolated and more preferable foraging habitat can be found in adjacent areas. The pond onsite could provide opportunities and is likely the best section of site for foraging bats.

The site had low potential for commuting bats, as the site itself was enclosed with a dense Leyland cypress hedge and fencing. A low growing species-poor hedgerow runs along the northern boundary to the site; however, this lies directly adjacent to Laxfield Road (minor road B1117) and therefore makes it unsuitable for commuting bats due to the danger it presents.

The surrounding habitats in adjacent areas provide increased foraging and commuting opportunities for bats. Hedgerows border arable fields to the east and south, allowing bats to access commuting routes and larger sections of woodland for both foraging and roosting. Multiple ponds and a wet ditch within 250m of the site provide abundant foraging opportunities due to assemblages of invertebrate species.

This site itself is likely to have low importance for bats, as foraging and commuting habitat is minimal. Adjacent habitat is likely to be preferable as foraging, roosting, and commuting opportunities are more abundant.

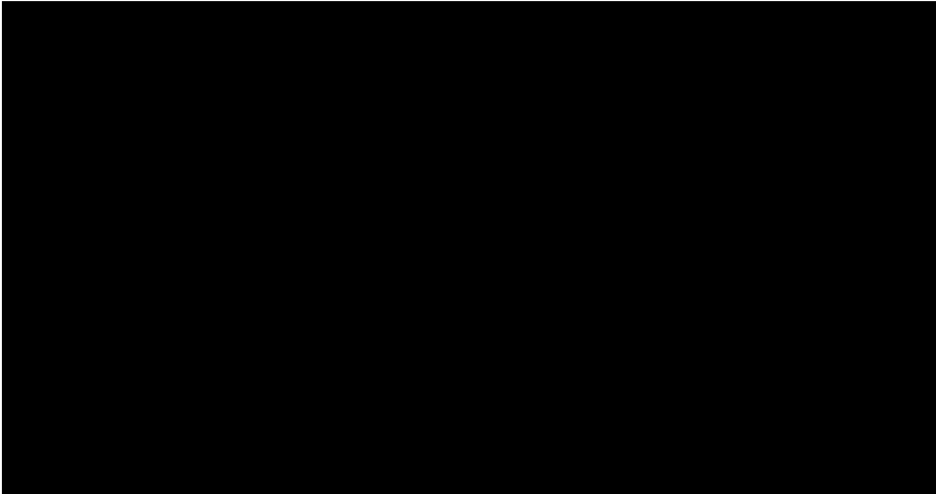
4.2.2 Birds

Bird species identified during the survey included blackbird (*Turdus merula*), wood pigeon (*Columba palumbus*), blue tit (*Cyanistes caeruleus*), and great tit (*Parus major*). These birds were either seen flying above the site, perching on nearby vegetation, or using the various bird feeders present on the patio to the south of the residential building. No protected or priority species were seen whilst on site.

There was no evidence of nests or breeding behaviour noted due to the timing of the survey, however the Leyland cypress hedge that bordered the site provides good quality nesting habitat for common garden birds, and the pond and small sections of scrub onsite also provide some foraging habitat. The building located on site had no signs of nesting birds, however there is a chance that nests may be constructed under the eaves of the residential building, by species such as house martin (*Delichon urbicum*), swift (*Apus apus*), and swallow (*Hirundo rustica*). Mature trees in the adjacent orchard to the north-west and deciduous woodland to the north also provide potential nests sites and foraging habitat for birds.

For a full list of species seen during the survey see Appendix III. For a list of bird species of conservation concern returned in the data search, please see Appendix V.

This site is likely to have 'site' importance for birds, as the Leyland cypress hedge bordering the site will provide suitable nesting habitat, and the pond, bird feeders, and small sections of ornamental planted vegetation provide sufficient foraging opportunities.



4.2.4 Great crested newt

The data search returned 13 records of great crested newt (GCN) within 2km of the Site, with the closest record being 0.8 km to the north-west.

Within the site boundary there is one pond, and a further five ponds were identified outside of the site boundaries, within 250m. Terrestrial habitat found onsite was considered sub-optimal for foraging GCN, as the majority of the site was amenity grassland and hardstanding.

The pond onsite was lined, with tall sides and a drop off into the water, this could provide potential habitat for GCN in their breeding phase, although considered unlikely, a Habitat Suitability Index assessment was conducted, and results can be seen below. The five other ponds within 250m of the site could provide suitable habitat for breeding GCN, however HSI's were unable to be conducted due to a lack of access and permission. The wet ditch to the west of the site increases connectivity between the adjacent ponds and the amenity grassland, pond, compost heap, and spoil mound found onsite, making it more likely that GCN would use the site, for both hibernation and breeding.

The pool room contained a derelict pool; which was considered unlikely to contain populations of GCN as access into the pool was poor, and any GCN that entered the pool would be entrapped due to the high, steep, and slippery sides preventing escape.

Table 5. HSI Scoring Based on ARGUK Advice Note 5 - Great Crested Newt Habitat Suitability Index

Pond name		Pond 1
Grid reference		TM 24802 73637
SI no.	SI Description	SI value
1	Geographic location	1
2	Pond area	0.1
3	Pond permanence	0.9

4	Water quality	0.67
5	Shade	1
6	Water fowl effect	0.67
7	Fish presence	0.33
8	Pond density	1
9	Terrestrial habitat	0.33
10	Macrophyte cover	0.5
HSI score		0.54
Pond suitability for GCN		Below Average

Table 6: The categorisation of the HSI score, is as follows:

HSI score	Pond suitability for GCN
< 0.50	Poor
0.50 – 0.59	Below average
0.60 – 0.69	Average
0.70 – 0.79	Good
> 0.80	Excellent

GCN Habitat Suitability Index (HSI) was conducted for one of the six ponds in the area:

1. Pond 1 was located within the Site, returned a score of 0.54 and had a pond suitability of 'Below Average'. This pond was 20m² and contained submerged and emergent vegetation. This pond is lined and has fairly high sides which would likely prevent escape of any GCN that enter the pond. This pond could be used by breeding GCN; however, this was considered unlikely due to the high sides of the pond and lack of suitable terrestrial habitat adjacent, as well as the confirmed presence of fish.
2. Pond 2 was located 36m to the south of the site and is approximately 172m². No HSI was conducted as access and permission was not available. This pond had good connectivity with the site, with a wet ditch running nearby, up to, and along the site boundary.
3. Pond 3 was located 50m to the south-west of the site and is approximately 428m². No HSI was conducted as access and permission was not available. This pond had good connectivity with the site, with a wet ditch running nearby, up to, and along the site boundary.
4. Pond 4 was located 48 m to the west of the site and is approximately 225 m². No HSI was conducted as access and permission was not available. This pond had good connectivity with the site, as other ponds, and a wet ditch lead to the boundary of the site. Dense scrub and mature trees also provided good terrestrial habitat between the pond and site.
5. Pond 5 was located 135 m to the north of the site and is approximately 450 m². No HSI was conducted as access and permission was not available. This pond had poor connectivity with the site, as Laxfield Road (minor road B1117) runs between the site and this pond. The presence of deciduous woodland nearby increases terrestrial habitat available to GCN using this pond.
6. Pond 6 was located 220 m to the west of the site and is approximately 230 m². No HSI was conducted as access and permission was not available. This pond had poor connectivity

with the site, as there was an intensively farmed arable field in between the pond and the site.

This site is likely to be of 'site' value for great crested newts, as there is a chance that they may be using the site.

4.2.5 Priority species

This section considers those species listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 which are not covered in the preceding section. It should be noted that some of these species (formerly described as UK BAP species) do also receive legal protection, but not in a way that is considered relevant to this proposal.

The data search returned 41 records of hedgehog (*Erinaceus europaeus*), and one record of harvest mouse (*Micromys minutus*). The record of harvest mouse was located 1.7km to the north, and the closest record of hedgehog was 0.6km to the west of the site.

Habitat found onsite was considered poor for harvest mice, as the amenity grassland was short-mown and lacked any areas of long-tussocky grass and scrub that harvest mice prefer to forage and nest in. Therefore, harvest mice using the site was considered to be highly unlikely.

The site contained habitats that have the potential to support hedgehog foraging, refuge, and hibernation. With habitats such as amenity grassland, hedgerows, and compost heaps. Connectivity between the site and adjacent residential gardens was good. However, the site is isolated as the wider landscape consists of arable fields.

The site is likely to be of 'local' value for hedgehogs, as habitat on, and directly adjacent to, the site was considered suitable.

4.2.6 Reptiles

The data search returned two records of grass snakes (*Natrix helvetica*) within 2km of the Site, with the closest record of grass snake being 1.7km to the north-west.

The habitats found onsite were considered sub-optimal for supporting foraging and basking reptiles. As there was a lack of suitable vegetation cover over most of the site. The pond onsite may provide potential hunting habitat for grass snakes (*Natrix helvetica*), although this pond has tall sides that could prevent escape, and a lack of vegetation cover from above, increasing the risk of predation from birds. The compost heap onsite could be used by breeding reptiles, as it provides a warm and moist environment for egg incubation, particularly for grass snakes. The spoil mound identified provides good hibernation habitat due to its stable temperature.

Adjacent habitats, including several ponds, scrub, grassland, and deciduous woodland, have more appropriate habitat for supporting all species of reptiles found in the Suffolk. However, connectivity to the site from the woodland to the north is low, due to Laxfield Road acting as a barrier for any commuting reptiles.

This site is likely to be of low value for reptiles including grass snakes (*Natrix natrix*), and negligible importance for species such as slow worm (*Anguis fragilis*), common lizard (*Zootoca vivipara*), and adder (*Vipera berus*).

4.2.7 Other protected and priority species

The site was considered unsuitable for several protected and priority species. There was one record of otter (*Lutra lutra*) found within 2km of the site, however the site was considered unsuitable for supporting otters as there were no large bodies of freshwater or rivers onsite or found nearby, and much of the surrounding area was arable land, decreasing the chances of supporting otters as they prefer clean and unpolluted waterways.

The site was also considered unsuitable for water vole (*Arvicola amphibius*), white crayfish (*Austropotamobius pallipes*), and hazel dormouse (*Muscardinus avellanarius*). As although the areas adjacent to the site had multiple ponds, a wet ditch that ran alongside the site boundary, and adjacent areas of woodland, these species would be unlikely to use the site due to a lack of foraging and nesting habitat, as well as general habitat features suitable for these species, such as running freshwater, dense scrub, and ancient woodland. It is also outside the current known range for dormouse in Suffolk.

4.3 Schedule 9 species

Species such as grey squirrel and muntjac deer have become common and widespread and occur regularly across the county. They are therefore not considered within this report.

The data search returned two records of Reeve's muntjac (*Muntiacus reevesi*), two records of variegated yellow archangel (*Lamium galeobdolon subsp. argentatum*), one record of wall cotoneaster (*Cotoneaster horizontalis*), and one record of red kite (*Milvus milvus*) within 2km of the Site.

Within the site boundary, there was one Schedule 9 species identified, which was a section of bamboo (*Bambusa sp.*). This area of bamboo was found in the south-western corner of the site and had appeared to be partially under management when the survey took place. Bamboo is highly resistant to a range of environments and without proper management can spread rapidly. It is recommended to plant bamboo in containers with root barriers to prevent the development of complex root systems in unwanted locations.

5. Potential impacts and obligatory recommendations

These recommendations are based upon the plans and proposals made available during the preparation of this report on the assumption that they remain unchanged; any change in plans could alter the potential impacts and subsequent recommendations. Where further survey work is recommended that could be material to the project, it should be completed, and the results made available prior to commencement of any site clearance/work.

No further surveys are considered necessary, as there will be no loss of ecologically important habitat relating to any of the protected or priority species listed above. Although there will be no loss of important habitat onsite, to ensure that the proposed works do not impact on species using other habitat onsite or in adjacent habitat, mitigation or risk avoidance measures are detailed in below sections.

The impact of the proposed development will be minimal, as the extension proposed will exist on the same footprint as the current pool hall extension. Therefore, no direct loss of ecologically important habitats will take place.

Any impacts that could result from the development involve

Harm or disturbance of individuals, namely hedgehogs but possibly GCN (during the construction phase)

Temporary fragmentation of habitat (during the construction phase)

5.1 Statutory designated areas

The impact of proposed activities on Sites of Special Scientific Interest (SSSIs) are assessed using Impact Risk Zones (IRZs), which establish buffer zones around each site which reflect the particular sensitivities of designated sites and indicate the types of development proposal which could potentially have adverse impacts. If the development is assessed as having a "likely significant effect" on any European statutory designated area, then the project will require an HRA (Habitat Risk Assessment) to be undertaken as stated in The Conservation of Habitats and Species Regulations 2017 (as amended).

The Site falls within the Impact Risk Zone (IRZ) of multiple SSSI, however as the proposal is a small-scale development and it will not include the creation of over 50 building units, the risk of impact to designated sites is negligible and therefore is unlikely to require a HRA or other pre-development consultation with Natural England regarding likely impacts on designated areas.

5.2 Flora and habitats

No habitats or flora of ecological importance will be lost for the proposed development. As the proposed extension is to be built on the same footprint as the existing pool hall extension. No vegetation is to be affected directly. The pool hall was considered unsuitable for roosting bat species and no nesting birds were identified during the survey; therefore the proposed demolition will not impact these species.

Further botanical survey is not considered necessary.

5.3 Protected and priority species

5.3.1 Bats

The potential impacts of the current proposals upon bats include:

- Temporary disturbance to bats using bordering hedges (during construction phase)

Sensitive lighting is recommended throughout the development and should follow guidance provided by the Bat Conservation Trust (Bats and Artificial Lighting at Night, 2023), to ensure foraging and commuting bats using adjacent habitats are not negatively impacted.

Further bat surveys are not necessary. However, lighting recommendations should be followed.

Potential mitigation suggestions

Sensitive lighting measures should be applied to any temporary security lighting used during the construction phase. This could include low pressure sodium lamps, with hoods, cowls or shields, to prevent light spillage. More detailed advice can be provided from a suitably experienced bat ecologist.

5.3.2 Birds

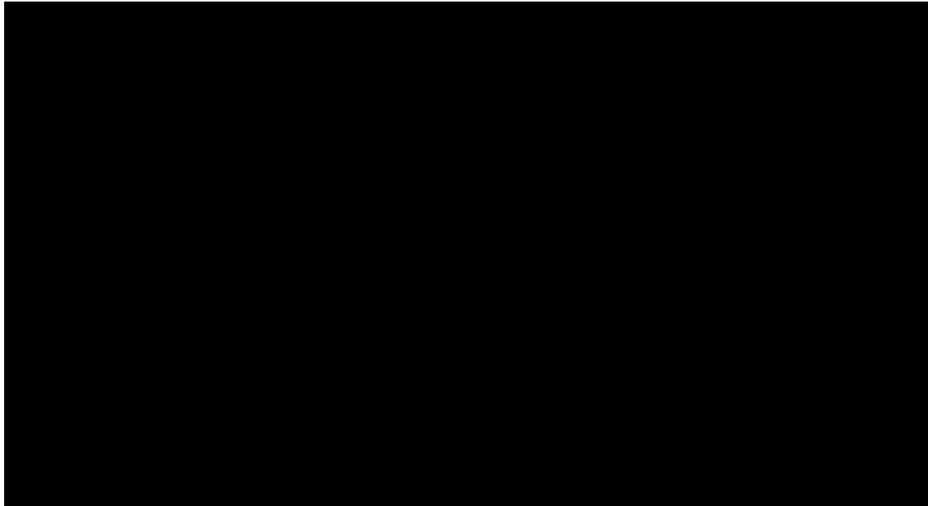
The potential impacts of the current proposals upon birds include:

- Damage, disturbance, injury, and death with regards to in-use nests on the pool hall extension.

Further bird surveys are not considered necessary.

Potential mitigation suggestions

Any structure clearance/demolition should be carried out outside the breeding bird season, which runs from 1st March to 15th September (species dependant) or following a nest check by a suitably experienced ecologist – to prevent infringing legislation which protects all nesting birds.



5.3.4 Great Crested Newts

The potential impacts of the current proposals upon great crested newts include :

- Temporary disturbance to GCN (during construction phase)
- Injury, or death to GCN (during construction phase)
- Danger of a GCN becoming trapped in open excavations overnight during construction works, or if concrete is left uncovered to dry overnight or at the weekend.

Great crested newts typically travel a maximum of 250-500m from their breeding ponds, and very rarely over 1km (Langton et al., 2001). As there are multiple ponds located within 250m of the site, there is a possibility of GCN being present on site.

As there is a possibility of GCN being present on site, and various suitable ponds within 250m, GCN eDNA analysis is required for the pond onsite. GCN may also be present in

adjacent habitat. To reduce impacts or harm to GCN a precautionary method of works is recommended to safeguard individuals, this is as follows:

- Any debris piles should be dismantled by hand and the materials kept in skips until moved off site or disposed of.
- Any debris and materials arising from the proposed construction should be stored in skips and/or on pallets to prevent creating refuge sites for reptiles or amphibians.
- The clearance of ruderals and vegetation > 300mm in height should be done during spring/summer (Feb to October) when amphibians and reptiles are active, all vegetation should be cut down to 150mm above ground level and left for at least an hour before final clearance to ground level to allow any reptiles or amphibians that may be present to disperse or to be carefully relocated to hedgerows in the local vicinity. Once cleared the land should be maintained as bare ground or short mown grassland throughout the development process.
- If a great crested newt is discovered at any stage of the development, work should cease immediately, and an ecologist should be contacted for further advice.

Potential mitigation suggestions

A Risk Avoidance Method Statement (RAMS) should be followed during the cc the proposed development, to prevent any impacts on this species.

5.3.5 Priority species

The potential impacts of the current proposals upon hedgehogs include :

- Disturbance/ injury/death to hedgehogs

Further priority species surveys are not considered necessary. However, as a precautionary measure in order to safeguard hedgehogs, the following good working practice should be adhered to:

- Any potential nesting habitat (discarded building materials, wood piles, leaf litter piles) should be removed by hand, outside the typical hibernation period (November to March) or under the supervision of an ecologist.
- Vegetation above 300mm above ground level should not be cleared until temperatures are above 6°C for at least 6 consecutive days to avoid disturbance of hibernating hedgehogs.
- Additionally, following recommendations as laid out for badgers will also minimise harm to hedgehogs.

5.3.6 Reptiles

The potential impacts of the current proposals upon reptiles include :

- Disturbance/ injury/death to reptiles

Further reptile surveys are not considered necessary. However, precautionary methods of working as suggested for great crested newt will also safeguard reptiles.

5.4 Schedule 9 species

The potential impacts of the presence of bamboo species upon the current proposals are minimal. As the construction area doesn't include the area of bamboo.

Management of the bamboo in the south-eastern corner of the site would be beneficial to prevent the spread of the species. Whilst surveying the site it appears that this bamboo had been partially managed. Some methods of management include:

- Excavation of bamboo shoots and root systems
- Implementation of physical barriers to prevent bamboo spreading outside of site boundaries
- Chemical treatments can kill off shoots and prevent the bamboo spreading more rapidly
- The cutting of shoots over multiple seasons can cause the roots system to use all stored energy, preventing further growth

6. Enhancement recommendations

The Natural Environment and Rural Communities Act 2006 (NERC), Section 40, established that all public bodies have a duty to conserve, restore, or otherwise enhance a population of a particular species or habitat:

Section 40 (A1)²

- "For the purposes of this section "the general biodiversity objective" is the conservation and enhancement of biodiversity in England through the exercise of functions in relation to England."

Section 40 (1)

- "A public authority which has any functions exercisable in relation to England must from time to time consider what action the authority can properly take, consistently with the proper exercise of its functions, to further the general biodiversity objective."

Section 40 (3)

- "The action which may be taken by the authority to further the general biodiversity objective includes, in particular, action taken for the purpose of—
(a) conserving, restoring or otherwise enhancing a population of a particular species, and
and
(b) conserving, restoring or otherwise enhancing a particular type of habitat."

Therefore, enhancement opportunities are encouraged in order to change the overall net biodiversity impact of the development from minor-adverse neutral to neutral/minor positive.

² This includes recent amendments to the Act under the Environment Act 2021, which extended the definition of general biodiversity objective to include biodiversity enhancement as opposed to solely biodiversity conservation.

Table 7. Enhancement recommendations

Target species	Enhancement	Requirements
Bats	<p>Installation of bat boxes (at least 2), such as Eco Kent bat boxes and WoodStone general purpose bat boxes (or similar) would increase roosting opportunities for bats within the Site.</p> <p>Bat boxes (such as Eco Kent bat boxes and bat tubes) could be incorporated into the final designs and therefore provide additional breeding, and sheltering opportunities for a range of wildlife.</p> <p>See Appendix VIII: Enhancement and mitigation example designs for examples.</p>	Exact models and locations should be determined by a suitably experienced ecologist.
Birds	<p>Installation of bird boxes (at least 2), such as Robin FSC Nest Box or WoodStone Seville Box, erected on boundary trees or integrated into the final design of the building in appropriate locations would provide additional nesting opportunities for local bird populations and replace those opportunities lost with the demolition of the pool hall onsite.</p>	Precise locations of bird boxes should be decided by a suitably experienced ecologist at the time of erection to ensure an optimal situation and reduce the effect of changing environmental conditions at the Site in the meantime.
Hedgehogs and other small vertebrates	<p>Any fences that might be erected should include a gap at some point in the base of each run of fencing to enable terrestrial vertebrates, including hedgehogs, to move through the plot and prevent entrapment.</p> <p>The implementation of a small mammal hibernation box somewhere onsite would increase the hibernation opportunities available to small mammals. Exact locations to be decided by a suitably experienced ecologist.</p>	Gap should be a minimum of 150mm long by 100mm high.

7. Conclusions

The Preliminary Ecological Appraisal found the Site to contain suitable and unsuitable habitats for supporting protected and priority species – namely GCN, birds, hedgehogs, and bats.

The pond onsite had low potential to support great crested newts due to the high pond walls and confirmed presence of fish. However, there may be GCN using the pond, and it will require eDNA analysis for confirmation. The site also lacked suitable terrestrial habitat for GCN. The building itself was considered to have negligible potential for bats, as the roofing was well sealed and there were no slipped or missing tiles. The pool hall was well sealed also, and due to the material of the walls the interior was very light and was considered highly unsuitable for bats. Birds are likely to use the Leyland cypress hedge that bordered the site, and the bird feeders present on site provided good foraging opportunities.

Much of the site was amenity grassland, which could provide habitat for badgers, although access to the site was limited and preferable habitats in adjacent areas would prove more suitable, such as arable field margins and hedgerows. Hedgehogs could use the site for foraging, although opportunities were sparse, but were more likely to use the compost heap to the south-west for hibernation. Reptiles using the site was considered unlikely, as the habitat present was unsuitable, and foraging opportunities were minimal. No other protected or priority species are considered within this report due to a lack of appropriate habitat or connectivity.

The following recommendations are made to minimise the risk of harm to individual animals:

Bats

- For nocturnal animals, including bats, lighting measures should be applied to any temporary security lighting used during the construction phase and be in keeping with guidelines for wildlife.

Birds

- Building demolition should be carried out outside of the nesting bird season (1st March to September) to prevent infringement on legislation protecting all nesting birds.

GCN and Reptiles

- A Risk Avoidance Method Statement to be followed to prevent impacting GCN or reptiles using the site.
- eDNA analysis is required to confirm the presence/absence of GCN from the pond onsite.

Hedgehogs

- Any potential nesting habitat should be removed by hand, outside the typical hibernation period (November to March) or under the supervision of an ecologist.
- Vegetation above 300mm above ground level should not be cleared until temperatures are above 6°C for at least 6 consecutive days to avoid disturbance of hibernating hedgehogs.

Site supervision

- **An Ecological Clerk of Works (ECoW) should be appointed prior to commencement, to oversee the works when necessary.**
- To promote best practice and avoid the risk of causing injury or harm to small mammals, amphibians and reptiles during the construction process a **Toolbox Talk** should be given by the ECoW or other suitably trained and licenced ecologist and made available to all contractors prior to works commencing.

It is unlikely that the proposed development would cause a significant long or short-term impact to the conservation status of protected species in the area or to the conservation sites in the surrounding area if these measures are followed, but sensitive planning may increase species abundance and diversity due to the habitat enhancements.

Any short-term impacts to species populations or individuals would have been minimised through the incorporation of the above recommendation prior to, and during works.

8. References

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9. Appendices

Appendix I: Table 8. Target notes

No	Photograph	Description
1		<p>Photo taken inside shower room adjacent pool room showing rodent droppings.</p> <p>Likely mouse droppings because of the dimensions and texture.</p>
2		<p>Photo taken whilst surveying the amenity grassland, showing fox scat identified.</p>
3		<p>Photo showing a blue tit using vegetation onsite. The blue tit was also spotted using the bird feeders located on the patio.</p>

4		<p>Photo taken showing a section of bamboo in the south-eastern section of site, which is a Schedule 9 invasive species.</p>
5		<p>Photo showing the guttering and eaves above the entrance to the pool room. A possible entry point for bat species.</p>
6		<p>Photo showing a rodent burrow identified in the spoil mound. Likely to be a rat burrow because of the dimensions of the burrow.</p>

Appendix II: Table 9. Site photographs

	
<p><i>Photograph 1. Interior swimming pool room</i></p>	<p><i>Photograph 2. Overview of amenity grassland onsite</i></p>
	
<p><i>Photograph 3. Exterior of pool room and western elevation of residential building</i></p>	<p><i>Photograph 4. Western boundary of site, consisting of a Leyland cypress hedge</i></p>
	
<p><i>Photograph 5. Compost heap in south-western corner of site</i></p>	<p><i>Photograph 6. Southern boundary of site, consisting of a Leyland cypress hedge, with a wooden and mesh fence running along the lower edge of the hedge.</i></p>



Photography 7. Pond 1, found onsite. And surrounding patio area



Photograph 8. Pea shingle hardstanding driveway and northern section of amenity grassland.

Appendix III: Species Lists

Table 10: Plants

Species on site	
Latin name	Common name/s
<i>Taraxacum officinale</i>	Common dandelion
<i>Sambucus nigra</i>	Elder
<i>Hedera helix</i>	Common ivy
<i>Lemna minor</i>	Common duckweed
<i>Rumex obtusifolius</i>	Broad leaved dock
<i>Lolium perenne</i>	Perennial ryegrass
<i>Glechoma hederacea</i>	Ground ivy
<i>Geranium lucidum</i>	Shining cranesbill
<i>Geranium molle</i>	Dove's foot cranesbill
<i>Ranunculus repens</i>	Creeping buttercup
<i>Prunella vulgaris</i>	Selfheal
<i>Geranium robertianum</i>	Herb robert
<i>Trifolium spp.</i>	Clover spp.
<i>Potentilla reptans</i>	Creeping cinquefoil
<i>Veronica chamaedrys</i>	Germander speedwell
<i>Rubus fruticosus</i>	Bramble
<i>Prunus laurocerasus</i>	Laurel
<i>Buxus spp.</i>	Box spp.
<i>Corylus avellana</i>	Hazel
<i>Cirsium arvense</i>	Field thistle
<i>Berberis julianae</i>	Winter green barberry
<i>Viola minor</i>	Lesser periwinkle
<i>Castanea sativa</i>	Sweet chestnut
<i>Carpinus betulus</i>	Hornbeam

<i>Prunus spp.</i>	Cherry
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Table 11: Mammals

Species on site	
Latin name	Common name/s
<i>Rodentia spp.</i>	Small rodent (Burrow and droppings)
<i>Sciurus carolinensis</i>	Grey squirrel (Feeding signs)
<i>Vulpes vulpes</i>	Red fox (Scat)

Table 12: Birds and Fish

Species on and directly adjacent to site	
Latin name	Common name/s
<i>Erithacus rubecula</i>	Robin
<i>Columba palumbus</i>	Wood pigeon
<i>Cyanistes caeruleus</i>	Blue tit
<i>Parus major</i>	Great tit

Appendix IV: Figures

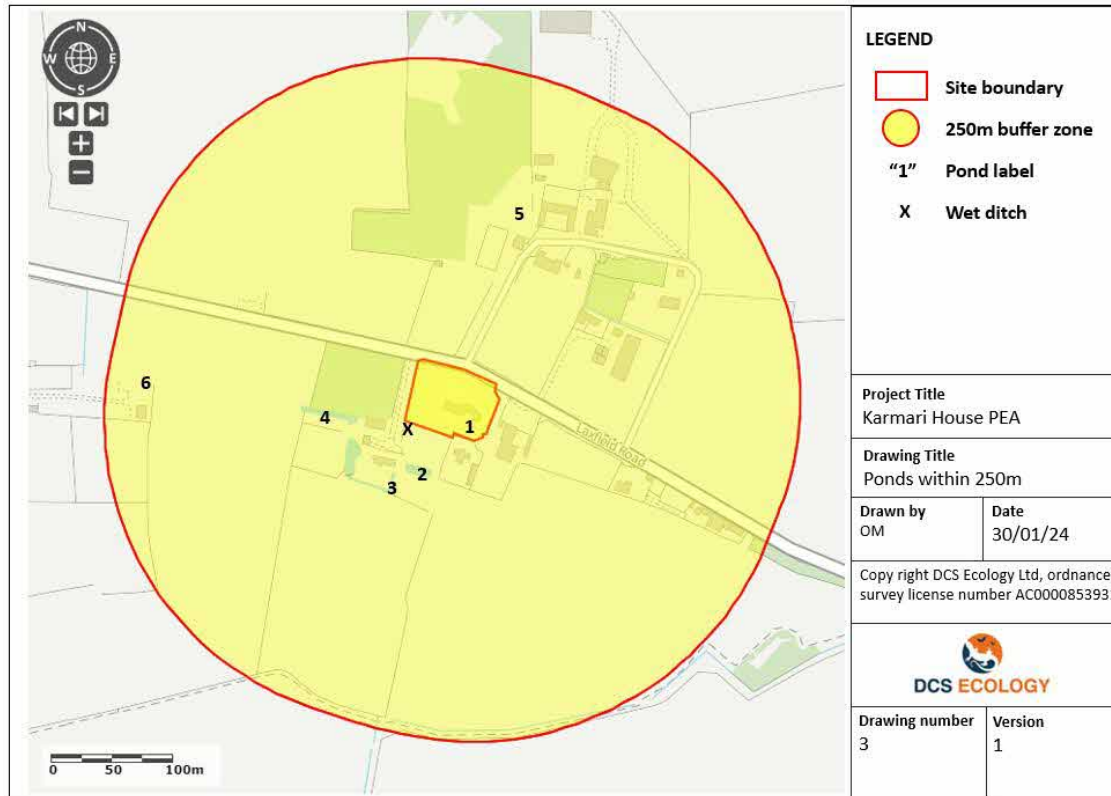


Figure 3: Ponds (potential Great Crested Newt ponds) within 250m. Based upon Ordnance Survey (c) Crown Copyright under licence AC0000853931

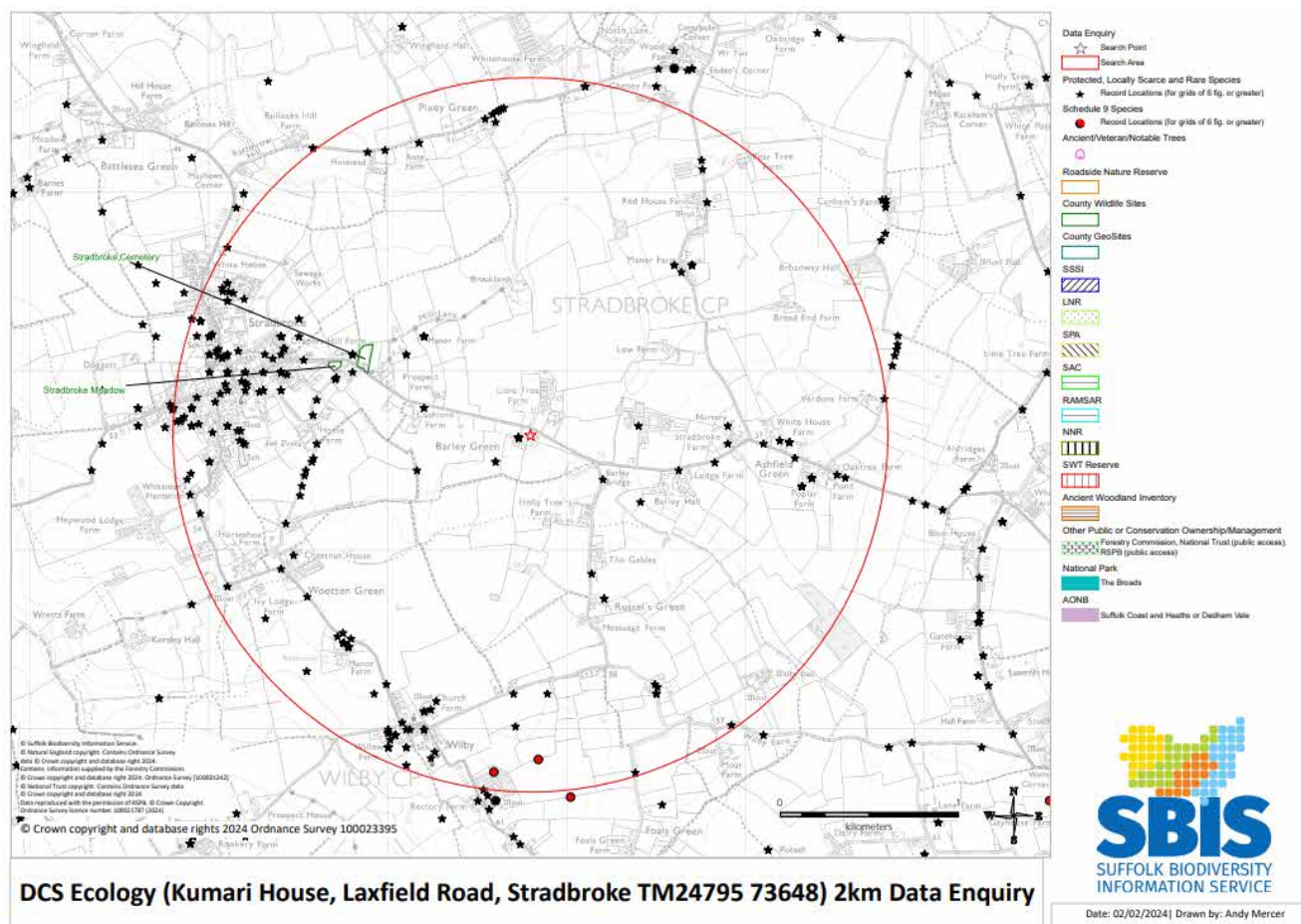


Figure 4: Protected species records, Statutory and Non-Statutory Designated Sites within 2km of the Site.

Kumari House, Laxfield Road, Stradbroke, E ye, Suffolk, IP21 5JR

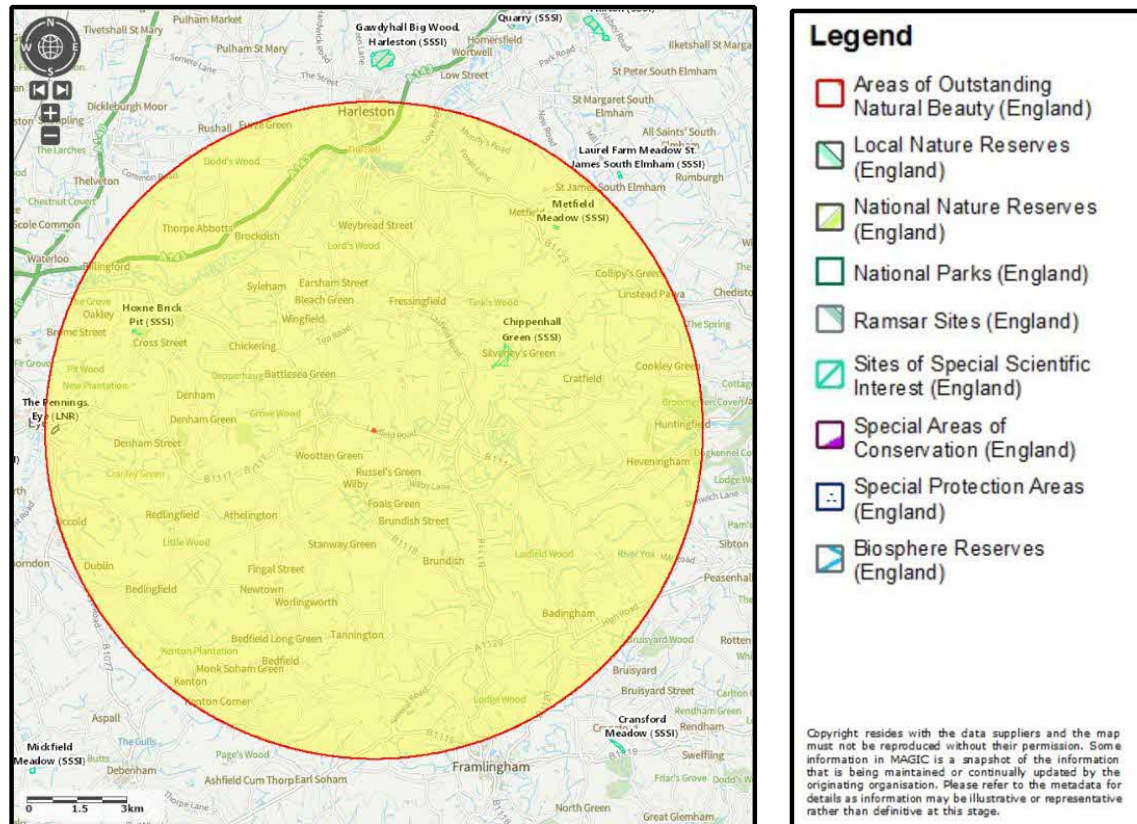


Figure 5: Statutory Conservation Sites within 10km of the Site. Based upon Ordnance Survey (c) Crown Copyright under licence AC0000853931

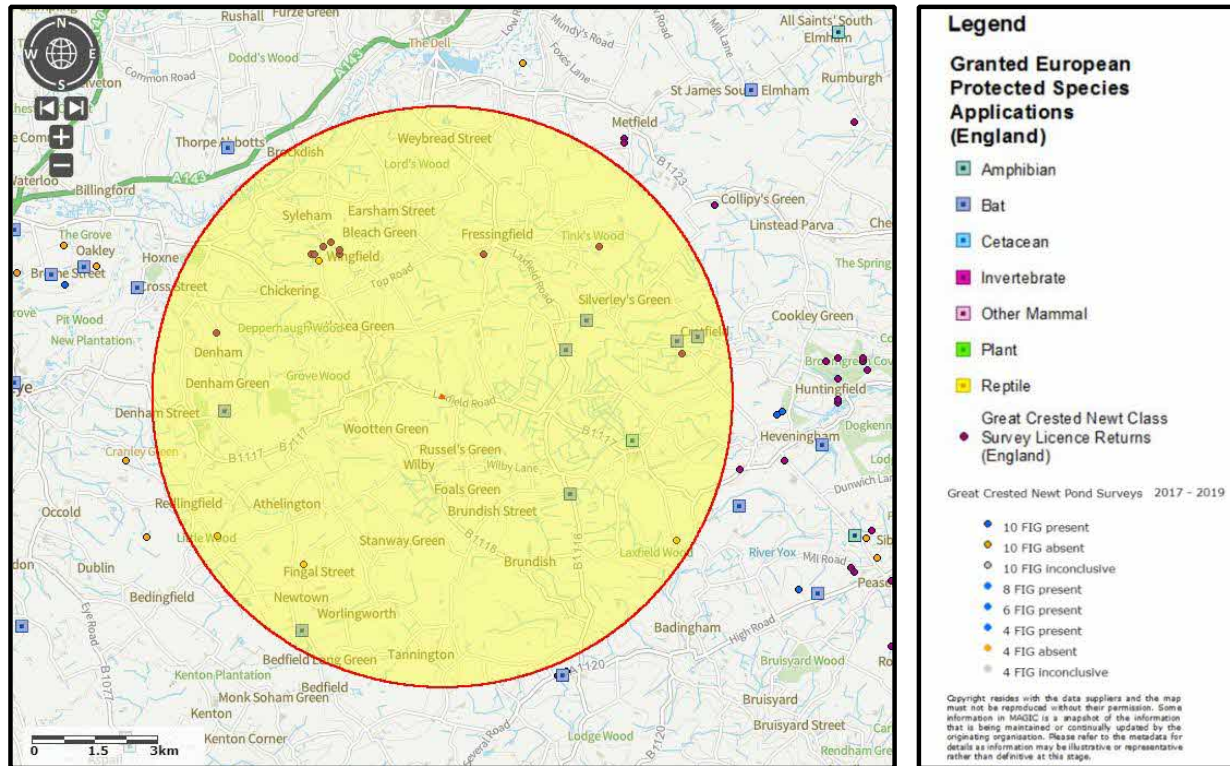


Figure 6: Protected species recorded on MAGIC within 7km of the Site. Based upon Ordnance Survey (c) Crown Copyright under licence AC0000853931

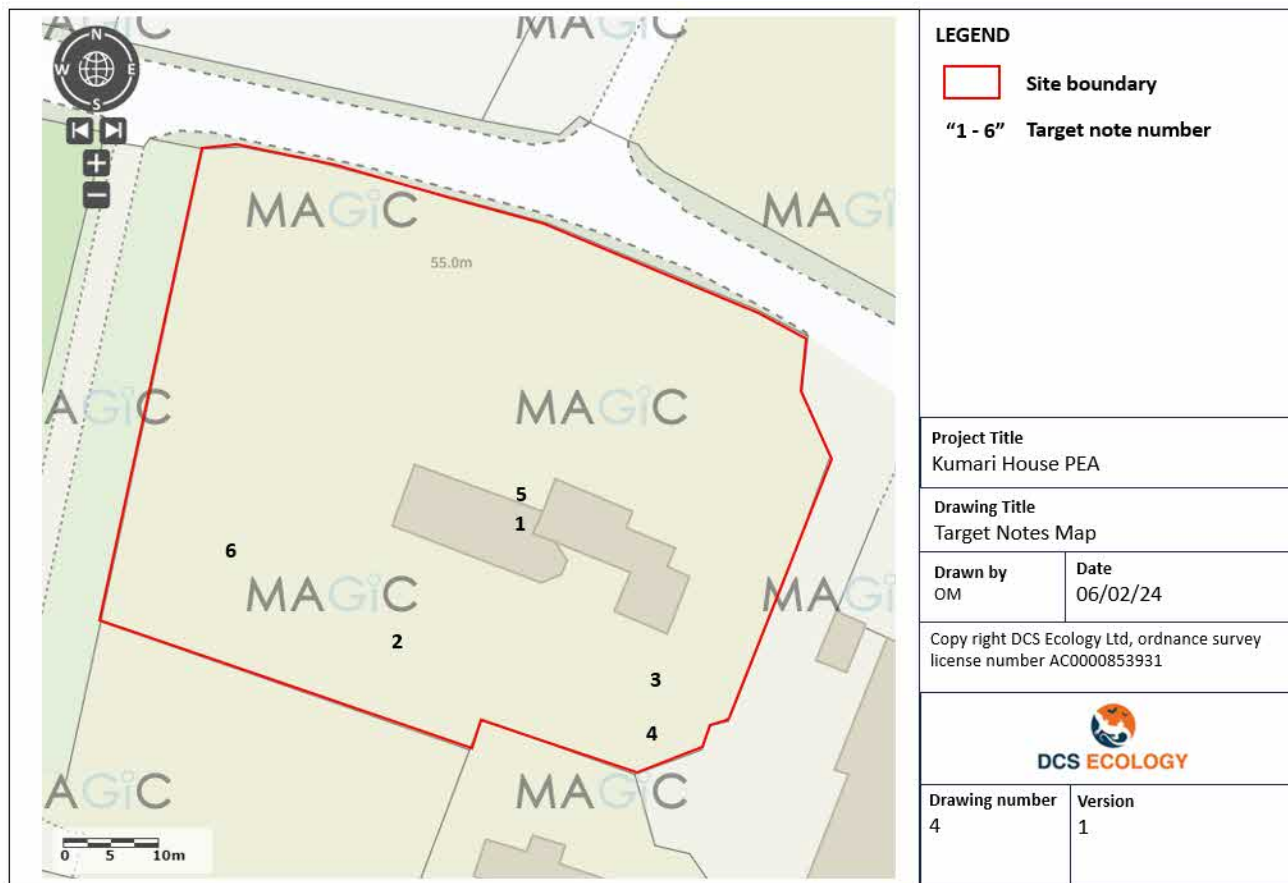


Figure 7: Target notes map. Based upon Ordnance Survey (c) Crown Copyright under licence AC0000853931

Appendix V: Desk Study

Table 13: WCA Sch. 1, BoCC Red Listed and Priority (BAP) bird species records within 2km of the Site

Species common name	Latin name	Status	Most Recent Record
Skylark	<i>Alauda arvensis</i>	BoCC Red, Sect.41, UKBAP	2020
Kingfisher	<i>Alcedo atthis</i>	WCA1i	2010
Greylag goose	<i>Anser anser</i>	WCA1ii	2020
Swift	<i>Apus apus</i>	BoCC Red	2019
Greenfinch	<i>Chloris chloris</i>	BoCC Red	2021
House martin	<i>Delichon urbicum</i>	BoCC Red	2021
Corn bunting	<i>Emberiza calandra</i>	BoCC Red, UKBAP	2011
Reed bunting	<i>Emberiza schoeniclus</i>	UKBAP; S41	2011
Hobby	<i>Falco subuleo</i>	WCA1i	2021
Herring gull	<i>Larus argentatus</i>	BoCC Red, UKBAP	2011
Linnet	<i>Linaria cannabina</i>	BoCC Red; S41	2020
Red kite	<i>Milvus milvus</i>	WCA1i	2016
Spotted flycatcher	<i>Muscicapa striata</i>	BoCC Red, UKBAP, S41	2014
Yellowhammer	<i>Emberiza citrinella</i>	BoCC Red, UKBAP	2020
House sparrow	<i>Passer domesticus</i>	BoCC Red, UKBAP, S41	2021
Tree sparrow	<i>Passer montanus</i>	BoCC Red, UKBAP; S41	2015
Grey partridge	<i>Peraix perax</i>	BoCC Red; S41	2020
Marsh tit	<i>Parus palustris</i>	BoCC Red; S41	2011
Dunnock	<i>Prunella modularis</i>	UKBAP	2021
Bullfinch	<i>Pyrrhula pyrrhula</i>	UKBAP	2020
Woodcock	<i>Scolopax rusticola</i>	BoCC Red	2009
Starling	<i>Sternus vulgaris</i>	BoCC Red, UKBAP	2021
Redwing	<i>Turdus iliacus</i>	WCA1i	2020

Fieldfare	<i>Turdus pilaris</i>	BoCC Red, WCA1i	2020
Mistle thrush	<i>Turdus viscivorus</i>	BoCC Red	2021
Barn owl	<i>Tyto alba</i>	WCA1i	2020
Lapwing	<i>Vanellus vanellus</i>	BoCC Red, UKBAP, S41	2009
Turtle dove	<i>Streptopelia turtur</i>	BoCC Red, S41, UKBAP	2021
Song thrush	<i>Turdus philomelos</i>	UKBAP	2021

Appendix VI: Relevant Protected Species Legislation

International and national legislation, and policy context.

EC Habitats Directive

In 1992 the then European Community adopted Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the Habitats Directive. The main aim of the Habitats Directive is to promote the maintenance of biodiversity by requiring member states to introduce protection for these habitats and species of European importance. The mechanism for protection is through the designation of Special Areas of Conservation (SACs), both for habitats and for certain species listed within Annex II. There are several species listed within Annex II of the Habitats Directive that are present within the UK; these include four lower plant species, nine higher plant species, six species of molluscs, six species of arthropods, eight species of fish, two species of amphibian, and nine species of mammal.

The Bern Convention

The Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) came into force in 1982. The principal aims of the Convention are to ensure the conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix 3. To this end the Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1000 wild animal species.

Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention or CMS) was adopted in Bonn, Germany in 1979 and came into force in 1985. Contracting Parties work together to conserve migratory species and their habitats by providing strict protection for endangered migratory species (listed in Appendix 1 of the Convention), concluding multilateral agreements for the conservation and management of migratory species which require or would benefit from international cooperation (listed in Appendix 2 of the Convention), and by undertaking cooperative research activities.

Convention on Biological Diversity

The Convention on Biological Diversity (Biodiversity Convention or CBD) was adopted at the Earth Summit in Rio de Janeiro and entered into force in December 1993. It was the first treaty to provide a legal framework for biodiversity conservation. Contracting Parties are required to create and enforce national strategies and action plans to conserve, protect and enhance biological diversity.

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) is the principal mechanism for the legislative protection of wildlife in Great Britain. However, it does not extend to Northern Ireland, the Channel Islands, or the Isle of Man. This legislation is how the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') and the European Union Directives on the Conservation of Wild Birds (79/409/EEC) and Natural Habitats and Wild Fauna and Flora (92/43/EEC) are implemented in Great Britain.

Conservation of Habitats and Species Regulations 2017 (as amended)

In the UK the Council Directive 92/43/EEC has been transposed into national laws by means of the Conservation (Natural Habitats, & c.) Regulations 1994 (as amended), and the Regulations (Northern Ireland) 1995 (as amended). The Regulations came into force on 30 October 1994 and have been amended several times. Subsequently the Conservation of Habitats and Species Regulations 2010 was created which consolidates all the various amendments made to the 1994 Regulations in respect of England and Wales and is commonly known as the 'the Habitats Regulations'. In Scotland the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the 1994 Regulations. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland. The Regulations contain five Parts and four Schedules and provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

Table 14: Relevant Protected Species Legislation

Species	Legislation	Protection
Bats	<ul style="list-style-type: none"> ▪ Conservation of Habitats and Species Regulations (2010) (as amended) ▪ Wildlife and Countryside Act (WCA) (1981), Schedule 5 (as amended) ▪ Wild Mammals Act (1996) 	It is an offence to: <ul style="list-style-type: none"> ▪ Intentionally kill, injure or take any bat, ▪ Intentionally or recklessly disturb a bat, ▪ Intentionally or recklessly damage, destroy or obstruct access to a bat roost
Great crested newts	<ul style="list-style-type: none"> ▪ Conservation of Habitats and Species Regulations (2010) (as amended) ▪ Wildlife and Countryside Act (WCA) (1981), Schedule 5 (as amended) 	It is an offence to: <ul style="list-style-type: none"> ▪ Intentionally kill, injure, or take a great crested newt, ▪ Intentionally or recklessly disturb a GCN, ▪ Intentionally or recklessly damage, destroy or obstruct access to any place used by a GCN for shelter or protection
Widespread reptiles	<ul style="list-style-type: none"> ▪ Wildlife and Countryside Act (WCA) (1981), Schedule 5 (as amended) 	It is an offence to: <ul style="list-style-type: none"> ▪ Intentionally kill or injure a reptile. ▪ Sell, offer, or expose for sale, have in possession or transport for the purpose of sale any live or dead reptile or any part of, or anything derived from, a reptile.
Birds	<ul style="list-style-type: none"> ▪ Wildlife and Countryside Act (WCA) (1981) (as amended) 	It is an offence to: <ul style="list-style-type: none"> ▪ Intentionally kill, injure, or take any wild bird, ▪ Intentionally take, damage, or destroy nests in use or being built, ▪ Intentionally take, damage, or destroy eggs. Species listed on Schedule 1 of the WCA (1981) are afforded additional protection, making it an offence to intentionally or recklessly disturb such species at, on or near an active nest.

Appendix VII: Abbreviations

Table 15. List of abbreviations

BAP	Biodiversity Action Plan
BCT	Bat Conservation Trust
BoCC	Birds of Conservation Concern
CHSR	Conservation of Habitats and Species Regulations 2017
CIEEM	Chartered Institute of Ecology and Environmental Management
CROW	The Countryside Rights of Way Act 2000
CWS	County Wildlife Site
ECoW	Ecological clerk of works
eDNA	Environmental DNA
EcIA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
EPS	European Protected Species
GCN	Great crested newt
HPI	Habitat of Principal Importance
HSI	Habitat Suitability Index
HRA	Habitat Regulations Assessment
JN CC	Joint Nature Conservation Committee
LNR	Local Nature Reserve
LPAs	Local Planning Authorities
MAGIC	Multi-Agency Geographic Information for the Countryside
NERC	Natural Environment and Rural Communities Act
NBIS	Norfolk Biodiversity Information Service
NE	Natural England
NERC	Natural Environment and Rural Communities Act 2006
NNR	National Nature Reserve
NPPF	The National Planning Policy Framework
PEA	Preliminary Ecological Appraisal

PRA	Preliminary Roost Assessment
PRF	Potential (bat) Roosting Feature
RAMs	Reasonable Avoidance Measures
SAC	Special Area of Conservation
SBAP	Suffolk Biodiversity Action Plan
SBIS	Suffolk Biodiversity Information Service
SPA	Special Protection Area
SSSI	Special Site of Scientific Interest
TAF	Temporary amphibian fencing
WCA	Wildlife and Countryside Act 1981 (as amended)
UKBAP	United Kingdom's Biodiversity Action Plan

Table 16. Abbreviations of bat species

Abbreviations	Common name	Latin name
BARB	Western barbastelle	<i>Barbastella barbastell</i>
BLE	Brown long-eared	<i>Plecotus auritus</i>
CPIP	Common pipistrelle	<i>Pipistrellus pipistrellus</i>
DAUB	Daubenton's	<i>Myotis daubentonii</i>
LEI	Lesser noctule/Leisler's	<i>Nyctalus leisleri</i>
NATT	Natterer's	<i>Myotis nattereri</i>
NOC	Common noctule	<i>Nyctalus noctule</i>
NPIP	Nathusius's pipistrelle	<i>Pipistrellus nathusii</i>
SERO	Serotine	<i>Eptesicus serotinus</i>
SPIP	Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>

Appendix VIII: Table 17. Enhancement and mitigation example designs

	
<p>Woodstone Seville Box 28-32mm Hole.</p>	<p>Woodstone multichambered bat box</p>
	
<p>Eco-Kent bat box</p>	<p>Hedgehog highways sign highlighting a gap that's been left within a fence for small mammal passage.</p>

Appendix VIII: Table 18. Additional context

EPS licence	European Protected Species licence European Protected Species (such as bats and great crested newts) receive full protection under The Conservation of Habitats and Species Regulations 2017 (as amended) and Wildlife and Countryside Act 1981 (as amended) (see table 4). Works involving the disturbance, harm, or damage/ destruction to breeding or resting places <u>must</u> be issued an EPS licence by Natural England prior to works. Failure to do so may result in legal action, such as a fine or up to a 6-month prison sentence. Records of previously issued EPS licences are submitted to MAGIC systems (xt), including information on the species, location, and duration of licence.
{MAGIC} Class Survey Licence Returns	Great Crested Newt Class Survey Licence Returns. Ponds recorded on MAGIC systems that were surveyed for great crested returned positive, but did not require an EPS licence
{MAGIC} Survey record	Great Crested Newt eDNA Habitat Suitability Index Pond Surveys for District Level Licensing 2017, 2018, 2019. Ponds recorded on MAGIC systems that underwent eDNA and/or HSI surveys between 2017 and 2019, recorded separately to Class survey licence returns.