
Ecology Report

PROPOSED NEW DWELLINGS
Warren Mill House, Wetherden, Suffolk

June 2022



ADDRESS | Mill House, Homersfield, Harleston, Suffolk IP20 0ET

TELEPHONE | 01986 788791

EMAIL | millhouseecology@gmail.com

REPORT PRODUCED BY:

MHE Consulting Ltd
Mill House
Homersfield
Harleston
IP20 0ET

01986 788791
07766 771305
millhouseecology@gmail.com

ARCHITECT

Evolution Town Planning Ltd
Opus House
Elm Farm Park
Thurston
Bury St Edmunds
Suffolk
IP31 3SH

01359 233663
www.evolution-planning.co.uk

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Executive Summary

MHE Consulting Ltd were instructed to undertake an ecological survey and assessment of land at Warren Mill House, Wetherden, Suffolk. A planning application is to be submitted to Mid Suffolk Council to construct two new dwellings to the east of the existing property.

The site currently comprises a former agricultural field, now grassland on dry, sandy soil. Some ruderal vegetation is present around the border, and a short hedgerow exists just beyond the western boundary. The site is bordered by arable land to the north and east, the property to the west and a quarry to the south.

The habitats on site will provide limited foraging and refuge opportunities for a range of garden birds, amphibians, bats, badgers (*Meles meles*), and hedgehogs (*Erinaceus europaeus*), with additional potential for some S.41 list invertebrates.

Recommendations are made to avoid wildlife offences and ecological impacts, particularly in relation to protected species. Where impacts cannot be avoided, measures are proposed to mitigate remaining effects including timing of works and good working practices, with necessary compensation detailed. Biodiversity enhancements are proposed, ensuring gains are delivered.

1 Introduction

1.1 BRIEF

MHE Consulting Ltd were instructed to undertake an ecological survey and assessment of land at Warren Mill House, Wetherden, Suffolk (TL 99702 62966; Figure 1). The report will inform a planning application to Mid Suffolk District Council to construct two new dwellings within an existing grass field.

The ecological survey and this report are necessary to:

- Identify the existing ecological value of the site;
- Identify the need for further (e.g., protected species) surveys;
- Assess any potential adverse impacts of the proposed development on ecological features of the site or nearby designated sites;
- Make recommendations for mitigation (if required); and
- Identify opportunities for biodiversity enhancements and, consistent with national and local planning policy, net gains.

This report will be used to develop the proposals as necessary, and to form the basis for the submission of biodiversity information with any planning application. It reflects the site at the time of the survey and should be reviewed and revised as appropriate.

1.2 SITE LOCATION AND DESCRIPTION

The proposed development site (Photos 1 to 4, Figures 1 and 2) comprises a small grass field with ruderal borders and planted trees. The site is bordered by an arable field to the north and east, a quarry to the south and an existing dwelling to the west.

Photos are provided in Appendix A1.

2 Planning policy and legislation

2.1 INTRODUCTION

This chapter summarises the key legislation and policies relevant to assessing the biodiversity impacts of the scheme upon habitats and species.

2.2 PLANNING POLICY

2.2.1 *National Planning Policy Framework (NPPF)*

The National Planning Policy Framework was originally published in 2012 and most recently revised in July 2021. The document sets out the Government's planning policies for England and provides guidance on how these policies are expected to be applied. It provides a framework for, and must be taken account of within, locally prepared plans for housing and other development, and is a material consideration in planning decisions.

An overarching objective of the NPPF, which aims to integrate and secure net gains, is to contribute to protecting and enhancing the natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

The full NPPF is available to view online using the gov.uk website: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachm ent_data/file/1005759/NPPF_July_2021.pdf . Policies of particular relevance to development and biodiversity include 174, 180, 181 and 182.

174. Planning policies and decisions should contribute to and enhance the natural and local environment by:

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

180. When determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside a Site of Special Scientific Interest (SSSI), and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of SSSI;
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

181. The following should be given the same protection as habitats sites:

- a) potential Special Protection Areas and possible Special Areas of Conservation;
- b) listed or proposed Ramsar sites; and
- c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

182. The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects) unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

2.2.2

Local Plan

Adopted local plans provide the framework for development across England, and include policies related to conserving and enhancing the natural environment. Existing planning policies and supporting documents used to plan, deliver, and monitor development across the Mid Suffolk District Council area can be found at <https://www.midsuffolk.gov.uk/planning/planning-policy/adopted-documents/mid-suffolk-district-council/mid-suffolk-local-plan/>.

Babergh District Council and Mid Suffolk District Council are in the process of creating a new Joint Local Plan.

2.3

LEGISLATION

2.3.1

Environment Act 2021

The Environment Act received royal assent in November 2021. The Act will set clear statutory targets for the recovery of the natural world in four priority areas: air quality, biodiversity, water and waste, and includes an important new target to reverse the decline in species abundance by the end of 2030. Of particular relevance to development planning will the requirement for all new development to deliver a quantified (10%) Biodiversity Net Gain.

2.3.2 *Natural Environment and Rural Communities (NERC) Act 2006*

Section 40 places a duty on every public body in exercising its functions, to have regard to the purpose of conserving biodiversity; this includes restoring or enhancing populations or habitats. A key purpose of this duty is to embed consideration of biodiversity as an integral part of policy and public-sector decision making. *Species and habitats of principal importance* in this respect are those published under Section 41 (“S. 41”) of the NERC Act 2006.

2.3.3 *Wildlife and Countryside Act 1981 (as amended)*

Rare and scarce habitats and species are afforded varying levels of protection under the Wildlife and Countryside Act 1981 (as amended) (hereafter “WCA 1981”). Some species and groups are afforded full protection (e.g. Schedule 1 bird species, bats), whilst others receive partial protection (e.g. widespread reptiles). Section 3.1 provides further detail relevant to this scheme. Species afforded legal protection are referred to by their relevant schedule (“Sch.”) within the act, i.e. “Sch. 1” (birds), “Sch. 5” (other animals), or “Sch. 8” (plants).

Invasive plant species such as Japanese knotweed (*Reynoutria japonica*) and giant hogweed (*Heracleum mantegazzianum*) are listed on Schedule 9 of the WCA 1981. It is an offence to plant or otherwise cause these species to grow in the wild and this includes the development of sites such that the plant colonises land owned by a third party.

2.3.4 *The Countryside and Rights of Way (CROW) Act 2000*

The CROW Act 2000 strengthened and updated elements of the WCA 1981, and gave a statutory basis to biodiversity conservation, requiring government departments to have regard for biodiversity in carrying out its functions and to take positive steps to further the conservation of listed habitats and species. It strengthened the protection of SSSIs and threatened species. Many of its provisions have been incorporated as amendments into the WCA 1981 and some have been superseded by the NERC Act 2006.

2.3.5 *The Conservation of Habitats and Species Regulations 2017*

The Conservation of Habitat and Species Regulations 2017 (hereafter referred to as the Habitat Regulations 2017) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), and elements of the EU Wild Birds Directive, into national law. The 2017 Regulations provide for the designation and protection of ‘European sites’ (SPAs, and SACs), the protection of ‘European Protected Species’ (“EPS”), and the adaptation of planning and other controls for the protection of European Sites.

They have been amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019, which continue the same provision for European protected species, licensing requirements, and protected areas after Brexit.

Under the Regulations, competent authorities i.e. any Minister, government department, public body, or person holding public office, have a general duty, in the exercise of any of their functions, to have regard to the relevant EC Directives.

2.3.6

Protection of Badgers Act 1992

The Protection of Badgers Act 1992 (hereafter “PBA 1992”) consolidates and improves upon the previous Badgers Act 1973, Badgers Act 1991, and Badgers (Further Protection) Act 1991. Under the PBA 1992 (except when holding a licence to do so) it is illegal for a person to wilfully; kill, injure, take, possess, sell, or otherwise cruelly treat a badger. It is also illegal to dig out, damage, destroy, or obstruct entry to setts (including by use of dog(s)). Further information on offences, exceptions, and penalties are listed on the PBA 1992 on legislation.gov.uk.

3 Methodology

3.1 INTRODUCTION

This report has been produced with reference to relevant guidance, most notably:

- Guidelines for Ecological Report Writing (CIEEM, 2017);
- Biodiversity – Code of Practice for Planning and Development (BS 42020:2013¹);
- Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018); and
- Biodiversity Net Gain: good practise principles for development (CIRIA, CIEEM and IEMA, 2016).

The following sections summarise the approaches used to review existing data, and to undertake appropriate field surveys to scope and inform an Ecological Impact Assessment (EclA) for the scheme. Where further surveys are considered necessary, this is identified in section 5.

3.2 DESK SURVEY

The following data sources were consulted to assess the potential for the application site to support protected or notable habitats/species:

- Aerial photos, Ordnance Survey maps, and the MAGIC website (<http://magic.defra.gov.uk/>): These were used to identify habitat types including priority habitats, suitability for particular species/groups, and the locality of nationally and internationally designated sites;
- Natural England (NE) open source protected species and habitat survey data; and
- An ecological assessment for a large residential scheme bordering the site to the north (Ecology Solutions Ltd, 2016).

From this exercise, it was concluded that the following legally protected species/groups may be present on the sites and/or land immediately adjacent:

- Amphibians including great crested newt (*Triturus cristatus*)²;
- Mammals including badgers³ and bats²;
- Breeding birds⁴ including Red and Amber status⁵ species; and
- S. 41⁶ list habitats such as hedgerows, and species such as hedgehog.

In the context of the setting and nature of the developments, the 'zone of influence' of the scheme is considered restricted to habitats on the sites and species within 250m of the site boundaries.

3.3 FIELD SURVEY

An initial site walkover was undertaken on the 4 March 2022 to 1) record habitats present; and 2) assess the value of the habitats present for protected and notable species. A list of vascular plants and a description of the vegetation was made, including the location and extent of any Schedule 9 (WCA 1981) plants. Photos of the habitats present, and any field signs are provided in Appendix A1.

¹ BSI Standards publication BS 42020:2013 Biodiversity – Code of practice for planning and development.

² GCNs and all species of bats receive full protection under the WCA 1981 and Habitats Regulations 2017.

³ Badgers and their setts are afforded protection by the PBA 1992.

⁴ All wild birds, their nests and eggs are protected under the WCA 1981 (as amended), level of protection varies per species.

⁵ The conservation statuses of UK bird species are listed within the Birds of Conservation Concern 5 (Stanbury *et al.*, 2021).

⁶ S. 41 of the NERC Act 2006 lists 'habitats and species which are of principal importance for the conservation of biodiversity in England'.

3.3.1 *Habitats and vascular plants*

The site was walked with all distinct vegetation and habitat types, and any features of interest identified using the UKHab Habitat Survey methodology (Butcher *et al.*, 2020). Care was taken to record as many species as possible.

3.3.2 *Amphibians and reptiles*

a) Amphibians

No ponds were present on site. One pond exists within 250m but was not accessible.

The terrestrial habitat suitability of the site was assessed with respect to refugia and foraging habitat based on the known habitat preferences of GCN and widespread amphibians such as common frog (*Rana temporaria*), smooth newt (*Lissotriton vulgaris*), and common toad (*Bufo bufo*).

b) Reptiles

Habitats on and around the application site were assessed with respect to the known foraging and refuge habitat preferences of widespread reptile species.

3.3.3 *Bats*

a) Building inspection

No buildings were present on site.

b) Tree roost potential

Existing trees which may require removal were visually checked to assess their suitability for use by roosting bats using the following criteria:

1. All potential roosting cavities (e.g. natural cavities, rot holes, woodpecker holes, splits, peeling bark) were inspected from the ground using binoculars where necessary;
2. All potential niches would be assigned a category according to Bat Conservation Trust (BCT) protocols (Collins, 2016). These categories are listed below:
 - High Suitability: Trees 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, conditions, and surrounding habitat;
 - Moderate Suitability: Trees 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;
 - Low Suitability: A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential. However, the tree(s) are of a size and age that elevated surveys may result in features being found; or features which may have limited potential to support bats; and
 - Negligible Suitability: Trees with negligible bat roost potential.
3. Where potential niches existed, niches below 5m high were physically inspected using ladders. Any cavities with the potential to support roosting bats were inspected with an endoscope and/or a small LED torch as necessary;
4. All potential roosting niches were checked for the presence of bats (alive or dead), faecal staining, fur and/or scratch marks around the entrance and droppings within the cavities or attached to the trunk/bough below the entrance.

c) Foraging and commuting habitat

Consideration is given to the value of any potential foraging and commuting habitats (i.e., hedgerows, trees, streams, ponds, composting areas) on the application site.

3.3.4 *Nesting birds*

The value of the site was assessed in relation to nesting birds. This was supplemented with field records of birds seen or heard within the site, or nests observed.

3.3.5 *Badger*

The application site and adjacent habitats were surveyed for evidence of badger activity including setts, day beds, latrines, diggings/snuffle holes, paths/runs, scratching posts, hair, and footprints. Any potential sett found was then assessed for evidence of recent use by badger and classified as per current guidance (Scottish Badgers, 2018).

3.3.6 *S.41 list habitats and species*

The site was surveyed to determine the presence of any S. 41 habitats such as native species-rich hedgerows. The site's suitability for S. 41 list species such as hedgehog was assessed based on their habitat preferences.

3.3.7 *Non-native invasive plant species*

The site was inspected for Schedule 9 species such as Japanese knotweed and giant hogweed.

3.4 SURVEY CONSTRAINTS

Botanical surveys are typically best undertaken from late spring to early summer. It is considered likely that no notable plant species were overlooked given the limited footprint and managed nature of the site.

3.5 SURVEYORS

The initial site survey was undertaken by Jake Brendish BSc (Hons) MSc, an ecologist with 2 seasons' survey experience. His main areas of focus are birds, bats and vascular plants.

3.6 ASSESSMENT

Impacts and effects upon habitats and species are assessed with reference to the CIEEM Guidelines for Ecological Impact Assessment (2018) and are reported in Section 5, based on the baseline conditions reported in Section 4.

The assessment includes potential impacts upon habitats and species during the construction and operational phases of the scheme. It considers positive and negative impacts, their extent, magnitude and duration, frequency and timing and reversibility.

4 Results

4.1 INTRODUCTION

This chapter summarises the results of the desk and field surveys.

4.2 BASELINE ECOLOGICAL CONDITIONS - DESK STUDY

4.2.1 *Designated sites*

Any locally designated sites (e.g., Local Nature Reserves) within 2km, nationally designated sites within 5km and internationally designated sites within 13km of the application site are listed below in Table 4.1.

Table 4.1 Relevant designated sites

Site name	Site designation
Norton Wood	SSSI
The Gardens, Great Ashfield	SSSI

Locally designated sites

None present within 2km.

Nationally designated sites

Norton Wood SSSI is an ancient coppice-with-standards woodland with small, more recent additions of secondary woodland. The wood is situated on a gently sloping plateau on weakly acidic soils of sand and loess over boulder clays. Much of the wood is of the acid pedunculate oak (*Quercus robur*) – hazel – ash (*Fraxinus excelsior*) woodland type with abundant birch (*Betula sp.*). There are also areas of wet ash – maple (*Acer sp.*) and pedunculate oak – hornbeam (*Carpinus betulus*) woodland. The ground flora includes several uncommon plants, and a characteristic flora has developed on a series of wide rides. The wood is bisected by a railway line.

The Gardens Great Ashfield SSSI comprises four floristically rich ancient meadows exemplifying one of the last remaining examples of unimproved calcareous clay and neutral grassland in Suffolk. It is traditionally managed by a combination of grazing and cutting for hay and supports a wide variety of grasses and herbs including a population of common twayblade (*Listera ovata*). The grass sward is dominated by quaking grass (*Briza media*), crested dog's tail (*Cynosurus cristatus*), red fescue (*Festuca rubra*) and glaucous sedge (*Carex flacca*).

The application site lies within a SSSI Impact Risk Zone but does not meet any of the criteria for consideration. Given the nature and limited size of the development, no significant impacts or effects are anticipated in relation to any of the features of the designated site.

Internationally designated sites

None present within 13km.

Habitats Regulations Assessment

Where a development or project may, alone or in combination, have a 'likely significant effect' upon the features of the Natura 2000 or Ramsar site, the Habitats Regulations 2017 require a Habitats Regulations Assessment (HRA) to be undertaken. Advice from NE states that increased housing located within 1km by foot and 13km by car of Natura 2000 sites may potentially cause disturbance to the interest features due to walkers

(and dogs). Disturbance to bird species that breed and/or overwinter within the sites is considered to cause the greatest impact.

HRAs are undertaken by a “competent authority” (CA), which in the case of Local Plans and most planning applications is the Local Planning Authority (LPA). Within Suffolk, Ipswich Borough Council in partnership with the neighbouring authorities Babergh District Council and East Suffolk Council have developed a ‘Recreational disturbance Avoidance and Mitigation Strategy’ (RAMS) to address likely significant effects upon Natura 2000 sites resulting from development within the area. The strategy provides the practical basis and evidence to identify projects to mitigate the impact of new development on the protected sites.

Given the application site is both over 13km from the nearest qualifying site no significant impacts are anticipated and no mitigation is considered necessary.

4.2.2 *Priority habitats*

Assessment of the Magic Map database returned an area of wood pasture and parkland 280m southeast of the boundary, with broadleaved woodland 480m northeast. Further areas of both priority habitats exist within 1km.

4.2.3 *Species*

No protected or notable species records exist from within the application site boundary. Species of relevance include are shown in Table 4.2.

Table 4.2 Protected/notable species within 2km of site

Scientific Name	Common Name	Designation
Amphibians and reptiles		
<i>Anguis fragilis</i>	Slow worm	Sch. 5
<i>Triturus cristatus</i>	Great crested newt	Sch. 5
Bats		
<i>Nyctalus leisleri</i>	Natterer’s bat	Sch. 5
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Sch. 5
Birds		
<i>Alauda arvensis</i>	Skylark	Red Status; S. 41
<i>Chloris chloris</i>	Greenfinch	Red Status
<i>Falco tinnunculus</i>	Kestrel	Amber Status
<i>Milvus milvus</i>	Red kite	Sch. 1
<i>Muscicapa striata</i>	Spotted flycatcher	Red Status; S. 41
<i>Passer domesticus</i>	House sparrow	Red Status
<i>Prunella modularis</i>	Dunnock	Amber Status
<i>Streptopelia turtur</i>	Turtle dove	Red Status; S. 41
<i>Sylvia communis</i>	Whitethroat	Amber Status
<i>Turdus philomelos</i>	Song thrush	Red Status
Invertebrates		
<i>Coenonympha pamphilus</i>	Small heath	S. 41
Other mammals		
<i>Erinaceus europaeus</i>	Hedgehog	S. 41
<i>Meles meles</i>	Badger	PBA 1992

4.2.4

NE open source GCN records

Assessment of Natural England's GCN class licence returns data and eDNA pond survey records show the closest positive record (licence return) to be located c. 210m north of the application site (dated 2017), which is well within the normal dispersal range of the species.

An EPSM licence (2017-31568-EPS-MIT) for GCNs exists for a site c. 240m to the north-east which is likely to relate to the record to the north.

4.3

BASELINE ECOLOGICAL CONDITIONS – FIELD SURVEY

4.3.1

Habitats and vascular plants

Descriptions of the habitats (Appendix A1) and the characteristic plants species present are provided below.

a) Modified grassland (g4 64)

The majority of the site is a former agricultural field on sandy soil, now supporting a small assemblage of grasses (Photos 1 and 2) and forbs including cat's-ear (*Hypochaeris radicata*), chickweed (*Stellaria media*), creeping thistle (*Cirsium arvense*), daffodil (*Narcissus agg.*), daisy (*Bellis perennis*), dandelion (*Taraxacum agg.*), lesser celandine (*Ficaria verna*), nettle (*Urtica dioica*), perennial rye-grass (*Lolium perenne*), ragwort (*Jacobaea vulgaris*), red fescue (*Festuca rubra*), ribwort plantain (*Plantago lanceolata*), small-flowered crane's-bill (*Geranium pusillum*), spear thistle (*Cirsium vulgare*), spotted medick (*Medicago arabica*), and Yorkshire-fog (*Holcus lanatus*).

b) *Arrhenatherum* neutral grassland (g3c5)

A margin of rougher grassland exists around the edge of the field, dominated by false oat-grass (*Arrhenatherum elatius*), also featuring bristly oxtongue (*Helminthotheca echinoides*), broadleaved dock (*Rumex obtusifolius*), chicory (*Cichorium intybus*), cleavers (*Galium aparine*), cock's-foot (*Dactylis glomerata*), common chickweed (*Stellaria media*), common field-speedwell (*Veronica persica*), common mallow (*Malva sylvestris*), dove's-foot crane's-bill (*Geranium molle*), garlic mustard (*Alliaria petiolata*), hedgerow crane's-bill (*Geranium pyrenaicum*), great mullein (*Verbascum thapsis*), ivy-leaved speedwell (*Veronica hederifolia*), lords-and-ladies (*Arum maculatum*), musk thistle (*Carduus nutans*), nettle, nipplewort (*Lapsana communis*), red deadnettle (*Lamium purpureum*), ragwort, spear thistle, small-flowered crane's-bill, spotted medick, wood forget-me-not (*Myosotis sylvatica*), and yarrow (*Achillea millefolium*).

c) Freestanding trees

A large pedunculate oak (*Quercus robur*) stands halfway along the southern site boundary (Photo 3).

d) Hedgerow (h2a) (Priority Habitat)

A hedgerow (c. 1.8m tall) exists just beyond the western site boundary (Photo 4). This consists almost entirely of beech (*Fagus sylvatica*), with some bramble (*Rubus fruticosus agg.*) and ivy (*Hedera helix*).

4.3.2

Amphibians and reptiles

a) Ponds

No ponds were present on site, with a single pond within 250m (Figure 2).

b) Terrestrial habitat

i) *Amphibians*

The application site offers suboptimal foraging, refuge and dispersal habitat for amphibians, being almost entirely short grassland. However, hedgerows just beyond the boundary represent more suitable dispersal opportunities.

ii) *Reptiles*

Local historical records list slow-worm records from within 2km. The short, sandy grassland provides suitable basking spots for a number of reptile species, though the lack of adjacent cover and scrub means that refuge habitat is almost absent and therefore, the site is unlikely to support an existing population.

When considering the above factors, the overall habitat suitability for reptiles was assessed as low.

4.3.3

Bats

a) Tree Roost Assessment

The mature oak contained a small number of features (knot holes, longitudinal cracks etc.) which could support small roosts, but is set to be retained (landowner pers. comm.).

b) Foraging/commuting habitat

The habitats on site offer little in the way of foraging and commuting habitat, with the short grassland providing negligible cover or foodplants for invertebrate prey. Though suitable habitat exists just beyond the boundary, the overall foraging and commuting potential of the site was assessed as Low (Collins 2016).

4.3.4

Nesting birds

No nests were discovered during the inspection, though several common garden and farmland species were observed passing over the site, including a great spotted woodpecker (*Dendrocopos major*) calling from the oak tree. The oak also provides suitable nesting opportunities for passerines such as dunnock (*Prunella modularis*) (Amber Status; S. 41 List), stock dove (*Columba oenas*) (Amber Status) and song thrush (*Turdus philomelos*) (Red Status) in the broadleaved trees.

The arable field to the north is suitable for skylark (*Alauda arvensis*) (Red Status; S. 41 List) and meadow pipit (*Anthus pratensis*) (Amber Status) among others, though the planned works are not predicted to impact these populations.

4.3.5

Badger

No evidence of badger (e.g., snuffle holes, runs, latrines, setts) was observed.

4.3.6

S. 41 habitats and species

a) Habitats

No S. 41 habitats were recorded on site. The hedgerow just outside the western boundary meets the S. 41 criteria but will be untouched.

b) Species

Hedgehogs may forage across the grassland, and under the hedgerows nearby. The oak is of sufficient age to support small populations of S. 41 invertebrates such as Lepidoptera.

4.3.7

Non-native invasive plants

No non-native invasive species were recorded within the application site boundary.

4.4

GEOGRAPHIC CONTEXT

The geographic context of a feature is a useful consideration within an assessment of impacts. For this report, the geographic frames of reference for the habitats and species present on site are provided in Table 4.3; values are based upon the criteria in Table A2.1 and expert best judgements.

Table 4.3 Feature value based on geographic context

Feature	Value
Grassland and trees/shrubs	Local
Amphibians and reptiles	Local
Bats	Local
Nesting and foraging birds	Local
S. 41 habitats and species	Local

5 Assessment and recommendations

5.1 INTRODUCTION

The following section provides a summary description of the proposed development, with an assessment of associated impacts and likely significant effects upon biodiversity.

The assessment and recommendations are based on use of the mitigation hierarchy, which in the first instance aims to avoid impacts. Where impacts cannot be avoided, they should be minimised (through mitigation). Only where impacts cannot be avoided or minimised should there be compensation for biodiversity harm.

Ecological enhancements are suggested, and consideration is given to individual as well as overall net gains or losses of biodiversity.

5.2 DESCRIPTION OF PROPOSED DEVELOPMENT

Outline planning permission is being sought to construct two single-storey detached dwellings on the grass field. It will require the permanent loss of large areas of the grassland and some ruderal vegetation, with potential impacts on common amphibians, reptiles, bats and nesting/roosting birds.

The assessment and recommendations below provide preliminary recommendations for mitigation and enhancements for the proposed development. They are based on the architects drawings by Les Andrews and an arboricultural assessment and planting plan by Giles Hill (Landscape Sculpture and Design Partnership) and information available at the time of writing and should be updated accordingly as the scheme is subsequently amended.

5.3 NEED FOR FURTHER SURVEYS

It is generally advised that subject to no significant change in site management regimes, and dependent on the species present, baseline survey results remain valid for approximately 12 – 18 months (CIEEM, 2019). Exceptions include where mobile species are/may be present, where site management practices cease or change, or where existing guidance indicates otherwise.

5.4 ASSESSMENT OF IMPACTS

The EclA assessment process (CIEEM, 2018) involves:

- Identifying and characterising impacts and their effects;
- Incorporating measures to avoid and mitigate negative impacts and effects;
- Assessing the significance of any residual effects after mitigation;
- Identifying appropriate compensation measures to offset significant residual effects; and
- Identifying opportunities for ecological enhancement.

The emphasis in EclA is on the assessment of 'significant effects' i.e. an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. In broad terms significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species including extent, abundance, and distribution.

The ecological features to be subject to detailed assessment in this report are those judged to be important and potentially affected by the project; protected species are included where the development will result in a potential breach of legislation.

5.5 HABITATS AND VASCULAR PLANTS

a) *Potential impacts*

Vegetation clearance and construction activities will result in the permanent loss of areas of grassland and some ruderal vegetation. Loss of these habitats constitutes a minimal negative ecological effect at a local level (i.e., loss of greenspace).

Any accidental damage to retained trees or areas of retained grassland during construction would result in a significant negative effect at the local level.

b) *Mitigation*

The works footprint and associated disturbance should be minimised in extent as much as possible. Retained hedgerows, trees (particularly those along the southern boundary) and grassed areas should be protected with temporary fencing (e.g., Heras) to prevent above ground damage and Root Protection Areas (RPAs) should be used to inform the detailed design.

The builder's welfare unit (if required) should ideally be sited off vegetated areas or the area will require reinstatement on completion of the works.

c) *Residual effects*

There will be a small residual effect due to the loss areas of grassland and ruderal vegetation that will require compensation (see section 5.10).

5.6 AMPHIBIANS AND REPTILES

a) *Potential impacts*

Ground-breaking and construction activities, in addition to limited vegetation clearance, could result in the potential entrapment, injury and mortality of amphibians (including potentially GCNs) through contact with caustic substances (e.g., wet cement), trenches (e.g., sewerage and surface water drainage runs), and movement of stored building materials.

During the operational phase site drainage comprising the use of gully pots and down pipes connecting to closed surface water drainage or those with silt traps can result in animals becoming trapped (Muir *et al.*, 2012) and impact upon amphibians. The risk posed to amphibians is amplified by the adjacent pond.

Combined, such impacts could result in permanent negative effects upon low-to-moderate numbers of individuals.

b) *Mitigation*

Given the potential (albeit low) for GCNs to disperse across the site (see 4.2.4), appropriate measures will be required to mitigate impacts as follows:

1. The lawn within the site boundary should be kept short with regular mowing prior to and during construction.
2. Excavations should be filled on the same day they are dug or covered overnight with ply boarding and any gaps filled with damp sharp sand;
3. If this is not feasible access ramps should be created to allow animals to escape and the excavations should be inspected daily and immediately prior to infilling.

- Any animals (except for GCN) present should be moved into retained hedgerows and/or other boundary habitats providing adequate cover;
4. Footings and concrete slabs should be poured during the morning where possible to ensure it has solidified prior to dusk to reduce the risk of animals coming into contact with wet concrete;
 5. Any hand mixing of mortar or concrete should be on ply boarding over a tarpaulin which is folded over the boarding at the end of each day to prevent animals coming into contact;
 6. Any excess concrete should be poured into a concrete skip, so it can then set to prevent animals coming into contact;
 7. All building materials and waste materials should be stored on hard gravel driveway to the north of the site or stored off the ground on pallets to reduce risk of animals seeking refuge;
 8. The GCN poster in Appendix A3 should be erected in the welfare facilities provided for construction staff onsite;
 9. Should any GCNs be encountered, works should stop immediately, and advice be sought from a suitably experienced ecologist. Any other animals should be allowed to move out of the works area, or safely relocated; and
 10. Permeable paving should be used preferentially to avoid the need for gully pots. Downpipes taking water off the roofs should be sealed at ground level by using a leaf and debris screen⁷ to prevent amphibians entering drains; and
 11. If gully pots are required, they should use small diameter (6mm) grates where possible. Any installed gully pots should be situated $\geq 100\text{mm}$ from the roadside, OR a wildlife-kerb⁸ must be installed adjacent to each gully pot AND a gully pot ladder⁹ placed into each gully pot.

Downpipes taking water off the roofs should be sealed at ground level by using a leaf and debris screen¹⁰ to prevent amphibians entering drains.

c) Residual effects

With mitigation measures proposed, no significant effects are anticipated during either the construction or operational phases.

5.7

BATS

a) Potential impacts

i) Roosting bats

No impacts predicted.

ii) Foraging and commuting habitats

Vegetation clearance will remove areas of short grassland and small sections of ruderal vegetation, neither of which are considered significant in relation to local foraging opportunities and as such are assessed as negligible in effect.

iii) Light disturbance

Lighting (construction and operational phases) can impact bat commuting and foraging behaviour and increase the risk of predation, which could affect foraging success and population recruitment and is considered a potential significant effect at the local level.

⁷ <https://www.drainagepipe.co.uk/leaf-and-debris-gully-110mm-p-D94G/>

⁸ e.g. <https://www.aco.co.uk/products/wildlife-kerb>

⁹ <https://www.thebhs.org/the-bhs-amphibian-gully-pot-ladder>

¹⁰ <https://www.drainagepipe.co.uk/leaf-and-debris-gully-110mm-p-D94G/>

Lighting impacts relate to security lighting external to the buildings, and potentially from spillage of internal lighting once the buildings are in use. In this instance, impacts on retained trees and hedgerow habitats around the site boundary are most relevant.

iv) Roofing membranes

Research has shown bats can become entangled in modern breathable roofing membranes (BRMs) causing injury or death to individuals (Waring *et al.* 2013) if bats can access under pantiles, plain tiles or slates. However, a zinc roof is proposed on the dwelling such that no suitable gaps (>5mm) which could allow bats to enter such that no impacts are predicted.

b) *Mitigation*

i) Foraging and commuting habitat

As per 5.5, protective fencing will be used to protect retained hedgerows and trees.

ii) Light disturbance

Exterior lighting (as well as temporary security lighting during the construction phase) design must minimise lighting impacts upon retained natural habitats including boundary hedgerows and trees, particularly to the south and east of the site, and should follow current guidance as necessary^{11,12}:

- *Type of lamp (light source)*: Light levels should be as low as possible as required to fulfil the lighting need. Lighting should have a maximum of 7.5 to 10 lux and LED lights should be used using the warm white (or amber) spectrum, with peak wavelengths >550nm (2700 or 3000°K) and no UV component; and
- *Lighting design*: Lighting should be directed to where it is needed, with minimal horizontal spillage towards retained habitats including mature broadleaved trees and hedgerows. This can be achieved by restricting the height of the lighting columns/fixtures and the design of the luminaire, including the following measure:
 - ❖ Light columns/fixtures in general should be as short as possible as light at a low level reduces the ecological impact.
 - ❖ Luminaires with an upward light ratio of 0% should be mounted on the horizontal i.e. with no upward tilt.
 - ❖ If taller lights are required, and as a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill; and
 - ❖ PIR movement sensors and timers should be used to minimise the 'lit time'.

iii) Roof membrane

The new dwelling should use bat friendly roofing felt (e.g. Type 1F) if handmade clay pantiles, plain tiles or weatherboarding are to be used. If tight fitting tiles (e.g. interlocking pantiles or machine-made plain tiles), slates or concrete weather-boarding are used, BRM may only be used if gaps are less than 5mm to ensure bats cannot come into contact with the membrane.

c) *Residual effects*

No residual effects anticipated.

5.8

NESTING BIRDS

a) *Potential impacts*

Vegetation clearance around the site may result in disturbance of active nests, e.g., in the adjacent hedgerow.

¹¹ <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting>

¹² www.eurobats.org/sites/default/files/documents/publications/publication_series/WEB_DIN_A4_EUROBATS_08_ENGL_NVK_28022019.pdf

Increased noise levels (during construction and operational phase) could affect the ability of birds to hold territories during the breeding season. Accidental damage to retained trees and hedgerows could also affect breeding success and/or result in the destruction of active nests.

The destruction of active nests would be considered a significant negative effect (as an offence under wildlife legislation) at the local level.

b) Mitigation

As per 5.5.

Habitat avoidance and mitigation as per sections 5.5 and 5.6.

Commencement of the building works should take place outside of the nesting bird season. If this is not feasible, a check for nesting birds should be undertaken prior to works starting. If any active nests are present, works within 5m must wait until the young have fledged.

c) Residual effects

Effects upon active nests are expected to result in a negligible residual effect.

5.9

OTHER S. 41 LIST HABITATS AND SPECIES

a) Potential impacts

Vegetation clearance, ground-breaking and construction activities will result in the permanent loss of foraging habitat for hedgehog (e.g., lawn and scrub).

During construction, hedgehogs could potentially fall into open trenches resulting in entrapment and possible injury and mortality of individuals due to falling in or becoming in contact with caustic substances such as fresh concrete.

Erection of ecological barriers (e.g. timber panel fencing) would affect foraging access for animals. In combination such impacts would be considered to result in a negative ecological effect at the local level.

Combined, the above impacts would result in negative effects upon local individuals.

b) Mitigation

Habitat avoidance and mitigation as per section 5.5 and 5.6.

Site clearance should always consider the potential presence of hedgehogs with vigilance, with no clearance of scrub undertaken when temperatures are regularly below 6°C. Animals encountered at other times should be moved to suitable cover, e.g., base of hedgerows or in the grassland areas to the west of the application site.

During construction, concrete should be poured early in the day or covered with ply boarding or membrane overnight to prevent animals coming into contact. Trenches should be covered overnight, or mammal ladders (large rough planks placed at shallow angles) placed to allow animals escape. Uncovered trenches must be checked daily and any animals encountered be relocated out of the works area.

The use of close board fencing should be avoided, with native species-rich hedgerows proposed for the site boundaries. If close board fencing were to be installed between

the gardens, then at least one hedgehog highway¹³ should be provided at either end of the fencing run with signage¹⁴. Gates should also be raised off the ground by a minimum of 130mm.

c) Residual effects

Direct impacts upon hedgehog will be avoided with no significant residual impacts.

5.10 COMPENSATION

The loss of grassland should be compensated for by enhancing retained grassland around the new dwelling by establishing wildflower borders of at least 3m wide. This should use a seed mix suitable for sandy soils^{15,16}.

5.11 CUMULATIVE EFFECTS

The Mid Suffolk Council website was searched on 7 March 2022 for significant planning applications within 1km of the application site dating back by two years. Refused and withdrawn applications were not considered in relation to cumulative ecological effects.

The search returned a small number of householder applications for extensions or alterations to existing dwellings, with some relating to the quarry to the south. To applications exist for large developments:

- An application exists for land immediately north for 240 new dwellings and associated landscaping and infrastructure (DC/18/01679); and
- An application for 44 houses exists to the west (DC/21/02956), with others for single dwellings.

Given the relative scale of the current scheme, no significant cumulative effects are considered likely.

5.12 ENHANCEMENT OPPORTUNITIES

Mitigation measures proposed will ensure negative ecological effects are avoided. To maximise biodiversity gains a minimum of 5 of the 8 enhancements (Table 5.1) are suggested.

Table 5.1 Biodiversity enhancements

Feature	Enhancement suggestion
Birds	<ol style="list-style-type: none"> 1. Two open-fronted and two hole-entrance nest boxes (Appendix A4) could be mounted on suitable planted trees. 2. Two sparrow terraces (Appendix A4) could be erected on the walls of the new dwellings.
Bats	<ol style="list-style-type: none"> 3. Three bat boxes (see Appendix A5) could be erected on suitable mature trees in the area. 4. Two integrated roost bricks¹⁷ could be incorporated into the walls of the new dwellings (location to be agreed on site with a suitably experienced ecologist).

¹³ <https://www.hedgehogstreet.org/help-hedgehogs/link-your-garden/>

¹⁴ <https://ptes.org/shop/just-in/hedgehog-highway/>

¹⁵ <https://wildseed.co.uk/mixtures/view/8>

¹⁶ <https://www.bostonseeds.com/products/wildflowers-seed/wildflower-seed-mixtures-20/bs3m-dry-sandy-loam-soils-wildflower-seeds.html>

¹⁷ <https://www.nhbs.com/4/woodcrete-and-woodstone-bat-boxes>

Feature	Enhancement suggestion
Hedgerows	<p>5. The proposed landscaping includes native boundary hedgerows and to maximise their biodiversity value a minimum of 6 of the following species should be used:</p> <ul style="list-style-type: none"> • Cherry plum (<i>Prunus cerasifera</i>); • Common dogwood (<i>Cornus sanguinea</i>); • Crab apple (<i>Malus sylvestris</i>); • Field maple; • Hawthorn; • Holly (<i>Ilex aquifolium</i>); • Hazel (<i>Corylus avellana</i>); • Hornbeam (<i>Carpinus betulus</i>); • Native roses (<i>Rosa sp.</i>) (NOT Japanese rose <i>Rosa rugosa</i>); • Spindle (<i>Euonymus europaeus</i>); and • Wild privet (<i>Ligustrum vulgare</i>) (NOT garden privet <i>Ligustrum ovalifolium</i>).
Nectar rich climbers	<p>6. Any ornamental planting should utilise nectar rich plants for the benefit of pollinators and associated predators (e.g., foraging bats and hedgehogs).</p> <p>Planting should include nectar rich climbers such as traveller's joy (<i>Clematis vitalba</i>) and honeysuckle (<i>Lonicera periclymenum</i>), which could be planted at 5ft intervals along existing and proposed hedgerows or trained up fences, posts, or trellises.</p>
Fruit trees	<p>7. A minimum of 6 Suffolk heritage fruit trees¹⁸ should be planted within the gardens of the new dwellings as part of the proposed tree planting.</p>
Trees	<p>8. A minimum of 50% of the proposed tree planting should comprise native species.</p>

Peat-based composts will not be used in any planting scheme to avoid impacts upon habitats and carbon storage.

5.13

CONCLUSIONS

With the avoidance, mitigation and compensation measures suggested, the scheme will minimise biodiversity impacts and provide some enhancements.

Measures proposed should be secured through appropriate planning conditions as per the British Standard (BS 42020:20131). These could include conditions for a Biodiversity Method Statement (e.g., BS 42020:2013 D.2.1) or equivalent document used to detail mitigation, compensation and enhancement implementation and associated monitoring.

¹⁸ <https://www.applesandorchards.org.uk/>

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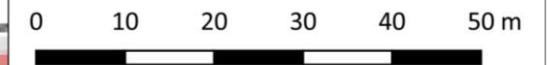
Waring, S., Essah, E., Gunnell, K. and Bonser, R. (2013) *Double jeopardy: the potential for problems when bats interact with breathable roofing membranes in the United Kingdom*. *Architecture & Environment*, 1 (1). pp. 1-13.

Figures



Legend

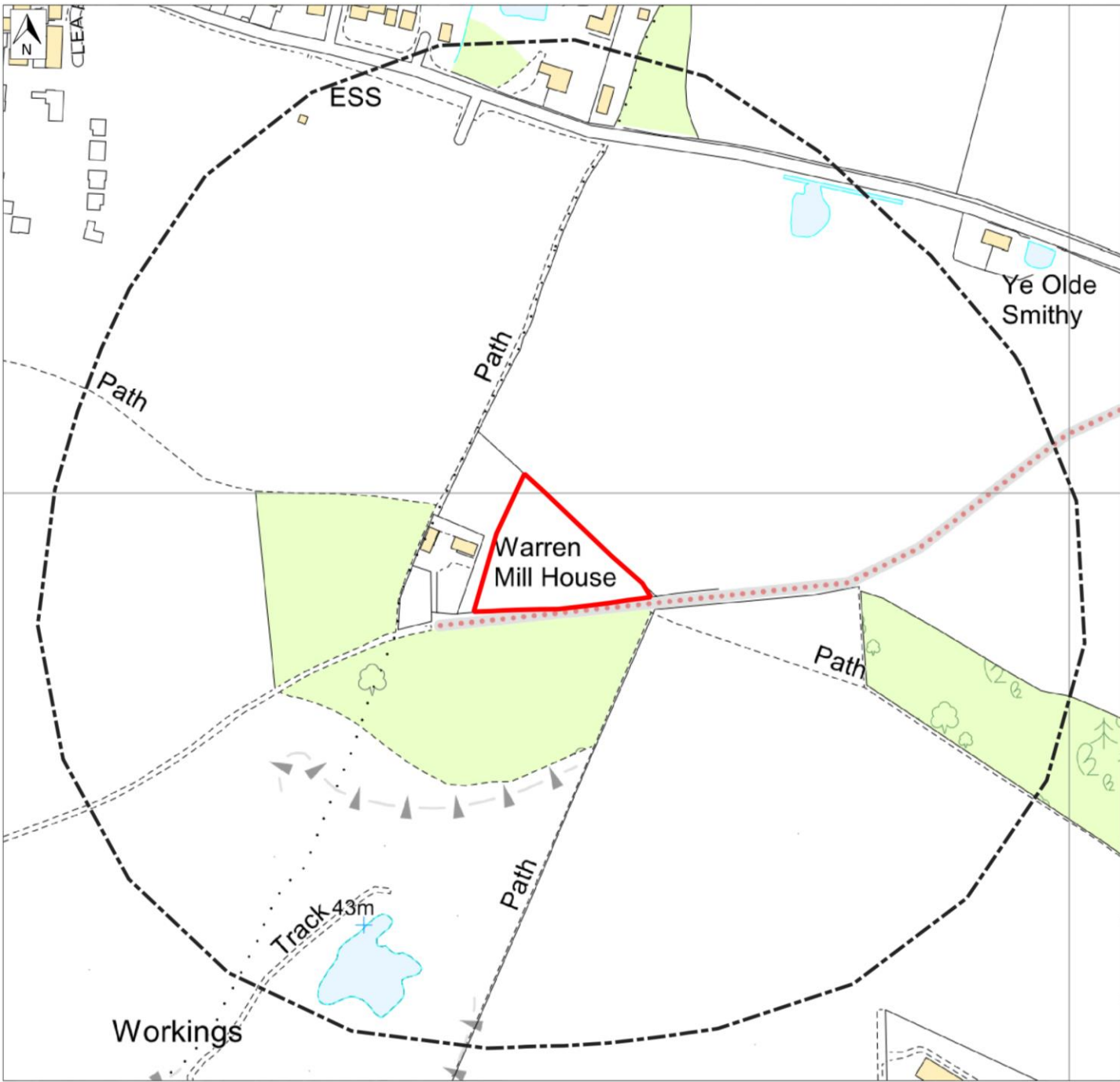
 Application site boundary



Project: Warren Mill House, Wetherden, Suffolk

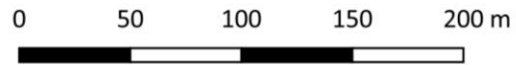
Drawn:	Date:	Drawing Ref:
JB	07/03/22	WARRENMILLHOUSE/01

Figure 1 Site location plan



Legend

- Application site boundary
- 250m site buffer



Project: Warren Mill House, Wetherden, Suffolk

Drawn:	Date:	Drawing Ref:
JB	07/03/22	WARRENMILLHOUSE/02

Figure 2 Pond plan

Appendices

Appendix A1 Photos



Photo 1 Short grassland on sandy soil dominated the site



Photo 2 Retained area to northwest with saplings



Photo 3 Site and access road viewed from south of site



Photo 4 Beech hedgerow just outside west boundary



Photo 5 A rabbit warren was present along the south boundary



Photo 6 Musk thistle (*Carduus nutans*) rosette

Appendix A2 EclA criteria

A2.1 General criteria for geographic context/value

Designation	Example
International	<ul style="list-style-type: none"> • SPA, SAC and Ramsar sites and the features that they have been designated for. • A sustainable area of habitat listed in Annex I of the Habitats Directive or smaller areas of such habitat which are essential to maintain the viability of a larger whole. • A sustainable population of an internationally important species e.g. UK Red Data Book (RDB) species or European Protected Species (EPS) of unfavourable conservation status in Europe (e.g. Annex II species: bats, GCNs etc.), of uncertain conservation status or of global conservation concern in the UK BAP.
National	<ul style="list-style-type: none"> • SSSI or a discrete area that meets the selection criteria for designation. • A sustainable area of priority habitat identified included on the S. 41 NERC Act list or smaller areas of such habitat that are essential to maintain the viability of a larger whole. • A sustainable population of priority species (listed under S. 41 of the NERC Act 2006). • A sustainable population of a nationally important species i.e. RDB species not included in above category but which is listed on Schedules 5 or 8 of the WCA 1981 (as amended). Also, sites supporting a breeding population of such species or supplying a critical element of their habitat requirements. • A sustainable population of uncommon or threatened Annex IV EPS species at a UK level. • A nationally scarce species (occurs in 30-100 10km squares in the UK) that has its main UK population within the district.
County	<ul style="list-style-type: none"> • A viable area of habitat identified in the county BAP. • A County Wildlife Site. • A sustainable population of common or non-threatened Annex IV EPS species at a UK level. • A Nationally Scarce species that does not have its main population within the county. • Any BAP species not included in the 'national' category above for which a county Action Plan exists.
Local	<ul style="list-style-type: none"> • Individual members of local populations of priority or other nationally/internationally important species which are not in themselves key for maintaining a sustainable population (e.g. individual dog otter passing through area with no holts or resting sites). • Other habitats and species not in the above categories but are considered to have some value at the district/borough level.

Appendix A3 GCN poster

Great Crested Newt

If seen by any employee, works must cease immediately and an ecologist be contacted for advice

It is an offence to intentionally or recklessly disturb, injure or kill great crested newts

Further information can be found at www.arguk.org



Appendix A4 Bird boxes

RSPB Sparrow terrace nest box

Product Code: R407816

Qty

£ 29.99



In Stock

ADD TO BASKET

Product Information | Product details | Ratings & Reviews

PROMOTIONAL NEST BOXES!

- Add two promotional nest boxes to your basket to save £2
- Offer ends 5th January 2020 and is subject to availability
- Loyalty points can be collected/redeemed as usual
- Not available in conjunction with any other offer



barkboxes.co.uk/product/willow-tit/

Saplings | Sign In | Fukrum ... | UK Grid Reference... | National Biodiversit... | Bing Maps | Santander Online... | Microsoft Office Ho... | Jacobs Engineering... | Jacobs Engineering...



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Willow Tit/Tree Creeper

£35.00

A long, thin box designed for fitting to smaller willow/birch trees, low to the ground, to encourage willow tit. Filled internally with damp sawdust/shavings/rotting wood as this species likes to excavate their own holes. The narrowing top crevice is designed to be suitable for roosting bats. Also suitable for tree creeper without the sawdust infill.

7 in stock (can be backordered)

- 1 + [Add to basket](#)

Category: bird and bat boxes

Description | Additional information | Reviews (0)

Description



Open Fronted Nest Box

£25.00

For birds such as robin and pied wagtail. Open fronted but with a generous canopy to screen from aerial predators. Place in good cover not in the open.

43 in stock

- 1 + [Add to basket](#)

Category: bird and bat boxes

Description Additional information Reviews (0)

Description


Height tbc
Width
Depth
Typical Weight

Visit the RSPB website

 **Shop**

Search via keyword or product code 

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[Bird food](#) [Bird care](#) [Wildlife](#) [Books](#) [Binoculars & scopes](#) [Gifts & home](#) [Sale & offers](#) [NEW](#)

[Home](#) > [Bird care](#) > [Bird houses & nest boxes](#) > [Garden bird nest boxes](#) > Apex starling nestbox

 Print

Apex starling nestbox

Qty

Product Code: R405836

£ 23.99



In Stock

[ADD TO BASKET](#)

SAVE £2 WHEN YOU BUY TWO PROMOTIONAL NEST BOXES!

- Add two promotional nest boxes to your basket to save £2
- Offer ends 5th January 2020 and is subject to availability
- Loyalty points can be collected/redeemed as usual
- Not available in conjunction with any other offer



Appendix A5 Bat boxes



Integrated eco bat box (crevice)



Schwegler 2F Bat Box



Vincent Pro bat



Schwegler 1FE



Ibstock integrated bat box



Woodstone multi-chamber box



Eco Kent bat box



Access to the bat boxes cut into weather boarding. The holes can be cut by scalloping the underside of the board where it covered the board below to reduce water ingress