
Preliminary Ecological Appraisal

**Edge House Farm, Rishangles, Eye
Suffolk**

for

Ms. Carole Deceaux

24 November 2020

Client

Ms. Carole Deceux

Planning authority

Babergh Mid Suffolk

Time limit of reliance

Please note that the reported surveys were conducted on the date(s) stated in the report and that it represents site conditions at the time of the visit. The findings and recommended mitigation are based on these conditions. If site conditions change materially after the site survey, the original report cannot be relied upon and will need to be updated. Ecological reports and surveys can typically be relied on for 18 to 24 months from the date of survey.

Surveys supporting European Protected Species Mitigation Licence applications must be within the current or most recent survey season for bats (May to September), or within two survey seasons for great crested newts (March to June).


Document	Preliminary Ecological Appraisal
Version	1.0
Date	24 November 2020
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<i>Signed disclosure</i> <i>The information, data, advice and opinions provided in this report which I have provided is true and has been prepared in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. I confirm that the opinions expressed are my true and professional bona fide opinions.</i> <i>Etienne Swarts, ACIEEM</i>	
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SUMMARY

- Greenlight Environmental Consultancy Ltd. has been commissioned to carry out a Preliminary Ecological Appraisal for a proposed development at Edge House Farm, Dublin Road, Rishangles, Eye, IP23 7QB (grid reference: TM 16637 69249).
- This report outlines the habitat features on site, the likelihood of protected species being present and any potential effects of the proposed development on such species.
- The ecology report is required in support of a planning application for the conversion of existing barn building into a residential dwelling and potential demolition of the old farm shop, sheds and stable block.
- The survey and assessment were completed by independent, qualified and experienced ecologists with Natural England survey licences for the relevant protected species.
- The findings of the assessment are that the habitats on the site are of **low** ecological value and that there are no significant ecological constraints that would prevent the proposed works.
- Further surveys for bats are required to inform an ecological impact assessment of the site and an appropriate mitigation strategy.
- If the following mitigation and enhancements are incorporated into the proposed layout, there will be a net gain for biodiversity, as is encouraged by the National Planning Policy Framework.

Protected habitats/species	Status	Potential effect	Recommended mitigation and enhancements
Protected sites	No statutory and three non-statutory protected sites within 2km.	No significant impacts on protected sites and their qualifying features.	None required.
Protected habitats and habitats subject to conservation designations	Amenity grassland, tall ruderal vegetation and hardstanding will be removed as part of the proposed works. No Priority Habitats will be affected.	Low scale of habitat loss predicted for wildlife.	<u>Mitigation</u> Soft landscaping scheme to include the planting of new native species-rich hedgerows and trees on and around the site. Construction work to be carried out in accordance with BSI (2012), BS 5837:2012, to protect trees and their root protection areas.
Bats	Moderate bat roosting potential in barn on site. Negligible bat roosting potential in old shop, sheds and stable block. Low bat roosting potential in one tree located on site.	Modification and/or destruction of potential bat roosts in buildings. Potential disturbance of bat roosts if present in trees. Low scale loss and potential light disturbance of commuting and	<u>Mitigation</u> Two activity surveys to be conducted on the barn with moderate bat roosting potential between May- September. The results of these surveys will determine an appropriate mitigation strategy. Soft roof and wall strip of buildings with negligible bat roosting potential; if a bat is identified, works must cease

Protected habitats/species	Status	Potential effect	Recommended mitigation and enhancements
	Moderate value commuting and foraging habitat on site.	foraging habitats on site.	<p>immediately and advice of a suitably licensed ecologist sought.</p> <p>Roofs lined with traditional 1F bitumen felt not NBCRM.</p> <p>Lighting schemes should comply with Bat Conservation Trust and CIE 150:2003 guidance.</p> <p>If tree with low bat roosting potential are to be affected by proposed works, a soft-fell approach should be adopted,</p> <p><u>Enhancement</u></p> <p>Installation of two integrated bat boxes on converted building.</p> <p>Installation of two standalone bat boxes on appropriate trees on site or in the local vicinity.</p>
Breeding birds	<p>Nesting habitats for hedgerow, tree and building nesting birds present on site, including potential breeding habitat for three Red and two Amber listed species.</p> <p>Various nests observed on site.</p> <p>No suitable barn owl foraging habitat on site.</p>	<p>Low scale loss of nesting habitat on site.</p> <p>Potential disturbance to breeding birds.</p>	<p><u>Mitigation</u></p> <p>Works to any hedgerow, trees and buildings on site to be conducted outside bird nesting season or under watching brief of ecologist if during nesting season.</p> <p><u>Enhancement</u></p> <p>Installation of one integrated swift box on converted building.</p> <p>Installation of one small bird box installed on an appropriate tree on site or in the local vicinity.</p>
Great crested newts	<p>Predominantly unsuitable terrestrial habitats on site.</p> <p>Three ponds within 250m of the site, assessed as poor suitability</p> <p>No GCN records within 2km.</p>	<p>Potential harm to GCN if present on site during works.</p> <p>We consider it unlikely GCN would be on site due to the small quantities of suboptimal habitats found along site peripheries.</p> <p>Additionally, works are limited to the conversion of the barn building which is surrounded by hardstanding.</p> <p>No impacts on potential GCN aquatic habitat.</p>	<p><u>Precautionary mitigation</u></p> <p>Cut and maintain vegetation short (maximum height of 10cm) on and around the site until the start of works.</p>

Protected habitats/species	Status	Potential effect	Recommended mitigation and enhancements
Reptiles	Predominantly unsuitable habitats on site. Two reptile records within 2km.	Reptiles unlikely to be found on site due to small quantities of suitable habitats present. No impacts predicted.	<u>Precautionary mitigation</u> Cut and maintain vegetation short (maximum height of 10cm) on and around the site until the start of works.
Other animals	N/A	Potential harm to animals.	<u>Mitigation</u> Porous hedgehog friendly fencing should be used within and around the site. Rough sawn planks placed inside any open excavations. Night lighting of the construction site should be minimised as far as possible. Construction materials should be stored off the ground on pallets.

1. METHOD

- 1.1. A walkover of the site was conducted on 23rd November 2020 by Miranda Proctor – an independent, qualified and experienced ecologist. Survey conditions were as follows: 5°C, 8mph wind, sunny and dry.
- 1.2. All survey methods were carried out in accordance with the most up to date good practice guidance for the relevant protected species. Please refer to Appendix A for the full methodology and species breakdown.
- 1.3. The habitats on and directly adjacent the site were considered unsuitable for the following protected species and no further surveys or mitigation for these species are detailed in this report:
 - Water vole *Arvicola amphibius*
 - Otter *Lutra lutra*
 - White-clawed crayfish *Austropotamobius pallipes*
 - Badger *Meles meles* (setts)
 - Hazel dormouse *Muscardinus avellanarius*
 - Natterjack toad *Epidalea calamita*

2. SITE CONTEXT

Location

- 2.1. The general location of the site is shown in Figure 1 below.
- 2.2. The site is situated in a rural setting on the northern edge of the village of Rishangles. The closest town is Eye approximately 4.8km north, with the A140 located approximately 5.2km west, the A143 approximately 9.5km north and the A1120 located approximately 9km south.
- 2.3. The site is enclosed by Dublin Road to the south and improved grassland lined by hedgerows to the north, east and west. The wider surroundings are predominantly comprised of arable fields lined by mature hedgerows and treelines, with scattered dwellings.

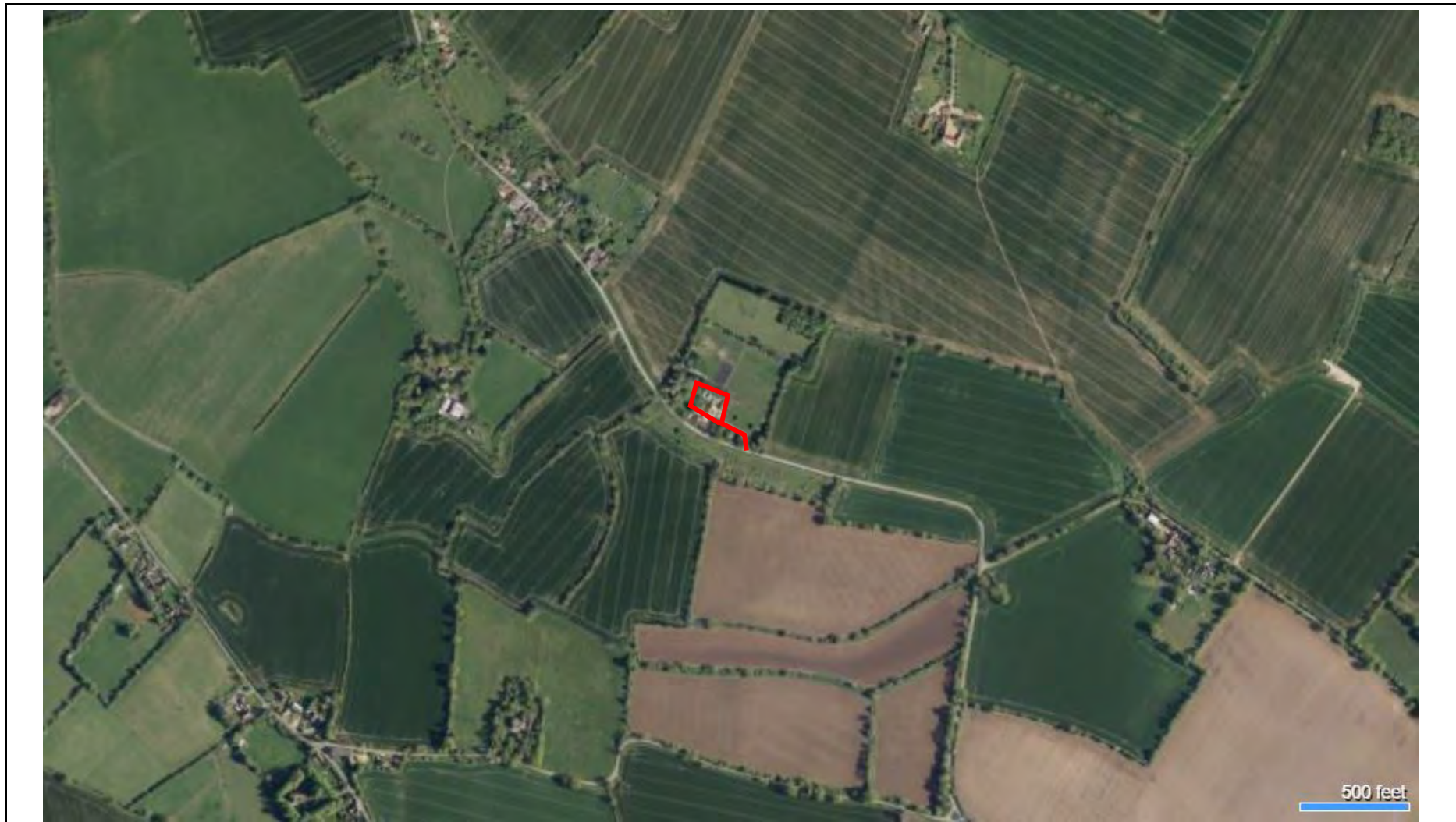


Figure 1

Satellite image of site surroundings, site indicated by red line.

Image © Google, date accessed 20/11/20

3. DESCRIPTION OF THE DEVELOPMENT

- 3.1. The proposals are for the conversion of existing barn building into a residential dwelling and potential demolition of the old farm shop, sheds and stable block. Please refer to Appendix I for the site boundary.

4. DESKTOP REVIEW

Protected sites

Statutory

- 4.1. There are no statutory protected sites located within 2km.
- 4.2. The proposed development falls outside of all SSSI Impact Risk Zones, being a residential development within Rishangles, Eye.

Non-statutory

- 4.3. There are three non-statutory protected sites located within 2km – three County Wildlife Sites (“CWS”). Please refer to Appendix C for the full citations.
 - i. Valley Farm Meadow CWS, approximately 0.9km southwest.
“This grassland county wildlife site supports a wide range of flowering plants, including a number of indicators of agriculturally unimproved meadows (Priority Habitat).”
 - ii. Roadside Nature Reserve 147 CWS, approximately 1.9km west.
“Sulphur Clover.”
 - iii. Roadside Nature Reserve 203 CWS, approximately 0.4km northwest.
“Boulder clay flora.”

Protected habitats and habitats subject to conservation designations

- 4.4. Priority Habitats, as listed under the NERC Act 2006 Section 41 Habitats of Principal Importance found on site include: Hedgerows.
- 4.5. Other Priority Habitats to occur within 2km (identified using MAGIC – managed by Natural England), include Good Quality Semi-Improved Grassland, Deciduous Woodland, and Woodpasture and Parkland BAP Priority Habitat. The closest of which, is Deciduous Woodland located approximately 300m west of the site.

Protected species

4.6. The biodiversity data search within 2km of the site indicated 490 records from 117 species.

4.7. Records of note within 2km and relevant to the proposed development works are:

- 18 barn owl *Tyto alba* records, with the most recent from 2016.
- 14 swift *Apus apus* records, with the most recent from 2019.
- No GCN *Triturus cristatus* records were returned.
- Two reptile records – two grass snake *Natrix natrix* records - with the most recent from 2019 and the closest record located approximately 1.4km north.
- 27 hedgehog *Erinaceus europaeus* records, with the most recent from 2019.
- 31 bat records, with the most recent from 2019, including common pipistrelles *Pipistrellus pipistrellus*, soprano pipistrelles *Pipistrellus pygmaeus*, brown long-eared bats *Plecotus auritus*, serotines *Eptesicus serotinus*, noctules *Nyctalus noctule*, Daubenton's *Myotis daubentonii*, Natterer's *Myotis nattereri* and other unidentified bat species.

Protected species licences

4.8. A 2km search on <http://www.magic.gov.uk/> indicated no records of granted European Protected Species ("EPS") Mitigation Licences.

5. FIELD STUDY

Habitats

- 5.1. The habitats on the site are of **low** ecological value, comprised predominantly of amenity grassland, buildings and hardstanding, with areas of tall ruderal vegetation, scattered trees, species-poor hedgerows and treelines on the site peripheries.
- 5.2. Figure 2 provides a phase 1 map of the habitats present on the site. NERC Act 2006 Section 41 habitats have been identified where relevant. A full list of plant species recorded on site is attached in Appendix E.

Parkland and scattered trees (phase 1 habitat classification A3)

- 5.3. The site contains several scattered trees. Species include: ash *Fraxinus excelsior*, cherry *Prunus sp.*, hawthorn *Crataegus monogyna*, Monterey cypress *Cupressus macrocarpa*, silver birch *Betula pendula*, and willow *Salix sp.*
- 5.4. A line of trees is present along the eastern site boundary. Species include: horse chestnut *Aesculus hippocastanum*, Lawson's cypress *Chamaecyparis lawsoniana*, oak *Quercus robur* and sycamore *Acer pseudoplatanus*. This treeline is classified as a hedgerow Priority Habitat under the NERC Act 2006 Section 41 Habitats of Principal Importance, but does not qualify as "important" under The Hedgerow Regulations 1997, lacking the required characteristics.

Tall ruderal (phase 1 habitat classification C3.1)

- 5.5. There is an area of tall ruderal vegetation within a fenced off area east of the barn building. Species present in this habitat include: bramble *Rubus fruticosus*, cocksfoot *Dactylis glomerata*, dock *Rumex sp.*, mouse ear *Cerastium sp.*, nettle *Urtica dioica*, sow thistle *Sonchus sp.*, ragwort *Jacobaea vulgaris*, rough hawkbit *Leontodon hispidus* and white dead nettle *Lamium album*.

Standing water (wet ditch (phase 1 habitat classification G1))

- 5.6. A wet ditch is present along the south boundary of the site.

Amenity grassland (phase 1 habitat classification J1.2)

- 5.7. North of the existing buildings and habitat adjacent is dominated by amenity grassland managed as lawn. Species include: clover *Trifolium sp.*, cranesbill *Geranium sp.*, creeping buttercup *Ranunculus repens*, daisy *Bellis perennis*, dandelion *Taraxacum sp.*, fescue *Festuca sp.*, and Yorkshire fog *Holcus lanatus*.

Introduced shrub (phase 1 habitat classification J1.4)

- 5.8. The site contains areas of introduced shrub including species such as: box *Buxus sp.*, holly *Ilex aquifolium* and rose *Rosa sp.*

Intact, species-poor hedge (phase 1 habitat classification J2.1.2)

- 5.9. The site features several intact, species-poor hedgerows which vary in management and height/width, dominated by blackthorn *Prunus spinosa*, hawthorn and Leyland cypress *Cupressus × leylandii*. These hedgerows are classified as Priority Habitats under the NERC Act 2006 Section 41 Habitats of Principal Importance, but do not qualify as “important” under The Hedgerow Regulations 1997, lacking the required characteristics.

Fence (phase 1 habitat classification J2.4)

- 5.10. The site contains post and rail fencing enclosing adjacent grazing fields.

Wall (phase 1 habitat classification J2.4)

- 5.11. The site contains a mixture of brick and breezeblock walls. The brick wall west of the site is encroached by ivy and the breezeblock wall encloses the stable block to the east.

Buildings (phase 1 habitat classification J3.6)

- 5.12. There are several buildings on site used for livestock and storage. Please refer to the bat section detailed below for further information.

Hardstanding (phase 1 habitat classification J5)

- 5.13. The site features areas of concrete, compacted gravel and patio hardstanding across the site, with encroaching vegetation.

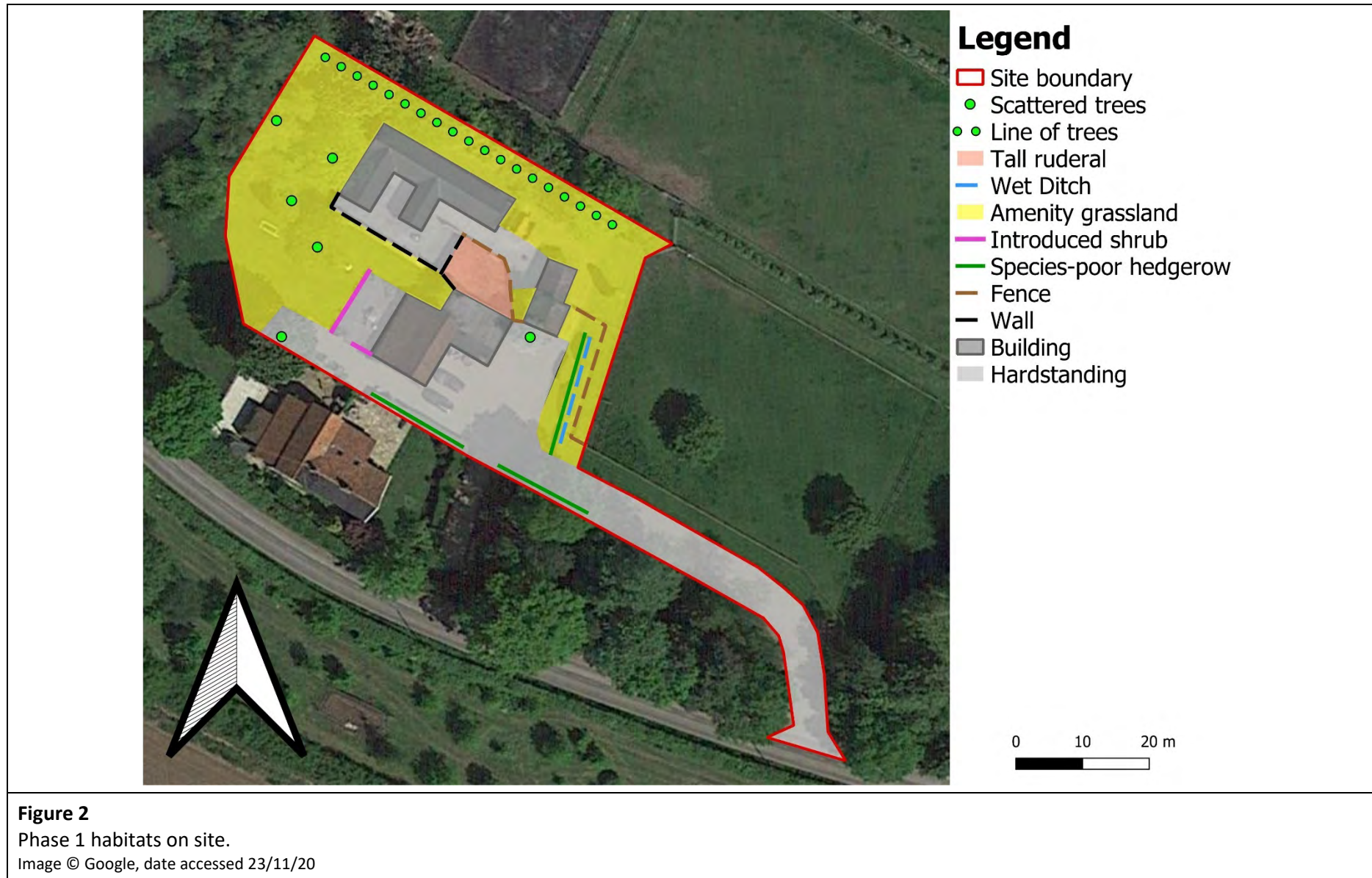




Photo 1, road frontage and existing southern access to the site, looking north.



Photo 2, looking west toward the site. A compacted gravel hardstanding drive leads to the site.



Photo 3, species-poor hedgerow and wet ditch along the eastern site boundary.



Photo 4, species-poor hedgerow along the southern site boundary.



Photo 5, amenity grassland and patio area west of the existing barn building.



Photo 6, area of tall ruderal vegetation north of the barn building.

Bats

5.14. There are four buildings located on site, and one tree with bat roosting potential, as indicated in Figure 3 and photos 7-13.

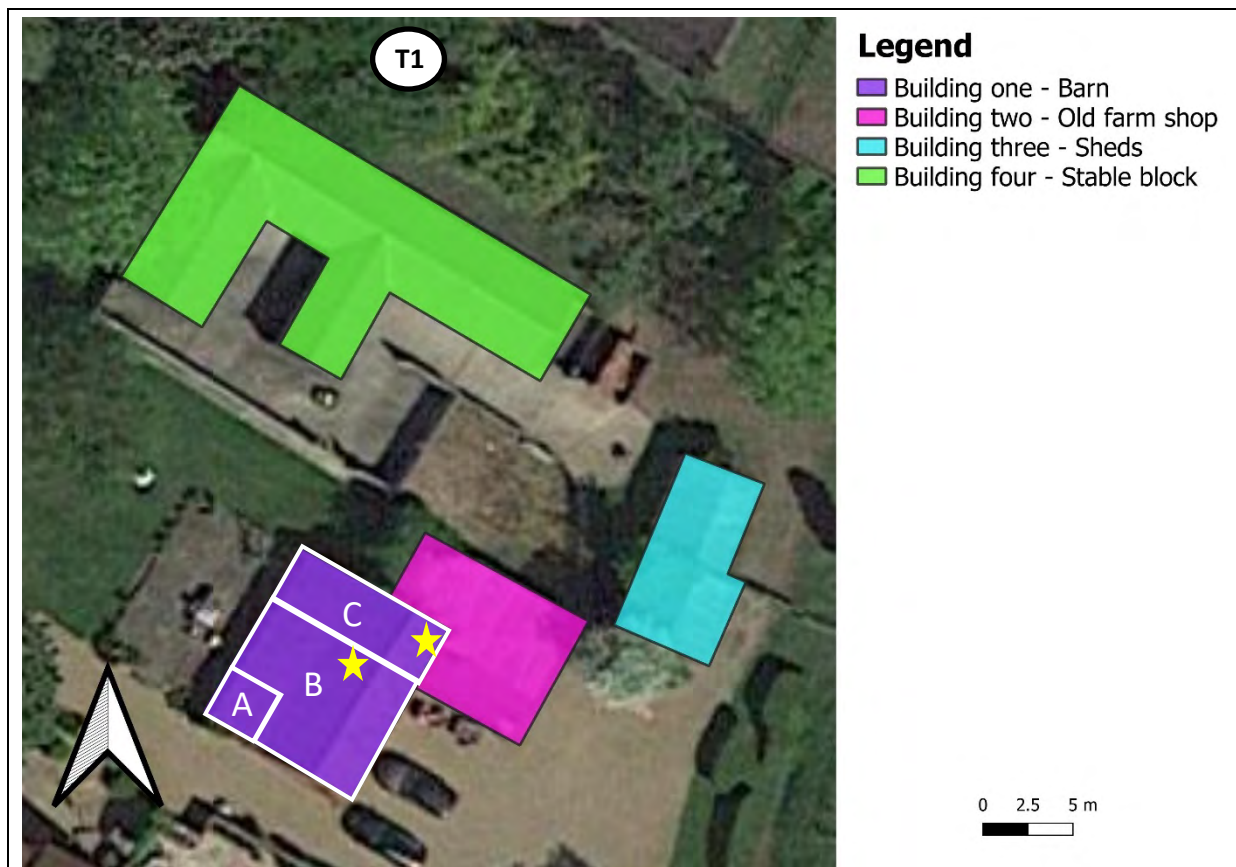


Figure 3

Location of buildings and tree with bat roosting potential, located on site.

Yellow stars indicate location of droppings indicative of brown long eared bats.

Image © Google, date accessed 23/11/20

Building one - Barn

5.15. The barn building is of brick construction, with a clay pan tile roof (lined with breathable membrane). The barn features large wooden doors, open timber soffits and timber facias. The building has light ivy cover climbing up external walls.

5.16. Internally the barn can be divided into three sections. Section A is a small, closed room toward the southwest corner of the barn with has a closed roof space which was dark and moderately cobwebbed throughout. Section B is the main section of the barn with an open roof space, a ridge beam present and lightly to moderately cobwebbed throughout. Section C, similar to Section B within, is divided into two floors (ground floor and first floor) and features a small metal framed window on the north gable which allowed in low light levels.

- 5.17. Roosting opportunities are present between gaps of brick and timber, under distorted/raised roof tiles and within the barn itself. Although no bats were visible, approximately 10 droppings indicative of brown long eared bats *Plecotus auritus* were identified in two locations (indicated by yellow stars in Figure 3). A swallow nest was observed within Section B of the barn.
- 5.18. The barn is assessed as **moderate** roost suitability for bats due to its location, roosting features and signs of bats.



Photo 7, south and east aspects of building one, looking north.



Photo 8, section A of the barn.



Photo 9, gaps between brick and timber and within brick walls create ideal potential roost features.



Photo 10, collection of droppings (approximately 10) indicative of brown long eared bats, beneath ridge beam in section B.

Building two – Old farm shop

- 5.19. The old farm shop is constructed of weatherboard walls with a pitch bitumen lined roof and timber soffits/facias. Internally, the old farm shop has boarded walls and roof. Few rat droppings were observed.
- 5.20. The old farm shop has limited roosting opportunities between the timber fascia on the east gable.
- 5.21. The old farm shop is assessed as **negligible** roost suitability for bats due to its limited roosting features and no signs of bats.



Photo 11, south and east aspects of building three, looking north.

Building three - Sheds

- 5.22. The sheds have a mixture of brick and breezeblock walls; the roof is comprised of corrugated metal sheets. Internally the roof space is open with timber trusses.
- 5.23. Cracks and gaps in the brick work create potential roost features; ivy cover may conceal various roosting features.
- 5.24. The sheds are assessed as **negligible** roost suitability due to limited roosting opportunities and lack of bat evidence.



Photo 12, north and east aspects of building three.

Building four – Stable block

- 5.25. The stable block is constructed of timber walls, corrugated metal roof which is lined with breathable membrane. The stable doors and windows allow in moderate light and are lightly cobwebbed throughout.
- 5.26. No signs of bats were identified. Swallow nests were observed upon trusses within stables.
- 5.27. Limited roosting opportunities beneath timber facias.
- 5.28. The stable block is assessed as **negligible** roost suitability for bats due to its limited roosting opportunities and lack of bat evidence.



Photo 13, looking west toward the stable block.

Trees

- 5.29. The trees around the site boundary were assessed for bat roosting potential.
- 5.30. One tree within the site boundary was assessed as having **low** roost suitability for bats based on its location, age and suitable features (Figure 3).
- 5.31. The remaining trees are assessed as **negligible** bat roosting potential, due to their age and/or lack of features.

	<p><u>Tree 1</u> English oak Low bat roosting potential Dead wood and split limbs create potential roost features. Moderate ivy cover may conceal other features suitable for roosting bats.</p>
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Foraging and commuting links

- 5.32. The site provides moderate value foraging and commuting habitats for bats along boundary hedgerows and treelines.
- 5.33. The landscape immediately adjacent to the site is considered of **low** to **moderate** value for foraging and commuting bats, with linked gardens, hedgerows and treelines providing links to the wider landscape. Residential dwellings adjacent to the site have the potential to provide roosting opportunities for bats.

Birds

- 5.34. Birds in the UK are classified into three categories of conservation importance - red, amber and green. Factors such as global threat level, population decline, breeding population decline and contraction of breeding range are taken into account to determine classification.
- 5.35. The following bird species were observed during the site visit:

Red listed:

House sparrow	<i>Passer domesticus</i>
Song thrush	<i>Turdus philomelos</i>

Amber listed:

Kestrel	<i>Falco tinnunculus</i>
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Green listed:

Blackbird	<i>Turdus merula</i>
Blue tit	<i>Cyanistes caeruleus</i>
Great tit	<i>Parus major</i>
Magpie	<i>Pica pica</i>
Pied wagtail	<i>Motacilla alba</i>
Woodpigeon	<i>Columba palumbus</i>
Wren	<i>Troglodytes troglodytes</i>

- 5.36. The site provides suitable nesting habitats for hedgerow, tree and building nesting species. A number of blackbird *Turdus merula*, swallow *Hirundo rustica* and woodpigeon *Columba palumbus* were present within buildings and tree canopies.
- 5.37. The site provides potential breeding habitat for the following Red listed species: house sparrow *Passer domesticus*, mistle thrush *Turdus viscivorus* and song thrush *Turdus philomelos*.
- 5.38. The site provides potential breeding habitat for the following Amber listed species: house martin *Delichon urbicum* and swift *Apus apus*.

5.39. No signs of barn owl were found on the site and no foraging habitat is present.

Great crested newts

5.40. There are no ponds within the survey site and three further ponds within 250m, which for the size of the development and nature of terrestrial habitat on the site, is a sufficient distance to consider for assessment (Figure 4). GCN are most likely to occupy good quality terrestrial habitat within 250m of a breeding pond (English Nature, 2001).

5.41. The terrestrial habitats on the site are considered predominantly unsuitable for GCN, consisting primarily of amenity grassland and hardstanding, with suboptimal tall ruderal and hedgerows.

5.42. Terrestrial habitats adjacent to the site include a mixture of unsuitable (arable fields and grazing fields) and suitable (improved grassland and hedgerows) GCN foraging and commuting habitats.

5.43. Ponds 1-3 were assessed as **poor** suitability for GCN (Table 3).

5.44. The expanse of arable fields surrounding the site may act as habitat barriers and ecologically separate the site from ponds in the local vicinity.

Pond	1	2	2
Geographic location	Zone A	Zone A	Zone A
	1.00	1.00	1.00
Pond surface area (m ²)	300m ²	<50m ²	<50m ²
	0.60	0.05	0.05
Desiccation rate	Never	Annually	Annually
	0.90	0.10	0.10
Water quality/ invert density	Poor	Poor	Poor
	0.33	0.33	0.33
Shoreline shade (%)	40%	30%	90%
	1.00	1.00	0.40
Waterfowl impacts	Major	Absent	Absent
	0.01	1.00	1.00
Fish impacts	Minor	Absent	Absent
	0.33	1.00	1.00
Ponds within 1km	13+	13+	13+
	1.00	1.00	1.00
Terrestrial habitat quality	Poor	Poor	Poor
	0.33	0.33	0.33
Macrophyte cover (%)	15%	0%	0%
	0.45	0.30	0.30
HSI Score	Poor	Poor	Poor
	0.39	0.42	0.38

Table 1, HSI score for ponds within 250m of the proposed site.



Photo 14, pond one, looking north.



Photo 15, pond two, looking south.



Photo 16, pond three, looking east.

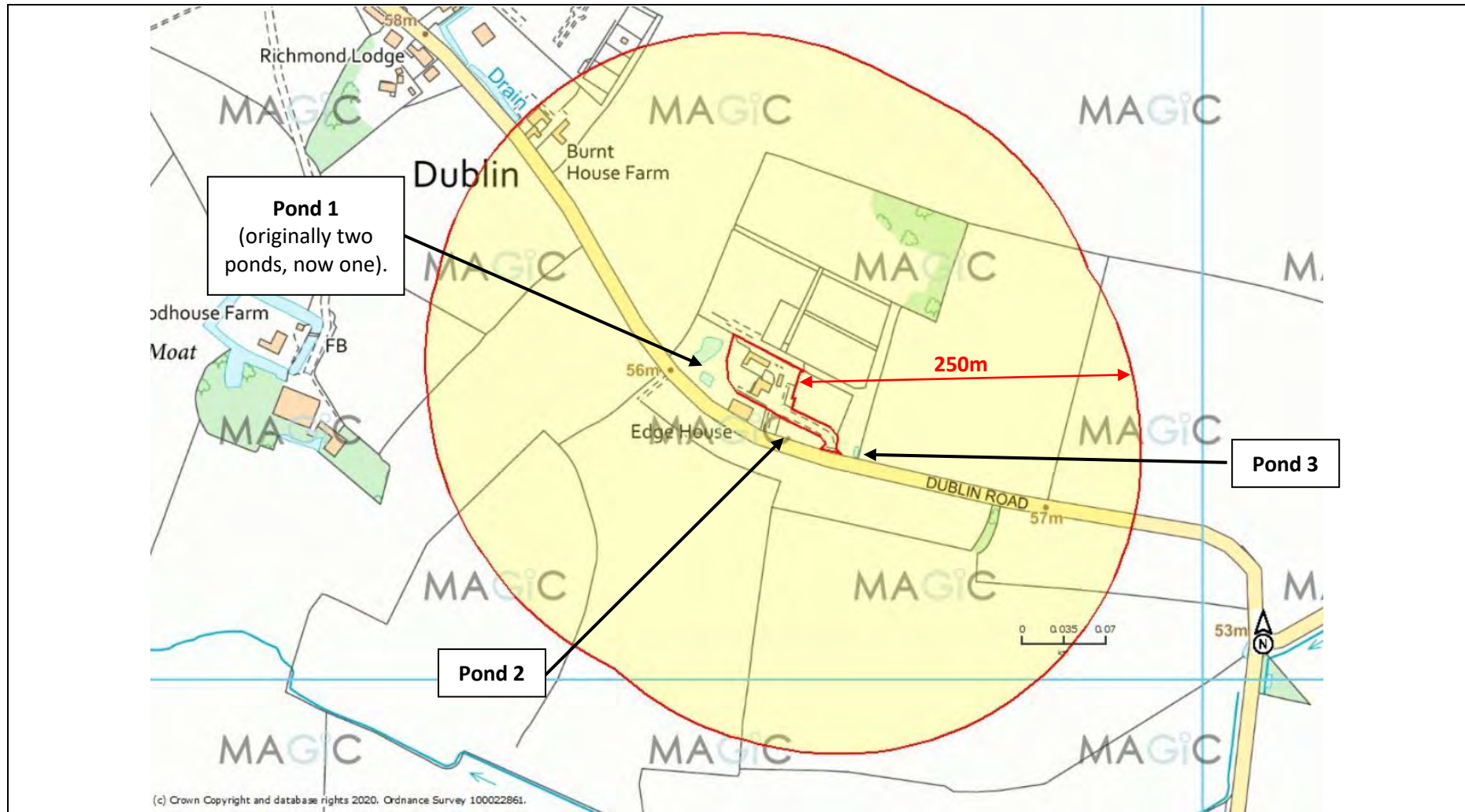


Figure 4
Ponds within 250m of the proposed site.
Image © MAGiC, date accessed 20/11/20

Reptiles

- 5.45. The habitats on the site are considered predominantly unsuitable for reptiles, consisting of amenity grassland and hardstanding with suboptimal hedgerows and tall ruderal vegetation.
- 5.46. Habitats located on the site boundaries including the base of the hedgerows which could be used as commuting habitats by reptiles if they were present in the area.
- 5.47. Terrestrial habitats adjacent to the site include a mixture of unsuitable (arable fields and grazing fields) and suitable (improved grassland and hedgerows) reptiles foraging and commuting habitats
- 5.48. The expanse of arable fields in the surrounding landscape may act as a habitat barrier and ecologically separates the site from habitats further afield.

6. DISCUSSION AND CONCLUSIONS

Protected sites

- 6.1. The development footprint falls outside all identified protected sites (statutory and non-statutory). There are no statutory protected sites and one non-statutory protected site located within 2km of the site.
- The closest non-statutory protected site (Roadside Nature Reserve 203 CWS), is located approximately 0.4km southwest of the site and designated boulder clay flora.
- 6.2. The proposed development falls outside of any SSSI Impact Risk Zones relating to residential developments.
- 6.3. The proposed development is expected to have no effects on statutory or non-statutory protected sites or their qualifying features, owing to its relatively small scale, distance to protected sites and limited predicted impacts beyond the area of works.

Habitats

- 6.4. The proposed works will require the extensive clearance of vegetated habitats on site, including ≈0.01ha of amenity grassland, ≈0.01ha tall ruderal and several scattered trees. No priority habitats will be affected by the proposed development. This is expected to result in a low scale loss of nesting habitat for tree nesting birds, and a low scale loss of foraging features for bats. Please refer to the bat section below for predicted impacts on buildings and trees with potential bat roosts.
- 6.5. As a precautionary measure, the following mitigation is recommended to avoid impacts on habitats from the proposed works:
- i. A soft landscaping scheme to include the planting of new native species-rich (≥5 species), hedgerows and trees on and around the site (see Appendix H for suggested species).
 - ii. Construction works carried out in accordance with British Standards Institution (2012), BS 5837:2012, Trees in relation to design, demolition and construction – recommendations, to protect trees which are to be retained and their root protection areas.

Bats

- 6.6. The proposed works will require the conversion of the barn and potential demolition of the old farm shop, sheds and stable block, which has the potential to materially modify or destroy potential bat roosting locations, if present.

- 6.7. The following surveys/mitigation is recommended to determine if any bat species are present, the nature of their use of the building(s) and any roosting locations:
- i. At least two bat activity survey (comprised of a dusk emergence and a dawn return-to-roost survey) to be conducted on building one – the barn - between May and September.
 - ii. If bats are found to be present and roosting within the barn, further activity surveys and a European Protected Species Mitigation Licence may be required for the development.
 - iii. A soft roof strip and demolition of the walls should be undertaken on buildings 2-4 (old farm shop, sheds and stable block if proposed for demolition) with special care. If any bats are found, work should cease immediately and a licenced bat worker contacted to remove any bats to safety and advise on the appropriate mitigation.
 - iv. If proposed works change to incorporate tree with low bat roosting potential, a soft-fell approach should be adopted.
 - v. Roofs should be lined with traditional type 1F bitumen felt, not non-bitumen coated roofing membrane (NBCRM) which includes both breathable and non-breathable membranes; these are proven to entangle bats through regular contact, which also compromises the integrity of the membrane.
 - vi. Lighting schemes should follow guidance from the Bat Conservation Trust and CIE 150:2003. Warm-white (long wavelength) lights with UV filters should be fitted as close to the ground as possible. Lighting units should be angled below 70° and equipped with movement sensors, baffles, hoods, louvres and horizontal cut off units at 90°.
- 6.8. The outcomes of further activity surveys will inform the detailed recommended mitigation for bats. We consider that the conversion of the barn will be able to accommodate this in the form of alternative roosting opportunities, as required.
- 6.9. As enhancements, we recommend the installation of:
- i. Two integrated bat boxes installed on the converted barn (Schwegler 1FR Bat Tube – Appendix F).
 - ii. Two standalone bat boxes installed on appropriate trees on site or in the local vicinity (Schwegler 1FF Bat Box with built-in wooden rear panel – Appendix F).
- 6.10. Building Regulations state that the energy efficiency of buildings must be improved where possible and that contractors must assess the condensation risk within the roof space and make appropriate provisions in line with BS 5250:2011. This British Standard states that both High Resistance (bitumen type 1F) and Low Resistance (NBCRM) underlays are acceptable as long as appropriate ventilation is provided. As NBCRM are proven to entangle bats through regular

contact, which also compromises the integrity of the membrane, the Bat Conservation Trust recommend only traditional type 1F bitumen is used.

Birds

- 6.11. The proposed works are expected to result in a low scale loss of bird nesting habitat through conversion of the barn, potential demolition of buildings 2-4 and clearance of vegetation, including several scattered trees.
- 6.12. Any works affecting bird nesting habitat such as management of hedgerows, trees or buildings would ideally need to be conducted outside the main nesting season, which lasts from March to August. If work is planned during the bird nesting season then a precautionary check of all habitats, should be conducted by a qualified ecologist immediately prior to starting any work. If any nesting birds are found, an appropriate protection zone from the nest will be required and should be maintained until the young have fledged.
- 6.13. As enhancements, we recommend the installation of:
- i. One integrated swift box installed on the converted barn (Schwegler Brick Nest Box Type 25 – Appendix F).
 - ii. One small bird box installed on an appropriate tree on site or in the local vicinity (Schwegler 1B or 2H Nest Box – Appendix F).
 - iii. A soft landscaping scheme to include the planting of new native species-rich (≥ 5 species), hedgerows and trees on and around the site (see Appendix H for suggested species).
- 6.14. Natural England and Local Planning Authorities (“LPA”) have recognised a significant decline in swift populations across the country, and are actively endorsing integrated swift boxes to provide a net gain in biodiversity, as is encouraged by NPPF 2019.

Great crested newts

- 6.15. The proposed works are expected to result in a low scale loss of terrestrial habitats (≈ 0.01 ha of tall ruderal), with aquatic habitats unaffected.
- 6.16. GCN are most likely to use suitable terrestrial habitat within only 250m of a breeding pond (English Nature, 2001) and we consider it highly unlikely that GCN would be present on site due to the small quantities of suitable habitat on site. Additionally, works involve the conversion of existing barn building which is surrounded by hardstanding to the east, west and south.
- 6.17. As a precautionary measure, the following mitigation is recommended to avoid impacts on GCN from the proposed works:

- i. Vegetation on site should be cut and maintained short (maximum height of 10cm) until the start of works, to discourage animals from using these areas.

6.18. After these precautionary mitigation measures, we predict no impact on GCN as a result of the development plans, and no further surveys are necessary.

Reptiles

6.19. The proposed works are expected to result in a low scale loss of reptile habitat through the clearance of ≈0.01ha of tall ruderal vegetation.

6.20. Although suitable reptile habitats are present on site, they are in small quantities (<0.01ha) and would be unable to support a population in isolation. As a precautionary measure, the following mitigation is recommended to avoid impacts on reptiles from the proposed works:

- i. Vegetation on site should be cut and maintained short (maximum height of 10cm) until the start of works, to discourage animals from using these areas.

6.21. After these precautionary mitigation measures, we predict no impact on reptiles as a result of the development plans, and no further surveys are necessary.

Other animals

6.22. The surrounding habitat of the site is considered suitable for hedgehogs. To maintain potential hedgehog routes within the site and between the site and further habitats, we recommend that any fencing installed is porous and provides access openings for hedgehogs (see Appendix G for examples).

6.23. General mitigation to protect wildlife during the construction period are as follows:

- Any excavations should have a rough sawn plank placed inside to act as a ramp to allow any animals that have fallen in to escape. The excavations should be checked each morning works are scheduled for, to remove any animals trapped.
- Lighting of the construction site at night should be minimised as far as practicable, to reduce the risk of possible disruption to nocturnal animals such as bats and badgers.
- Construction materials should be stored off the ground on pallets, to prevent providing shelter for animals and subsequent harm when materials are moved.

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Appendix A Methods

Desktop Review

A desktop review of published data, such as records of protected sites and species, OS maps and satellite images has been carried out. A data search was carried out with the Suffolk Biodiversity Information Service ("SBIS").

A field survey visit was conducted to confirm the findings of the desktop review and to record habitats and species located on site.

Equipment available for use during the survey were binoculars, ladders, torches, endoscope and a digital camera.

Habitats

The habitats on site have been defined using the Handbook for Phase 1 habitat survey (JNCC, 2010). Natural Environment and Rural Communities (NERC) Act (2006) habitats listed under section 41 have been identified where appropriate.

Bats

An assessment of the habitats on and surrounding the site for bat interest was made, in accordance with latest bat survey guidelines (Collins, 2016).

The building(s) on site was assessed for its potential to support roosting bats and involved a thorough internal and external search of all suitable cavities, holes and crevices. All suitable areas, including objects, ledges and floors were inspected for the following signs:

- Bat droppings
- Stains around roosting places and entrance points
- Urine marks
- Prey remains
- Areas devoid of cobwebs
- Live or dead bats
- Suitable cracks and crevices for bats to enter

In exposed conditions, the signs of bat usage such as droppings and urine marks can be obliterated by heavy rain.

An evaluation system was applied to the building(s) using the following criteria:

- **Negligible roost suitability for bats.** These buildings have no potential roosting features for bats, or very few or minor features in an isolated or unsuitable location such that the presence of a bat roost is considered highly unlikely. Such buildings usually fall into two main types: generally, well maintained without cracks and crevices, no gaps between bargeboard or soffit and wall, or without an attic space; or those which contain some or all of the above features, but are both draughty and thick in cobwebs

or contain strong odours such as solvents, diesel etc. It must be borne in mind that a building from this latter group can become suitable for bats following refurbishment. This often happens to houses once the attic space has been cleaned and under-felted prior to timber treatment. When no suitable habitats for bats are found, no further surveys or European Protected Species (“EPS”) mitigation licence are required.

- **Low roost suitability for bats.** Buildings in this category have one or more potential roost sites that could be used by individual bat opportunistically. These buildings do not however provide suitable conditions (such as space, shelter, temperature, humidity, or light and noise disturbance) to be used on a regular basis by a large number of bats. Structures with low roost suitability for bats will require **one dusk emergence or one dawn re-entry survey** conducted between May and August to assess their current use by bats.
- **Moderate roost suitability for bats.** These buildings contain one or more potential roosting sites which could be regularly used by bats owing to their size, shelter, protection and conditions. These buildings are however unlikely to support a roost of high conservation status (maternity roost or hibernation roost). Structures with moderate roost suitability for bats will require two surveys, **one dusk emergence and one dawn re-entry survey** conducted between May and September with at least one of the surveys undertaken between May and August, to assess their current use by bats.
- **High roost suitability for bats.** This group includes buildings with one or more potential roost sites which are obviously suitable for use by a larger number of bats on a regular basis and potentially for longer periods of time owing to their size, shelter, protection and conditions. These buildings may support a roost of high conservation status (maternity roost or hibernation roost) and will require three activity surveys to assess their current use by bats. The surveys should include at least **one dusk emergence and** at least **one dawn re-entry survey** (the third survey can either be at dusk or dawn) and should be conducted between May and September with at least two of surveys undertaken between May and August.

Trees on and around the site were assessed for their suitability to support roosting bats. The assessment involved a ground level inspection of the exterior of the trees to search for features offering roosting potential to bats such as split limbs, woodpecker holes, cavities, lifted bark and dense thick-stemmed ivy.

An evaluation system was applied to the trees using the following criteria:

- **Negligible roost suitability for bats.** Trees unlikely to be used by roosting bats.
- **Low roost suitability for bats.** A tree of sufficient size and age to contain Potential Roosting Features (“PRFs”), but with none seen from the ground or features seen with only very limited roosting potential.
- **Moderate roost suitability for bats.** A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.

- **High roost suitability for bats.** A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection and surrounding habitat.

The habitats on and around the site were assessed for their commuting and foraging potential for bats. An evaluation system was applied to the commuting and foraging potential using the following criteria.

- **Negligible commuting and foraging potential for bats.** Habitat features unlikely to be used by commuting or foraging bats.
- **Low commuting and foraging potential for bats.** Habitats that could be used by a small number of commuting or foraging bats such as, a gappy hedgerow, unvegetated stream or lone trees, but are isolated and not well connected to the surrounding landscape.
- **Moderate commuting and foraging potential for bats.** Habitats that are continuous and connected to the wider landscape such as, lines of trees, scrub, linked back gardens, grasslands and water features.
- **High commuting and foraging potential for bats.** Habitats that are continuous and connected to the wider landscape such as, river valleys, watercourses, hedgerows, lines of trees, deciduous woodland, and grazed parkland. These habitats are likely to be used regularly by commuting or foraging bats and are likely to be close to, or connected to, known roosts.

Birds

The site and its surrounding habitats were assessed for their potential to support breeding birds. Bird nesting habitat could include grassland, hedgerows, scrub, trees and buildings.

Bird species noted during the site visit were recorded. Trees, buildings and grassland were checked for use by barn owls, swifts and skylarks.

Great crested newts

Habitats on and near the site were assessed for their suitability for great crested newts ("GCN").

Water features on and near the site were assessed for their suitability for occupation by GCN, according to a Habitat Suitability Index ("HSI"). The HSI is a theoretical index of a waterbody's suitability to support a breeding population of GCN and is calculated from a series of ten variables recorded on site, as detailed in Table 4.

Indices	Name	Description
SI1	Geographic Location	Lowland England or upland England, Scotland and Wales
SI2	Pond area	To the nearest 50m ²
SI3	Permanence	Number of years' pond dry out of ten
SI4	Water quality	Measured by invertebrate diversity
SI5	Shade	Percentage shading of pond edge at least 1m from shore
SI6	Fowl	Level of waterfowl use
SI7	Fish	Level of fish population
SI8	Pond count	Number of ponds within 1km divided by 3.14
SI9	Terrestrial habitat	Quality of surrounding terrestrial habitat
SI10	Macrophytes	Percentage extent of macrophyte cover on pond surface

Table 4, HSI indices.

The HSI score is the geometric mean of the ten suitability indices calculated:

$$HSI = (SI1 \times SI2 \times SI3 \times SI4 \times SI5 \times SI6 \times SI7 \times SI8 \times SI9 \times SI10)^{1/10}$$

Once calculated, the HSI score for a waterbody can be categorised as follows:

Excellent (>0.8)

Good (0.7 – 0.79)

Average (0.6 – 0.69)

Below Average (0.5 – 0.59)

Water voles, otters and white-clawed crayfish

Water features on and adjacent to the site were assessed for use by water vole, otter and white-clawed crayfish. Otters in England typically use areas of fresh water and streams and ditches for moving between habitats. Otter holts are usually located underneath tree roots, in tunnels. Field signs of presence include spraints on prominent features such as bridges, tree bases or boulders, and footprints.

Water voles inhabit burrows in the banks of ponds, ditches, streams and rivers. Field signs include droppings left in latrine spots, burrow entrances or feeding remains.

White-clawed crayfish inhabit streams and rivers with a moderate flow rate, and lakes. Clear, well-oxygenated water is preferred. Typical habitat features include crevices in rocks, gaps between stones, submerged plants and tree roots.

Reptiles

The habitats on the site and within the proposed area of works were assessed for suitability for reptiles.

Reptiles rely on conditions that allow them to maintain their body temperature through basking. They require access to direct sunlight, shelter from the elements, sufficiently large populations of prey species and hibernation sites.

Reptiles typically favour a habitat mosaic with a diverse vegetation structure, which could include grassland, scrub and woodland.

Badgers

An inspection of all habitats with the potential to support badger *Meles meles* sett construction and foraging activities on the application site was undertaken. Any incidental observations of badger signs were also recorded. The survey comprised searching for evidence of badger activity in the form of setts, droppings, pathways, snuffle holes, hair and footprints.

Dormice

Dormice habitats include deciduous woodland, hedgerows and scrub. Dormice are found mainly in the south of England, including Kent and Sussex, with sporadic populations elsewhere. An assessment of the suitability of site habitats for occupation by dormice was made.

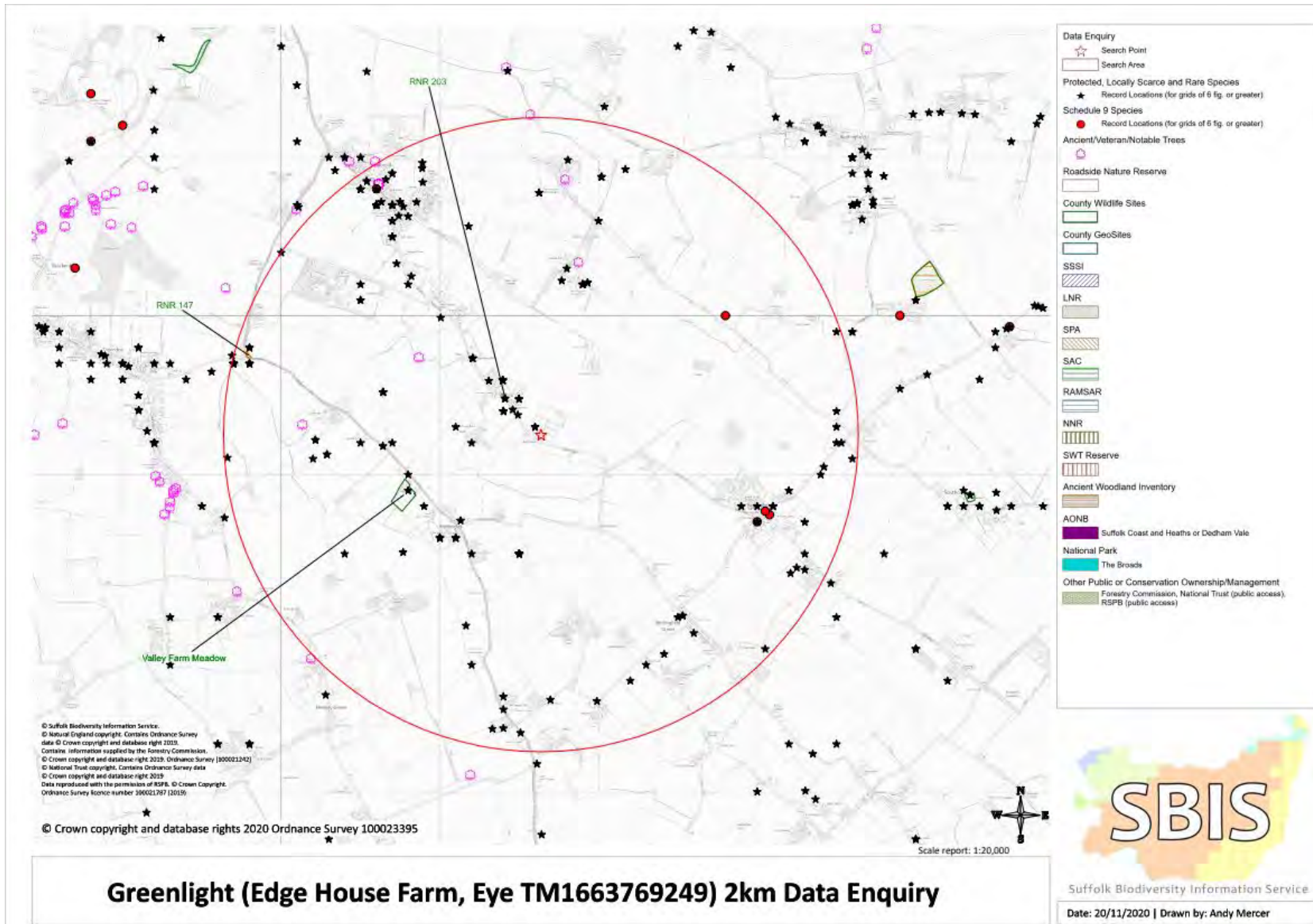
Other protected species

Particular regard was made to the nature of the proposed development and the potential of impact upon any other protected species, species which are nationally or locally scarce, or species subject to other conservation designations such as Red Data Book or Priority S41 species, from the development work, should these be present in the area.

Constraints

The field survey was conducted outside of the optimal survey period for flowering plants. Although the habitats recorded on site are unlikely to change to those described in this report, flora biodiversity is likely to be under recorded.

Appendix B
Map of protected sites within 2km



Greenlight (Edge House Farm, Eye TM1663769249) 2km Data Enquiry

Appendix C

Protected sites citations

County Wildlife Sites citations

CWS Number	Mid Suffolk 154
Site Name	VALLEY FARM MEADOW
Parish	RISHANGLES
District	Mid Suffolk
NGR	TM158689
Description	<p>This grassland county wildlife supports a wide range of flowering plants, including a number of indicators of agriculturally unimproved meadows (Priority habitat) including bird's-foot-trefoil, pepper saxifrage, cowslip, meadow vetchling and of particular note a population of green-winged orchids. This species, which is a strong indicator of ancient unimproved grassland, is declining in Suffolk and is Near Threatened nationally.</p>
RNR Number	0
Area	1.55

CWS Number	Mid Suffolk 181
Site Name	RNR 147
Parish	Thorndon
District	Mid Suffolk
NGR	TM 14786977 - TM 14816973
Description	Sulphur Clover. This site is also a Roadside Nature Reserve.
RNR Number	147
Area	0.07

CWS Number	Mid Suffolk 195
Site Name	RNR 203
Parish	Rishangles
District	Mid Suffolk
NGR	TM164694
Description	Boulder clay flora. This site is also a Roadside Nature Reserve.
RNR Number	203
Area	0.03

Appendix D Legislation

European Protected Species

The Ramsar Convention (1971) on Wetlands of International Importance especially as Waterfowl Habitat seeks to promote the conservation and wise use of wetlands, particularly those which support internationally significant numbers of water birds. This is achieved through the designation of Ramsar Sites.

The European Community Council Directive on the Conservation of Wild Birds (79/409/EEC) sets out general rules for the conservation of all naturally occurring wild birds, their nests, eggs and habitats. It requires member states to designate Special Protection Areas (SPAs) for protection of certain species.

The main piece of legislation relating to nature conservation in Great Britain is **The Wildlife and Countryside Act 1981 (as amended)**. This Act is supplemented by provision in **The Countryside and Rights of Way (CROW) Act 2000** and **The Natural Environment and Rural Communities Act 2006 (in England and Wales)**. This act provides varying degrees of protection for the listed species of flora and fauna, including comprehensive protection of wild birds, their nests and eggs.

The Countryside and Rights of Way Act 2000 strengthens the protection given to SSSIs. It revises the procedures for the notification of SSSIs and for the consenting of operations which may damage the special interest of a SSSI. Local authorities have a duty to take steps, consistent with the proper exercise of their functions, to further the conservation and enhancement of SSSIs. The act also strengthens the existing provisions of the Wildlife and Countryside Act 1981 for the enforcement of wildlife legislation, including a new offence of "recklessly" destroying or damaging the habitats of certain protected species.

UK wildlife is also protected under **The Conservation (Natural Habitats &c.) Regulations 1994** (which were issued under the European Communities Act 1972), through inclusion on Schedule 2. In 2017, these Regulations, together with subsequent amendments, were consolidated into **The Conservation of Habitats and Species Regulations 2017**.

The Regulations 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. The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 5. However, these actions can be made lawful through the granting of licenses by the appropriate authorities. Licenses may be granted for a number of purposes but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild population of the species concerned.

The Protection of Badgers Act 1992 consolidates previous badger legislation by providing comprehensive protection for badgers and their setts, with a requirement that any authorised sett disturbance or destruction be carried out under licence.

The Hedgerows Regulations 1997 aim to protect important hedgerows in the countryside. They make it illegal to remove most countryside hedges without first notifying the local planning authority, and provide protection for 'important hedgerows'.

County Wildlife Site is a non-statutory designation used to identify high quality wildlife habitats in a county context. Local Authorities have a responsibility as part of their planning function to take account of sites of substantial nature conservation value and to consider them alongside other material planning considerations. The location of County Wildlife Sites will be included in Local Plans and Development Documents.

National Planning Policy - National Planning Policy Framework (NPPF)

Section 15 of the National Planning Policy Framework 2019 (NPPF): Conserving and enhancing the natural environment states that 'planning policies and decisions should contribute to and enhance the natural and local environment by ... minimising impacts on and providing net gains for biodiversity.'

Office of The Deputy Prime Minister ("ODPM") Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their impact within the planning system.

Paragraph 98 of Circular 06/2005 states that 'the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat'.

Implications of legislation and policies

Without this ecological assessment, the potential developer would be unable to demonstrate due diligence in his responsibilities. Furthermore, the local planning authority would not have been provided with sufficient information for a planning decision to be made. This could result in non-determination or refusal of the application.

With legal responsibilities and planning implications, it is essential that any ecological assessment of a potential development site, including the area of this report, must determine the possible presence or absence of any protected species as part of any planning development consideration.

Where mitigation or compensation measures are required to ensure that no significant impacts will result on biodiversity from the development, the proposed measures may be secured through planning conditions or by EPS Mitigation Licences from Natural England.

Bats

All bat species in Britain are protected under the Wildlife and Countryside Act 1981 through inclusion on Schedule 5. They are also protected under the Conservation (Natural Habitats &c.) Regulations 1994 (which were issued under the European Communities Act 1972), through inclusion on Schedule 2. On 30th November 2017, these Regulations, together with subsequent amendments, were consolidated into the Conservation of Habitats and Species Regulations 2017.

European protected animal species (“EPS”) and their breeding sites or resting places are protected under Regulation 42. It is an offence for anyone to deliberately capture, injure or kill any such animal or to deliberately take or destroy their eggs. It is an offence to damage or destroy a breeding or resting place of such an animal. It is also an offence to have in one's possession or control, any live or dead European protected species.

The threshold above which a person will commit the offence of deliberately disturbing a wild animal of a European protected species has been raised. A person will commit an offence only if he deliberately disturbs such animals in a way as to be likely significantly to affect (a) the ability of any significant groups of animals of that species to survive, breed, or rear or nurture their young, or (b) the local distribution of abundance of that species. The existing offences under the Wildlife and Countryside Act (1981) as amended which cover obstruction of places used for shelter or protection (for example, a bat roost), disturbance and sale still apply to European protected species.

This legislation provides defences so that necessary operations may be carried out in places used by bats, provided the appropriate Statutory Nature Conservation Organisation (in England this is Natural England) is notified and allowed a reasonable time to advise on whether the proposed operation should be carried out and, if so, the approach to be used. The UK is a signatory to the Agreement on the Conservation of Bats in Europe, set up under the Bonn Convention. The Fundamental Obligations of Article III of this Agreement require the protection of all bats and their habitats, including the identification and protection from damage or disturbance of important feeding areas for bats.

Barn Owls

The Habitats Regulations (1994), as amended, states that a person commits an offence in the case of Barn Owl only if this species is disturbed in the breeding season. This applies equally to all those bird species listed under Schedule 1.

Breeding Birds

It is an offence to kill, injure or take any wild bird; take, damage or destroy the nest of any wild bird while that nest is in use or being built (even of "pest" species); take or destroy the eggs of any wild bird.

Great Crested Newts

Great crested newts are protected under both English and European law. It is an offence to kill, injure, disturb or take great crested newts or to damage or destroy their places of shelter, whether the animals are present or not.

Water Vole

The water vole received limited legal protection in April 1998 through its inclusion in Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) for some offences. Legal protection makes it an offence to:

- intentionally kill, injure or take (capture) a water vole;

- possess or control a dead or live water vole, or any part of a water vole;
- intentionally or recklessly damage or destroy access to any structure or place which water voles use for shelter or protection or disturb Water Voles while they are using such a place;
- sell, offer for sale or advertise for sale live or dead Water Voles

Water voles, their breeding sites and resting places are protected by law. In most cases, work can be planned to avoid harming water voles. If works cannot avoid disturbing them or damaging their habitats, you may be able to get a licence from Natural England.

Otters

Otters are protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended) and revised by the Countryside and Rights of Way Act 2004, making it an offence to:

- intentionally kill, injure or take an otter;
- possess or control any (live or dead) otter, or any part of or anything derived from an otter;
- intentionally or recklessly damage or destroy or obstruct access to any structure or place used for shelter or protection by an otter;
- intentionally or recklessly disturb an otter while it is occupying a structure or place for that purpose;
- to sell, offer for sale, possess or transport for the purpose of sale any (live or dead) otter or part or derivative of an otter;
- to advertise for buying and selling such things.

Furthermore, otters are included on Schedule 2 of the Conservation (Habitats &c.) Regulations (1994), making it an offence to:

- deliberately to capture or kill a wild animal of a European protected species;
- deliberately to disturb any such animal;
- deliberately to take or destroy the eggs of such an animal; or
- damage or destroy a breeding site or resting place of such an animal.

Otters are also listed as a priority species on the UK and Biodiversity Action Plans.

White-Clawed Crayfish

This crayfish is listed under Annex II of the habitats directive and areas are designated as Special Areas of Conservation to protect this species. Outside of this a licence is required to capture this species. It is listed as a priority species under the Biodiversity Action Plan and is a Species of Principal Importance under section 41 of the NERC Act 2006.

Reptiles

Reptiles such as common lizard, slowworm, grass snake or adder are protected under Section 9 of the Wildlife & Countryside Act (1981) as amended. The legislation makes it illegal to deliberately or recklessly kill or injure

any native reptile. This protection therefore requires that reasonable effort be made to avoid harm to reptiles during developments on land occupied by reptiles.

Badger

The Wildlife and Countryside Act (1981) and its subsequent amendment in 1985 made it an offence to take, kill, injure or ill-treat a badger. The badger gained further protection under the auspices of The Protection of Badgers Act (1992) which consolidates all former protective legislation in relation to badgers, except their inclusion on Schedule 6 of the Wildlife and Countryside Act 1981.

Under the 1992 Act, the badger sett is protected against obstruction, destruction, and damage; furthermore, the animal's access to and from the sett must not be impeded. It should be noted that the concept/definition of the sett extends beyond the main sett to include annexe, subsidiary and outlying setts. However, although the badger and its sett are protected (including access to the sett), the wider habitat and foraging ground is not.

Dormice

Dormice are protected from being killed, injured, captured or disturbed and their resting and breeding places should not be damaged or destroyed.

Natural England Licensing - EPS Mitigation Licensing

Licences can be obtained from the Wildlife Management and Licensing Service at Natural England to allow certain activities that would otherwise constitute an offence, for the purposes of development (e.g. destruction of a bat roost, loss of great crested newt aquatic and terrestrial habitat, etc).

Appendix E

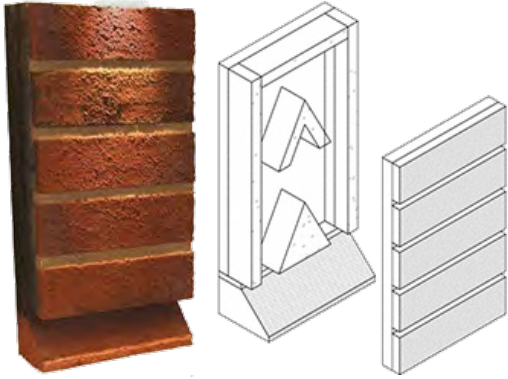
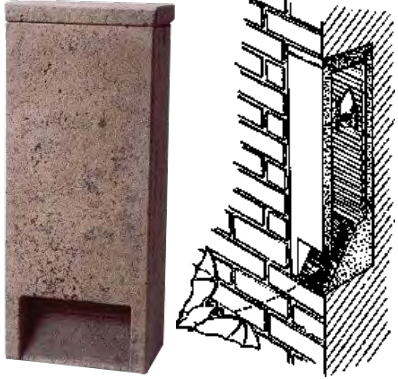


Plant species recorded on site

English name	Scientific name
Ash	<i>Fraxinus excelsior</i>
Blackthorn	<i>Prunus spinosa</i>
Box	<i>Buxus sp.</i>
Bramble	<i>Rubus fruticosus</i>
Cherry	<i>Prunus sp.</i>
Cleavers	<i>Galium aparine</i>
Clover	<i>Trifolium sp.</i>
Cock's foot	<i>Dactylis glomerata</i>
Cranesbill	<i>Geranium sp.</i>
Creeping buttercup	<i>Ranunculus repens</i>
Daisy	<i>Bellis perennis</i>
Dandelion	<i>Taraxacum officinale</i>
Dock	<i>Rumex sp.</i>
Dog-rose	<i>Rosa canina</i>
Fescue	<i>Festuca sp.</i>
Ground ivy	<i>Glechoma hederacea</i>
Hawthorn	<i>Crataegus monogyna</i>
Holly	<i>Ilex aquifolium</i>
Horse chestnut	<i>Aesculus hippocastanum</i>
Ivy	<i>Hedera helix</i>
Lawson's cypress	<i>Chamaecyparis lawsoniana</i>
Leyland cypress	<i>Cupressus x leylandii</i>
Monterey cypress	<i>Cupressus macrocarpa</i>
Mouse ear	<i>Cerastium sp.</i>
Nettle	<i>Urtica dioica</i>
Oak	<i>Quercus robur</i>
Perennial ryegrass	<i>Lolium perenne</i>
Ragwort	<i>Jacobaea vulgaris</i>
Rose	<i>Rosa sp.</i>
Rough hawkbit	<i>Leontodon hispidus</i>
Selfheal	<i>Prunella vulgaris</i>
Silver birch	<i>Betula pendula</i>
Sow thistle	<i>Sonchus sp.</i>
Sycamore	<i>Acer pseudoplatanus</i>
White dead nettle	<i>Lamium album</i>
Willow	<i>Salix sp.</i>
Yorkshire fog	<i>Holcus lanatus</i>

Appendix F

Examples of bat and bird boxes

(images sourced from www.nhbs.com, www.habibat.co.uk and www.manthorpe.co.uk)

<p>Integrated bat box Habibat Bat Box</p> 	<p>Integrated bat box 1FR Schwegler Bat Tube</p> 
<p>Standalone bat box 2F Schwegler Bat Box (General purpose)</p> 	<p>Standalone bat box 1FF Schwegler Bat Box with built-in wooden rear panel</p> 

Recommendations for installing bat boxes:

(Sourced from Bat Conservation Trust www.bct.org)

Ideally, several boxes should be put up facing in different directions to provide a range of conditions.

Locate boxes:

- Where bats are known to feed close to hedges and treelines (some bats use a treeline or hedgerow for navigation, putting boxes near these features may help the bats find the box).
- On trees: boxes should be placed on the trunk of a mature tree, where there is a clear flight line/accessible entrance.
- On buildings: boxes should be placed as close to the eaves as possible.
- As high as possible (ideally, at least 3 to 4m above the ground, where safe installation is possible).
- In sunny places, sheltered from strong winds (usually between south-west and south-east).

Make sure the boxes are secured.

Boxes can be installed on trees using adjustable ties to avoid damaging the trees. Otherwise, timber screw bolts or nails can be used. Aluminium alloy nails are less likely to damage saws and chipping machinery.



Bats need time to find and explore new homes, and it may be several months or even years before boxes have residents. Once bats find a place they want to live they can return over and over again. Droppings on the landing area, urine stains around the lower parts of the box and chittering noises from inside on warm afternoons and evenings are signs of occupation.

<p>Small bird nesting box 1B Schwegler Nest Box</p> 	<p>Small bird nesting box 2H Schwegler Robin Box</p> 
<p>Integrated swift box Schwegler Brick Nest Box Type 25</p>  <p>Type 25</p>	<p>Integrated swift box Manthorpe Swift Brick</p> 
<p>Recommendations for installing bird boxes: (Sourced from British Trust for Ornithology www.bto.org and Manthorpe www.manthorpe.co.uk)</p>	
<p>The highest priority when siting a nest box must be to provide a safe and comfortable environment in which birds can nest successfully.</p> <p>Tips for putting up a nest box:</p> <ul style="list-style-type: none"> • Boxes should be sited 1-3m from the ground, ideally on tree trunks but can be placed on the side of a shed or wall. Avoid areas where foliage obscures the entrance hole. • Don't place boxes too close to another nest box of the same type, as this may promote aggressive behaviour between neighbours. • Shelter your nest box from prevailing wind, rain and strong sunlight. The box should face between north and east, and angled vertically or slightly downwards to prevent rain entering. • Make sure cats cannot get into the box. • Keep nest box away from bird feeders. • Use galvanized or stainless steel screws or nails. If fixing boxes to trees, galvanised wire can be used to tie the box to the trunk or hang it from a branch. Make sure to regularly inspect these fittings (every two or three years) to ensure the box remains securely attached. <p>Tips for putting up house sparrow terraces and swift bricks/boxes:</p> <ul style="list-style-type: none"> • Locate ≥ 5m high on the gable wall of the property and above the level of the insulation zone. • Where possible, install in locations that are unlikely to receive large amounts of direct sunlight during the hottest times of the day, ideal places include below the overhang of the verge and barge board. 	

Appendix G

Examples of hedgehog friendly fencing

(images sourced from www.quercusfencing.com and www.jackson-fencing.co.uk)

Quercus Fencing	Jacksons-Fencing
Hedgehog friendly oak woven fencing panels	Hedgehog friendly gravel board for use with slotted posts
	

Recommendations for installing hedgehog friendly fencing:

(Sourced from Hedgehog Street www.hedgehogstreet.org)

A hedgehog friendly fence should have a gap measuring at least 13cm by 13cm in the gravel board. These gaps allow any hedgehog to pass through but are too small for nearly all pets.

At least one hedgehog friendly fence panel should be located on each side of your garden, to provide unimpeded access.

Almost all fencing materials can be made hedgehog friendly, but may require DIY adaptations. Please note that some concrete gravel boards contain metal rods running along the length of the boards to provide strength and rigidity, and cannot be cut. To overcome this, a gap can be left between the gravel board and post to provide the required gap.

Appendix H

Native species suitable for planting and sowing

Plants should be obtained from specialist nurseries and preferably be of local genetic stock.

Key: (f) – fruit and berry species; (e) – evergreen species; (se) semi-evergreen species; (d) – deciduous species

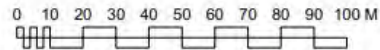
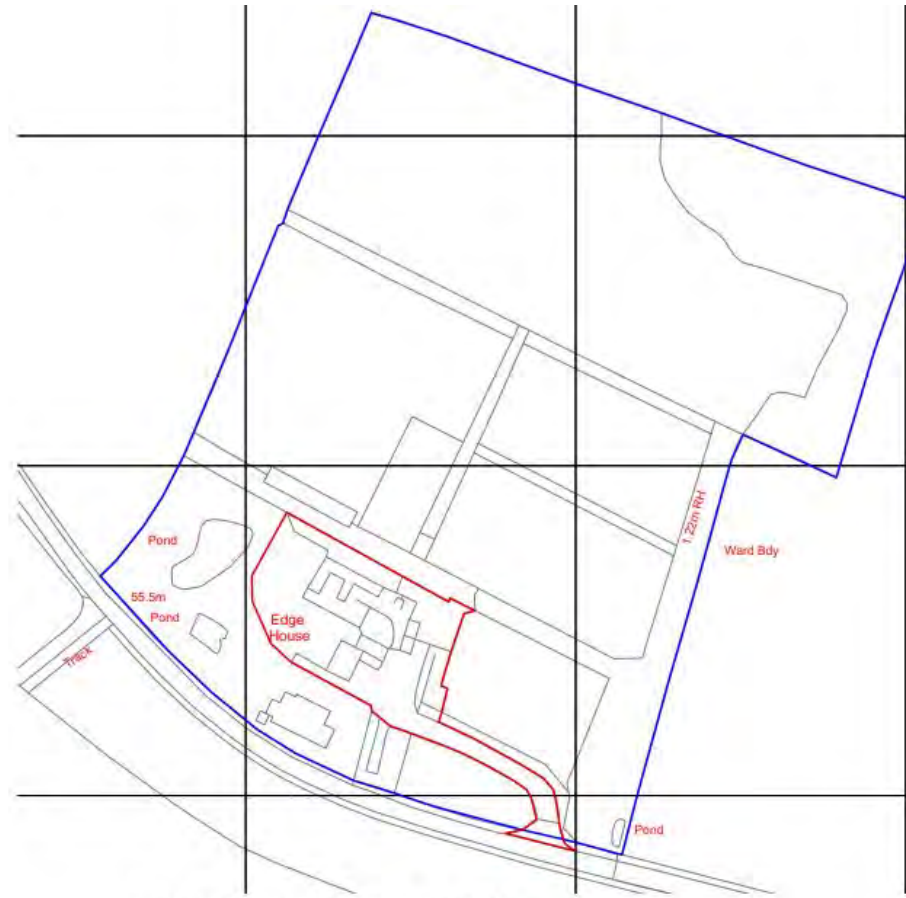
Trees	
Alder (d)	<i>Alnus glutinosa</i>
Apples (f; d)	<i>Malus spp.</i> (local varieties)
Ash (d)	<i>Fraxinus excelsior</i>
Beech (d)	<i>Fagus sylvatica</i>
Bird cherry (f; d)	<i>Prunus padus</i>
Elder (f; d)	<i>Sambucus nigra</i>
Elm (d)	<i>Ulmus procera</i>
Field maple (d)	<i>Acer campestre</i>
Pedunculate oak (d)	<i>Quercus robur</i>
Rowan (f; d)	<i>Sorbus aucuparia</i>
Pears (f; d)	<i>Pyrus spp.</i>
Silver birch (d)	<i>Betula pendula</i>
Small-leaved lime (d)	<i>Tilia cordata</i>
White willow (d)	<i>Salix alba</i>
Wild cherry (f; d)	<i>Prunus avium</i>
Walnut (d)	<i>Juglans regia</i>

Shrubs	
Blackthorn (f; d)	<i>Prunus spinosa</i>
Buckthorn (f; d)	<i>Rhamnus catharticus</i>
Crab apple (f; d)	<i>Malus sylvestris</i>
Dog rose (f; d)	<i>Rosa canina</i>
Dogwood (f; d)	<i>Cornus sanguinea</i>
Field maple (d)	<i>Acer campestre</i>
Guelder-rose (f; d)	<i>Viburnum opulus</i>
Hawthorn (f; d)	<i>Crataegus monogyna</i>
Hazel (d)	<i>Corylus avellana</i>
Holly (e)	<i>Ilex aquifolium</i>
Honeysuckle (f; d)	<i>Lonicera periclymenum</i>
Spindle (f; d)	<i>Euonymus europaeus</i>
Wild privet (f; se)	<i>Ligustrum vulgare</i>
Yew (f; e)	<i>Taxus baccata</i>

Flowering plants	
Bird's-foot trefoil	<i>Lotus corniculatus</i>
Black knapweed	<i>Centaurea nigra</i>
Common cat's-ear	<i>Hypochoeris radicata</i>
Common sorrel	<i>Rumex acetosa</i>
Common vetch	<i>Vicia sativa</i>
Cowslip	<i>Primula veris</i>
Field scabious	<i>Knautia arvensis</i>
Foxglove	<i>Digitalis purpurea</i>
Lady's bedstraw	<i>Galium verum</i>
Meadow buttercup	<i>Ranunculus acris</i>
Meadow vetchling	<i>Lathyrus pratensis</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Primrose	<i>Primula vulgaris</i>
Red clover	<i>Trifolium pratense</i>
Selfheal	<i>Prunella vulgaris</i>
Sweet violet	<i>Viola odorata</i>
Wild daffodil	<i>Narcissus pseudonarcissus</i>
Yarrow	<i>Achillea millefolium</i>

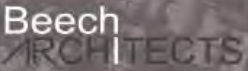
Grasses	
Common bent	<i>Agrostis capillaris</i>
Crested dog's-tail	<i>Cynosurus cristatus</i>
Meadow fescue	<i>Festuca pratensis</i>
Red fescue	<i>Festuca rubra</i>
Rough meadow-grass	<i>Poa trivialis</i>
Small timothy	<i>Phleum bertolonii</i>
Smooth meadow-grass	<i>Poa pratensis</i>
Sweet vernal-grass	<i>Anthoxanthum odoratum</i>
Yellow oat-grass	<i>Trisetum flavescens</i>

Appendix I Site Boundary



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Rev

 www.beecharchitects.com	Church Farm Barn The Street Thordor Suffolk IP23 7JR e enquiries@beecharchitects.com t 01379 678442		PROJECT Edge House Farm, Dublin Road, Rishangles, Eye, IP23 7QB		DRAWING LOCATION PLAN		NOTES Generally do not scale drawings. All dimensions to be checked on site.
			SCALE 1:1250 @ A3		DATE August 2020		
CLIENT Carole Decaux	DRAWN BY HF	CHECKED	DRAWING NUMBER 01	JOB NUMBER 506	STATUS Preliminary	REV	This drawing is copyright and remains the property of Beech Architects Ltd. Original size A3 Scale shown will be incorrect if reproduced in any other format