
Preliminary Ecological Appraisal

**Land At Chandos Farm, Bull Road, Thornham
Parva**

for

Stephen Davey and Sandra Newson

10 July 2023

Client

Stephen Davey and Sandra Newson

Planning authority

Mid Suffolk District Council

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).


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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>Nathan Duszynski, ACIEEM</i>	
Greenlight Environmental Consultancy Limited Diss Business Hub Hopper Way Diss Norfolk IP22 4GT www.greenlightco.co.uk	

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SUMMARY

- Greenlight Environmental Consultancy Ltd. has been commissioned to carry out a Preliminary Ecological Appraisal for a proposed development at Land At Chandos Farm, Bull Road, Thornham Parva, Suffolk, IP23 8ES (grid reference: TM 10863 72865).
- 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 demolition the existing barn and construction of a single residential dwelling with associated infrastructure for vehicular access and utility services.
- 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.
- **If proposed plans change to affect trees with bat roosting potential, further surveys are required prior to works commencing to inform an ecological impact assessment of the site and an appropriate mitigation strategy.**
- **Under the proposed plans, no further surveys/licences are required to inform an ecological impact assessment or 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	One statutory and three non-statutory protected sites within 2km.	No significant impacts on protected sites and their qualifying features.	<u>Mitigation</u> Construction work to be carried out in accordance with BSI (2013), BS 42020:2013 to protect Thornham Parva Meadow CWS and Lowland Meadows (Priority Habitat) from runoff and pollution.
Protected habitats and habitats subject to conservation designations	Modified grassland and ruderal vegetation 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: <ul style="list-style-type: none"> • The planting of new native species-rich hedgerows and trees around site. • Species-rich wildflower mixtures in open areas, rich in nectar and pollen. Construction work to be carried out in accordance with BSI (2012), BS 5837:2012, to protect trees and their root protection areas.

Protected habitats/species	Status	Potential effect	Recommended mitigation and enhancements
Bats	<p>Negligible bat roosting potential in buildings one (barn) and two (outbuilding).</p> <p>Moderate-high bat roosting potential in three trees located on site.</p> <p>Low value commuting and foraging habitat on site.</p>	<p>Potential disturbance of bat roosts if present in trees.</p> <p>Low scale loss and potential light disturbance of commuting and foraging habitats on site.</p>	<p><u>Mitigation</u></p> <p>If proposed works change to affect trees with moderate or high bat roosting potential, further bat surveys will be conducted.</p> <p>Any lighting schemes will comply with Bat Conservation Trust and CIE 150:2003 guidance.</p> <p><u>Enhancement</u></p> <p>Installation of one integrated and one standalone bat box installed on buildings and trees respectively.</p>
Breeding birds	<p>Nesting habitats for tree and building nesting birds present on site, including potential breeding habitat for Amber listed species.</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 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 and one small bird box on site, installed on new buildings and trees respectively.</p>
Great crested newts	<p>Predominantly unsuitable terrestrial habitats on site.</p> <p>One pond on site and seven ponds within 250m of the site, one assessed as below average suitability, one dry and six could not be accessed for detailed assessment.</p> <p>Site falls within Amber risk zone for district level licensing.</p> <p>19 GCN records within 2km.</p>	<p>Potential harm to GCN if present on site during works.</p> <p>GCN unlikely to be present onsite with ponds and suitable habitat located to the south and east.</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> <p>Rough sawn planks placed inside any open excavations.</p> <p>Construction materials will be stored off the ground on pallets and waste materials in skips.</p> <p>In the highly unlikely event that any GCN are found, work will cease immediately, and a licenced ecologist contacted to remove any GCN to safety and advice on how to proceed.</p> <p>One south facing hibernacula to be created on site.</p>
Reptiles	<p>Habitats on site predominantly unsuitable.</p> <p>No reptile records within 2km.</p>	<p>Reptiles unlikely to be found on site due to small quantities of suitable habitats present.</p> <p>No impacts predicted.</p>	<p><u>Precautionary mitigation</u></p> <p>Mitigation for GCN above will be implemented to avoid impacts on reptiles from the proposed work.</p>
Other animals	N/A	<p>Potential harm to animals.</p>	<p><u>Mitigation</u></p> <p>If fencing is required, this will be porous and provide openings for hedgehogs.</p> <p><u>Enhancement</u></p> <p>Installation of one bee brick.</p>

1. METHOD

- 1.1. A walkover of the site was conducted on 11th May 2023 by Lucy Reed and Daniel Howes – independent, qualified and experienced ecologists. Survey conditions were as follows: 15oC, 3mph wind, sunny intervals 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, with no evidence or signs of use observed. 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 within the village of Thornham Parva, with the A140 located approximately 0.6km east. The closest town is Diss, located approximately 6.5km north of the site.
- 2.3. The site is enclosed by an arable field to the north, grassland to the east, barns and residential dwellings to the south and a residential dwelling to the west. The wider surroundings are comprised of a mixture of residential dwellings, large blocks of woodland and arable fields lined with mature trees and hedgerows.



Figure 1
Satellite image of site surroundings, site indicated by red line.
Image © Google, date accessed 25/05/23

3. DESCRIPTION OF THE DEVELOPMENT

- 3.1. The proposals are for the demolition the existing barn and construction of a single residential dwelling with associated infrastructure for vehicular access and utility services. Please refer to Appendix K for the proposed plans.

4. PROTECTED SITES

Statutory

- 4.1. There is one statutory protected site located within 2km – one Sites of Special Scientific Interest (“SSSI”). Please refer to Appendix C for the full citation.
 - i. Major Farm, Braiseworth SSSI, approximately 1km east.

“Major Farm Meadow is damp and species-rich, one of the few remaining unimproved hay meadows in Suffolk. The meadow is shallow-sloping, on boulder clay of low soil fertility, and characterised by an abundance of mole-hills.”
- 4.2. The proposed development falls outside of all SSSI Impact Risk Zones relating to rural residential developments.

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. Thornham Parva Meadow CWS, approximately 10m southeast.

“This meadow is a good example of an unimproved species-rich grassland (Priority habitat) and supports a plant community typical of this type of grassland including cowslip, ox-eye daisy, meadow vetchling, tufted vetch, pyramidal orchid and common knapweed. The meadow is bordered by native ancient hedgerow (Priority habitat) which adds to the structural diversity of the site. The grassland and hedges offer opportunities for a range of invertebrates and nesting birds.”
 - ii. Thornham Estate Woods CWS, approximately 0.4km west.

“The Thornham Estate situated to the south of Mellis contains a number of woodlands, one of which (Duchess Wood) is listed in the Suffolk Ancient Woodland Inventory compiled by English Nature. The remaining woodland is considered to be recent secondary woodland, planted 100-200 years ago.”

- iii. Mellis Common CWS, approximately 1.6km northwest.

“Mellis Common, an extensive area of Common land, is situated to the centre and south-west of the village.”

5. HABITATS

Desktop review

- 5.1. Priority Habitats to occur within 2km (identified using MAGIC – managed by Natural England), include Good Quality Semi-Improved Grassland, Lowland Meadows, Deciduous Woodland, Traditional Orchards and Woodpasture and Parkland BAP Priority Habitat. The closest of which, is Lowland Meadows located approximately 10m southeast of the site.

Field study

- 5.2. The habitats on the site are of **low** ecological value, being mainly modified grassland, bare ground, ruderal vegetation and hardstanding.
- 5.3. No Priority Habitats, as listed under the NERC Act 2006 Section 41 Habitats of Principal Importance are found onsite.
- 5.4. Figure 2 provides a 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.

Modified grassland (UK Habitat Classification g4; secondary code: 11 scattered trees, 17 ruderal/ephemeral, 73 bare ground, 75 recent management, 117 dry, 191 ditch)

- 5.5. The majority of the site is comprised of managed modified grassland with large patches of bare ground and scattered ruderal vegetation to the west. The site has undergone some recent management and therefore the sward height is low. Grassland species include: cock’s-foot *Dactylis glomerata*, cow parsley *Anthriscus sylvestris*, creeping buttercup *Ranunculus repens*, dove’s-foot cranesbill *Geranium molle*, ground elder *Aegopodium podagraria*, ground ivy *Glechoma hederacea*, lords-and-ladies *Arum maculatum*, perennial ryegrass *Lolium perenne* and red dead-nettle *Lamium purpureum*. Ruderal species include: broad-leaved dock *Rumex obtusifolius*, groundsel *Senecio vulgaris* and nettle *Urtica dioica*.
- 5.6. A dry ditch is present along the northern boundary, with scattered trees to the north and west of the site. Tree species include: Apple *Malus x domestica*, ash *Fraxinus excelsior*, elder *Sambucus nigra*, English oak *Quercus robur* and hawthorn *Crataegus monogyna*.

Buildings (UK Habitat Classification u1b5)

- 5.7. There are two buildings onsite. Please refer to the bat section detailed below for further information.

Other developed land (UK Habitat Classification u1b6)

- 5.8. The site features an area of concrete hardstanding to the south and compact gravel hardstanding driveway to the southeast of site.

Built linear features (UK Habitat Classification u1e; secondary code: 69 fence)

- 5.9. The site features a mixture of wire mesh and post and rail fencing along the east and west boundaries.





Photo 1, area of concrete and compact gravel hardstanding to the southeast of the site, looking east.



Photo 2, bare ground, ruderal vegetation and scattered trees to the west of the site, looking northwest.



Photo 3, scattered trees along the site's northern boundary, looking northeast.



Photo 4, looking south along the site's eastern boundary.

6. PROTECTED AND NOTABLE SPECIES

Desktop review

Data search

- 6.1. The biodiversity data search within 2km of the site indicated 641 records from 154 species.
- 6.2. Records of note within 2km and relevant to the proposed development works are:
 - Eight barn owl *Tyto alba* records, with the most recent from 2022.
 - 10 skylark *Alauda arvensis* records, with the most recent from 2017.
 - 17 swift *Apus apus* records, with the most recent from 2017.
 - 19 GCN *Triturus cristatus* records, with the most recent from 2018. The closest record is located approximately 0.6km northeast.
 - 29 hedgehog *Erinaceus europaeus* records, with the most recent from 2019.
 - 73 bat records, with the most recent from 2019, including common pipistrelles *Pipistrellus pipistrellus*, soprano pipistrelles *Pipistrellus pygmaeus*, Nathusius' pipistrelle *Pipistrellus nathusii*, brown long-eared *Plecotus auritus*, serotines *Eptesicus serotinus*, noctules *Nyctalus noctula*, Leisler's *Nyctalus leisleri*, Daubenton's *Myotis daubentonii*, Natterer's *Myotis nattereri*, barbastelles *Barbastella barbastellus* and other unidentified bat species.

Protected species licences

- 6.3. A 2km search on <http://www.magic.gov.uk/> indicated two records of a granted European Protected Species ("EPS") Mitigation Licence relating to:
 - Bats (case reference: 2016-25741-EPS-MIT) from 2016, approximately 1.1km west. Species on the licence include: common pipistrelle and brown long-eared.
 - Amphibians (case reference: 2020-49983-EPS-MIT) from 2020, approximately 1.8km west. Species on the licence include: great crested newt.

Bats

6.4. There are two buildings and three trees with bat roosting potential located on site, as indicated in Figure 3 and Photos 5-8.

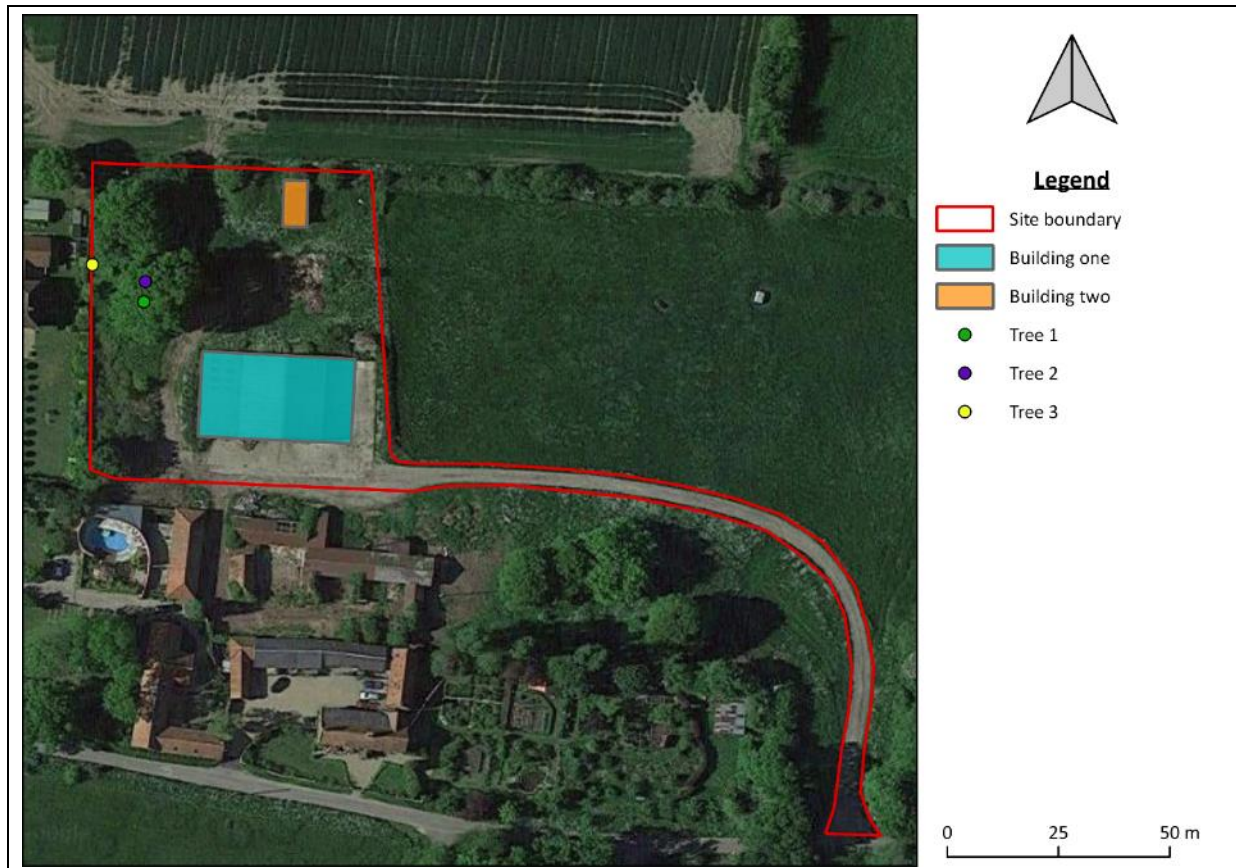


Figure 3

Location and numbering of buildings and trees located on site.

Image © QGIS, date accessed 25/05/23

Building one – barn

- 6.5. The barn is a steel framed, brick and corrugated asbestos construction with a pitched, corrugated asbestos roof. The brickwork is in good condition. Internally, the roof is unlined. Gaps between the corrugated asbestos sheets allow some natural light into the building, with the building light and draughty throughout.
- 6.6. There were no signs of use by bats on the building exterior or interior and the structure provides an unsuitable roost environment, with no suitable cavities for roosting bats. The building is assessed as **negligible** (summer and hibernation) roost suitability for bats.



Photo 5, south and west aspects of building one, looking northeast.



Photo 6, internal view of building one, looking north.

Building two – outbuilding

6.7. The outbuilding is a timber framed, corrugated metal construction with a corrugated metal roof. Internally, the roof is unlined. Gaps between the corrugated metal sheets allow some natural light into the building, with the building light and draughty throughout.

There were no signs of use by bats on the building exterior or interior and the structure provides an unsuitable roost environment, with no suitable cavities for roosting bats. The building is assessed as **negligible** (summer and hibernation) roost suitability for bats.



Photo 7, south and west aspects of building two, looking northeast.



Photo 8, internal view of building two, looking north.

Trees

- 6.8. The trees around the site boundary were assessed for bat roosting potential.
- 6.9. A total of three trees on or adjacent the site were assessed as having **moderate** to **high** roost suitability for bats based on their location, age and suitable features (Table 1, Figure 3).
- 6.10. The remaining trees are assessed as **negligible** bat roosting potential, due to their age and/or lack of features.

Tree No.	Tree species	What3words	Bat roosting potential	Potential roosting features
1	English oak	tastier. unheated. both	Moderate	Cavities in trunk, dropped limbs.
2	English oak	limped. zest. catchers	High	Lifted bark, cavities in trunk, dropped limbs.
3	English oak	tribune. ruffle. resettle	Moderate	Lifted bark.

Table 1, trees with bat roosting potential.



Photo 9, trees one (left) and two (right) with lifted bark, cavities in trunks and dropped limbs, looking northwest.



Photo 10, cavity in trunk (highlighted in red) in tree one.



Photo 11, lifted bark (highlighted in red) in tree two.

Foraging and commuting links

- 6.11. The site itself provides **low** value foraging habitat for bats along the boundary trees, with bats mainly using nearby woodlands for foraging.
- 6.12. 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 the site and within Thornham Parva have the potential to provide roosting opportunities for bats.

Birds

- 6.13. 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.
- 6.14. The following bird species were observed during the site visit:

Amber listed:

Woodpigeon

Columba palumbus

Green listed:

Blackbird	<i>Turdus merula</i>
Chiffchaff	<i>Phylloscopus collybita</i>
Collared dove	<i>Streptopelia decaocto</i>
Great tit	<i>Parus major</i>
Pied wagtail	<i>Motacilla alba</i>
Robin	<i>Erithacus rubecula</i>

- 6.15. The site provides suitable nesting habitats for tree and building nesting species.
- 6.16. The site does not provide potential breeding habitat for the Red listed species.
- 6.17. The site provides potential breeding habitat for the following Amber listed species: woodpigeon.
- 6.18. No signs of barn owl were found on the site and no foraging habitat is present.

Great crested newts

- 6.19. There is one pond within the survey site and seven 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).
- 6.20. The terrestrial habitats on the site are considered predominantly unsuitable for GCN, consisting of managed modified grassland, bare ground and hardstanding, with small quantities of suboptimal ruderal vegetation. Previous satellite images suggest the vegetation on site has undergone recent management.
- 6.21. Terrestrial habitats adjacent the site include a mixture of unsuitable (managed modified grassland and residential dwellings with associated gardens and hardstanding) and suitable (scrub and hedgerows) GCN foraging, commuting and hibernating habitats. Habitats within 100m of the site are considered suitable for GCN (Good Quality Semi-Improved Grassland and Lowland Meadows).
- 6.22. Pond two was assessed as **below average** suitability for GCN (Table 2). Pond one did not appear to exist, having been filled in or dry for a prolonged period of time and ponds 3-8 were not assessed in detail, as authorised access to the ponds was not available.
- 6.23. The site falls within the Amber risk zone for GCN district level licensing, which is classified as “containing main population centres for GCN and comprise important connecting habitat that aids natural dispersal” (Natural England, 2021).

Pond	2
Geographic location	Zone A
	1.00
Pond surface area (m ²)	100m ²
	0.20
Desiccation rate	>3 years out of 10
	0.50
Water quality/ invert density	Poor
	0.33
Shoreline shade (%)	90%
	0.40
Waterfowl impacts	Absent
	1.00
Fish impacts	Absent
	1.00
Ponds within 1km	13+
	1.00
Terrestrial habitat quality	Moderate
	0.67
Macrophyte cover (%)	5%
	0.35
HSI Score	Below average
	0.56

Table 2, HSI score for ponds within 250m of the proposed site.



Photo 12, pond two, looking southwest.

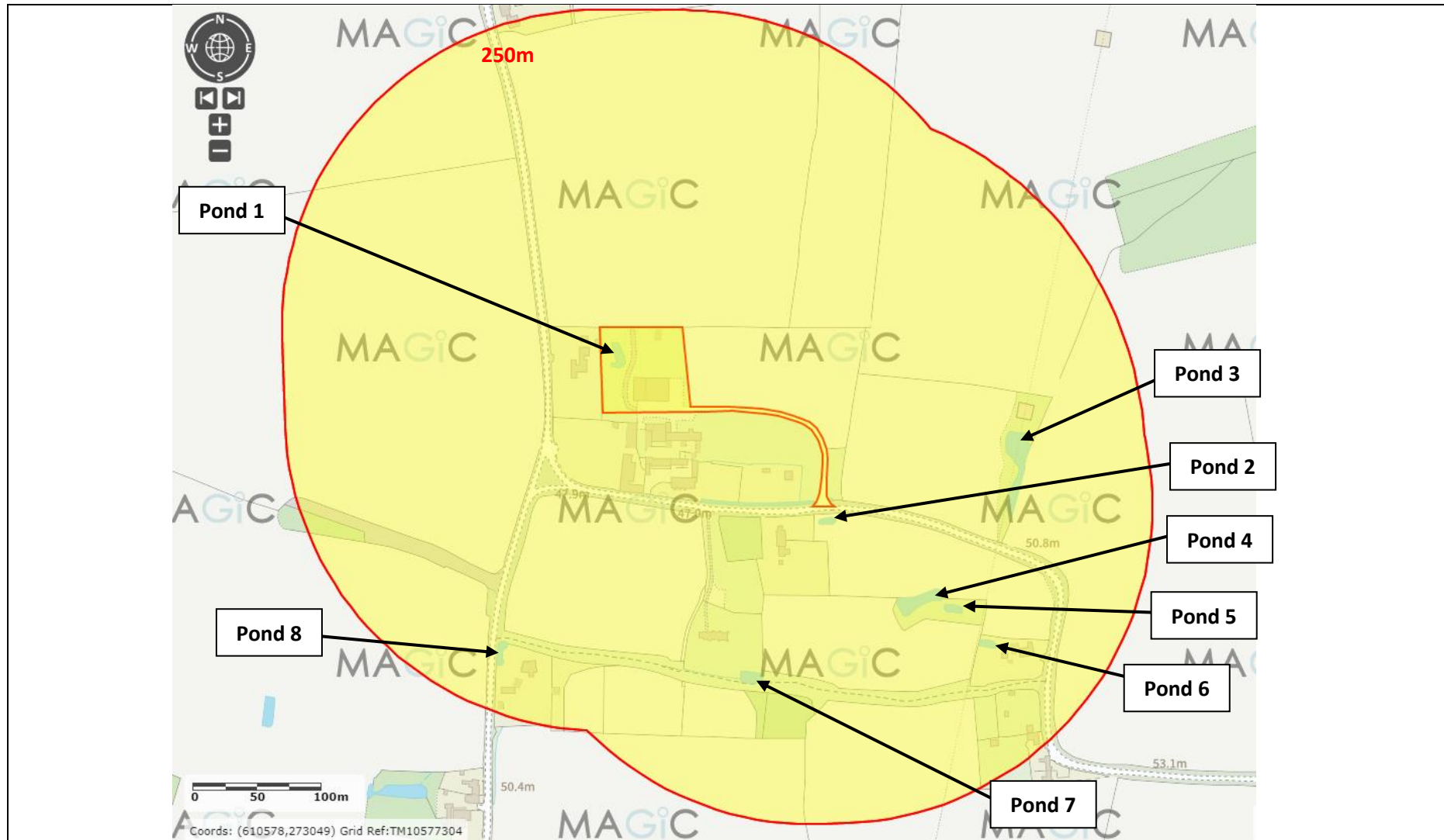


Figure 4
Ponds within 250m of the proposed site.
Image © MAGiC, date accessed 24/05/23

Reptiles

- 6.24. The habitats on the site are considered predominantly unsuitable for reptiles, consisting of managed modified grassland, bare ground and hardstanding, with small quantities of suboptimal ruderal vegetation. Previous satellite images suggest the vegetation on site has undergone recent management.
- 6.25. Habitats located on the site boundaries including the dry ditch could be used as commuting habitats by reptiles if they were present in the area.
- 6.26. Terrestrial habitats adjacent the site include a mixture of unsuitable (managed modified grassland and residential dwellings with associated gardens and hardstanding) and suitable (scrub and hedgerows) reptile foraging, commuting and hibernating habitats. Habitats within 100m of the site are considered suitable for reptiles (Good Quality Semi-Improved Grassland and Lowland Meadows).

7. DISCUSSION AND CONCLUSIONS

Protected sites

- 7.1. The development footprint falls outside all identified protected sites (statutory and non-statutory). There is one statutory protected site and three non-statutory protected sites located within 2km of the site.
- The closest statutory protected site (Major Farm, Braiseworth SSSI), is located approximately 1km east and designated as one of the few remaining unimproved hay meadows in Suffolk.
 - The closest non-statutory protected site (Thornham Parva Meadow CWS), is located approximately 10m southeast of the site and designated for its unimproved species-rich grassland.
- 7.2. The proposed development falls outside of any SSSI Impact Risk Zones relating to rural residential developments.
- 7.3. The following mitigation will be implemented to avoid potential impacts on statutory and non-statutory protected designated sites and their features from the proposed works:
- i. Construction work is carried out in accordance with British Standards Institution (2013), *BS 42020:2013, Biodiversity – Code of Practice for planning and development*, to protect Thornham Parva Meadow CWS and the Lowland Meadows (Priority Habitat) (approximately 10m southeast) from runoff and pollution via the implementation of a Construction Environmental Management Plan (“CEMP”).

Habitats

- 7.4. The proposed works will require the clearance of vegetated habitats on site, including modified grassland, scrub and ruderal vegetation. No priority habitats will be affected by the proposed development. This is expected to result in a low scale loss of nesting habitat for hedgerow and 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 with potential bat roosts.
- 7.5. As a precautionary measure, the following mitigation will be implemented to avoid impacts on habitats from the proposed works:
- i. A soft landscaping scheme to include:
 - a. The planting of new native species-rich (≥ 5 species), hedgerows and trees around the site (see Appendix F for suggested species).

- b. The planting of a native species-rich lawns in gardens and wildflower mixtures in open spaces, which are rich in nectar and pollen (see Appendix F for suggested seed mix).
- 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.
- iii. Construction work is carried out in accordance with British Standards Institution (2013), BS 42020:2013, *Biodiversity – Code of Practice for planning and development*, to protect Thornham Parva Meadow CWS and the Lowland Meadows (Priority Habitat) (approximately 10m southeast) from runoff and pollution via the implementation of a Construction Environmental Management Plan (“CEMP”).

Bats

- 7.6. The proposed works are expected to result in a low scale loss of potential roosting, foraging and commuting habitats for bats through the demolition of all the buildings on site, clearance of vegetation and through increased noise and light levels.
- 7.7. As a precautionary measure, the following mitigation will be implemented to avoid impacts on bats from the proposed works:
 - i. If proposed works change to affect trees with moderate or high bat roosting potential, further bat surveys will be conducted. If bats are found to be present and roosting within any trees, a European Protected Species Mitigation Licence may be required for their removal.
 - ii. Any lighting schemes will follow guidance from the Bat Conservation Trust and CIE 150:2003. Warm-white (long wavelength) lights with UV filters will be fitted as close to the ground as possible. Lighting units will be angled below 70° and equipped with movement sensors, baffles, hoods, louvres and horizontal cut off units at 90°.
- 7.8. 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 (non-bitumen coated roofing membranes (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 NBCRM that have passed the

snagging propensity test (must be supplied/installed with the necessary certification) or traditional type 1F bitumen are used.

7.9. As enhancements, the following will be implemented:

- i. One integrated bat box on the new dwelling (Bat Block – Appendix G).
- ii. One standalone bat box on a suitable tree onsite (Greenwood’s Ecohabitats three crevice bat box – Appendix G).

7.10. After these precautionary mitigation measures, we predict no impact on bats as a result of the development plans. We consider that a European Protected Species Licence will not be required, and no further surveys are necessary.

Birds

7.11. The proposed works are expected to result in a low scale loss of bird nesting habitat through the demolition of all the buildings and clearance of vegetation.

7.12. As a precautionary measure, the following mitigation will be implemented to avoid impacts on birds from the proposed works:

- i. Any works affecting bird nesting habitat such as management of trees or buildings would ideally need to be conducted outside the main nesting season. If work is planned during the bird nesting season (between 1st March and 31st July), then a precautionary check of all habitats will 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 will be maintained until the young have fledged.

7.13. As enhancements, the following will be implemented:

- i. One integrated swift box on the new dwelling (Swift Block – Appendix F).
- ii. One small bird box on a suitable tree onsite (Schwegler 1B or 2H Nest Box – Appendix F).

7.14. 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 2021.

Great crested newts

7.15. The proposed works are expected to result in a low scale loss of terrestrial habitats. The majority of the site is unsuitable for GCN, consisting of managed modified grassland and hardstanding.

7.16. Taking a worst-case scenario of 0.01-0.1ha of land being lost or damaged within 100m of a breeding pond, the risk assessment calculation (set out in the GCN method statement template provided by Natural England) indicates an “*offence likely*”, although goes on to state:

“This generic risk assessment will over- or under-estimate some risks because it cannot take into account site-specific details. In particular, the exact location of the development in relation to resting places, dispersal areas and barriers should be critically examined.”

7.17. The pond onsite is dry and therefore not considered as part of the risk assessment calculation. Ponds within 250m are located to the south and east of the site, with limited suitable habitats to the north and west. Therefore, we consider it highly unlikely that GCN would forage and/or commute across the proposed areas of works.

7.18. As a precautionary measure, works will take place under a strict GCN method statement and the following measures implemented to avoid impacts on GCN:

- i. Vegetation on site will be cut and maintained short (maximum height of 10cm) until the start of works, to discourage animals from using these areas.
- ii. Any excavations will have a rough sawn plank placed inside to act as a ramp to allow any animals that have fallen in to escape. The excavations will be checked each morning works are scheduled for, to remove any animals trapped.
- iii. Construction materials will be stored off the ground on pallets and waste materials in skips, to prevent providing shelter for animals and subsequent harm when materials are moved.
- iv. In the highly unlikely event that any GCN are found, work will cease immediately, and a licenced ecologist contacted to remove any GCN to safety and advice on how to proceed.
- v. The construction of a south facing bund/hibernacula on site (Appendix J), which is covered in low-nutrient soils.

7.19. 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

7.20. The proposed works are expected to result in a low scale loss of reptile habitat through the clearance of managed modified grassland and ruderal vegetation.

7.21. Although suitable reptile habitats are present on site, they are in small quantities (<0.03ha) and would be unable to support a population in isolation. As a precautionary measure, the mitigation for GCN above will ensure there are no impacts on reptiles from the proposed development.

7.22. 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

7.23. 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, any fencing installed will be porous and provide access openings for hedgehogs (see Appendix H for examples).

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

- i. Any excavations will have a rough sawn plank placed inside to act as a ramp to allow any animals that have fallen in to escape. The excavations will be checked each morning works are scheduled for, to remove any animals trapped.
- ii. Construction materials will be stored off the ground on pallets and waste materials in skips, to prevent providing shelter for animals and subsequent harm when materials are moved.

7.25. As enhancements, the following will be implemented:

- i. The installation of one bee brick on the new building (Bee brick – Appendix I).

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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 UK Habitat Classification (Butcher *et al.*, 2020). 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 3.

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 3, 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.

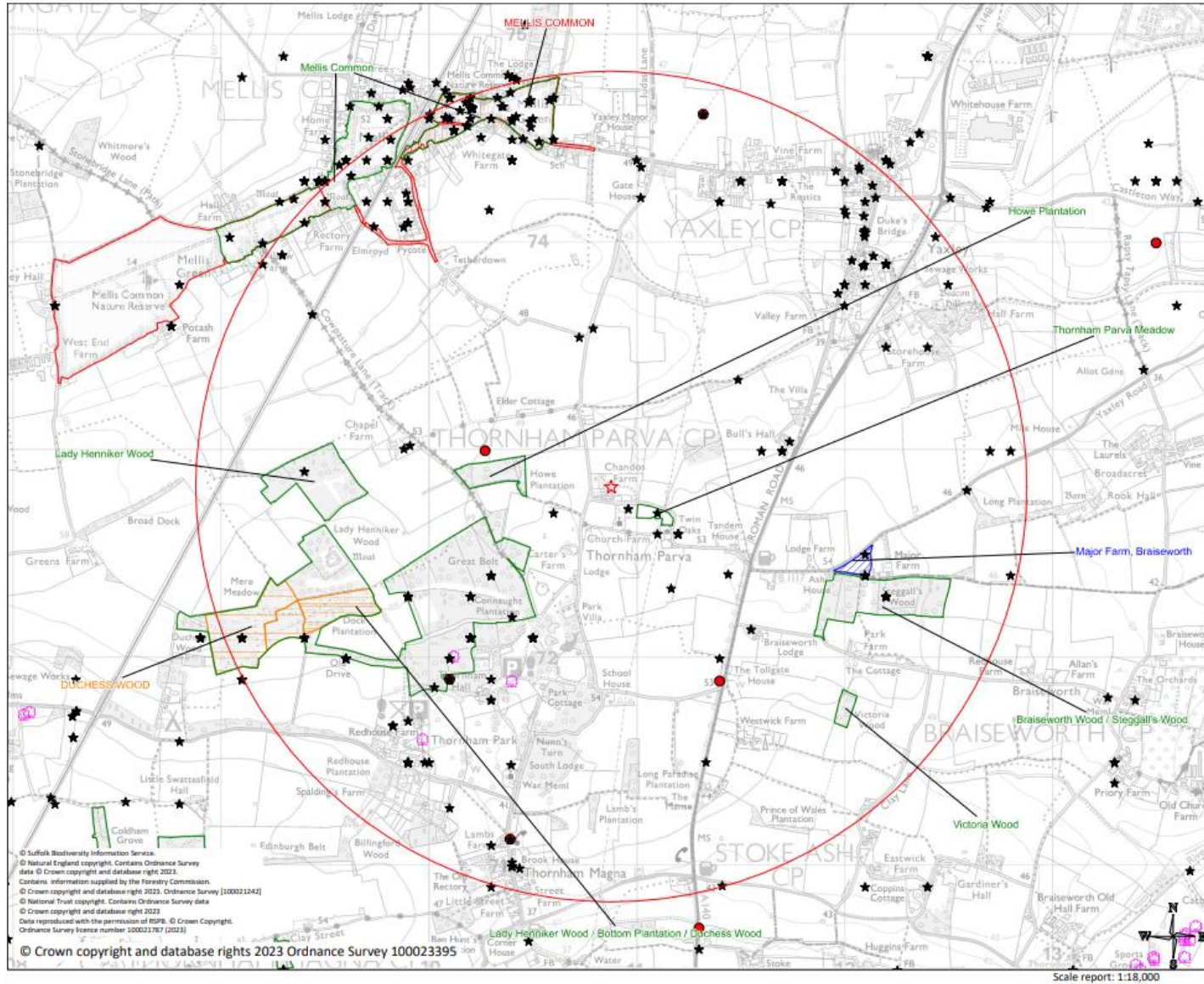
Other protected species

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

Ponds 3-8 were not accessible and could not be surveyed for GCN suitability.

Appendix B
Map of protected sites within 2km



Greenlight (Chandos Farm and Big Barn, Thornham Parva TM10878 72827) 2km Data Enquiry



Date: 31/03/2023 | Drawn by: Andy Mercer

Appendix C

Protected sites citations

SSSI citations

County: Suffolk **Site name:** MAJOR FARM,
BRAISEWORTH

District: Mid Suffolk

Status: Site of Special Scientific interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

Local Planning Authority: Mid Suffolk District Council

National grid reference: TM 122723 **Area:** 1.2 (ha) 2.9 (ac)

Ordnance survey sheet: 1:50,000: 155 1:10,000: TM 17 SW

Date notified (under 1949 Act): **Date of last revision:**

Date notified (under 1981 Act): 1986 **Date of last revision:**

Other information

A new site.

Description and reasons for notification

Major Farm Meadow is damp and species-rich, one of the few remaining unimproved hay meadows in Suffolk. The meadow is shallow-sloping, on boulder clay of low soil fertility, and characterised by an abundance of mole-hills.

The sward supports a wide variety of grasses and herbs of which Sweet Vernal-grass *Anthoxanthum odoratum*, Common sorrel *Rumex acetosa*, Meadow Buttercup *Ranunculus acris* and Ribwort *Plantago lanceolata* are dominant. Other species include Crested Dogstail *Cynosurus cristatus*, Red Fescue *Festuca rubra*, Rough-stalked Meadow Grass *Poa trivialis*, Perennial Rye grass *Lolium perenne*, Cock'sfoot *Dactylis glomerata* and Yorkshire Fog *Holcus lanatus*. Herbaceous species include Cuckoo Flower *Cardamine pratensis*, Pepper Saxifrage *Silaum silaus*, Oxeye Daisy *Leucanthemum vulgare*, Adder's Tongue *Ophioglossum vulgatum* and the white flowered form of the Bugle *Ajuga reptans*, with colonies of Cowslip *Primula veris*, Twayblade *Listera ovata*, Green-winged Orchid *Orchis morio* and Common spotted Orchid *Dactylorhiza fuchsii*.

The meadow is bounded by a mature hedgerow containing oak and ash standards and rich in woody species. Within the meadow there is a fine specimen of the rare native Black Poplar *Populus nigra*.

File ref: EA/S/248/14/WPZ

County Wildlife Sites citations

CWS Number	Mid Suffolk 123
Site Name	THORNHAM PARVA MEADOW
Parish	THORNHAM PARVA
District	Mid Suffolk
NGR	TM111727
Description	<p>This meadow is a good example of an unimproved species-rich grassland (Priority habitat) and supports a plant community typical of this type of grassland including cowslip, ox-eye daisy, meadow vetchling, tufted vetch, pyramidal orchid and common knapweed. The meadow is bordered by native ancient hedgerow (Priority habitat) which adds to the structural diversity of the site. The grassland and hedges offer opportunities for a range of invertebrates and nesting birds.</p>
Area	0.97

CWS Number	Mid Suffolk 27
Site Name	THORNHAM ESTATE WOODS
Parish	THORNHAM MAGNA
District	Mid Suffolk
NGR	TM100725
Description	<p>The Thornham Estate situated to the south of Mellis contains a number of woodlands, one of which (Duchess Wood) is listed in the Suffolk Ancient Woodland Inventory compiled by English Nature. The remaining woodland is considered to be recent secondary woodland, planted 100-200 years ago. Dr.Oliver Rackham identified a large woodbank running through Bottom Plantation which he believes was the boundary of Duchess Wood. Victoria and Steggall's Woods, situated to the east of the A140 in the parish of Braiseworth, are typical oak, ash and hazel woods. Extensive areas of oak and ash woodland to the west of the A140 include Great Belt, Lady Henniker Wood, Dock Plantation and Duchess Wood. Some compartments have been replanted with softwoods. However many of the clearings and rides still support a species-rich flora including ragged-robin, cowslip and common spotted-orchid. Plants strongly associated with ancient woods occur in a few places on the Estate, for example herb-Paris, wild service-tree and wood anemone are evidence of the antiquity of the woods. In addition, a good range of butterflies and moths have been recorded. Of particular conservation value is Birdshedge Grove, situated between grazing meadows in the Dove valley and arable land to the south. The waterlogged areas at the base of the slope support a particularly diverse range of plants and birds. Furthermore, three rare species of moss have been recorded here. A survey of the Estate ponds has shown that a number of them provide a valuable refuge for wetland plants and aquatic invertebrates. In addition, great crested newts, a specially protected species (Wildlife and Countryside Act,1981) have been recorded in several ponds. Management work to improve the amenity value and public access to the Estate is carried out by the countryside warden based here.</p>
Area	105.18

CWS Number	Mid Suffolk 101
Site Name	MELLIS COMMON
Parish	MELLIS
District	Mid Suffolk
NGR	TM101747
Description	<p>Mellis Common, an extensive area of Common land, is situated to the centre and south-west of the village. The Common is crossed by two roads and farms and houses are sited at intervals around the perimeter. Numerous hedges, consisting mainly of hawthorn, elder, elm and bramble enclose part of the site. It is thought that some parts of the Common, particularly in the west, were ploughed up during the last war and consequently they support a species-poor community. A large proportion of the remainder of the Common which is grazed regularly however supports a high diversity of flowering plants; a total of 163 species have been recorded on the Common as a whole. Small depressions which frequently occur over the site remain waterlogged throughout the year, unless it is a particularly dry summer. A wide range of wetland plants occur in these low-lying areas, for example gypsy-wort, water mint and water forget-me-not. The slightly higher areas support a range of indicator plants strongly associated with old, herb-rich grassland, for example quaking-grass, green-winged orchid and field wood-rush. A notable feature of Mellis Common is a large number of ponds, mainly on the margins of the site. Some open ponds are a valuable habitat for wildlife, particularly breeding amphibians. Others are overgrown and need management. The Suffolk Wildlife Trust owns approximately two thirds of Mellis Common. The management of the Common is agreed and implemented by the Mellis Common Management Committee.</p>
Area	32.67

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 2021 (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
Apple	<i>Malus x domestica</i>
Ash	<i>Fraxinus excelsior</i>
Bramble	<i>Rubus fruticosus</i>
Bristly oxtongue	<i>Helminthotheca echioides</i>
Broad-leaved dock	<i>Rumex obtusifolius</i>
Cleavers	<i>Galium aparine</i>
Clover	<i>Trifolium sp.</i>
Cock's-foot	<i>Dactylis glomerata</i>
Cow parsley	<i>Anthriscus sylvestris</i>
Creeping buttercup	<i>Ranunculus repens</i>
Daisy	<i>Bellis perennis</i>
Dandelion	<i>Taraxacum officinale</i>
Dove's-foot cranesbill	<i>Geranium molle</i>
Elder	<i>Sambucus nigra</i>
English oak	<i>Quercus robur</i>
Forget-me-not	<i>Myosotis sp.</i>
Groundsel	<i>Senecio vulgaris</i>
Ground elder	<i>Aegopodium podagraria</i>
Ground ivy	<i>Glechoma hederacea</i>
Hawthorn	<i>Crataegus monogyna</i>
Hogweed	<i>Heracleum sphondylium</i>
Ivy	<i>Hedera helix</i>
Lords-and-ladies	<i>Arum maculatum</i>
Nettle	<i>Urtica dioica</i>
Perennial ryegrass	<i>Lolium perenne</i>
Red dead-nettle	<i>Lamium purpureum</i>
Spear thistle	<i>Cirsium vulgare</i>

Appendix F

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>

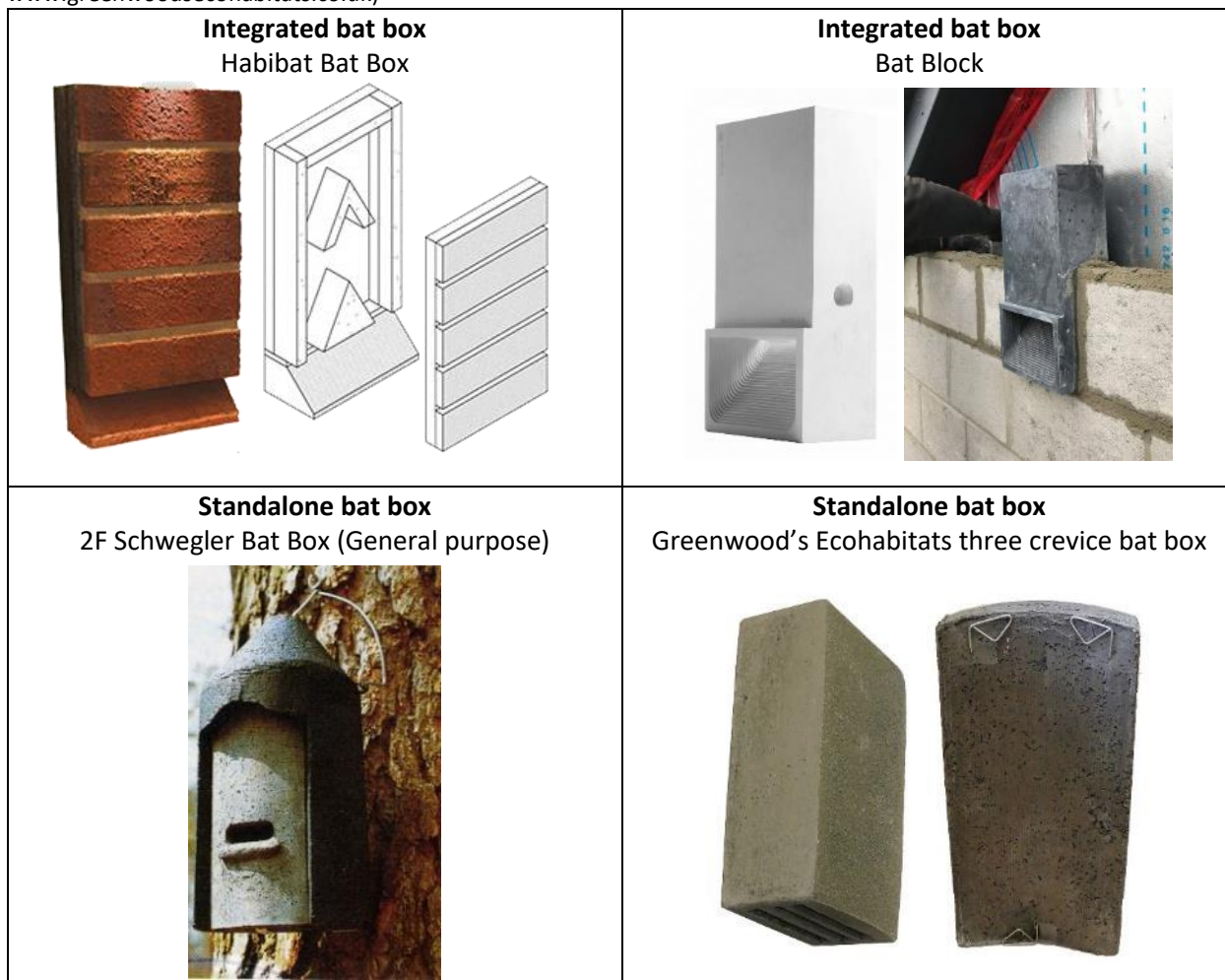
Wildflower Meadow Mixture – EM3 Emorsgate Seeds

<https://wildseed.co.uk/product/mixtures/complete-mixtures/general-purpose-meadow-mixtures/special-general-purpose-meadow-mixture/>

Appendix G

Examples of bat and bird boxes

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



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 Swift Block</p> 	<p>Integrated swift box Manthorpe Swift Brick</p> 
<p>Integrated sparrow terrace 1SP Schwegler Sparrow Terrace</p> 	<p>Integrated sparrow terrace Terraced Sparrow Box</p> 

Recommendations for installing bird boxes:

(Sourced from British Trust for Ornithology www.bto.org, Manthorpe www.manthorpe.co.uk and Barn Owl Trust www.barnowltrust.org.uk)

The highest priority when siting a nest box must be to provide a safe and comfortable environment in which birds can nest successfully.

Tips for putting up a nest box:

- 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.

Tips for putting up house sparrow terraces and swift bricks/boxes:

- Locate ≥ 5 m 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.



Tips for putting up barn owl boxes:

- The box should be installed on a building or tree in open farmland, on an isolated hedgerow or along the edge of a woodland.
- Boxes should be sited at least 3m from the ground, with a clear flight-path for entry and exit.
- Where possible, install boxes facing suitable habitat and ideally away from the prevailing wind.
- Nest boxes should ideally be installed in pairs.

Appendix H

Examples of hedgehog friendly fencing

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

<p>Quercus Fencing Hedgehog friendly oak woven fencing panels</p>  A photograph showing a hedgehog sitting on a wooden fence panel. The fence is made of horizontal wooden slats. There is a gap in the fence where the hedgehog is sitting, and it appears to be looking through it. The background shows green grass.	<p>Jacksons-Fencing Hedgehog friendly gravel board for use with slotted posts</p>  A photograph showing a close-up of a gravel board fence. The board is made of light-colored wood or plastic. There is a gap between the board and a slotted post. The ground in front of the fence is covered with fallen autumn leaves.
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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 I Bee Bricks

(images sourced from www.nhbs.com and www.greenandblue.co.uk)

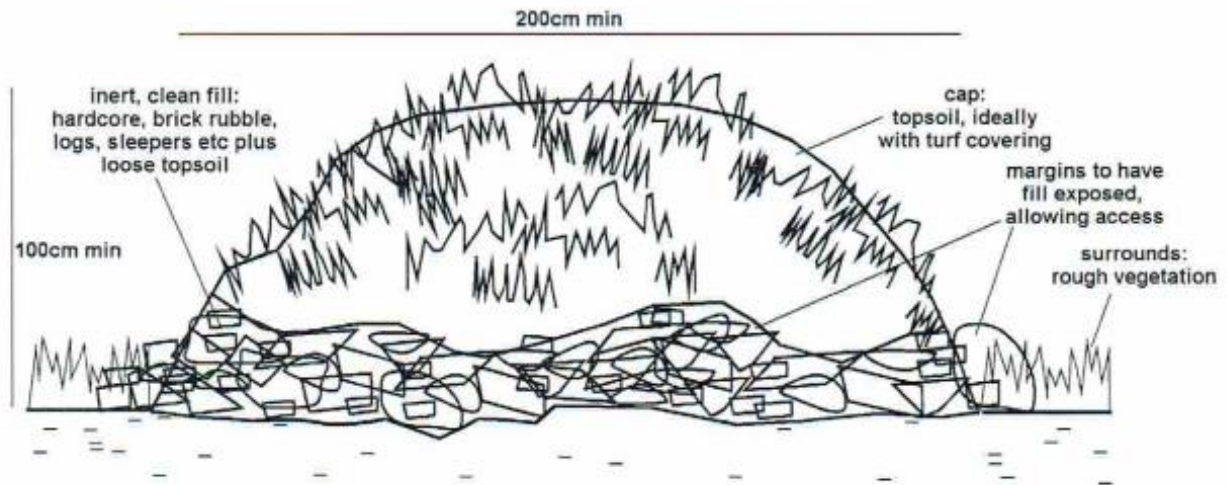
Bee post	Bee bricks
	
Recommended bee brick installation (Sourced from NHBS www.nhbs.com)	
<ul style="list-style-type: none">• Bee bricks will be installed on a south facing sunny spot of an external wall of the residential dwelling, at a minimum height of 1m. No vegetation should be obstructing the holes.• Bee posts will be positioned south facing in a sun exposed spot, with no vegetation covering the fascia. The posts must be set in a concrete base at a minimum of 30mm, similar to installing a fencepost.	

Appendix J

Newt and reptile artificial hibernaculum design

Figure 3: Suggested hibernaculum design

This design mimics artificial and natural conditions in which great crested newts have frequently been found overwintering. Dimensions should not be below 2m length x 1m width x 1m height. The illustrated design would be suitable for locating on an impermeable substrate. On free-draining substrates, the design is largely similar but the bulk of the fill is sited in an excavated depression in the ground. Hibernacula should ideally be positioned across a site, both close to and distant from breeding ponds, always in suitable terrestrial habitat and above the flood-line.



Source: English Nature (2001) *Great Crested Newt Mitigation Guidelines*, Peterborough.

Appendix K Proposed plans

PLANNING | Proposed Site Layout



<p>SCALE BAR:</p>	<p>DRAWINGS:</p> <p>The drawings are the copyright of Studio 35 Architects Ltd. The drawings must not be scaled from. The contractor/reader should take and verify all dimensions on site before proceeding with any works. All dimensions shown on the drawings are for Planning purposes only.</p> <p>GENERAL:</p> <p>All works are to be carried out with the relevant current British Standard Codes of Practice and Building Research Digest Papers, and to the approval of the local Authority and all statutory undertakers. All materials shall be suitable for the purposes intended and shall be used only in accordance with the manufacturer's recommendations. All necessary permissions are to be obtained from the local Authority for approval prior to the commencement of work on site.</p> <p>It is the owner's responsibility to ensure that the property and site is free from any covenants or unusual restrictions, easements or encumbrances.</p>	<p>PARTY WALL ACT 1966:</p> <p>Attention is drawn to the Party Wall Act 1966. The client or owner must give notice in writing to neighbours of the intended building operations and excavations and receive approval of same.</p> <p>CEM 2015 REGULATIONS:</p> <p>Attention is drawn to the client with regard to the CEM 2015 regulations. These drawings and construction are intended for Planning & Building Regulation purposes only. The scope of this does not go any further. It is the duty of the client under the regulations to appoint a 'Principal Contractor'. There is no obligation for the client to appoint a 'Principal Designer'. The 'Principal Contractor' will then take on the role of 'Principal Designer' for purposes of the pre-construction and construction phases of the project under the CEM 2015 regulations where a pre-construction phase is required. A Safety File and construction plan, as provided for the HSE, in order to reduce risks through the design processes of construction etc.</p>	<p>PROJECT: Land at Chandos Farm, Bull Road, Thornham Parva, Suffolk.</p>			
			<p>CLIENT: Mr S Dawley & Mrs S Newson</p> <p>DRAWING TITLE: PROPOSED SITE PLAN</p>			
		<p>REVISION</p>		<p>Studio 35</p> <p>PLANNING</p>		
		<p>SCALE: 1:500</p>	<p>PAPER SIZE: A1</p>	<p>DATE: JUNE 2023</p>	<p>DRAWN BY: [Red dot]</p>	
		<p>JOB: 4015</p>	<p>DWG NO: SL01</p>	<p>REV:</p>		