
Ecology Report

PROPOSED ALTERATIONS AND EXTENSIONS
The Grange, Dakings Lane, Felsham, Suffolk

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Executive Summary

MHE Consulting Ltd were instructed to undertake an ecological survey and assessment of existing buildings and adjacent gardens at The Grange, Dakings Lane, Felsham, Suffolk. A planning application is to be submitted to Mid Suffolk Council for internal and external alterations to the Grade II Listed “The Grange” and attached buildings. The works proposed include:

- The replacement of existing concrete roof tiles with traditional slate tiles;
- The reinstatement of original dormer windows and installation of new windows, doorways and accesses;
- Restore the original brickwork and ironwork at the front of main house;
- To partially demolish an existing garage and some concrete tanks in the garden; and
- The erection of a new cart lodge and extension of the existing driveway.

The buildings are situated within a garden containing areas of hard standing and gravel, concrete tanks (previously used for fish rearing), a managed lawn with ruderal fringes, vegetable beds, scattered trees and shrubs, boundary hedgerows and two large ponds P1 and P2.

The ponds were assessed as supporting Average (P1) and Good (P2) habitat suitability for breeding great-crested newts (GCNs) (*Triturus cristatus*) and other amphibians. In terms of terrestrial habitats, lawn areas provide foraging opportunities whilst shrubs, boundary hedgerows and waste materials (e.g., brick and brash piles) offer refuge and potentially overwintering opportunities. Most common reptiles are likely to be absent from the site, except for grass snake (*Natrix helvetica*) which may visit the site to hunt in the ponds.

A Preliminary Roost Inspection found evidence of roosting bats in both loft-spaces in The Grange with c. 500-1000 brown long-eared bat (*Plecotus auritus*) (BLE) droppings present on the floor below the ridge in each loft-space. A light scattering of both pipistrelle (*Pipistrellus spp.*) and BLE droppings were present in the loft in the cottage indicating possible roosting activity in the ridge. No evidence of current or historical roosting was found in the garage, which is to be partly demolished.

The proposed new dormers to front and rear will be installed below the roof void level such that impacts on any roosting bats in the roof void would be limited to some localised noise disturbance. It is considered unlikely that any bats roost under the tiles in the location where the dormers are proposed.

The re-roofing works could result in the temporary loss of roosting areas in the roof voids and bat friendly roofing membranes must be used to avoid future entanglement issues.

Mature trees and shrubs and ponds provide high value bat foraging and commuting opportunities whilst the trees, shrubs and gardens provide bird nesting, song perch and foraging opportunities. Foraging (e.g., lawns and herbaceous areas) and refuge (e.g., base of dense shrubs) opportunities for hedgehogs (*Erinaceus europaeus*) are also present. These habitats may also support 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, good working practices and further protected species surveys (e.g., bat activity surveys prior to any reroofing works), with biodiversity enhancements proposed.

1 Introduction

1.1 BRIEF

MHE Consulting Ltd were instructed to undertake an ecological survey and assessment of existing buildings and adjacent gardens at The Grange, Dakings Lane, Felsham, Suffolk (TL 93848 56061; Figure 1). A planning application is to be submitted to Mid Suffolk Council for internal and external alterations to the Grade II Listed “The Grange” and attached buildings, to include:

- The replacement of existing concrete roof tiles with traditional slate tiles;
- The reinstatement of original dormer windows and installation of new windows, doorways and accesses;
- Restore the original brickwork and ironwork at the front of main house;
- To partially demolish an existing garage and some concrete tanks in the garden; and
- The erection of a new cart lodge and extension of the existing driveway.

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 application site (Figure 1) is located off Dakings Lane, Felsham and comprises the Grade II listed “The Grange” and an attached annex and garage (Photos 1 to 6). The buildings are situated within a garden containing areas of hard standing and gravel, concrete tanks (previously used for fish rearing) (Photo 7), managed lawn with ruderal fringes (Photos 8 to 10), vegetable beds (Photo 11), scattered trees and shrubs (Photos 12 to 14), boundary hedgerows (Photo 15) and two large ponds (Photos 16 and 17).

The application site is situated within a predominantly agricultural landscape, with other residential properties and gardens and several ponds (Figure 2) located within 250m of the site. 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/attachment_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 (SPA) and possible Special Areas of Conservation (SAC);

b) listed or proposed Ramsar sites; and

c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential SPAs, possible SACs, 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 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 and Mid Suffolk Councils are currently in the process of creating a 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
- Historical biological records: species and locally designated site records within 2km of the site were provided by the Suffolk Biodiversity Information Service (SBIS; Appendix A2).

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 and reptiles including great crested newt (*Triturus cristatus*) and grass snake (*natrix helvetica*)
- Mammals including badgers² and bats³;
- 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 21 December 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,

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

² Badgers and their setts are afforded protection by the PBA 1992.

³ All species of bats receive full protection under the WCA 1981 and Habitats Regulations 2017.

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'.

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.

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 Phase 1 Habitat Survey methodology (JNCC, 2010). Care was taken to record as many species as possible.

3.3.2 *Amphibians and reptiles*

a) Amphibians

Two ponds situated within the bounds of the application site (Photos 16 and 17, Figure 2) were assessed for their suitability to support breeding GCNs, and other common amphibians, using the GCN Habitat Suitability Index (HSI) as developed by Oldham et al. (2000). However, no access was secured to assess another pond P3 and a moat M1 shown on OS Maps within 250m of the site.

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

The existing buildings were assessed with regards to suitability for supporting roosting bats with reference to the NE Bat Mitigation Guidelines (Mitchell-Jones, 2004) and the Bat Conservation Trust (BCT) "Bat Surveys: Good Practice Guidelines, 3rd edition" (Collins, 2016).

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 importance;
 - 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 where appropriate. Any cavities with the potential to support roosting bats were inspected with a SeeSnake 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

Given the nature of the site (e.g., residential property and garden) and the survey carried out, the timing of the survey visit was considered appropriate for this report.

3.5 SURVEYORS

The initial site survey was undertaken by Christian Whiting BSc (Hons) MSc MCIEEM and Alex Gregory BSc (Hons)

who has over 24 years' experience working as an ecologist. He holds Natural England (NE) survey licences for bats (2015-14745-CLS-CLS - Bat Survey Level 2), barn owl (CL29) and great crested newts (Class A licence 2015-17633-CLS-CLS). He is a Registered Consultant (Registration RC089) on NE's Bat Low Impact Class Licence and is an agent under the Environment Agency's and IDB water vole (*Arvicola amphibius*) organisational and class licences respectively. His main areas of expertise are bats, vascular plants, amphibians and reptiles, otter (*Lutra lutra*) and water vole.

Alex Gregory has two years' experience surveying for amphibians, bats, reptiles, and water vole.

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 and nationally designated sites within 5km of the application site are listed below in Table 4.1. There are no internationally designated sites within 13km of the site.

Table 4.1 Relevant designated sites

Site name	Site designation
Newson's Farm*	CWS
Bradfield Woods*	NNR and SSSI
Thorpe Morieux Woods*	SSSI

*Listed on the Ancient Woodland Inventory for England.

Locally designated sites

One County Wildlife Site (CWS) exists within 2km of the application site, Newson's Farm, which has been restored to a rich habitat mosaic of meadow, scrub, and woodlands alongside ancient hedgerows, and both old and newly created ponds. The site supports a range of species, including amphibians and reptiles, nesting birds, bats, and small mammals - most notably hazel dormice (*Muscardinus avellanarius*).

Given the limited nature of the proposal no significant impacts upon the locally designated sites are anticipated.

Nationally designated sites

Bradfield Woods NNR and SSSI comprises a series of ancient woodlands which have been traditionally coppiced since the mid-13th Century. The combination of coppice management and great complexity of soil types and drainage present throughout the site has produced diverse and unusual communities of plants; over 370 species of plants have been recorded, a total only surpassed in 2-3 other locations. Notable species present include oxlip (*Primula elatior*), herb-paris, ramsons (*Allium ursinum*), water avens (*Geum rivale*), wood spurge (*Euphorbia amygdaloides*) and several species of orchid.

The woods support hazel dormouse (*Muscardinus avellanarius*) and other small mammals, which favour coppiced stools, a range of woodland birds, including a large breeding population of nightingale (*Luscinia megarhynchos*), and numerous species of invertebrate. A large pond adds extra ecological value and several small streams and ephemeral pools support plants which require high humidity such as bryophytes and ferns.

Thorpe Morieux Woods SSSI incorporates three ancient coppice woodlands on poorly drained boulder clays (Bulls Wood; Great Hastings Wood and Thorpe/Felsham Woods). The woods show a gradation from alkaline to acidic conditions depending on the thickness of surface deposits of sand and loess. Pedunculate oak-hazel-ash woodland and wet ash-maple woodland types predominate. All three woods are actively coppiced and support a diverse ground flora including large populations of

oxlip: a scarce local species. Wet rides have been created in two of the woods and several wet hollows support species such as marsh marigold (*Caltha palustris*) and lesser pond sedge (*Carex acutiformis*).

The application site lies within a SSSI Impact Risk Zone but does not meet any of the criteria for consideration. As such, no significant impacts or effects are anticipated in relation to any of the features of the designated sites.

4.2.2 *Priority habitats*

No priority habitats are shown within 250m of the application site boundary.

4.2.3 *Species*

No protected or notable species records exist for within the application site boundary. Table 4.2 identifies, where data resolution allows, species records within 2km of the application site boundary.

Table 4.2 Protected/notable species, relevant to the scheme, within 2km of site

Latin Name	Common Name	Designation
Amphibians and reptiles		
<i>Anguis fragilis</i>	Slow worm	WCA5; S. 41
<i>Bufo bufo</i>	Common toad	WCA5; S. 41
<i>Lissotriton vulgaris</i>	Smooth newt	WCA5
<i>Natrix helvetica</i>	Grass snake	WCA5; S. 41
<i>Rana temporaria</i>	Common frog	WCA5
<i>Triturus cristatus</i>	Great crested newt	EPS; WCA5; S. 41
<i>Zootoca vivipara</i>	Common lizard	WCA5; S. 41
Bats		
<i>Barbastella barbastellus</i>	Barbastelle	EPS; WCA5; S. 41
<i>Myotis nattereri</i>	Natterer's	EPS; WCA5
<i>Nyctalus noctula</i>	Noctule	EPS; WCA5; S. 41
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	EPS; WCA5
<i>P. pygmaeus</i>	Soprano pipistrelle	EPS; WCA5; S. 41
<i>Plecotus auritus</i>	Brown long-eared	EPS; WCA5; S. 41
Birds		
<i>Apus apus</i>	Swift	Red Status
<i>Chloris chloris</i>	Greenfinch	Red Status
<i>Curruca communis</i>	Whitethroat	Amber Status
<i>Delichon urbicum</i>	House martin	Red Status
<i>Emberiza citronella</i>	Yellowhammer	Red Status; S. 41
<i>Falco tinnunculus</i>	Kestrel	Amber Status
<i>Linaria cannabina</i>	Linnet	Red Status
<i>Muscicapa striata</i>	Spotted flycatcher	Red Status; S. 41
<i>Passer domesticus</i>	House sparrow	Red Status; S. 41
<i>Prunella modularis</i>	Dunnock	Amber Status
<i>Pyrrhula pyrrhula</i>	Bullfinch	Amber Status
<i>Strix aluco</i>	Tawny owl	Amber Status
<i>Streptopelia turtur</i>	Turtle dove	Red Status; S. 41
<i>Sturnus vulgaris</i>	Starling	Red Status
<i>Troglodytes troglodytes</i>	Wren	Amber Status

<i>Turdus philomelos</i>	Song thrush	Red Status
<i>T. viscivorus</i>	Mistle thrush	Red Status
<i>Tyto alba</i>	Barn owl	Red Status; Sch. 1
Other mammals		
<i>Erinaceus europaeus</i>	Hedgehog	S. 41
<i>Lepus europaeus</i>	Brown hare	S. 41
<i>Meles meles</i>	Badger	PBA 92
<i>Micromys minutus</i>	Harvest mouse	S. 41
<i>Muscardinus avellanarius</i>	Hazel dormouse	EPS; WCA5; S. 41
Invertebrates		
<i>Apatura iris</i>	Purple emperor	RLGB.Lr(NT), WCA5
<i>Limnitis camilla</i>	White Admiral	RLGB.VU; S. 41
<i>Satyrrium w-album</i>	White-letter hairstreak	RLGB.EN; WCA5; S. 41
N/A	Several species of moth	S. 41
Plants		
<i>Trifolium ochroleucon</i>	Sulphur clover	RLGB/ENG.VU

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 (eDNA record) to be located c. 4.79km southeast of the application site (dated 2019), which is outside the normal dispersal range of the species.

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) Built environment

The buildings proposed for alterations include a Grade II listed dwelling (The Grange) of redbrick construction with a concrete tiled gambrel roof. A redbrick attached annex (The Bakery) has a concrete tiled pitched roof. A single storey redbrick garage (to be partly demolished) with a concrete tiled hipped roof is attached to the southern aspect of the cottage (Photos 1 to 6).

Concrete slab and graveled driveways exist to the west of the buildings, with a narrow concrete path and patio/terrace to the rear.

b) Concrete tanks

Some large concrete tanks (former fish hatchery) have been built close to the southern garden boundary (Photo 7).

c) Lawn

Large areas of managed lawn with ruderal fringes exist in the garden to the rear and south of the buildings (Photos 8 to 10). The lawn areas support low numbers of common forbs including creeping buttercup (*Ranunculus repens*), daisy (*Bellis perennis*), ground ivy (*Glechoma hederacea*), doves-foot cranesbill (*Geranium molle*), groundsel (*Senecio vulgaris*), yarrow (*Achillea millefolium*) dandelion (*Taraxacum agg.*), spear thistle (*Cirsium vulgare*) bristly oxtongue (*Helminthotheca echioides*), cleavers (*Galium aparine*), common ragwort (*Senecio jacobaea*), green alkanet (*Pentaglottis*

sempervirens), lesser burdock (*Arctium minus*), common nettle (*Urtica dioica*) and white dead-nettle (*Lamium album*).

d) Vegetable beds

Some neglected vegetable beds exist within the garden to the south of the buildings (Photo 11).

e) Trees and shrubs

Numerous native (and some non-native) trees and shrubs of varying maturity are scattered throughout the site – these include some fruit trees, e.g. apple (*Malus sp.*), next to the vegetable beds (Photo 11). Elsewhere, horse chestnut (*Aesculus hippocastanum*), ash (*Fraxinus excelsior*) and yew (*Taxus baccata*) exist in the front garden with wild cherry (*Prunus avium*), ash, pedunculate oak (*Quercus robur*), common alder (*Alnus glutinosa*) and willow (*Salix sp.*) in the rear garden (Photos 12 to 14) and around the pond margins. Hazel (*Corylus avellana*), buddleia, elder (*Sambucus nigra*), dog rose (*Rosa canina*), bramble (*Rubus fruticosus agg.*), various garden ornamental shrubs, and bamboo were also recorded.

f) Hedgerows

A length of common laurel (*Prunus laurocerasus*) hedgerow forms part of the southern garden boundary adjacent to the concrete former fish tanks (Photo 15).

g) Ponds

Two ponds exist within the bounds of the application site. Pond P1 is located c.10m west/southwest of the buildings (Photo 16) with a larger pond P2 located in the rear garden (Photo 17)

4.3.2

Amphibians and reptiles

a) Ponds

Pond P1 (Photo 16) is situated c. 10m west/southwest of the garage. The pond holds some water, although water levels were very low during the site walkover and is heavily shaded by mature trees and shrubs scattered along its banks. It has relatively turbid water and contains a large amount of leaf litter, with macrophyte coverage limited and some evidence of waterfowl, e.g., mallards (*Anas platyrhynchos*), but not fish, and areas of suitable terrestrial habitat located within 250m (e.g., mature gardens and hedgerows etc.). The pond was assessed as supporting *Average* habitat suitability for GCNs (HSI score 0.61).

Pond P2 (Photo 17) is a much larger pond located in the rear garden. The pond holds water and is less shaded than pond P1, with relatively good water quality, some macrophyte coverage and dense bankside vegetation in places, e.g., pendulous sedge (*Carex pendula*) and bramble. There is some evidence of waterfowl, e.g., mallards, and possibly prior fish stocking (although this could not be confirmed). Adjacent terrestrial habitats offer potential foraging and refuge opportunities (e.g., mature gardens and hedgerows). The pond received a *Good* (0.76) HSI score.

No access was secured to assess the habitat suitability of a moat M1 (c. 10m west) and recently created pond P3 (c. 100m west), which are located within the grounds of Moat Farm to the west of the application site.

c) Terrestrial habitat

i) *Amphibians*

The application site supports areas of suitable terrestrial foraging (e.g., lawn) and refuge (shrubs, hedgerows, and ruderal fringes) habitat for common amphibians, with discrete refuge opportunities present beneath and/or within materials (e.g., rubble piles) stored in the garden (Photo 18).

ii) *Reptiles*

The site largely supports habitats which are of low value to most common reptiles (e.g., managed lawn, gravel and hard standing), with limited areas of potential refuge habitat (e.g., bramble and ruderal vegetation) present in the eastern part of the gardens and around the margins of pond P2. The site is also situated within a largely agricultural landscape and relatively isolated from areas of suitable reptile habitat. This is likely to prevent the dispersal of most species onto the site, apart from more mobile species, e.g., grass snakes, which may hunt in ponds P1 and P2 if they support amphibians and seek refuge within areas of dense vegetation in the garden.

4.3.3

Bats

a) Building Assessment

Table 4.3 Building inspection results

Building	Materials	BRP
The Grange	Redbrick dwelling which has a concrete tiled gambrel roof with Type 1F bitumen felt. The dwelling has two large loft spaces.	<i>High</i>
No bats were present during inspection with c. 500-1000 brown long-eared bat (BLE) (<i>Plecotus auritus</i>) droppings on the floor below the ridge in the eastern loft space (Photo 19) and c. 500 BLE scattered on the floor below the ridge in the western loft. The roof tiles are tight fitting with few potential access points along the ridge which is largely intact. Access into the roof void is likely to be via the chimneys where some lead flashing is lifted.		
Cottage	Redbrick dwelling which has a pitched, concrete tiled roof (Type 1F bitumen felt).	<i>Moderate</i>
Light scattering of pipistrelle. and BLE droppings in the loft (Photo 20).		
Garage	Brick walls, hipped, concrete tiled roof (Type 1F bitumen felt)	<i>Low</i>
No evidence of roosting bats (e.g., droppings, staining and urine splashes) was found in the garage.		

b) Tree Roost Assessment

No trees require felling and/or cutting back which have the potential to support roosting bats.

b) Foraging/commuting habitat

The garden surrounding the buildings support High value bat foraging habitats (e.g., mature trees and shrubs, hedgerows, and ponds). These habitats retain some connectivity to other linear features in the wider locality (e.g., hedgerows) and were assessed as being of Moderate value to commuting bats (Collins, 2016).

4.3.4

Nesting birds

No evidence of nesting birds was found in the garage or any of the roof voids of The Grange or the annex. The garage could potentially support small passerines such as wren (*Troglodytes troglodytes*).

Trees and shrubs within the garden provide suitable nesting opportunities for small passerines such as dunnock (*Prunella modularis*) (Amber Status), and house sparrow (*Passer domesticus*) (Red Status, S. 41), with potential for larger species like stock dove (*Columba oenas*) (Amber Status) and song thrush (*Turdus philomelos*) (Amber Status) in taller, mature specimens.

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

The small orchard meets the qualifying criteria for a S. 41 traditional orchard habitat. The ponds would meet the qualifying criteria for S. 41 pond habitats if they supported GCNs.

b) Species

There is potential for hedgehogs, and possibly the occasional brown hare (*Lepus europaeus*), to forage and seek refuge within the garden. Mature trees and shrubs present could support some S. 41 list invertebrates, such as Lepidoptera.

4.3.7 *Non-native invasive plants*

No non-native invasive species (WCA9) were recorded within the application site boundary although several clumps of bamboo were present, which can spread vigorously if left unmanaged.

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 4.4; values are based upon the criteria in Table A2.1 and expert best judgements.

Table 4.4 Feature value based on geographic context

Feature	Value
Lawn, trees/shrubs, vegetable beds, hedgerow, and ponds	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

Planning permission is being sought to undertake internal and external alterations to the existing buildings and driveway, together with the erection of a new cart lodge, following the partial demolition of an existing garage and concrete tanks.

Proposed building works will largely be limited to within the footprint of the existing buildings, driveway, and concrete tanks (to be demolished), with a small area of lawn permanently lost in the footprint of the new cart lodge. Combined, this has the potential to impact amphibians, bats, nesting/roosting birds and hedgehogs.

The assessment and recommendations below provide preliminary recommendations for mitigation and enhancements for the proposed development. They are based on drawings provided by Wincer Kievenaar Architects Ltd, 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

For the LPA to discharge its responsibilities regarding European Protected Species it needs to have certainty that an approved development can be legally implemented (e.g., by securing a bat licence or works are undertaken such that bats are not impacted and roost sites are retained).

It is normal practice to carry out bat emergence and/or dawn surveys to characterise roosts to secure a European Protected Species Mitigation bat licence from Natural England or inform an unlicensed method statement. Such surveys would confirm the location of bat access points (to inform the re-roofing works) and the nature of any roosts present to aid the development of an unlicensed mitigation strategy such as:

- 1) Timing the re-roofing works in the spring or autumn when no maternity roosts would be present and bat numbers are generally at their lowest, and
- 2) Completing the roofing works in sections (e.g., do the northern roof void first before then moving onto the southern section) to ensure a darkened roof void is always available.

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 temporary disturbance to and permanent loss of a small area of lawn where the new cart lodge is proposed, which constitutes a small net loss of greenspace but is not considered to be ecological significant.

Any accidental damage to adjacent terrestrial habitats (e.g., lawn areas, trees and shrubs in the wider gardens) during construction would result in a significant negative effect at the Local level.

Building works could potentially cause damage to the either pond through accidental pollution such as siltation or a fuel/hydraulic fuel oil or other chemicals, which would have a significant negative effect at the Local level.

f) Mitigation

i) Terrestrial habitats

Retained trees, hedgerows and lawn 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.

To prevent damage to retained habitats, the builder's compound (if required) should be sited on existing gravel/hard standing and away from mature trees, shrubs and other retained and/or boundary features.

ii) Aquatic habitats

A contractor Risk Assessment Method Statement (RAMS) should be developed ahead of works commencing to ensure Good Practice measures are used to avoid and/or minimise the risk of pollution upon ponds P1 and P2 (particularly pond P1). Measures may include, but are not exclusive to:

- Locating any site compounds (including any fuel storage) away from the moat;
- Limiting topsoil removal as required and covering topsoil whilst stockpiled;
- Cleaning machinery in designated areas with a sump and re-using wastewater where possible or discharging via a sewer or tanker only;
- Storing chemical and fuels securely within double-bunded bowzers or chemical stores (with a 110% capacity to contain any spillage) away from the ponds;
- Using water based, non-toxic and biodegradable chemicals and fuels where possible;
- Mixing and washing chemicals and associated equipment in designated areas with wastewater safely disposed of via mains sewerage or tanker as appropriate;
- Use of biodegradable hydraulic and fuel oils;
- Having adequate site security in place; regularly checking equipment for failures and/or leaks; and
- Keeping spill kits and booms present on the site and ensuring staff are trained in their use.

Although prepared for other areas of the UK, useful further information is available via the Guidance for Pollution Prevention - Works and maintenance in or near water: GPP 5 January 2017 document, produced by Natural Resources Wales (NRW), the Northern Ireland Environment Agency (NIEA) and the Scottish Environment Protection Agency (SEPA)⁷.

c) Residual effects

No significant residual effects on habitats are anticipated.

5.6 AMPHIBIANS AND REPTILES

a) Potential impacts

Vegetation clearance, ground-breaking and construction activities will result in the temporary disturbance to and permanent loss of a relatively small area of potential foraging habitat (e.g., lawn) with potential entrapment resulting in the injury and mortality of individuals due to the presence of trenches, caustic materials such as wet concrete, and temporary stockpiles of soil and/or building materials.

Accidental damage/pollution of ponds P1 and P2 could harm any animals, including GCNs present.

On completion of the development, the use of gully pots or similar as part of a surface water drainage system can result in the entrapment of amphibians (Muir, 2012).

Combined, such impacts could result in permanent negative effects upon low-to-moderate numbers of individuals considered a negative effect at the local level.

⁷ <http://www.netregs.org.uk/media/1418/gpp-5-works-and-maintenance-in-or-near-water.pdf>

b) Mitigation

Given the limited footprint of the building works (beyond the existing footprint), good working practises as part of a Precautionary Working Method Statement would likely ensure offences are avoided. These should include:

1. All lawn/grassed areas on site should be kept short 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.
4. Any animals (except for GCN) present should be moved to retained habitats, e.g. hedgerows and/or shrubs providing adequate cover;
5. 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;
6. 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;
7. Any excess concrete should be poured into a concrete skip, so it can then set to prevent animals coming into contact.
8. All building materials and waste materials should be stored on hard standing or stored off the ground on pallets to reduce risk of animals seeking refuge;
9. The GCN poster in Appendix A5 should be erected in the welfare facilities provided for construction staff on site.
10. Should any GCNs (Appendix A5) 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.
11. **Gully pots should be avoided where possible and permeable paving should be used so amphibians cannot become trapped in silt traps or attenuation crates; and**
12. **Downpipes taking water off the roofs should be sealed at ground level by using a leaf and debris screen⁸ 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

The future re-roofing works (if undertaken) could potentially damage/disturb any bat roosts present (likely BLEs and pipistrelles) in the loft spaces and underneath roof tiles or lead flashing considered a significant negative effect.

The dormer windows and conservation roof light on the main house are considered unlikely to result in the disturbance of bats where tiles need to be removed to create the dormer window or install the roof light. The construction works will cause temporary disturbance of any bats roosting in the roof voids the roof structure above the existing

⁸ <https://www.drainagepipe.co.uk/leaf-and-debris-gully-110mm-p-D94G/>

ceiling level of the rooms below the roof voids – such disturbance would cause a negative effect at the Local level.

ii) Foraging and commuting habitats

Not significant in terms of habitats present.

iii) Light disturbance

Lighting impacts (construction and operational phases) relate to security lighting external to the buildings, and potentially from spillage of internal lighting once the buildings are in use. Lighting can impact bat commuting and foraging behaviour and increase the risk of predation, which could affect foraging success and population recruitment.

In this instance, impacts on retained mature trees and shrubs in the garden and the ponds are most relevant.

Potential lighting impacts are considered a potential significant negative effect at the Local level.

iv) Roofing membranes

Research has shown bats can become entangled in modern breathable roofing membranes if used under clay pantiles or peg/plain tiles (Waring *et al.*, 2013) or behind weatherboarding. Without mitigation, the impacts above could result in significant effects at a Local level.

b) Mitigation

i) Roosting bats

Dormer and roof lights

The installation of the dormer windows and roof lights should be undertaken with regards to the potential for bats to be present with all tiles and materials to be removed by hand with inspections prior to cutting of existing plasterboard etc.

If any bats or suspected bats (e.g., droppings) are present, works must stop and a suitably experience ecologist should be contacted to agree a way forward. As bats by nature will often tuck themselves away in a crevice out of sight the only signs one may be present are droppings on the wall or floor below the roost site.

Bat droppings look similar to mouse and rat droppings (dark and shaped like grains of rice) but they can be easily distinguished from rodent droppings by doing the 'crumble test' whereby you roll a dropping in a piece of tissue, between your finger and thumb. If it crumbles under only a little pressure, it's a bat dropping. Sometimes crushed bat droppings looks sparkly in the light. Mouse and rat droppings are hard and require a lot of force to squash them.

Bird droppings will also crumble like a bat dropping but they will have some white on part of the dropping from uric acid which is mixed in with the faeces in birds whereas in mammals it is expelled in the urine.

to avoid disturbance to torpid/hibernating bats (considered highly unlikely given no bat droppings were found in the roof void), localised stripping of the roof tiles should avoid periods where daytime temperatures are below 5°C for 5 consecutive days (January to early March).

Re-roofing

The following avoidance measures can be used to minimise the risk of impacting roosting bats and could form part of an unlicensed method statement.:

- 1) timing the re-roofing works in the spring or autumn when no maternity roosts would be present and bat numbers are generally at their lowest;
- 2) avoid the winter period (see above); and
- 3) completing the roofing works in sections (e.g., do the northern roof void first before then moving onto the southern section) to ensure a darkened roof void is always available;

A licensed ecologist should be present during the roof strip so if any bats are encountered, they can be safely moved (under licence) or allowed to move by their own volition.

ii) Foraging and commuting habitat

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

iii) Light disturbance

Exterior lighting (e.g., exterior lighting on the new cart lodge) (as well as temporary security lighting during the construction phase) design must minimise lighting impacts upon retained natural habitats including the ponds and mature trees and shrubs in the garden and should follow current guidance as necessary^{9,10}:

- *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 ponds. 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'.

iv) Roof membrane

As clay pantiles are proposed for the new cart lodge a bat friendly roofing felt (e.g., Type 1F or a breathable sarking board e.g., Hunton Sarket or Pavatex Isolair) should be used as well as behind weatherboarding.

For any future re-roofing works with slates a non-bitumen coated roofing membrane (NBCRM) can be used if **it has passed a snagging propensity test**¹¹. The only product currently to have a certificate that confirms it passed the test is TLX BatSafe. Alternatively, a traditional bitumen Type 1F felt can be used or a wood fibre sarking board (e.g., Pavatex Isolair).

⁹ <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting>

¹⁰ www.eurobats.org/sites/default/files/documents/publications/publication_series/WEB_DIN_A4_EUROBATS_08_ENGL_NVK_28022019.pdf

¹¹ <https://www.bats.org.uk/our-work/buildings-planning-and-development/non-bitumen-coated-roofing-membranes>

c) Residual effects

With mitigation (e.g., timing of works and wildlife friendly lighting) the installation of dormer windows and re-roofing works are unlikely to result in significant residual impacts on roosting bats.

5.8

NESTING BIRDS

a) Potential impacts

Commencement of building works during the nesting season (March to August inclusive) may result in the injury or death of nesting birds and damage to active nests and eggs. Increased noise levels (during construction and operational phase) could also affect the ability of birds to hold territories during the breeding season whilst accidental damage to nearby trees/shrubs 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 building works should take place outside of the nesting bird season (March to August inclusive). 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 will be avoided with no residual effects anticipated.

5.9

OTHER S. 41 LIST HABITATS AND SPECIES

a) Potential impacts

Vegetation clearance will result in the small permanent loss of potential foraging habitat for hedgehogs (e.g., lawn). 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 and brick walls) would affect foraging access for animals. In combination such impacts would be considered to result in a negative ecological effect at the local level.

b) Mitigation

Habitat avoidance and mitigation as per section 5.5 and 5.6 with protective fencing of the adjacent fruit trees.

Hedgehogs encountered within the working area should be moved to suitable cover, e.g., base of hedgerows or under the cover of trees and shrubs along the eastern garden boundary.

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 and fixed in position) 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 is not proposed and should be avoided if any fencing is subsequently needed, with native species-rich hedgerows preferable where boundary features are required.

If any fencing was required for control of dogs and/or small children, then picket fencing with the bottom of fencing set 130mm above ground level would allow hedgehogs to pass under. Alternatively, post and rail fencing with galvanized stock wire fencing (8/100/30 specification) can be used with the biggest holes 150mm x 150mm at the bottom, whilst gates can be raised by 130mm.

If close board fencing were to be installed, then at least one hedgehog highway¹² should be provided at either end of each fencing run with signage.¹³

c) Residual effects

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

5.10 COMPENSATION

Residual impacts relate to the small net loss of greenspace (e.g., lawn) in the footprint of the new cart lodge. This is not considered to be significant in terms of habitats and/or protected species present on site and locally. However, to be consistent with planning policy, biodiversity gains could be delivered through suggested enhancement measures (see section 5.12 below).

5.11 CUMULATIVE EFFECTS

The Mid Suffolk Council website was searched on 10 January 2023 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. Any applications considered relevant are listed below:

- Prior approval was granted (DC/21/06252) for the proposed change of use of a redundant agricultural barn (Class Q) to form 2no. dwellings at Brindlewood, Dakings Lane, Felsham. No ecology report was submitted with the application.
- Permission was granted (DC/22/01043) for the conversion of an existing stable block to form a single storey dwelling, at The Old Barn, Cockfield Road, Felsham. A Preliminary Ecological Appraisal Report (PEAR) submitted with the application assessed the stables as supporting negligible BRP with the likelihood of significant impacts on other protected species assessed as low.

There is no indication from the above applications that there will be any significant cumulative impact with the current application.

5.12 ENHANCEMENT OPPORTUNITIES

Mitigation measures proposed will ensure negative ecological effects are avoided. To maximise biodiversity enhancements a minimum of 4 of the 7 options listed in Table 5.1 should be implemented.

¹² <https://www.hedgehogstreet.org/help-hedgehogs/link-your-garden/>

¹³ <https://ptes.org/shop/just-in/hedgehog-highway/>

Table 5.1 Biodiversity enhancements

Feature	Enhancement suggestion
Pond restoration	<p>1. Pond P1 could be enhanced for wildlife by increasing water retention and light levels and improving water temperature and oxygen content. This should attract a greater abundance and diversity of aquatic macrophytes and invertebrates, with the restored ponds also functioning as ecological 'steppingstone' habitats for amphibians, as well as providing high value foraging habitat for local bat and bird populations. Works will include the following:</p> <ul style="list-style-type: none"> • Fallen trees and excess mud/silt should be removed from at least 80% of the pond. This can be confidently undertaken with a tracked 360 digger, with mud/silt left on an area of short vegetation next to the pond for 48 hours to drain and then removed from site, e.g., spread on a local agricultural field, or allowed to compost down. • Rainwater could be directed (e.g., piped) into pond P1 from the new cart lodge to help maintain water levels effectively. • The pond should be allowed to re-vegetate naturally as research as part of the Norfolk Ponds Project ¹⁴ shows macrophytes will establish in most ponds from the seed bank in the retained silt. <p>If no macrophytes establish in the first 3 years, native macrophytes could then be planted (UK sourced - not imported) including a mix of floating (F), submerged, emergent (E) and marginal (M) as follows:</p> <ul style="list-style-type: none"> • Water forget-me-not (<i>Myosotis scorpioides</i>) M – x6 plants • Water mint (<i>Mentha aquatica</i>) M – x6 plants • Broad-leaved pondweed (<i>Potamogeton natans</i>) F – x2 plants • Yellow flag (<i>Iris pseudacorus</i>) E – x2 plants • Sweet rush (<i>Acorus calamita</i>) (leaves have a lovely scent of orange) E – x1 plant. <p>Works should be undertaken between October and January, preferably in autumn when the ground is dry and pond water levels are low. This period also avoids breeding seasons for amphibians and birds. Any macrophytes should be planted in April to June</p>

¹⁴<https://www.norfolkfwag.co.uk/norfolk-ponds-project/>

Feature	Enhancement suggestion
	<p>to maximise growth prior to the autumn and winter dieback.</p> <p>No non-native plants, fish, or other fauna should be introduced to the ponds at any time.</p>
Nectar rich climbers	<p>2. Any ornamental planting should utilise nectar rich plants to benefit 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 proposed hedgerows and/or trained up walls, fences, posts, and trellises.</p>
Suffolk heritage fruit cultivars	<p>3. Some Suffolk heritage fruit trees¹⁵ could be planted in the garden to supplement existing fruit trees, which would enhance the biodiversity value of the wider site (e.g. pollinators and windfall fruit for birds, mammals, and invertebrates) and provide the owners with a seasonal harvest.</p>
Raptor box	<p>4. A tawny owl¹⁶ box could be erected on a suitable mature tree in the garden or along the boundaries.</p>
Small passerine nest boxes	<p>5. Six nest boxes (Appendix A5) including sparrow terrace (x2), starling box (x2), tree creeper box (x1) and spotted flycatcher (x1) box could be mounted on existing mature trees in the gardens and/or buildings.</p>
Bats	<p>6. Three bat boxes comprising 1x each of the boxes Appendix A6), could be erected on suitable mature trees in the garden.</p>
Wildlife friendly compost heap	<p>7. A wildlife friendly composting area (Appendix A7) could be created close to the moat with adjacent log/brush piles (see below) to provide refuge habitat for other reptiles and amphibian species.</p>

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

5.13

CONCLUSIONS

The proposed mitigation and enhancement measures will minimise losses of biodiversity and provide opportunities for 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.

¹⁵ [Suffolk | Apples & Orchards Project \(applesandorchards.org.uk\)](http://Suffolk | Apples & Orchards Project (applesandorchards.org.uk))

¹⁶ <https://www.nestbox.co.uk/products/tawny-owl-nest-box>

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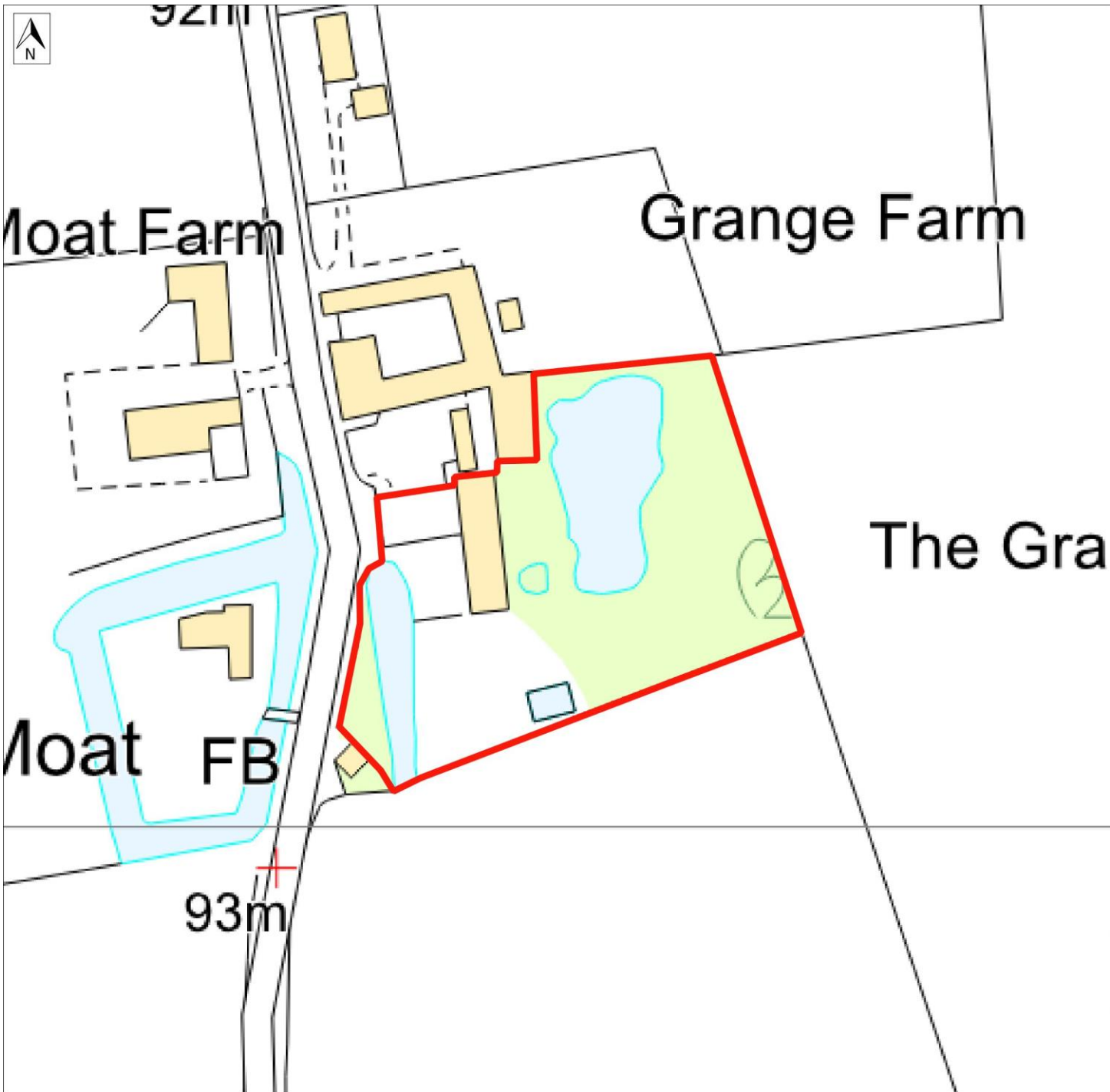
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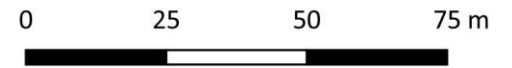
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Figures



Legend

 Application site boundary

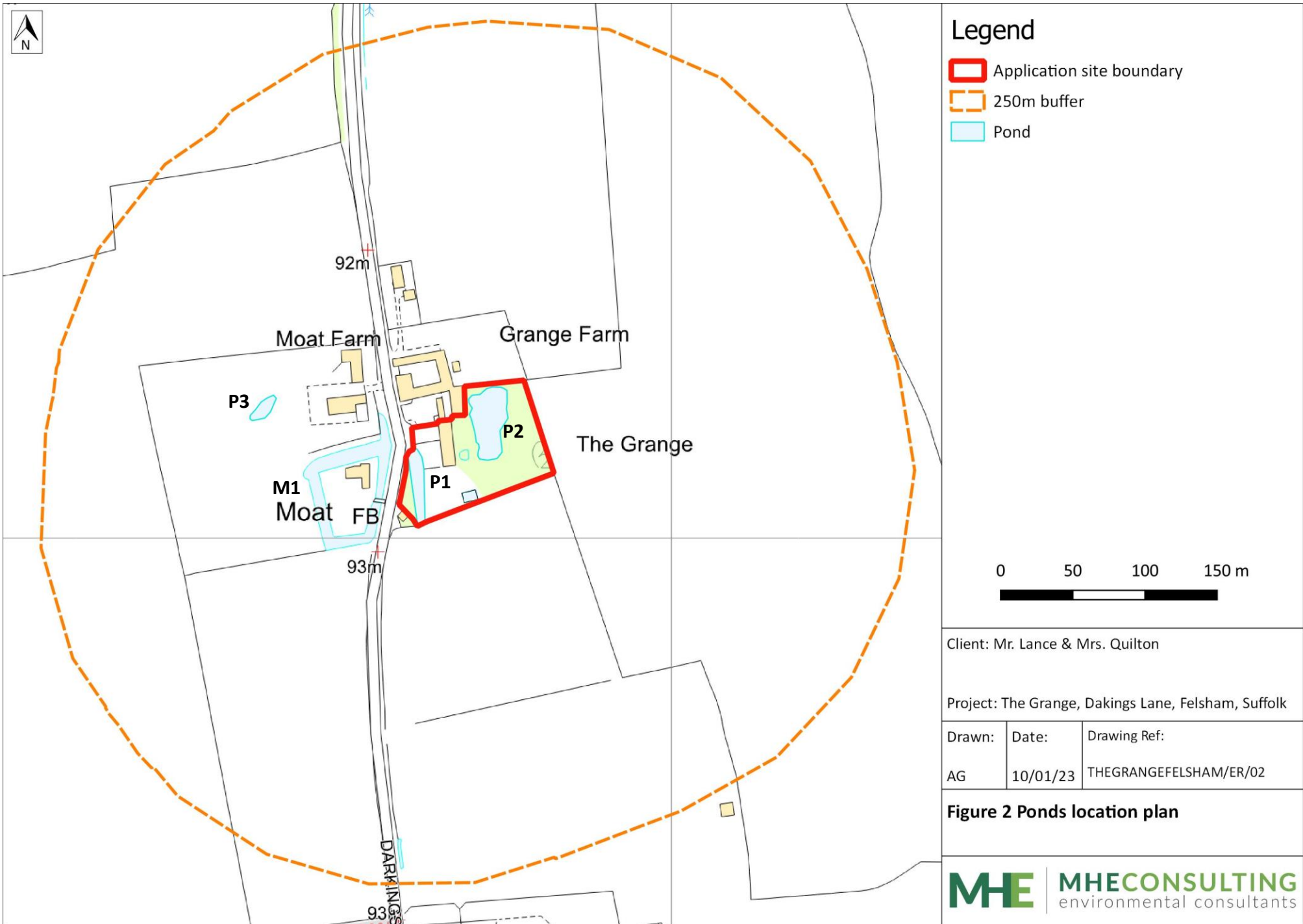


Client: Mr. Lance & Mrs. Quilton

Project: The Grange, Dakings Lane, Felsham, Suffolk

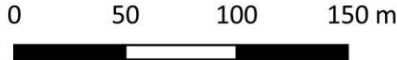
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Figure 1 Site location plan



Legend

- Application site boundary
- 250m buffer
- Pond



Client: Mr. Lance & Mrs. Quilton

Project: The Grange, Dakings Lane, Felsham, Suffolk

Drawn:	Date:	Drawing Ref:
AG	10/01/23	THEGRANGEFELSHAM/ER/02

Figure 2 Ponds location plan

Appendices

Appendix A1 Photos



Photo 1 West elevation of "The Grange"



Photo 2 Southwest elevation of "The Grange" and attached cottage



Photo 3 Northwest elevation of existing garage to be partly demolished



Photo 4 Southeast elevation of existing garage to be partly demolished



Photo 5 East elevation of The Grange and attached buildings



Photo 6 View of the loft above The Grange



Photo 7 Concrete tanks previously used to rear fish



Photo 8 View of lawn area to the east of buildings



Photo 9 View of lawn and ruderal vegetation in the southwest corner of the garden



Photo 10 Lawn area to the south of existing garage where new cart lodge is proposed



Photo 11 Overgrown vegetable beds and fruit trees in the garden to the southwest of the buildings



Photo 12 View of trees in the garden to the southeast of the buildings



Photo 13 Trees along the eastern garden boundary



Photo 14 View of trees along southern garden boundary (west of concrete tanks)



Photo 15 Common laurel hedge forming part of southern garden boundary adjacent to the concrete tanks



Photo 16 Pond P1



Photo 17 Pond P2



Photo 18 Rubble pile in garden near to where new cart lodge is proposed.

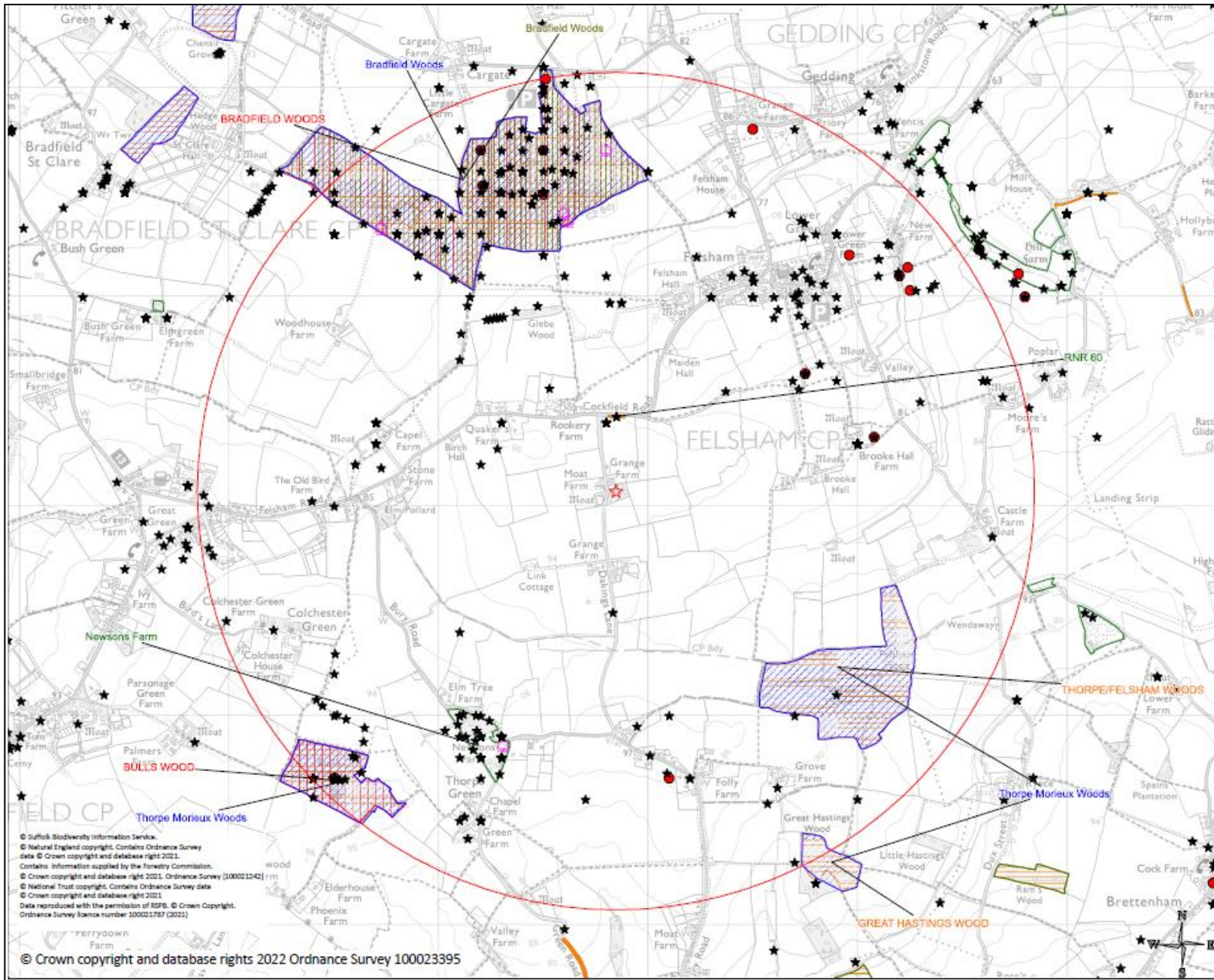


Photo 19 BLE droppings on the floor beneath the ridge in The Grange northern loft



Photo 20 Scattering of BLE and pipistrelle droppings on the floor in the cottage loft

Appendix A2 SBIS data search map



- Data Enquiry**
- ☆ Search Point
 - Search Area
- Protected, Locally Scarce and Rare Species**
- ▲ Record Locations (for grids of 6 fig. or greater)
- Schedule 9 Species**
- Record Locations (for grids of 6 fig. or greater)
- Ancient/Veteran/Notable Trees**
- Ancient/Veteran/Notable Trees
- Roadside Nature Reserve**
- Roadside Nature Reserve
- County Wildlife Sites**
- County Wildlife Sites
- County GeoSites**
- County GeoSites
- SSSI**
- ▨ SSSI
- LNR**
- ▨ LNR
- SPA**
- ▨ SPA
- SAC**
- ▨ SAC
- RAMSAR**
- ▨ RAMSAR
- NNR**
- ▨ NNR
- SWT Reserve**
- ▨ SWT Reserve
- Ancient Woodland Inventory**
- ▨ Ancient Woodland Inventory
- Other Public or Conservation Ownership/Management**
- ▨ Forestry Commission, National Trust (public access), RSPB (public access)
- National Park**
- ▨ The Broads
- ACNB**
- ▨ Suffolk Coast and Heaths or Dedham Vale

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Scale report: 1:18,000



MHE Consulting (The Grange, Felsham TL 93846 56072) 2km Data Enquiry

Date: 21/12/2022 | Drawn by: Andy Mercer

Appendix A3 EclA criteria

A3.1 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 A4 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



https://secure.telegraph.co.uk/multimedia/archive/03435/great_crested_newt_3435922k.jpg

Appendix A5 Bird boxes



RSPB Robin and wren diamond nestbox

Product ID: R401640

£ 15.00

★★★★☆ [Read all reviews](#)

Best-selling, diamond shaped, open-fronted nest box attractive to robins, wrens, pied wagtails and spotted flycatcher.

[Read full information](#)

SAVE £2 WHEN YOU BUY TWO PROMOTIONAL NEST BOXES!

- Add two promotional nest boxes to your basket to save £2
- Offer ends 4 January 2023 and is subject to availability
- Loyalty points can be collected/redeemed as usual
- Not available in conjunction with any other offer

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Visit the RSPB website

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[Home](#) > [Bird care](#) > [Bird houses & nest boxes](#) > [Garden bird nest boxes](#) > [RSPB Sparrow terrace nest box](#)

 Print



RSPB Sparrow terrace nest box

Product ID: R407816

£ 35.00

★★★★☆ [Read all reviews](#)

Provides three separate nest boxes in one FSC® certified timber terrace, each with its own 32mm entrance hole. Beautifully made in the UK.

RSPB nest boxes provide a safe and snug place for birds to roost and nest. Unlike cheaper alternatives, our [bird houses](#) are made from sustainable FSC® certified timber and have excellent insulation properties. This makes them warm in winter and cool in summer. RSPB nest boxes are carefully designed with correct dimensions and ventilation, without perches for intruders to grip onto and threaten the occupants.

[Read full information](#)

SAVE £2 WHEN YOU BUY TWO PROMOTIONAL NEST BOXES!

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Home > Bird care > Bird houses & nest boxes > Garden bird nest boxes > Apex starling nestbox

Print



Apex starling nestbox

Product ID: R405836

£ 26.99

★★★★☆ [Read all reviews](#)

Beautifully made FSC @ certified timber nest box designed with starlings in mind. The 45mm entry hole allows the larger birds to nest in the box.

Features include drainage holes and one side that pivots open for easy end-of-season cleaning.

Nest box measures 31.5 x 18.5 x 18cm.

[Read full information](#)

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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



Willow Tit/Tree Creeper

£35.00

A new improved 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.

12 in stock

- 1 +

Add to basket

Category: [bird and bat boxes](#)

Description

Additional information

Reviews (0)

Description

Height 430mm
Width 60mm
Depth 70mm
Typical Weight 4.3kg

Appendix A6 Bat boxes



Woodstone multi-chamber box



Eco Kent bat box



Vincent Pro bat box

Appendix A7 Wildlife friendly compost area

How to build a wildlife friendly compost heap...

- Clear an area.
- Stand a pallet up so its long edge sits on the ground.
- At either end of the pallet, hammer a stake between the two layers of the pallet.
- Place two pallets at right-angles to the first and once again secure with stakes.
- Secure the remaining pallet to the front using wire or string - this will allow you to remove it when you need to turn or empty your compost.



Shaggy ink cap - fungi help breakdown the contents of your compost heap.



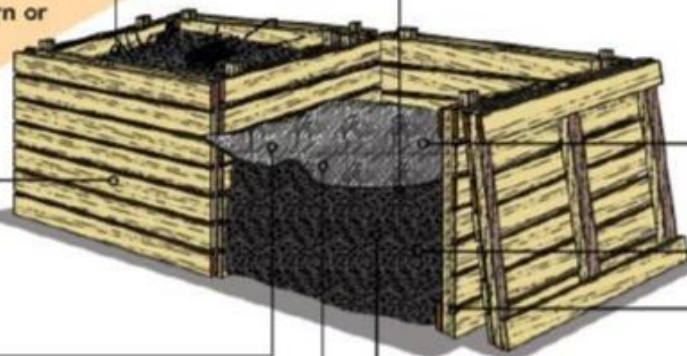
Snail - will feed on the compost and provide food for many different birds.



Grass snake - if you are lucky a female may lay eggs in your heap during June or July.



Woodlouse - minibeasts are vital to a compost heap.



Millipede - they munch their way through the ingredients, turning it into a rich compost.



Slow worm - may breed and have their young in the heap.



Common toad - will find shelter in the damper parts of the heap.



Worm - a healthy compost heap needs worms.



Hedgehog - may visit at night to feed on snails and other invertebrates.

The compost heap's ingredients

Balance is the key to a good compost heap. To make a good mix you need more or less equal amounts of 'greens' and 'browns' plus small amounts from the 'others' list.

The Greens

Nitrogen-rich ingredients

- Comfrey leaves, nettles, young green weeds - avoid weeds with seeds, coffee grounds, grass cuttings, urine - diluted using 20 parts water to 1 part urine, raw vegetable peelings, tea bags and leaves, soft green prunings.

The Browns

Carbon-rich ingredients

- Cardboard - cereal packets and egg boxes, waste paper - even shredded, old bedding plants, newspaper - although it is better to recycle them, hay and straw, wood shavings, fallen leaves.

Other Compostable Items

- Wood ash - in moderation, hair, crushed egg shells, natural fibres - such as wool or cotton.