

**Proposed Two Dwellings**  
**The Bungalow, Thornham Magna, Suffolk**



Ecological Survey Report – November 2021

**MHE Consulting Ltd**

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# Executive Summary

MHE Consulting Ltd were instructed to undertake an ecological survey of land at The Bungalow, The Street, Thornham Magna, Suffolk (TM 10470 71002, Figure 1) where it is proposed to build 2 houses with garden with garages, driveways and gardens in the rear garden behind the existing bungalow. Separate planning permission were granted for the demolition of the bungalow and construction of 2 dwellings at the front of the site (Ref: DC/20/04979), and a new bridge access (Ref: DC/19/01558).

The application site comprises an area of gardens to the rear of the existing bungalow and includes area of broadleaved trees and a mix of grassland and ruderal vegetation with numerous scattered broad-leaved trees and hedgerows.

The value of the site for foraging and commuting bats was assessed as being *Moderate* with some retained trees following clearance works in 2019 having the potential to support roosting bats.

The remnant hedgerows, trees and shrubs following some pioneer clearance some bird nesting and song perch habitat for small passerines including wren (*Troglodytes troglodytes*), robin (*Erithacus rubecula*) and other species. Ruderal and unmanaged former lawn provide foraging habitat for insectivorous species such as starling (*Sturnus vulgaris*).

Hedgehog (*Erinaceus europaeus*) (S. 41 list species) will use hedgerows and shrubs as dispersal and refuge habitat, whilst the former lawn and ruderal habitat provides foraging habitat.

Mitigation measures are recommended to limit impacts on retained habitats and protected and notable species of interest through the site clearance, construction and operational phases of the scheme. These include protection of retained habitats and good practice measures to prevent amphibians, hedgehogs and other wildlife being inadvertently injured or killed during the scheme. Where mitigation is insufficient to prevent impacts compensation measures such as tree and hedgerow planting has been prescribed. Enhancement opportunities are also suggested.

With the mitigation, compensation and enhancement measures proposed, the proposed development is considered consistent with the relevant planning and wildlife guidance and legislation with no significant adverse impacts on biodiversity predicted.

# 1 Introduction

## 1.1 Brief

MHE Consulting Ltd were instructed to undertake an ecological survey of land at The Bungalow, The Street, Thornham Magna, Suffolk (TM 10470 71002, Figure 1) where it is proposed to build two dwellings with, garages, driveways and gardens to the rear of an existing bungalow.

A separate planning permission (Ref: DC/20/04979) was granted for the demolition of the bungalow and construction of 2 dwellings at the front of the site, and a new bridge access (Ref: DC/19/01558) was granted planning permission in Oct 2019.

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) as well as biodiversity enhancement opportunities; and
- Provide an assessment of residual effect, and where appropriate identify the need for post-construction monitoring.

This report will be used to develop the proposals as necessary, and to form the basis for the submission of biodiversity information with the 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 2) comprises an area of gardens to the rear of the existing bungalow and includes area of broadleaved trees and a mix of grassland and ruderal vegetation with numerous scattered broad-leaved trees and hedgerows (Photos 1 to 6).

Photos of habitats present are provided within 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 NPPF was originally published in 2012 and 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](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, 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 Sites of Special Scientific Interest;
- 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. Planning policies and supporting documents that are used to plan, deliver and monitor development across the Mid Suffolk District can be found at <https://www.midsuffolk.gov.uk/planning/planning-policy/adopted-documents/mid-suffolk-district-council/mid-suffolk-local-plan/>.

## 2.3

### **Legislation**

### 2.3.1

#### *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.

### 2.3.2

#### *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 which fall under the protection of this legislation are referred to herein 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 (*Fallopia 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.

### 2.3.3

#### *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 Sites of Special Scientific Interest (SSSI) 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.

### 2.3.4

#### *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’ (Special Protection Areas, SPAs, and Special Areas of Conservation, SACs), the protection of ‘European Protected Species’ (“EPS”), and the adaptation of planning and other controls for the protection of European Sites.

They have recently 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.

### 2.3.5

#### *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](http://legislation.gov.uk).

## 3 Survey methodology

### 3.1 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 site and/or land immediately adjacent to it:

- Amphibians<sup>1</sup> and reptiles<sup>2</sup> including great crested newts (GCNs) (*Triturus cristatus*), toads (*Bufo bufo*), grass snake (*Natrix helvetica*), adder (*Viper berus*), common lizard (*Zootoca vivipara*) and slow-worm (*Anguis fragilis*);
- Mammals including badgers (*Meles meles*)<sup>3</sup> and bats<sup>4</sup>;
- Breeding birds<sup>4</sup> including Red and Amber status<sup>5</sup> species; and
- S. 41<sup>6</sup> list habitats such as hedgerows, and species such as hedgehog (*Erinaceus europaeus*), stag beetle (*Lucanus cervus*) and Lepidoptera (butterflies and moths).

In the context of the landscape setting, scale of the application site, and unknown nature of the development, the 'Zone of Influence' of the scheme is considered restricted to habitats on the site and species within 250m of the site boundary unless identified otherwise.

### 3.2 Field survey

An initial site walkover was undertaken on the 11/01/2019 with a further site survey on the 01/10/20 to 1) record habitats present; and 2) assess the suitability of habitats present for protected and notable species. Habitats present (Figure 2) were recorded as per the JNCC Phase 1 habitat survey methodology (JNCC, 2010). A list of vascular plants and a description of the vegetation was made, including the location and extent of Schedule 9 plants.

#### 3.2.1 *Amphibians and reptiles*

The terrestrial habitat suitability of the site for amphibians and reptiles was assessed with respect to refugia and foraging habitat based on the known habitat preferences.

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<sup>1</sup> GCNs and all species of bats receive full protection under the WCA 1981 and Habitats Regulations 2017.

<sup>2</sup> Widespread amphibians and reptiles receive partial protection under the WCA 1981.

<sup>3</sup> Badgers and their setts are afforded protection by the PBA 1992.

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

<sup>5</sup> The conservation statuses of UK bird species are listed within the Birds of Conservation Concern 4 (Eaton *et al.*, 2015).

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

No ponds are present on the application site though OS maps show 8 ponds to be present within 250m of the site boundary with the closest being 30m from the site boundary. No significant ecological barriers are present hindering dispersal to the application site while hedgerows and wooded areas provide ecological corridors.

### 3.2.2

#### *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).

### 3.2.3

#### *Bats*

##### a) Tree roost potential

Existing trees were visually checked (11/01/19) 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;
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 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.

b) Foraging/commuting habitat

Consideration was given to habitats on site for their potential to provide foraging and/or commuting opportunities for bats, such as ponds and hedgerows. The value of these habitats was assessed with reference to the BCT guidance (Collins, 2016). Values are summarised below:

- *Negligible*: Negligible features on site;
- *Low*: Habitat that may be used by low numbers of bats (e.g. defunct hedgerow, lone tree) but isolated from the surrounding landscape;
- *Moderate*: Continuous habitat connected to the wider surrounding landscape (e.g. lines of trees and scrub, open water); or
- *High*: Continuous high-quality habitat connected to the wider surrounding landscape likely to be regularly used (e.g. river valley, hedgerow, woodland) with additional value if close to known roosts.

3.2.4

*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.

3.2.5

*S. 41 list habitats and species*

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

3.2.6

*Non-native invasive plant species*

The site was inspected for Schedule 9 (WCA, 1981) species such as Japanese knotweed and giant hogweed.

3.3

**Survey constraints**

Site topographical and proposal plans show areas of scrub habitat and numerous trees which have been cleared and removed from site for this development prior to the ecological survey being carried out. This has constrained the capability to accurately survey this habitat and assess the impacts of its loss. Six of seven outbuildings/sheds shown on the topographical plan for the site were removed prior to the ecological survey and no inspection or assessment of these buildings could be undertaken for nesting birds or roosting bats.

Given the nature and context of the site, the timing of the survey visit was considered appropriate for this report.

3.4

**Surveyor**

Christian Whiting BSc (Hons) MSc MCIEEM has over 20 years' experience working as an ecologist and holds NE survey licences for bats (2015-14745-CLS-CLS - Bat Survey Level 2, barn owl (CL29/00213) and GCNs (Class A licence 2015-17633-CLS-CLS). He is a Registered Consultant (Registration RC089) on NE's Bat Mitigation Class Licence. He also holds a NE water vole (*Arvicola amphibius*) Developers Class Licence CL31 (Intentional disturbance of water voles and damage/destruction of water vole burrows by means of 'Displacement') and is registered on the Environment Agency's and Water Management Alliance IDB water vole class

licences respectively. His main areas of expertise are bats, vascular plants, amphibians and reptiles, otter (*Lutra lutra*) and water vole.

### 3.5

#### **Assessment**

Impacts upon habitats and species have been assessed with reference to the CIEEM guidelines for Ecological Impact Assessment (2018).

The assessment includes potential impacts upon habitats and species during the construction and operational phases of the scheme. It considers direct and indirect, secondary and cumulative impacts and whether the impacts and their effects are short, medium long-term, permanent, temporary, reversible, irreversible, positive and/or negative.

Baseline conditions are based on the observations of this survey. Levels of significance and geographical contexts used have been defined according to best judgement and the criteria in Appendix A3. Where further surveys are deemed necessary this is addressed in Section 5.3.

# 4 Results

## 4.1 Brief

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

## 4.2 Baseline ecological conditions - desk study

### 4.2.1

#### *Designated sites*

Locally and Nationally designated sites within 2km and 5km of the application site are listed in Table 4.1. No Internationally designated sites are located within 2km or 13km (SPA/Ramsar) of the application site boundary.

**Table 4.1 Locally designated sites**

Site name and designation(s)
Braiseworth Wood/Staggall's Wood CWS
Birdshedge Grove CWS
Coldham Grove CWS
Dormans Wood CWS
Howe Plantation CWS
Lady Henniker Wood CWS
Lady Henniker Wood/Bottom Plantation/Duchess Wood CWS *
Thornham Parva Meadow CWS
Victoria Wood CWS
View Wood CWS
Major Farm Braiseworth SSSI

\* Listed on the Ancient Woodlands inventory.

#### Local sites

The Thornham Estate Woods includes comprises numerous individual County Wildlife Sites (CWS) as listed in Table 4.1. These woods are predominantly oak (*Quercus* sp.), ash (*Fraxinus excelsior*) and hazel (*Corylus avellana*) with rides supporting rich ground flora including ragged robin (*Lychnis flos-cuculi*) and common spotted orchid (*Dactylorhiza fuchsii*). Birdshedge Grove CWS is of particular interest, having a waterlogged area supporting a diverse range of plants and birds and three rare species of moss have been recorded at the site.

Thornham Parva Meadow CWS is an unimproved herb rich grassland meadow enclosed by ancient hedgerows, both of which are priority habitats. The species richness and structural diversity support an array of insect species.

#### National sites

Major Farm Meadow SSSI is damp and species-rich and one of the few remaining unimproved hay meadows in Suffolk. The meadow is shallow-sloping, on boulder clay of low soil fertility, and characterised by an abundance of mole-hills. The sward supports a wide variety of grasses and herbs of which sweet vernal-grass (*Anthoxanthum odoratum*), common sorrel (*Rumex acetosa*), meadow buttercup

(*Ranunculus acris*) and ribwort plantain (*Plantago lanceolata*) are dominant. Herbaceous species include cuckoo flower (*Cardamine pratensis*), pepper saxifrage (*Silaum silaus*), oxeye daisy (*Leucanthemum vulgare*), adder's-tongue fern (*Ophioglossum vulgatum*) and the white-flowered form of bugle (*Ajuga reptans*) with colonies of twayblade (*Listera ovata*), green-winged orchid (*Orchis morio*) and common spotted orchid (*Dactylorhiza fuchsii*). The meadow is bounded by a mature hedgerow containing oak (*Quercus* sp) and ash (*Fraxinus excelsior*) standards and rich in woody species. Within the meadow there is a fine specimen of the rare native black poplar (*Populus nigra*).

Due to the location and scale of the scheme it does not meet any of the listed risk criteria.

#### 4.2.2

#### Species

No protected or notable species records exist for the property site boundary. Table 4.2 identifies species records for within 250m and 2km of the application site boundary

**Table 4.2 Protected/notable species within 250m and 2km of the application site**

Scientific name	Common name	Legal /conservation status	<250m of site
<b>Amphibians</b>			
<i>Bufo bufo</i>	Common toad	Sch. 5; S. 41	-
<i>Lissotriton vulgaris</i>	Smooth newt	Sch. 5	-
<i>Rana temporaria</i>	Common frog	Sch. 5	-
<i>Triturus cristatus</i>	Great crested newt	EPS; Sch. 5; S. 41	-
<b>Birds</b>			
<i>Apus apus</i>	Swift	Amber status	<b>Yes</b>
<i>Emberiza citrinella</i>	Yellowhammer	Red status; S. 41	-
<i>Linaria cannabina</i>	Linnet	Red status; S. 41	-
<i>Passer domesticus</i>	House sparrow	Red status; S. 41	<b>Yes</b>
<i>Perdix perdix</i>	Grey partridge	Red status; S. 41	-
<i>Poecile palustris</i>	Marsh tit	Red status	<b>Yes</b>
<i>Streptopelia turtur</i>	Turtle dove	Red status; S. 41	-
<i>Sturnus vulgaris</i>	Starling	Red status; S. 41	-
<i>Turdus iliacus</i>	Redwing	Red status; Sch. 1	-
<i>Turdus philomelos</i>	Song thrush	Red status	-
<i>Tyto alba</i>	Barn Owl	Sch. 1	-
<b>Mammals - bats</b>			
<i>Barbastella barbastellus</i>	Western barbastelle	EPS; Sch. 5; S. 41	-
<i>Eptesicus serotinus</i>	Serotine	EPS; Sch. 5	-
<i>Myotis daubentonii</i>	Daubenton's	EPS; Sch. 5	-
<i>Nyctalus noctula</i>	Noctule	EPS; Sch. 5; S. 41	-
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	EPS; Sch. 5	-



Scientific name	Common name	Legal /conservation status	<250m of site
<i>P. pygmaeus</i>	Soprano pipistrelle	EPS; Sch. 5; S. 41	-
<i>Plecotus auritus</i>	Brown long-eared	EPS; Sch. 5; S. 41	-
<b>Mammals - other</b>			
<i>Arvicola amphibius</i>	Water vole	Sch. 5; S. 41	<b>Yes</b>
<i>Erinaceus europaeus</i>	Hedgehog	S. 41	-
<i>Lepus europaeus</i>	Brown hare	S. 41	-
<i>Lutra lutra</i>	Otter	EPS; Sch. 5; S. 41	<b>Yes</b>
<i>Meles meles</i>	Badger	PBA 1992	-
<b>Invertebrates</b>			
<i>Coenonympha pamphilus</i>	Small heath	S. 41	-
<i>Satyrrium w-album</i>	White-letter hairstreak	Sch. 5; S. 41	-

### 4.3

#### 4.3.1

### Baseline ecological conditions – field survey

#### *Habitats and vascular plants*

Descriptions of the habitats of the whole site (Figure 2) excluding the front part not included within this application, and the characteristic plants species present are provided below whilst photographs of the habitats are provided in Appendix A1.

#### *a) Unmanaged lawn*

Land on the west side is predominantly former lawn habitat that has become unmanaged since the bungalow became unoccupied and is species poor with ground ivy (*Glechoma hederacea*), cleavers (*Galium aparine*) and other forb species (Photos 1 and 2).

#### *b) Scattered trees (part cleared)*

Numerous scattered trees (Photos 2 to 4) are present on-site including a single bird cherry (*Prunus avium*), holly (*Ilex aquifolium*), several mature and semi-mature oak, a large field maple (*Acer campestre*) and ash. Trees along the bank of the roadside stream are beech (*Fagus sylvatica*) and hornbeam (*Carpinus betulus*) with occasional sycamore (*Acer pseudoplatanus*).

#### *c) Ruderal*

Land to the west side of the site comprises more ruderal species with common nettle (*Urtica dioica*), variegated nettle (*Lamium hirsutum*), foxglove (*Digitalis* sp.) and other species (Photos 4 to 6). Ruderal vegetation has regrown (Photo 6) since the initial clearance works.

#### *d) Scrub (cleared)*

Land around the east, west and north boundaries have previously supported dense shrubs and scrub (aerial photos). Some of this vegetation had been cleared (Photo 5) prior to the ecological survey undertaken in 2019 with some remnant bramble (*Rubus fruticosus* agg.) and shrubs. Scrub has regrown (Photo 6) in the intervening period between the first and update survey.

#### e) Hedgerows

A few remnant hedgerows (Figure 2) are present along the west and east site boundaries. Along the west these are comprised of box (*Buxus sempervirens*), elm (*Ulmus* sp.), hawthorn (*Crataegus monogyna*) and holly. Along the east this is overgrown and comprised of hawthorn, field maple and sycamore.

#### 4.3.2

#### *Amphibians and reptiles*

The application site supports areas of potential refuge and foraging habitat for amphibians and reptiles. Prior to site clearance the areas of scrub would have provided suitable refuge and dispersal habitat whilst remnant hedgerows and shrub as well provide some refuge habitat. Former lawn habitat provides potential amphibian terrestrial foraging habitat, whilst the ruderal habitat under the trees will provide cover and foraging habitat.

The stream provides potential amphibian dispersal habitat though being running water it is not suitable for amphibian egg laying. Common toad and common frog are likely to occur on and pass through the application site and occasional grass snake may pass through.

The 8 nearby ponds P1 to P8 (Figure 3) are connected to the application site through a series of hedgerows and woodland areas, allowing relatively unimpeded access to the application site. The Street and the watercourse run between the site and ponds P2 to P6 and together these features will form a partial ecological barrier to dispersal.

The applicant contacted the owners of ponds P1, P7 and P8 to ask for access to assess the suitability of the 3 ponds with letters sent on the 8 December 2020. The owner of the pond P1 confirmed that it no longer exists as it dried annually and was then filled in, whilst the Thornham Estate has not responded to the request for access with the applicant's also rang the estate offices a couple of times with no response. Looking on Google Earth Pro ponds P7 and P8 are located in an area of woodland which has been present for c. 80+ years, with some younger tree visible in 1999 which may have occurred after the 1987 storm. No ponds are visible.

The potential of the ponds for supporting GCNs has been calculated using the Habitat Suitability Index making the following assumptions: 1) that the pond supports poor water quality based on the likely invertebrate assemblages being species-poor due to the heavy shading, lack of macrophytes and potential eutrophication from adjacent arable farmland, 2) the ponds not support fish (due to lack of permanency of water due to the tree cover), and 3) the likelihood that the ponds will dry in most years due to evapotranspirative loss due to the trees. The size of the ponds has been estimated by measuring the pond areas shown on the OS map layer.

Habitat Suitability Index scores of 0.451 (Poor) and 0.521 (Below Average) were calculated for ponds P7 and P8 respectively. If the ponds dried every year rather than most years, then the HSI scores reduce to 0.344 (Poor) and 0.444 (Poor) respectively. Therefore, it is considered unlikely that any significant GCN populations exist within ponds P7 and P8 and that there is low potential for any GCNs to inhabit the application site and rear gardens of properties along The Street

immediately to the north and south.

4.3.3

#### *Badger*

No badger setts or evidence of foraging badger were recorded on site, though the grassland would provide suitable foraging opportunities. A further site visit found no evidence of badgers on site.

4.3.4

#### *Bats*

##### a) Tree assessment

Most of the trees on site were assessed as supporting low suitability for roosting bats. Two trees T1 and T2 (Figure 2) supported *Moderate suitability for roosting bats*. Since the initial site survey some trees have been removed including T1.

##### b) Commuting/foraging habitat

Habitats present on site offer foraging and commuting opportunities in the form of scattered trees, the log pile and stream. Scrub would have also provided suitable foraging habitat prior to its clearance. Overall, the habitat on site is valued as *Moderate* in this context.

4.3.5

#### *Nesting birds*

The laurel shrub, hedgerows and scattered trees may be used as nesting habitat, particularly those with dense ivy cover, as well as song perches. Scrub habitat prior to its clearance would have provided good nesting habitat for wren (*Troglodytes troglodytes*) and other species. The grassland and ruderal vegetation may be used by foraging insectivores such as starling.

4.3.6

#### *S. 41 list habitats and species*

Hedgerows along the east and west boundaries constitute S. 41 habitats.

The retained hedgerows, areas of bramble scrub and the log piles (if left for an extended period of time so vegetation grows up around it) provide potential hedgehog refuge habitat. The former lawn and ruderal habitat provide hedgehog foraging habitat.

Trees and hedgerows may provide egg laying and feeding habitat for S. 41 listed Lepidoptera, whilst the potential for stag beetle being present is considered low with very few historical records for north Suffolk. However, the Thornham Estate has significant woodland areas and many veteran trees, so the wider landscape is suitable.

4.3.7

#### *Non-native invasive plants*

No non-native Sch. 9 plants exist on site.

**4.4**

## **Geographic context**

The geographic context of a feature is useful in defining the importance of that feature during the assessment of impacts. For the purpose of this report, the geographic frames of reference for the habitats and species present on site are provided in Table 4.2; values are based upon best judgement and the criteria in Table A3.1.

**Table 4.2 Feature values based on geographic context and Table A3.1 criteria**

<b>Feature</b>	<b>Value</b>
Grassland, ruderal, shrubs, hedgerows, trees and scrub	Local
Minor watercourse	Local
Amphibians and reptiles	Local
Bats	Local
Nesting birds	Local
Hedgehog	Local
Invertebrates	Local

## 5 Assessment and recommendations

### 5.1 Description of proposed development

A bungalow and outbuilding are to be demolished and 2 dwellings built along with garages, driveways, gardens and a bridged site access.

The assessment and recommendations below provide a preliminary assessment of mitigation, compensation and enhancements for the proposed development based on the drawings available at the time of writing (*Patrick Allen & Associates Architects; drawings 3934-82*); they should be updated accordingly as the scheme is subsequently amended.

### 5.2 Assessment of Impacts

This assessment, made with reference to the 2018 CIEEM guidelines to Ecological Impact Assessment (EclA), aims to:

- Identify and characterise impacts;
- Avoid, and where necessary incorporate mitigation measures to reduce any impacts;
- Assess the significance of residual effects;
- Identify appropriate compensation measures to offset significant residual effects;
- Identify opportunities for ecological enhancement where feasible; and
- As per CIEEM guidelines, habitats that have been recently cleared for the purpose of development are included within this assessment.

The scale of impacts has been assessed with reference to the criteria in Table A3.2.

### 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 typically 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 Habitats and vascular plants

#### *a) Potential impacts*

The proposed development will result in the loss of some lawn and ruderal habitat, whilst some mature trees have already been felled in the past couple of years since an initial site walkover. These habitat losses are considered a negative effect at the Local level.

Site clearance, construction and operational phases of the scheme may cause increased surface runoff of silt and pollutants into the adjacent minor watercourse considered a potential significant negative effect on habitats at the local level.

Impacts upon associated protected and/or notable species are assessed in sections 5.5 to 5.8 below.

*b) Mitigation*

To prevent unintentional damage to retained trees and hedgerows these habitats should be protected with temporary fencing (e.g. Heras) during construction while Root Protection Areas (RPAs) should be used to inform the detailed design and the construction phase as necessary. Where any planned hard standing or buildings coincide with RPAs hand dig solutions should be employed to avoid damage to roots.

To avoid impacts to a small tributary of the River Dove to the west of the application site a Construction Environment Management Plan (CEMP) or equivalent document should be developed ahead of works commencing to ensure Best Practice measures are used to avoid and/or minimise the risk of pollution. Measures may include, but are not exclusive to:

- Locating the site compound (including any fuel storage) away from the stream;
- Limiting clearance of riparian habitats;
- 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 bowsers or chemical stores (with a 110% capacity to contain any spillage) away from the watercourse;
- 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;
- Using 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.

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)<sup>7</sup>. Once operational, impacts from sewerage and effluent discharges will be avoided through connection to mains sewerage or an on-site sewage/water treatment system.

*c) Compensatory habitat*

Native species hedgerow planting is proposed which will offset some of the scrub clearance undertaken in 2019. The planting should be native and species-rich (≥6 native woody species/30m length) and incorporate a mixture of the following species: common dogwood (*Cornus sanguinea*), field maple, cherry plum (*Prunus*

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

*cerasifera*), hawthorn, spindle (*Euonymus europaeus*), hazel, dog rose (*Rosa canina*), crab apple (*Malus sylvestris*) and holly.

Habitat compensation should include the planting of a minimum of 6 native trees which should include a small-leaved lime (*Tilia cordata*), a holly, a wayfaring tree (*Viburnum lantana*), a wild service tree (*Sorbus torminalis*), a hornbeam (*Carpinus betulus*) and bird cherry and other species listed in Table 5.1. Trees should be chosen from native and locally produced stock with mulch applied to the base and deer protection used.

To compensate for the loss of scrub (which has already been cleared) a native species-rich hedgerow will be planted along the eastern site boundary using native species from the recommendations in Table 5.1. Any tree or hedgerow plant to die within five years of the scheme completion should be replaced like-for-like.

*d) Residual effects*

If the prescribed mitigation and compensation measures are followed, no significant residual effects are predicted.

## 5.5

### **Amphibians and reptiles**

*a) Impacts*

Site clearance including the removal of bramble scrub and long grass could result in the injury or death of individual animals. During the construction phase animals may fall into open excavations, come into contact with caustic materials (i.e. wet concrete) and take refuge amongst building materials or spoil piles which when later moved could result in the injury or death of individual animals. These impacts are considered likely to be a negative effect upon individuals at the local level.

Loss of scrub and lawn habitats constitute reduction in the availability of potential refuge and foraging habitat, considered a negative effect at the local level

If gully pots connecting to a closed surface water drainage system are installed, there is potential for animals to fall in and become trapped resulting in mortalities (Muir, 2012) considered a significant effect at the local level.

*b) Mitigation*

Given the small scale of the application site with only 4 new dwellings proposed for the site as a whole (2 already approved and 2 proposed), a non-licensed method statement could be employed on the site.

The following good practice construction measures are recommended to avoid impacts from the site clearance, construction and operational phases:

1. An Ecological Clerk of Works to oversee vegetation clearance and other higher risk activities (e.g., excavation of footings and pipe runs which could be constructed when amphibians are not hibernating);
2. The former lawn should be repeatedly mown prior to any commencement of an approved scheme to maintain unsuitability for animals;

3. Retained trees and hedgerow habitat should be protected with temporary fencing;
4. Leaf litter, bricks, logs and other refugia should be cleared sensitively as animals may be found underneath (particularly between October to March) and moved to areas of the site which won't be disturbed by building works;
5. 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;
6. If this is not feasible access ramps should be created to allow animals to escape and the excavations should be inspected prior to infilling.;
7. Should any common amphibians or reptiles encountered they should be allowed to disperse or be carefully moved into retained habitat (e.g. boundaries). An ecologist must be called immediately if any suspected GCNs (Appendix A4) are encountered.
8. Footings and concrete slabs should be poured in the morning where possible to ensure it has hardened prior to evening to reduce the risk of nocturnal animals touching wet concrete;
9. 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;
10. Any excess cement/concrete should be poured into a concrete skip, so it can then set to prevent animals coming into contact;
11. All building materials should be stored on bare ground or hard standing, or stored off the ground on pallets; and
12. Any spoil should be stored on site temporarily should be stored on bare/hard ground or in skips to prevent amphibians or reptiles from seeking refuge.
13. **If utilised, installed gully pots for surface water drainage should be raised above ground level, sealed or covered with a fine grate cover to prevent entrapment issues and be situated  $\geq 100\text{mm}$  from kerbs to maintain function while reducing the probability of animals falling in.**
14. **Downpipes taking water off the roofs should be sealed at ground level by using a leaf and debris screen<sup>8</sup> to prevent amphibians entering drains.**

*c) Compensatory habitat*

Compensation measures prescribed in section 5.4 will compensate for lost vegetation habitat.

*d) Residual effects*

With the mitigation and compensation prescribed will ensure there is **no significant** effect upon widespread amphibians or reptiles during the site clearance or construction phases of the scheme.

## 5.6

### **Bats**

*a) Potential impacts*

i) Loss of commuting and foraging habitat

Removal of trees has resulted in the loss of trees with a negative effect on the availability of foraging and potential roosting niches at the local level.

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



## ii) Lighting impacts

Lighting during both construction and operational phases has the potential to impact bats as some species (e.g. BLE and barbastelle both of which have been recorded on site) will actively avoid lit areas due to an increased risk of predation, whilst emergence times can be significantly delayed due to illumination of roost access/egress points which in turn impacts upon feeding success.

As insects are attracted to lights this can result in a reduction in prey availability for species that will not forage in lit areas, and an increased risk of predation for species which actively forage around lighting. Together, these impacts are considered a significant negative effect on a small number of individuals at the local level.

## iii) Roofing membranes

Research has shown bats can become entangled in modern breathable roofing membranes (Waring *et al.*, 2013) if used under clay pantiles or peg/plain tiles.

### *b) Mitigation*

#### i) Commuting and foraging habitat

Retained trees and hedgerows on site must be protected with Heras fencing and root protection areas to prevent damage the above and below ground growth.

#### ii) Lighting

Exterior and street lighting (as well as temporary security lighting during the construction phase) design must minimise lighting impacts upon retained boundary and adjacent habitats, in particular for the larger outline application site, and should follow current guidance<sup>9</sup>:

*Type of lamp (light source):* Light levels should be as low as possible as required to fulfil the lighting need. Lamps 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 grassland, hedgerows, scrub and the watercourse. This can be achieved by restricting the height of the lighting columns 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;
- PIR movement sensors and timers should be used to minimise the 'lit time' on residential properties (up to 1 minute); and
- Lighting design should be undertaken by an experience practitioner, with lighting contour plans used to model impacts as required.

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

<sup>10</sup> [www.eurobats.org/sites/default/files/documents/publications/publication\\_series/WEB\\_DIN\\_A4\\_EUROBATS\\_08\\_ENGL\\_NVK\\_28022019.pdf](http://www.eurobats.org/sites/default/files/documents/publications/publication_series/WEB_DIN_A4_EUROBATS_08_ENGL_NVK_28022019.pdf)

iii) Roofing membranes

If the roofs of the dwellings will use pantile or peg/plain tiles, traditional roofing felt Type 1F or a breathable sarking board (e.g., Hunton Sarket) must be used.

c) *Compensatory habitats*

Compensatory habitats described in section 5.4 will compensate for lost foraging and commuting habitats when planting matures.

d) *Residual impacts*

Subject to the mitigation and compensation recommendations being followed there will be no significant effect upon roosting bats. There will be a temporary minor negative impact on foraging and commuting bats resulting from the loss of habitat though this will become negligible once compensatory habitat planting has matured.

## 5.7

### **Nesting birds**

a) *Potential impacts*

During the site clearance and construction phases, works have the potential to disturb breeding or nesting birds using retained trees and hedgerows, and to injure or kill adult birds and destroy nests of birds using trees that are to be felled and shrub that was cleared as part of this scheme. There will also be a loss of potential foraging habitat due to the likely future management of loss grass and ruderal vegetation. Such impacts would be considered a negative effect upon species at the local level.

b) *Mitigation*

During the site clearance and construction phase, the following measures should be taken to avoid impacts upon breeding birds:

- Retained trees and shrubs should be protected with temporary fencing (e.g. Heras) during the works to prevent damage to above ground growth whilst Root Protection Areas (RPAs) should be used to inform the detailed design;
- Any tree felling and clearance of scrub should be undertaken outside of the nesting bird season (March to August inclusive);
- If this is not possible then a nesting bird check should be carried out by an experienced and qualified ecologist immediately prior to works being carried out;
- Should active nests be found they should be left undisturbed with a 10m no-works buffer until any dependent young have fledged and left the nest. Any nest sites should be clearly marked on site and site staff briefed on their location; and
- Any site compounds should be positioned away from any boundary hedgerows such as on existing parking areas to minimise disturbance during the main bird-breeding season (e.g. March to August inclusive).

c) *Compensatory habitat*

Four compensatory nesting boxes (Appendix A6) consisting of tree creeper (x2) and tit boxes (x2) should be erected on suitable retained trees around the application site to compensate for the loss of nesting habitats until compensatory planting (as per section 5.4) matures.

*d) Residual effects*

Subject to the mitigation and compensation recommendations being followed, impacts upon nesting habitat are considered negligible.

**5.8**

**S. 41 list habitats and species**

*a) Potential impacts*

During the site clearance phase the removal of scrub (already undertaken) may result in the injury or death of sheltering hedgehog.

During the construction phase hedgehog could potentially fall into open excavations including wet concrete, take shelter in piles of building materials, or fall into open trenches (including wet concrete poured late in the day) resulting in injury or death. Such impacts are assessed as a negative effect at the local level.

The loss of scrub, tree and lawn habitats is considered a negative effect on the availability of refuge, dispersal and foraging habitats for hedgehog and the availability of egg laying and feeding habitat for Lepidoptera. The erection of brick walls and close board timber fencing can block the dispersal of hedgehog thereby impacting feeding and breeding success considered a significant negative effect on animals at the local level.

*b) Mitigation*

Scrub removal should be undertaken in early autumn to avoid impacts upon nesting hedgehog. If clearance is required in the spring to avoid nesting bird issues, vegetation should be retained to no lower than 300mm above ground level to avoid injury or harm to hibernating hedgehog until temperatures are regularly (6 consecutive days/nights) above 6°C. Clearance at other times of year should be undertaken with prior checks/supervision by an ecologist.

Concrete should be poured early in the day or covered with ply boarding or membrane overnight to prevent animals coming into contact, and spoil should be placed into skips that animals cannot access. Trenches should be covered overnight, or mammal ladders (rough pieces of timber) placed to enable animals to escape.

Inter property boundaries will comprise a native species-rich hedgerow (as per section 5.4). However, the proposed close board fencing along the north and south boundaries must have hedgehog highways (13cm x 13cm holes) created in the gravel boards to allow the dispersal of animals between garden plots<sup>11</sup>. The location of hedgehog gaps should be agreed with an ecologist and shown on landscape plans; signage<sup>12</sup> should be erected either side of the fence at the agreed location for the benefit of new householders.

*c) Compensatory habitat*

Some of the logs currently on site from site clearance works in 2019 should be cut to size and stacked to create a hedgehog log pile<sup>13</sup> in order to compensate for lost

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<sup>11</sup> <https://www.hedgehogstreet.org/help-hedgehogs/link-your-garden>

<sup>12</sup> <https://www.britishhedgehogs.org.uk/shop/product/hedgehog-highway-sign>

<sup>13</sup> <https://www.hedgehogstreet.org/help-hedgehogs/helpful-garden-features/>

hedgehog refuge habitat until compensatory planting (as per section 5.4) has matured. Brash could be placed over the log pile. These can be combined with log piles created for amphibians (section 5.5). Hedgerow planting once established and if managed correctly will in time provide hedgehog refuge habitat.

*d) Residual effects*

Subject to the mitigation and compensation recommendations being followed there will be no significant residual effect.

**5.9**

**Cumulative effects**

The Mid Suffolk District Council planning website was searched (22/10/2020) for relevant applications within a 1km buffer of the application site dating back 4 years. Few minor householder and listed building consent applications were returned with a larger scheme close to the application site (ref: DC/18/01661) which was refused permission (though an appeal has been lodged). Approval was granted (Ref: DC/19/01558) for a bridged access to the application site.

The approved two schemes (bridge and 2 dwellings) for the site and the proposed scheme for the rear garden (2 additional dwellings) will have a significant in-combination impact on the habitats present on site and includes the loss of some mature trees removed as part of site clearance in 2019. If the proposed scheme does not deliver the recommended habitat compensation, there will be a net loss in biodiversity on the site.

**5.10**

**Enhancement opportunities**

Subject to the recommended habitat compensation provided as part of the site landscaping and additional recommendations within this report, the proposed scheme will not result in significant negative ecological effects. The proposed development should also include biodiversity enhancements (Table 5.1) to deliver ecological gains once habitats have established.

**Table 5.1 Enhancement opportunities**

<b>Feature</b>	<b>Enhancement suggestion</b>
Fruit trees	1. Heritage fruit trees <sup>14</sup> should be planted with a minimum of 1 tree per dwelling. They could be planted in the front gardens or as mature trees within the proposed northern or southern hedgerows.
Bats	2. Three timber Kent bat boxes timber and/or woodcrete/woodstone bat boxes should be erected on retained trees around the application site boundary (Appendix A5).
Birds	3. A tawny owl box (Appendix A6) could be erected on a mature oak along the eastern site boundary.
Invertebrates	4. Nectar rich climbing plants, such as honeysuckle ( <i>Lonicera periclymenum</i> ) and wild clematis ( <i>Clematis vitalba</i> ) should

<sup>14</sup> <https://www.applesandorchards.org.uk/>

Feature	Enhancement suggestion
	<p>be incorporated into the new and existing hedgerows or encouraged to grow on new garages.</p> <p>5. A native shade tolerant wildflower seed mix (i.e. <a href="https://wildseed.co.uk/mixtures/view/34">https://wildseed.co.uk/mixtures/view/34</a>) may be sown along the base of existing and new hedgerows to provide a diverse understorey food source for pollinating invertebrates.</p>

Peat based composts should not be used in any planting schemes for the site to avoid destruction of peatland habitats and impacts on existing carbon storage.

## 5.11

### Conclusions

Subject to the recommendations made in Section 5, it is anticipated that the proposed development is consistent with the relevant regulatory and planning policy guidance and wildlife laws.

Potential negative ecological impacts resulting from the proposed development should be mitigated or compensated for as recommended and could be secured through use of planning conditions including the use of a CEMP (e.g. BS 42020:2013<sup>15</sup> D.4.1) for pollution prevention, a Biodiversity Method Statement (e.g. BS 42020:2013 D.2.1) for guidance of wider measures such as amphibian/reptile and hedgehog mitigation measures as well as detailed design and location of enhancements such as bird and bat boxes to maximise biodiversity benefits.

Conditions could also be secured specific to breeding birds (e.g. BS 42020:2013 D.3.2.1) and bats (e.g. BS 42020:2013 D.3.5 and D.3.6). With mitigation and compensation measures it is anticipated that there will be a residual minor negative impact from the development due to the permanent loss of grassland, ruderal and scrub habitat and loss of some semi-mature trees.

<sup>15</sup> BSI Standards publication BS 42020:2013 Biodiversity – Code of practice for planning and development

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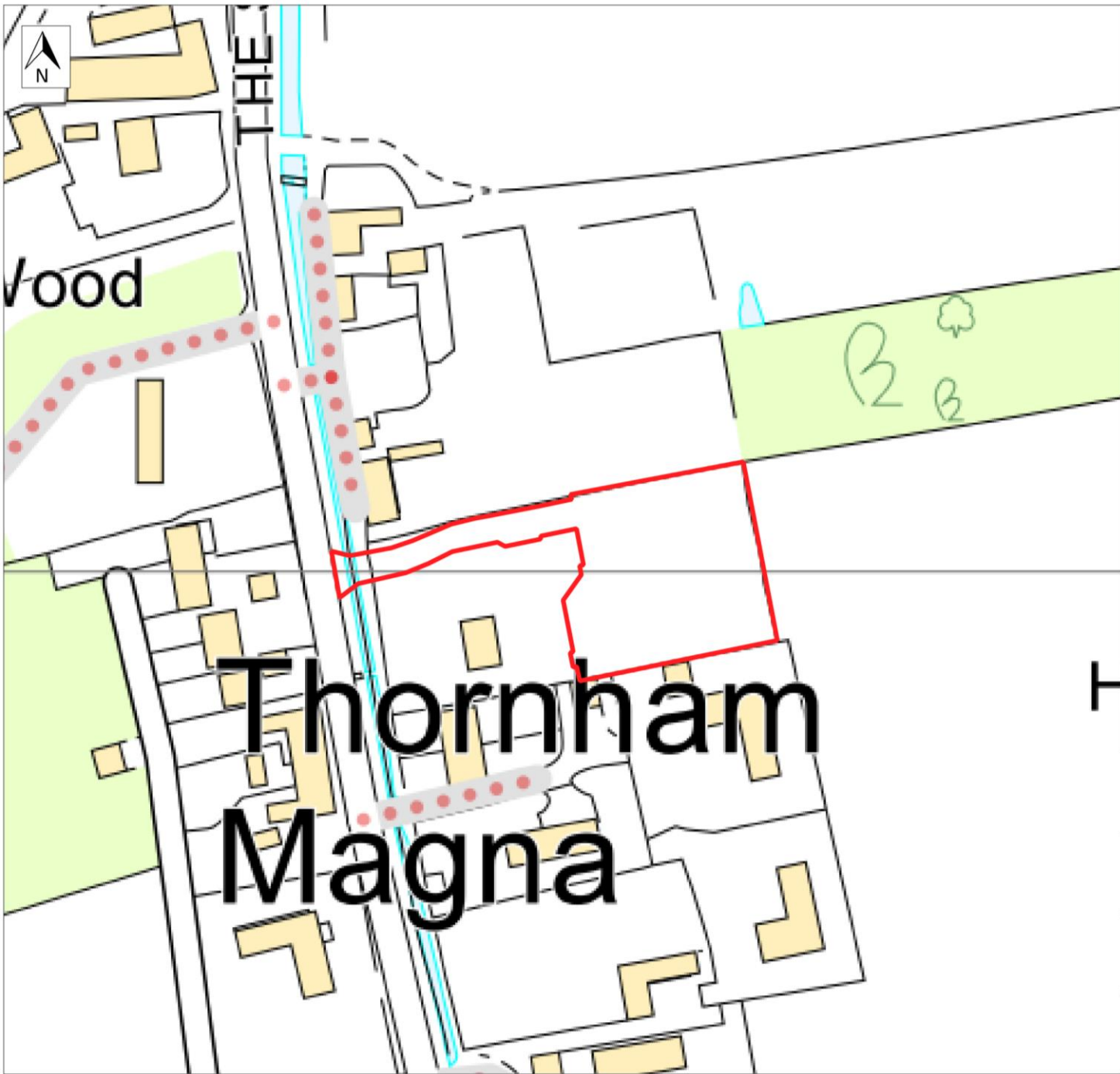
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Oldham, R., Keeble, J., Swan, M. and Jeffcote, M. (2000), Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10(4), pp. 143-155.

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## Figures



**Legend**

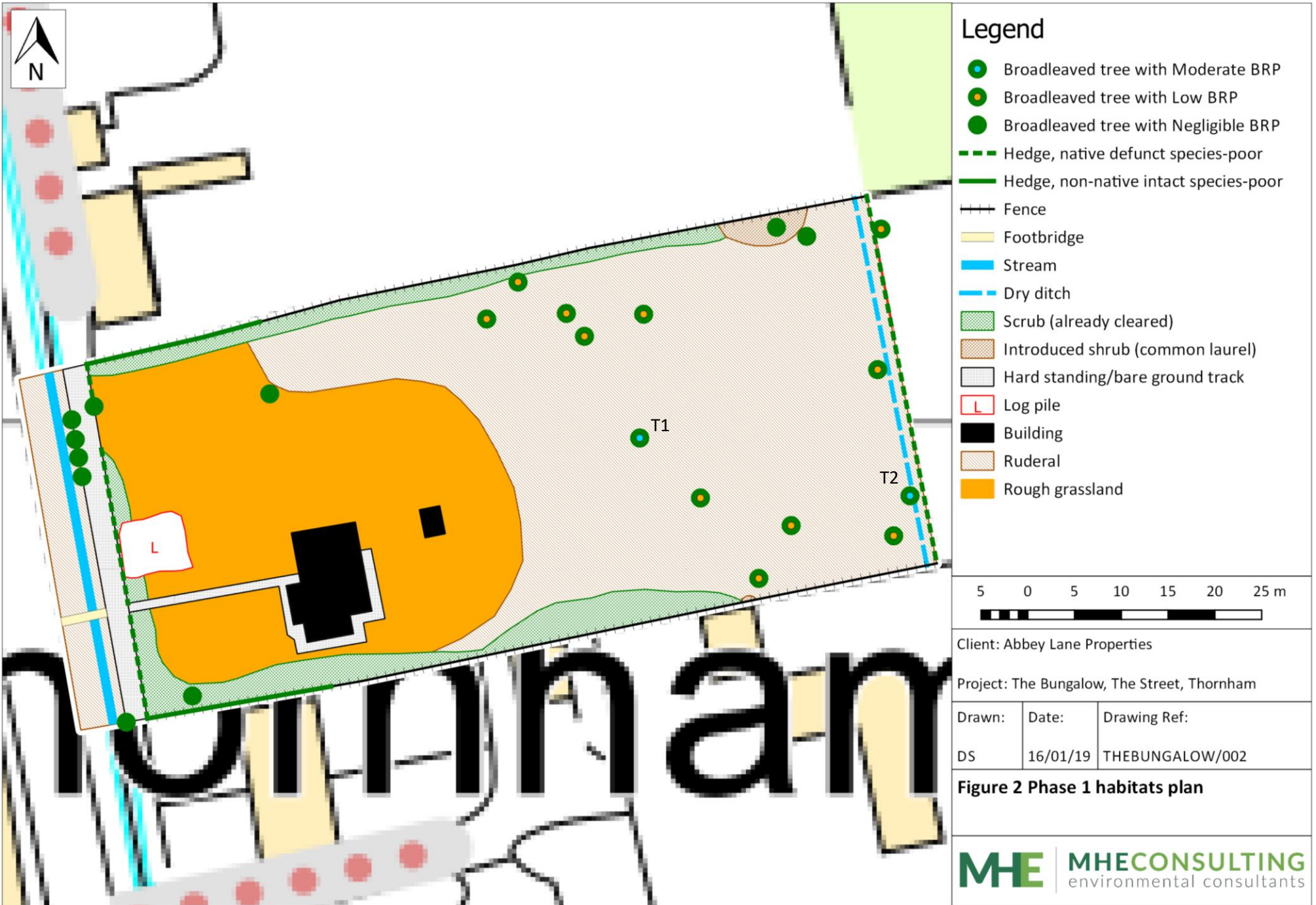
 Application site



Client: Abbey Lane Properties		
Project: The Bungalow, The Street, Thornham Magna		
Drawn:	Date:	Drawing Ref:
CW	04/11/21	THEBUNGALOW/001

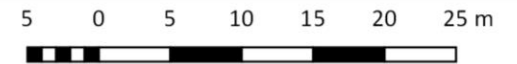
**Figure 1 Site location plan**





**Legend**

- Broadleaved tree with Moderate BRP
- Broadleaved tree with Low BRP
- Broadleaved tree with Negligible BRP
- Hedge, native defunct species-poor
- Hedge, non-native intact species-poor
- Fence
- Footbridge
- Stream
- Dry ditch
- Scrub (already cleared)
- Introduced shrub (common laurel)
- Hard standing/bare ground track
- L Log pile
- Building
- Ruderal
- Rough grassland

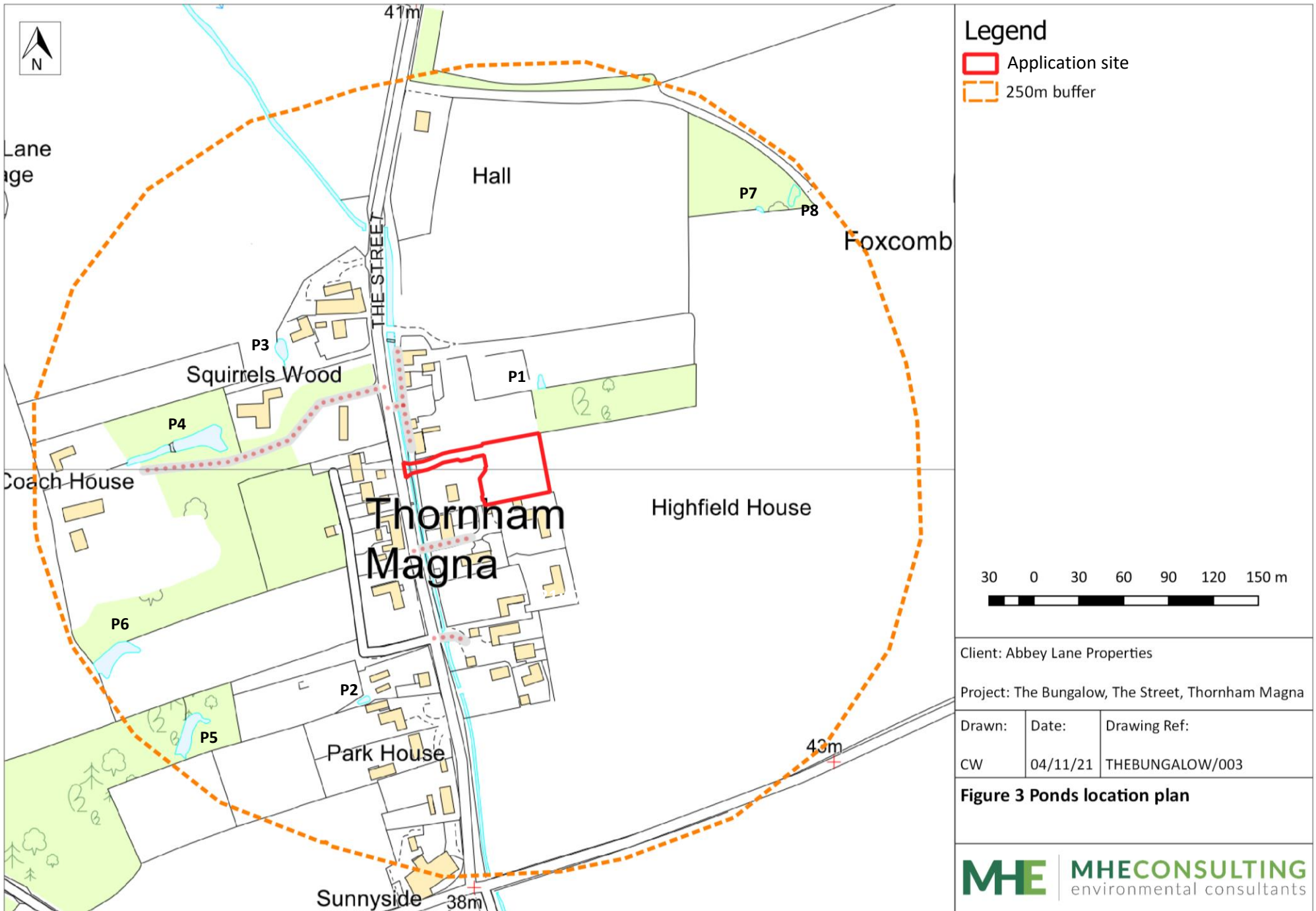


Client: Abbey Lane Properties

Project: The Bungalow, The Street, Thornham

Drawn:	Date:	Drawing Ref:
DS	16/01/19	THEBUNGALOW/002

**Figure 2 Phase 1 habitats plan**



# Appendices

## Appendix A1 Photos





**Photo 1** Proposed access to the proposed and approved schemes



**Photo 2** View of the proposed development site – spring 2019



**Photo 3** Broad-leaved trees adjacent to the northern site boundary



**Photo 4** Expanse of short ruderal and scattered mature oak trees where the two dwellings are proposed.



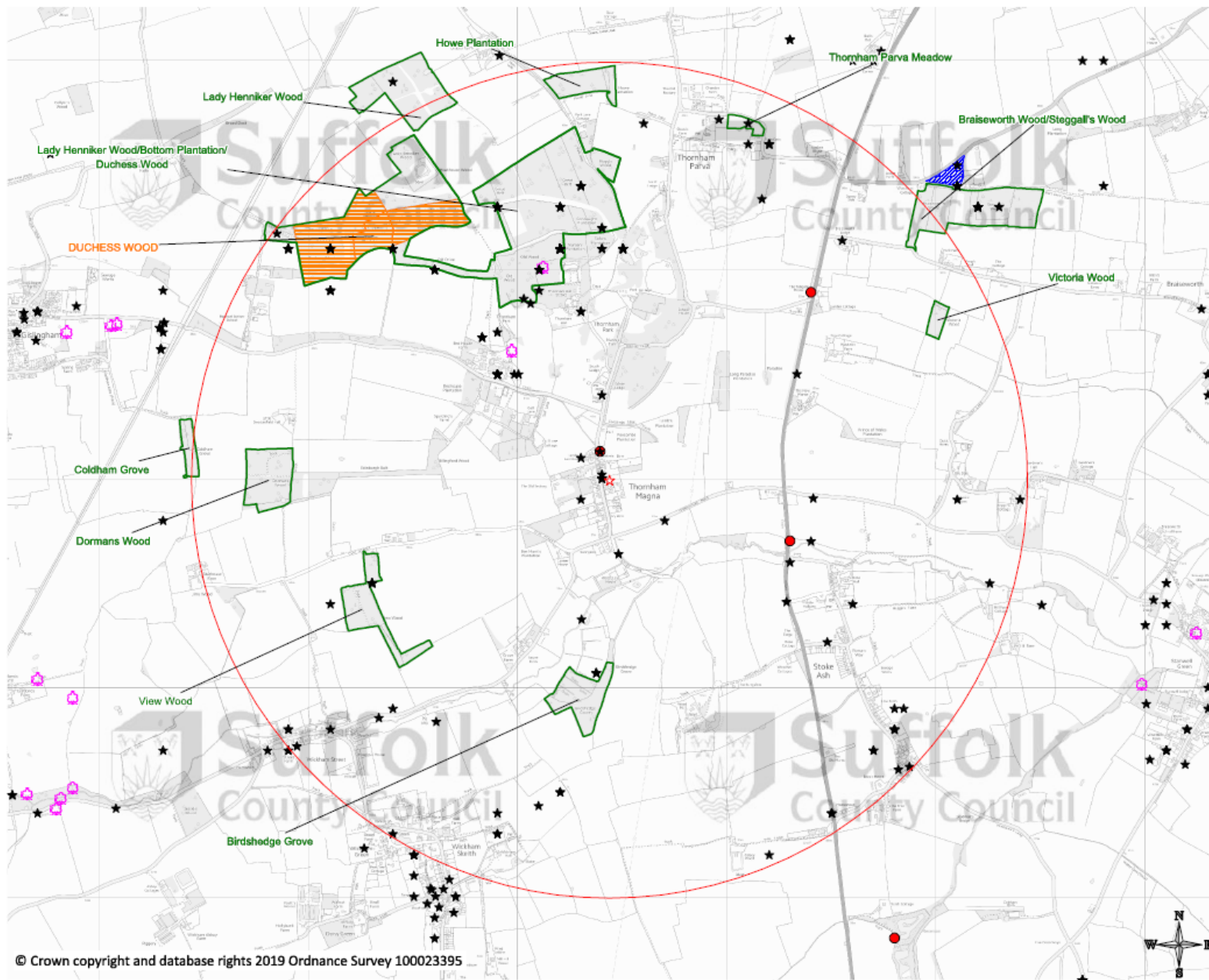
**Photo 5** Southern site boundary and some recently cleared scrub – spring 2019



**Photo 6** Ruderal and scrub vegetation has developed since clearance works in 2019



**Appendix A2 SBIS data 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**

- ★ Record Locations

**Roadside Nature Reserve**

- 

**County Wildlife Sites**

- 

**County GeoSites**

- 

**SSSI**

- 

**LNR**

- 

**SPA**

- 

**SAC**

- 

**RAMSAR**

- 

**NNR**

- 

**SWT Reserve**

- 

**Ancient Woodland Inventory**

- 

**AONB**

- Suffolk Coast and Heaths or Dedham Vale

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Scale report: 1:18,000



Suffolk Biodiversity Information Service

Date: 08/01/2019 | Drawn by: Jane Mason

**MHE Consulting (The Bungalow, Thornham Magna TM1043670991) 2km Data Enquiry**

**Appendix A3 EclA criteria**



### A3.1 General criteria for categorising value of ecological features

Designation	Example
<b>International</b>	<ul style="list-style-type: none"> <li>• SPA, SAC and Ramsar sites and the features that they have been designated for.</li> <li>• 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.</li> <li>• 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, GCNs, barbastelle), of uncertain conservation status or of global conservation concern in the UK BAP.</li> </ul>
<b>National</b>	<ul style="list-style-type: none"> <li>• SSSI or a discrete area that meets the selection criteria for designation.</li> <li>• A sustainable area of priority habitat identified included on the section 41 NERC Act list or smaller areas of such habitat that are essential to maintain the viability of a larger whole.</li> <li>• A sustainable population of priority species (listed under S. 41 of the NERC Act 2006).</li> <li>• 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 Wildlife &amp; Countryside Act 1981 (as amended). Also, sites supporting a breeding population of such species or supplying a critical element of their habitat requirements.</li> <li>• A sustainable population of uncommon or threatened Annex II EPS species at a UK level.</li> <li>• A nationally scarce species (occurs in 30-100 10km squares in the UK) that has its main UK population within the district.</li> </ul>
<b>County</b>	<ul style="list-style-type: none"> <li>• A viable area of habitat identified in the county BAP.</li> <li>• A County Wildlife Site.</li> <li>• A sustainable population of common or non-threatened Annex IV EPS species at a UK level.</li> <li>• A Nationally Scarce species that does not have its main population within the county.</li> <li>• Any BAP species not included in the 'national' category above for which a county Action Plan exists.</li> </ul>
<b>Local</b>	<ul style="list-style-type: none"> <li>• 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, small numbers of common bat species).</li> <li>• Other habitats and species not in the above categories but are considered to have some value at the district/borough level.</li> </ul>

**Table A3.2 Criteria for assessing the scale of ecological impacts**

Scale of Impact	Description of effect on its own or in combination with other proposals
Major negative	<ul style="list-style-type: none"> <li>• An adverse effect on the integrity of the habitat/site in terms of the coherence of its ecological structure and function across its whole area that enables it to sustain the habitat, complex of habitats and /or population levels of species of interest; and/or</li> <li>• Adverse impacts leading to permanent loss of population/sub-population/ assemblage or its ability to remain viable.</li> </ul>
Negative	<ul style="list-style-type: none"> <li>• An adverse effect on the habitat/site significant in terms of its ecological objectives, but not adversely affecting its integrity; and/or</li> <li>• adverse impacts leading to measurable long-term damage to or loss of populations/sub-populations/ assemblages though not likely to compromise long-term viability.</li> </ul>
Minor negative	<ul style="list-style-type: none"> <li>• Some adverse effect on the habitat/site but no adverse effect on the integrity nor obvious adverse effect in terms of its ecological objectives; and/or</li> <li>• Adverse impacts affecting a few individuals when this would not be likely to be measurable or significant in terms of population dynamics.</li> </ul>
Negligible	<ul style="list-style-type: none"> <li>• No significant impact in either direction.</li> </ul>
Minor Positive	<ul style="list-style-type: none"> <li>• Some positive effect on the habitat/site likely to enhance the wildlife and habitat of the site, although unlikely to affect its ecological objectives; and/or</li> <li>• Positive impacts affecting a few individuals, although this would be unlikely to be measurable or significant in terms of population dynamics.</li> </ul>
Positive	<ul style="list-style-type: none"> <li>• A positive effect on the habitat/site in terms of its ecological objectives, although unlikely to have a positive effect on its integrity; and/or</li> <li>• Positive impacts leading to measurable long-term enhancement to or improvement of populations/ sub-populations/ assemblages though unlikely to improve long-term viability.</li> </ul>
Major positive	<ul style="list-style-type: none"> <li>• A positive effect on the integrity of the habitat/site in terms of the coherence of its ecological structure and function across its whole area that enables it to sustain the habitat, complex of habitats and/ or population levels of species of interest; and/or</li> <li>• Positive impacts leading to permanent improvement of a population/ sub-population/ assemblage or its ability to remain viable.</li> </ul>

## **Appendix A4 GCN notification signage**

# 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](http://www.arguk.org)



## **Appendix A5 Bat boxes**



Vincent Pro Bat Box



Woodstone multi-chamber box

### The Kent bat box

Simple to construct, self-cleaning and low maintenance.

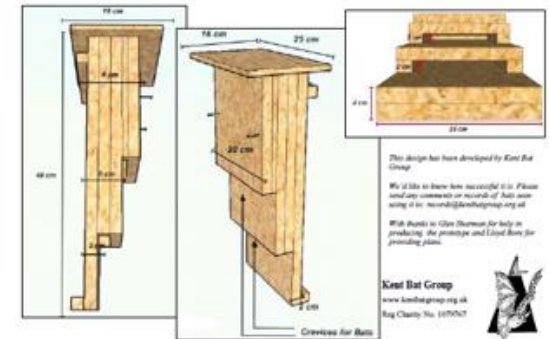
The only critical measurement is the width of the crevices—these should be no larger than suggested. Other measurements are approximate.

#### Materials and construction

Box to be made from untreated rough-sawn timbers  
 Timber should be c.20mm thick  
 The box should be rainproof and drought-free  
 Crevices can be between 15 and 25 mm wide  
 Fixing may be by use of brackets, durable bands or wires

#### Location

Boxes are best fixed as high as possible in a sheltered wind-free position, exposed to the sun for part of the day.  
 They can be fitted to walls, other flat surfaces or trees  
 A clear flight line to the entrance is important



Kent bat box

## **Appendix A6 Bird boxes**

RSPB Sparrow terrace nest box Qty


Product Code: H407816 **£ 29.99**


[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


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

Beautifully made from FSC timber; roof treated with safe, non-toxic, water-based preservative. UK made.

**Installing your nestbox**

For secure and stable fixing, there are two hanging tabs attached to the






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

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

**BARK BOXES**  
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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)
<i>Description</i>		

barkboxes.co.uk/product/open-fronted-nest-box/

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

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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)
<i>Description</i>		
Height tbc		
Width		
Depth		
Typical Weight		

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## Apex starling nestbox

Product Code: R405836



Qty

**£ 23.99**

In Stock [ADD TO BASKET](#)

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- Loyalty points can be collected/redeemed as usual
- Not available in conjunction with any other offer



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[Home](#) > [Products](#) > [Nestboxes](#) > [Tawny Owl box – upright](#)



## Tawny Owl box – upright

**£65.00**

Our 'built to last' Tawny Owl box is based on a tried and tested *British Trust for Ornithology* upright design. Outdoor quality nest box suitable for fixing to a tree.

Built from sustainable, FSC-approved pressure treated 18mm plywood with thick felt roof and sealed joints throughout. Approx (mm) 320D x 930H x 360W plus fixing batten. Weight 15kg.

***'Nestbox hanging kit' included.***

More information on [Tawny Owl nestboxes](#).

*During busy periods nestboxes may not be available for immediate dispatch. Please contact us on [01364 653026](tel:01364653026) for more information.*

## **Appendix A7 Stag beetle loggery designs**



## Build a log pile for stag beetles

Stag beetles are one of the largest insects in the UK. They are in decline across Europe but there are many simple things you can do to help.

### How you can help stag beetles

Stag beetles don't move far from where they emerge. Although males can fly up to 500m, most female stag beetles don't travel more than 20m and return to where they emerged to lay eggs. This means populations are vulnerable to becoming isolated and if there isn't enough dead wood nearby, dying out all together.

Private gardens are very important habitats for stag beetles. They rely on decaying wood that is in contact with the soil, both to feed on as larvae and in which to lay their eggs.

You can help by building a log pile in your garden to ensure that there is a good supply of suitable dead wood nearby for females to lay their eggs in.



Stag beetle larva

### Stag beetle facts

- ▶ They are Britain's largest native terrestrial beetle
- ▶ The larvae develop underground in rotting wood for several years
- ▶ The adult only lives for a few weeks in the summer with the sole purpose of finding a mate
- ▶ Adult beetles don't eat but rely on the fat stores built up during their larval stage
- ▶ The male's antler-like jaws are used to fight off rival males

Images: Peter Cox, Ben Andrews, PTESS



Please create a log pile for stag beetles and map it at [www.ptes.org/stagbeetle](http://www.ptes.org/stagbeetle). For more tips please see over.



# How to make a log pile

- ▶ Log pyramids can be built at any time of year
- ▶ Use wood from any broadleaved tree
- ▶ The logs should be at least the thickness of an adults arm
- ▶ Site the logs in partial shade if possible to prevent them drying out
- ▶ Partially bury the logs in the soil so that they don't dry out
- ▶ Allow plants to grow over the log pyramid to retain moisture and provide shade

Your log pile will also benefit a range of other species including fungi, dead wood invertebrates and the animals that feed on them. It will be a great place for foraging small mammals, basking reptiles and potentially solitary bees.



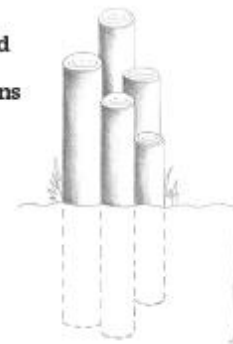
**Large log pyramid suitable for parks and large gardens**



Ground level

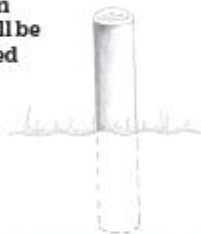
Approx. 50cm deep

**Log pyramid suitable for small gardens**



Approx. 50cm deep

Or, if space is limited, a single log on or in the soil will be appreciated



## More tips for stag beetle friendly gardening

- ▶ Leave tree stumps in place if possible; they can become garden features with plants growing over them
- ▶ Try not to use pesticides
- ▶ Keep a lid on your water butt as stag beetles are known to fall in and drown
- ▶ Avoid using polythene sheeting to control weeds. Newly emerging stag beetles can get trapped beneath it in spring and die
- ▶ If you find larvae in the bottom of rotten fence posts and need to move them, dig a hole elsewhere in your garden and put them in together with some of the rotting wood from the original site. Cover loosely with soil

Images: Ross Bower, Steve Heywood

