

# **Preliminary Ecological Appraisal**

of

### Brindlewood Barn, Felsham,

### Suffolk

#### Carried out for:

Rachel Dunn

 $1^{st}$ 

#### Prepared by: Abrehart Ecology

The Barn, Bridge Farm Friday Street, Brandeston Suffolk IP13 7BP

Tel: 01728 684362 - 07798 941555

e-mail: toby@abrehartecology.com

Website: abrehartecology.com

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### 1. Background to Commission

- 1.1 Abrehart Ecology Ltd was commissioned by Box Valley Architectural Design, on behalf of Rachel Dunn, to carry out a Preliminary Ecological Appraisal (PEA) of the land for the proposed conversion of an existing barn at Brindlewood, off Dakings Lane in Felsham, Suffolk (central grid reference TL 93776 56097; Fig. 1; hereafter referred to as the Site).
- 1.2 The survey was required to inform a planning application at the Site; to include the conversion of an existing barn (within the same building footprint) and associated access and parking/infrastructure. The Site, including the barn and associated hardstanding yard, covers an area of approximately 525m<sup>2</sup>.

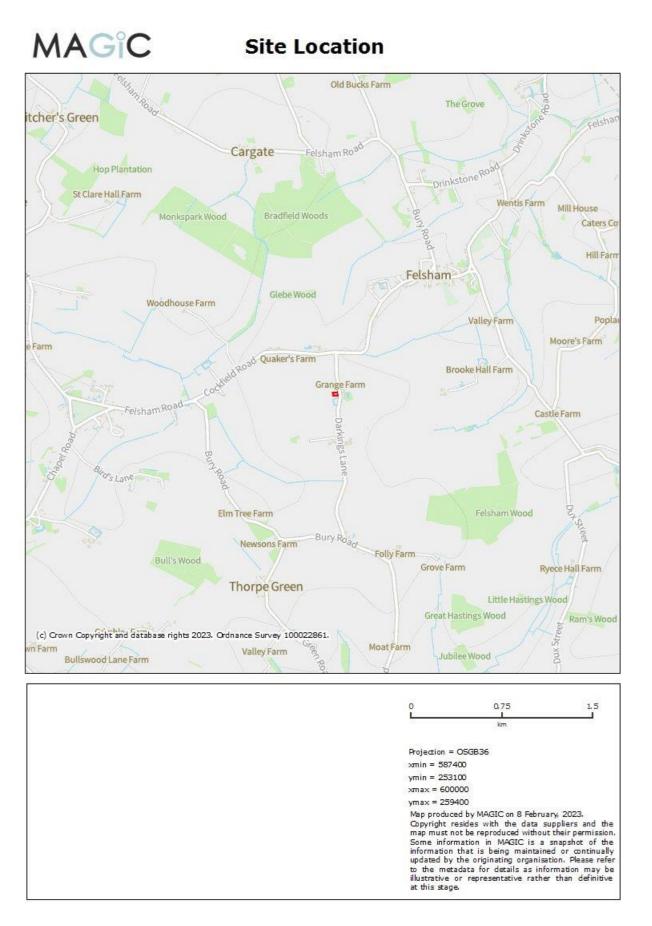
#### Aims of Study

- 1.3 This report provides an ecological appraisal 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 planning application within the Site.
  - To provide an assessment of potential impacts to protected species, habitats, or protected sites.

#### Site Description

- 1.4 The survey area is located to the west of Dakings Lane, within the ownership boundary of Brindlewood. It included an existing barn and former stables associated with a small concrete yard and the actively used access of the dwelling. Immediately surrounding the Site are the residential habitats of Brindlewood (gardens and planted areas) and neighbouring properties; this included several ponds and other standing water (a moat).
- 1.5 Beyond the residential houses and gardens, the wider landscape is dominated by agricultural land, with small blacks of ancient deciduous woodland and villages (see Figure 1).







#### **Relevant Legislation**

- 1.6 Protected species, as referred to within this report, are taken to be those protected under European Legislation (Conservation of Habitats and Species Regulations 2010, as amended) and UK legislation (Wildlife and Countryside Act 1981; Protection of Badgers Act 1992).
- 1.7 Public bodies have a duty of responsibility to consider species of principle importance in England as listed in Section 41 of the NERC Act (2006).
- 1.8 The National Planning Policy Framework (NPPF) 2021 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.
- 1.9 Paragraph 2.4.2 of the Mid Suffolk Local Plan (within Section 2.4 The Countryside and the Rural Economy) states: "The Countryside and Rural Economy Objectives of the Local Plan are:-
  - To encourage the rural economy through diversification and the sensible re-use or conversion of rural buildings
  - To conserve and improve the landscape taking account of its natural beauty and features of archaeological or historic interest
  - To conserve the diversity of wildlife particularly by protecting and enhancing habitats
  - To make the countryside more accessible to the public for informal recreation
  - To protect the countryside from inappropriate forms of development
  - To safeguard the use of the countryside's natural resources, including its farmland, mineral reserves and groundwater supply."
- 1.10 Appendix V details legislation which protects species and groups relevant to the Site (bats, reptiles, birds, and badgers).



### 2. Methods

#### Desk Study

- 2.1 Data obtained from the Suffolk Biodiversity Information Service (SBIS) were used to conduct a standard data search1 for any information regarding statutory and non-statutory sites and records of protected and priority species within a 2km radius of the Site. The data were received on the 10<sup>th</sup> of February 2023.
- 2.2 A 7km radius search for conservation areas part of the National Site Network, including Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsars was undertaken using MAGIC (http://www.natureonthemap.naturalengland.org.uk/).

#### Field Survey

2.3 A Preliminary Ecological Appraisal was carried out by Alister Killingsworth BSc (Hons) MSc ACIEEM (Natural England Great Crested Newt Class Survey Licence WML-CL08, Natural England Bat Class Survey Licence WML-CL17) on the 9<sup>th</sup> of February 2023 in accordance with standard best practice methodology for Phase 1 Habitat Surveys set out by the JNCC (JNCC 2010). Weather conditions during the survey were 50% cloud cover, a light breeze (Beaufort Scale 2), a temperature of 6°C, and good visibility. The Site was traversed slowly by the surveyor, mapping habitats, and making notes on dominant flora and fauna. The survey was extended to 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.

#### Survey Limitations

2.4 Although the survey was carried out outside the botanical season, this was not considered a significant limitation due to the habitat types present and existing management.

<sup>&</sup>lt;sup>1</sup> 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 2010 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.



### 3. Results

3.1 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.

#### Data Search (for maps see Appendix II)

3.2 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. Species scoped out were dormice, water voles, and otters.

#### Data Search

- 3.3 There were two statutory designated sites within 2 km of the Site, these are detailed below. The Site itself falls within the Impact Risk Zone for these SSSIs.
  - Bradfield Woods SSSI & National Nature Reserve (NNR) (approximately 1.1km northwest) – Almost entirely of ancient origin and contain the largest area of actively worked coppice-with-standards woodland in Suffolk. A rich flora has developed under the influence of coppicing. Bracken glades have developed on sand lenses and woodland clearings beneath scattered silver birch and hawthorn, and there are large numbers of rare and uncommon ancient woodland plants. A very long list of fungal species has also been recorded in the woods. The woods support a range of woodland birds, provides valuable habitat for insects, hazel dormice, bryophytes, and ferns.
  - Thorpe Morieux SSSI (approximately 1.15km south-east) Three ancient coppice woods on poorly drained boulder clays, all of which as under active management and have entirely semi-natural stands. The ground flora contains several uncommon species, including a large population of oxlip (a scarce local species) and other ancient woodland indicators.
- 3.4 There are two County Wildlife Sites within 2km of the Site. These are:
  - Newsons Farm A small holding within an arable landscape near Thorpe Morieux. It has been restored to a rich mosaic of meadow, scrub, and woodland alongside ancient hedgerows and old and newly created ponds. An area of old apple trees indicated the former presence of an orchard. The habitats support hazel dormice, interesting flora, a range of birds, mammals, amphibians (including GCN), and reptiles. It has good connectivity to the wider countryside, including Suffolk Wildlife Trust reserves.
  - RNR 60 A roadside nature reserve noted for supporting sulphur clover.
- 3.5 There are no National Site Network conservation areas (Ramsar, SAC, or SPA) within 7km of the Site.
- 3.6 A search of Habitat types at, adjacent to, and surrounding the Site revealed no Priority Habitats will be impacted by the proposals.
- 3.7 The data search showed records of protected species in the area, which could potentially occur on the Site. These are detailed within the relevant sections below.

#### Field Survey Results

3.8 The Site comprised an existing barn and former stables within the grounds of a recently built/renovated property along Dakings Lane in Felsham. The proposed development is to stay within the existing footprint of the barn and so the survey focussed on this area and the immediate surrounding habitats – including ponds within the adjacent residential garden and at the southern boundary.

#### Areas within the Construction Boundary

- 3.9 <u>Buildings</u>: Much of the Site comprised an existing brick and weatherboarding barn with attached former stables on the southern aspect. Internally was a wooden frame, on which was a single skin corrugated sheet (concrete/asbestos type) roof. The roofing occasionally included clear plastic sheeting which, in combination with windows on northern and eastern aspects, created a very light environment internally. The roof of the stables had a second layer of metal sheeting over the corrugated sheets. Internally, the structure was separated into smaller rooms by brick and concrete breezeblock walls. Within these smaller areas/rooms and stables were darker areas which were likely more suitable for roosting bats. Potential for roosting bats is discussed further in Section 4 and on the plan within the Appendix. The barn appeared regularly used/disturbed as it was used for storage of recreation equipment, partly as a workshop, and an area for exercise/fitness.
- 3.10 The former stables were partially open, with only lower halves of stable doors present. These were similarly used for storage or recreational materials and wood.
- 3.11 <u>Hardstanding</u>: Access into the barn is through a gravel driveway with newly constructed wooden fencing and gates. The gravels had limited vegetation growth, which was restricted to scattered plants of cleavers (*Galium aparine*), stinging nettle (*Urtica dioica*), red dead-nettle (*Lamium purpureum*), smooth cat's-ear (*Hypochaeris radicata*), groundsel (*Senecio vulgaris*), dove's-foot crane's-bill (*Geranium molle*), common mouse-ear (*Cerastium fontanum*), and mosses. Along the road boundary was a planted, fairly young hawthorn (*Crataegus monogyna*) hedgerow that contained an old pigeon/dove nest.
- 3.12 To the rear of the stables was an associated concrete 'yard' area. This was used in part for storage of building materials, some of which was in aggregate bags, and spoil and vegetation piles. Away from stored materials, the concrete was starting to revegetate with grassland and ruderal species.
- 3.13 <u>Grassland</u>: To the south and west of the barn were managed areas of residential garden. This had a consistent sward height across its extent and comprised typical lawn grass species and patches of common forbs or 'weed' species, including those found within the gravels and bristly oxtongue (*Helminthotheca echioides*).

#### Areas within the Ownership Boundary (outside construction boundary)

- 3.14 <u>Grassland:</u> The lawn continued south to the southern boundary of the ownership boundary. Here it adjoined the moat detailed below. To the west were areas of longer 'meadow' grassland near to a lined garden pond.
- 3.15 <u>Ponds:</u> The smaller pond within the garden was lined and had minimal marginal or emergent vegetation, although some submerged plants were noted. It had a shelf which was exposed during extreme dry weather in 2022. The larger moat had patches of marginal vegetation and was used by a good number of ducks at the time of survey.

3.16 A map showing the habitat types on Site can be seen in Appendix II.



# Protected and Priority Species Within the Site & Potential Impacts and Recommendations

#### Statutory Designated Areas

- 4.1 The Site is within the Impact Risk Zone for the SSSI sites; however, it does not contain the species or habitats for which they are designated and will not significantly increase footfall or disturbance through the conservation areas.
- 4.2 Given the small size of the development and screening provided by surrounding residential dwellings, tree belts, and farm buildings and agricultural fields, it was not considered necessary to carry out a Habitats Regulation Assessment for the development. The areas contain extensive footpath networks, and the proposed construction will not significantly increase visitor footfall along these.

#### Flora

4.3 No species of interest were recorded during the survey and mown grasslands were considered unlikely to support a rich flora. The desk study highlighted several species of rare plant have been previously recorded within 2km of the Site, this included those listed on Schedule 8 of the Wildlife and Countryside Act 1981 and classified as 'Vulnerable' and 'Endangered' on the England Red List. Almost all the rare and protected species highlighted within the data search are associated with woodland, arable land, and species-rich meadows and would not be found within the habitats on Site.

#### 4.4 No further botanical surveys are required.

#### **Badgers**

- 4.5 The Site was visually searched for evidence of the presence of badgers (*Meles meles*), including setts, footprints, latrines, and snuffle marks. Habitats within the Site were suitable for foraging animals; however, no evidence of large mammals was recorded. Anecdotal evidence suggested deer use the garden areas.
- 4.6 The hedgerow along the road boundary, adjacent to the Site, was not considered suitable for sett creation and will not be impacted by proposals.
- 4.7 Seven records of badgers were returned within the desk study from 2002 to 2018; none of which were within 1.5km of the Site.
- 4.8 No further survey is necessary; however, precautionary measures detailed in paragraph
   4.28 will be adhered to, to avoid disturbing nocturnal species and foraging mammals should they be present.

#### **Bats**

- 4.9 The barn and stables contained possible evidence of bat activity; these findings and recommendations are detailed below.
- 4.10 Possible bat droppings were found on stored materials and there was a small accumulation of butterfly wings found within a smaller internal 'room'. Several of these droppings were collected and sent away for DNA analysis; however, they were revealed to be from pygmy shrew.
- 4.11 Ingress points into the barn were noted around stable door frames and through damaged

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Brindlewood Barn

ventilation bricks. The open fronted stables were accessible for bats, particularly brown longeared bats which could utilise the exposed rough beams.

- 4.12 Findings are shown on a plan of the Site in the Appendix.
- 4.13 Habitats surrounding the Site were suitable for both foraging and commuting species, as ponds and mature trees are likely to support assemblages of invertebrates (prey species) and hedgerows/other linear features connect to woodland blocks in the wider landscape.
- 4.14 The data search returned records of at least eight species of bat within 2km of the Site; these were barbastelle (*Barbastella barbastellus*), Myotis sp., Natterer's (*Myotis nattereri*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), pipistrelle species, noctule (*Nycatalus noctula*), and brown long-eared (*Plecotus auritus*) bats within 2km of the Site. This included bat detector recordings, roosts, and breeding colonies (of common pipistrelle).
- 4.15 It is recommended that further survey is carried out. As the building was considered to have moderate bat roost suitability (criteria seen below), it is recommended that two surveys are carried out between May and September. These surveys should be designed or led by a Level 2 bat licenced ecologist and to Bat Conservation Trust guidelines.

A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions <sup>a</sup> and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).

4.16 It is also recommended that the Site incorporate sensitive lighting – ensuring the boundaries are not illuminated as it could be an important commuting corridor for nocturnal species. This will follow guidance provided by the Bat Conservation Trust (Bats and Lighting in the UK, 2009), to ensure foraging and commuting bats using adjacent habitats are not negatively impacted. Lighting measures should also be applied to temporary security lighting used during the construction phase. This will include low pressure sodium lamps, with hoods, cowls, or shields, to prevent light spillage.

#### Birds

- 4.17 The hawthorn hedgerow along the road boundary was suitable for nesting birds and contained an old woodpigeon or dove nest.
- 4.18 Three old dove nests were noted in the main barn and a single swallow (*Hirundo rustica*) nest cup was noted on a ledge in the northernmost open stable.
- 4.19 The grassland lacked a suitable structure for ground nesting species and appeared regularly disturbed.
- 4.20 The data search returned a high number of records of common and protected species that have been observed in the local landscape. The hedgerows at the boundaries offered nesting and foraging habitat for BoCC red listed and NERC S41 species such as dunnock (*Prunella modularis*) and house sparrow (*Passer domesticus*).
- 4.21 No further survey is necessary; however, habitat should be cleared outside the nesting bird season or following a nesting bird survey (carried out by an experienced



ornithologist/ecologist); should any active nests be found, then clearance will stop until young have fledged.

4.22 Bird nest boxes, including those suitable for swallows, should be incorporated into designs (building or landscape) to replace nesting niches that will be lost.

#### Great Crested Newts & Reptiles

- 4.23 Habitats recorded within the construction boundary offered limited opportunities for herptiles. The flooring within barn was well-sealed concrete that had no obvious crevices or damage that could be used by sheltering or hibernating animals. Equipment and materials stored within the barn appeared regularly disturbed/non-permanent. The short, mown grassland did not have structure for either foraging or sheltering amphibians; however, it did offer opportunities for reptiles (basking), and they were adjacent to areas of longer grassland and ponds, which could be used by foraging, sheltering, and commuting animals.
- 4.24 Several ponds were highlighted on OS maps within 500m of the Site boundary, including one within the adjacent garden and one at the southern boundary of the wider ownership area. Two ponds were assessed for their potential for supporting breeding GCN, the results tables are below. These results indicate that the moat is of 'poor' suitability and the garden pond is of 'below-average' suitability.

	Pond 1 (garden)		Pond 2 (moat)	
	Field Score	SI Score	Field Score	SI Score
Zone	A	1	A	1
Pond area (m <sup>2</sup> )	25	0.05	1700	0.85
Pond permanence	Never dries	0.9	Never dries	0.9
Water quality	Moderate	0.67	Poor	0.33
Shade %	0-60	1	0-60	1
Fowl	Minor	0.67	Major	0.01
Fish	Absent	1	Possible	0.7
Pond density	7	0.85	7	0.85
Terrestrial Habitat	Moderate	0.67	Moderate	0.67
Macrophyte cover %	16-20	0.5	5%	0.35

- 4.25 A MAGIC search for granted Natural England EPS Mitigation licences and GCN surveyor licence returns and GCN pond surveys from 2017-2019 was carried out. No records or licences were found within 2km of the Site and the nearest EPS licence was from approximately 5.7km south of the Site in Preston St Mary. The nearest positive surveys were from approximately 5km north-east and south-east of the Site.
- 4.26 There were seven records of GCN returned in the data search, alongside further amphibians records of common frog, smooth newt, and common toad a NERC S41 species of principal importance in England. None of the GCN records were within 1km of the Site, the nearest being 1.2km north-east from 2008.
- 4.27 Three species of common and widespread reptiles (slow-worm (*Anguis fragilis*), grass snake (*Natrix helvetica*), and common lizard (*Zootoca vivipara*)) have been recorded occasionally in the local area 12 records total. These records were from three distinct areas in the local landscape, all over 1km from the Site boundary.



4.28 No further surveys are considered necessary; however, works should follow a Reasonable Avoidance Measures Method Statement, to minimise the risk of harm to herptiles throughout the construction process.

#### Hedgehogs

- 4.29 Grassland habitats within the Site offered potential foraging habitat for hedgehogs; the shorter grassland provided good access to potential prey items. The adjoining hedgerows and longer grassland offered an extension of this foraging habitat and could also be utilised as a potential commuting corridor, and cover for sheltering animals. Fallen leaves from deciduous trees could provide nest building material.
- 4.30 Although no evidence of hedgehogs was recorded during the survey, the data search returned 30 records of hedgehog within 2km of the Site from 2005 to 2019. The records were mostly from Felsham, Cockfield, and Thorpe Morieux. All records were from over 500m from the Site boundary.
- 4.31 No further survey is necessary; however, as the Site provides suitable foraging habitat for foraging mammals, and hedgehogs and badgers have been recorded in the local area, construction works will implement several precautionary measures, including the following:
  - Covering excavations overnight to prevent animals falling in, or the provision of an escape ramp;
  - Safe storage of materials that may harm animals; and
  - Security lighting to be set on short timers to avoid disturbing nocturnal animals using the Site and immediate surrounding area it will be directional to avoid boundary features (trees and hedgerows).

#### Invertebrates

- 4.32 The mown grassland areas were unsuitable for supporting assemblages of common and rare/protected terrestrial invertebrates. Much of the habitat was disturbed, and there was limited forb, ruderal, or scrubby/woody species.
- 4.33 None of the rare of protected invertebrates could use the habitats within the Site, which require a greater botanical diversity or woodland habitats.

#### 4.34 No further survey is necessary.

### 5. Conclusions

- 5.1 The preliminary ecological appraisal found the Site contained habitats suitable for supporting protected species bats, breeding birds, and amphibians. Hedgehogs are listed as a Species of Principal Importance in England (and listed on Schedule 6 of the Wildlife and Countryside Act 1981 making it illegal to kill or injure through certain methods) and so should also be considered as part of this application. The following measures will be implemented to minimise the risk of harm to individual animals:
  - Emergence / return to roost bat surveys carried out between May and September (two surveys).
  - Covering of excavations and/or provision of exit ramps is recommended during works to prevent harm to mammals.
  - Recommendations for precautionary working methods should be followed during clearance of any scrub to prevent harm to hibernating/sheltering hedgehogs.
  - Adherence to a Reasonable Avoidance Measures Method Statement to minimise the risk of harm to great crested newts.
  - Building and tree clearance to be carried out outside the breeding bird season or following a nesting bird survey by a suitably experienced ecologist.
  - Sensitive lighting measures to prevent disturbance to foraging bats or other nocturnal species. An experienced ecologist will liaise with construction staff to inform these measures.
- 5.2 As detailed in Paragraphs 1.9, the Local Policy requires new developments to have consideration for priority habitats and species, protected sites, protected species, and biodiversity; however, the conversion of rural buildings is considered beneficial if carried out sensitively. The proposed conversion of the barn will not cause significant harm or disturbance to such features if mitigation measures are followed. The development should follow the mitigation hierarchy and avoid negative impacts to biodiversity wherever possible. Any remaining short-term impacts (such as the removal of nesting niches and foraging habitat) or potential long-term impacts (such as potential disturbance to bat roosts) will be adequately mitigated for through the above measures.
- 5.3 In addition to having a negligible impact to biodiversity within the construction boundary, the development will not negatively impact species or habitats within the wider ownership boundary or adjacent land. There will be no impact on SSSIs or National Site Network conservation areas and no requirement for a Habitat Regulations Assessment.



### 6. References

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## **Appendix I: Site Photos**









Preliminary Ecological Appraisal Brindlewood Barn





# **Appendix II: Species Lists**

Plants

Cerastium fontanum	
Cirsium arvense	
Cirsium vulgare	
Conium maculatum	
Crataegus monogyna	
Epilobium sp.	
Euphorbia peplus	
Galium aparine	
Geranium molle	
Helminthotheca echioides	
Hypochaeris radicata	
Lamium purpureum	
Leucanthemum vulgare	
Lolium perenne	
Rumex sp.	
Senecio vulgaris	
Tripleurospermum inodorum	
Urtica dioica	



### **Appendix III: Figures**

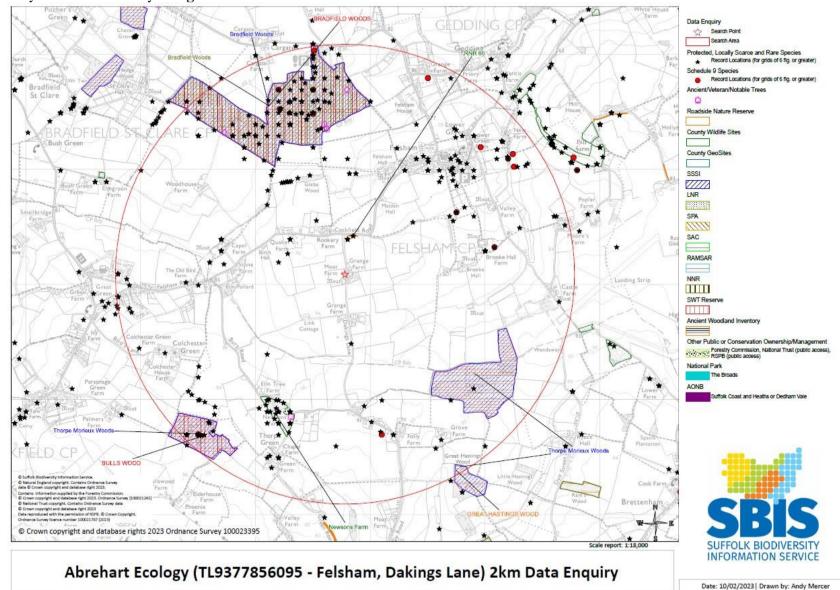
#### Phase 1 Habitat Map







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Statutory and Non-Statutory Designated Sites within 2km of the Site

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#### Potential bat roost features and evidence





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# Appendix V: Relevant Protected Species Legislation

Species	Legislation	Protection	
Bats	<ul> <li>Conservation of Habitats and Species Regulations (2010) (as amended)</li> <li>Wildlife and Countryside Act (WCA) (1981), Schedule 5 (as amended)</li> <li>Wild Mammals Act (1996)</li> </ul>	<ul> <li>It is an offence to:</li> <li>Intentionally kill, injure or take any bat</li> <li>Intentionally or recklessly disturb a bat</li> <li>Intentionally or recklessly damage, destroy or obstruct access to a bat roost</li> </ul>	
Great Crested Newts	<ul> <li>Conservation of Habitats and Species Regulations (2010) (as amended)</li> <li>Wildlife and Countryside Act (WCA) (1981), Schedule 5 (as amended)</li> </ul>		
Widespread Reptiles	• Wildlife and Countryside Act (WCA) (1981), Schedule 5 (as amended)	<ul> <li>It is an offence to:</li> <li>Intentionally kill or injure a reptile</li> <li>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</li> </ul>	
Birds	• Wildlife and Countryside Act (WCA) (1981 (as amended)	<ul> <li>It is an offence to:</li> <li>Intentionally kill, injure or take any wild bird</li> <li>Intentionally take, damage or destroy nests in use or being built</li> <li>Intentionally take, damage or destroy eggs</li> <li>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</li> </ul>	

