
Ecology Report

**PROPOSED ALTERATIONS AND EXTENSION TO
GARAGE**
Old Hall Cottage Hemingstone, Suffolk

October 2023



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Executive Summary

MHE Consulting Ltd were instructed to undertake an ecological survey and assessment of an existing garage at Old Hall Cottage, Hemingstone, Suffolk (TM 15198 53176). The report will inform a planning application to Mid Suffolk District Council to extend and alter the garage to provide ancillary accommodation for a family relative.

The proposed development site is located off the main road in Hemingstone and comprises an existing detached single-storey garage with a plain tile roof with bitumen underfelt and render walls. Trees and a hedgerow exist immediately to the north with the front garden of Old Hall Cottage to the south with areas of lawn, and some shrubs and some rosemary (*Salvia rosmarinus*) and lavender (*Lavandula sp*) bushes immediately to the south (Photos 1 to 3). A pond (Photo 4) exists to the south with areas of mature orchards to the north, west and south and several mature trees by the pond and close to the house.

Gaps exist under the plain tiles which could support crevice dwelling species such as pipistrelles (*Pipistrellus spp*), but no droppings were evident on the roof tiles or within potential access points. An inspection of the garage found no evidence of roosting bats internally or any feeding remains indicating no significant roosts (e.g., maternity roosts) are present. Therefore, the garage was assessed as supporting Low potential for supporting a significant roost. A dusk emergence bat survey recorded no bats emerging from the garage. Adjacent hedgerows, trees (including the orchards) and the pond provide optimal bat commuting and foraging habitat.

The adjacent hedgerow and trees immediately to the north provide potential nesting and song perch habitat for a range of garden birds, whilst the orchards also provide seasonal foraging habitat. A nearby pond supports good suitability for amphibians including great crested newts (*Triturus cristatus*). The lawn, orchards and scrub habitats beyond where the extension is proposed provide terrestrial habitat for common amphibians, reptiles such as slow worm (*Anguis fragilis*), hedgehogs (*Erinaceus europaeus*) and potentially some S.41 list invertebrates.

Recommendations are made to avoid wildlife offences and ecological impacts, with bat roost compensation requirements detailed. Where impacts cannot be avoided entirely, measures are proposed to mitigate remaining effects including timing of works and good working practices. Biodiversity enhancements are proposed, ensuring biodiversity gains are delivered. Standard planning conditions are referenced to secure mitigation.

1 Introduction

1.1 BRIEF

MHE Consulting Ltd were instructed to undertake an ecological survey and assessment of an existing garage at Old Hall Cottage, Hemingstone, Suffolk (TM 15198 53176; Figure 1). The report will inform a planning application to Mid Suffolk District Council to extend and alter the garage to provide ancillary accommodation for a family relative.

The ecological survey and this report are necessary to:

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

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

1.2 SITE LOCATION AND DESCRIPTION

The proposed development site is located off the main road in Hemingstone (Figure 1) and comprises an existing detached single-storey garage with plain tiles and render walls. Trees and hedgerow exist to the north with the front garden to Old Hall Cottage to the south with areas of lawn, and some shrubs and a mature rosemary (*Salvia rosmarinus*) and some lavender (*Lavandula sp*) immediately to the south (Photos 1 to 3). A pond (Photo 4) exists to the south with areas of mature orchards to the north, west and south and several mature trees by the pond and close to the house. Photos 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 National Planning Policy Framework was originally published in 2012 and most recently revised in July 2021. The document sets out the Government's planning policies for England and provides guidance on how these policies are expected to be applied. It provides a framework for, and must be taken account of within, locally prepared plans for housing and other development, and is a material consideration in planning decisions.

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

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

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

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

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

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b) development on land within or outside a Site of Special Scientific Interest (SSSI), and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of SSSI;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

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

a) potential Special Protection Areas (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 Special Protection Areas (SPA), possible Special Areas of Conservation (SAC), and listed or proposed Ramsar sites.

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

2.2.2

Local Plan

Adopted local plans provide the framework for development across England, and include policies related to conserving and enhancing the natural environment. Existing planning policies and supporting documents used to plan, deliver, and monitor development across the Mid Suffolk District Council area can be found at

<https://www.midsuffolk.gov.uk/planning/planning-policy/adopted-documents/mid-suffolk-district-council/mid-suffolk-local-plan/>.

Babergh and Mid Suffolk Councils are in the process of creating a new Joint 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 details 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 (*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 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 (as amended) transposed the land and marine aspects of the Habitats Directive (Council Directive 92/43/EEC) and certain elements of the Wild Birds Directive (Directive 2009/147/EC) into UK law. They have been recently 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 (National Site Network) 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 Regulations.

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.

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 including great crested newt (GCN) (*Triturus cristatus*)² and reptiles such as slow worm (*Anguis fragilis*)³;
- Mammals including badgers (*Meles meles*)⁴ and bats²;
- Breeding birds⁵ including Red and Amber status⁶ species; and
- S. 41⁷ list species such as hedgehog (*Erinaceus europaeus*).

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

3.3 FIELD SURVEY

An initial site walkover was undertaken on the 14 September 2023 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 GCNs and all species of bats receive full protection under the WCA 1981 and Habitats Regulations 2017.

³ Widespread reptiles and amphibians receive partial protection under the WCA 1981.

⁴ Badgers and their setts are afforded protection by the PBA 1992.

⁵ All wild birds, their nests and eggs are protected under the WCA 1981 (as amended), level of protection varies per species.

⁶ The conservation statuses of UK bird species are listed within the Birds of Conservation Concern 4 (Eaton *et al.*, 2015).

⁷ 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

Pond P1 (Photo 4, Figure 1) is located 20m to the south of the garage and was assessed for its potential to hold GCN and other breeding amphibians. Three other ponds are located on the other side of the main road at Old Hall Farm. Due to the minor scale of the proposed development these ponds were considered irrelevant.

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 garage was assessed for its suitability to support 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). The criteria used to determine the level of Bat Roost Potential (BRP) of buildings is outlined in Table 3.1.

Table 3.1 Bat Roost Potential (BRP) of buildings.

Bat Roost Suitability	Description
<i>Confirmed presence</i>	Bat presence confirmed during the scoping survey
<i>High</i>	Buildings that have many areas suitable for roosting which are obviously suitable for use by a larger number of bats including maternity colonies.
<i>Moderate</i>	Buildings with a small number of areas suitable for roosting, but still supporting features that could be attractive to bats and potentially support maternity colonies.
<i>Low</i>	Buildings with limited roosting opportunities but which could be used on a sporadic or occasional basis by a low number of bats, but which are unsuitable for maternity roosts.
<i>Negligible</i>	Buildings which appear unsuitable for roosting bats due to a clear lack of roosting spaces such as voids and/or absence of suitable access points.

b) Tree roost potential

Existing trees around the site boundaries were visually checked to assess their suitability for use by roosting bats. The criteria for assessing the levels of BRP for trees are listed below in Table 3.2.

Table 3.2 Categories of Bat Roost Potential (BRP) for trees.

Bat Roost Suitability	Description
<i>Confirmed presence</i>	Bat presence confirmed during the scoping survey
<i>High</i>	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.
<i>Moderate</i>	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.
<i>Low</i>	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.
<i>Negligible</i>	Trees with negligible bat roost potential.

Where potential niches existed, niches below 5m high were physically inspected, using ladders as required. Any cavities with the potential to support roosting bats were inspected with a SeeSnake endoscope and/or a small LED torch as necessary. 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 (Table 3.2) according to Bat Conservation Trust (BCT) protocols (Collins, 2016).

d) 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 as per Table 3.3 of the BCT guidelines.

Table 3.3 Commuting and foraging habitats

Suitability	Description
<i>High</i>	<p>Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.</p> <p>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, trees-lined watercourses, and grazed parkland.</p> <p>The site is close to and connected to known roosts.</p>
<i>Moderate</i>	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees

	and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland, or water.
<i>Low</i>	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e., not very well connected to the surrounding landscape by other habitats. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in parkland situation) or a patch of scrub.
<i>Negligible</i>	Negligible habitat features on site likely to be used by commuting and foraging bats.

d) Dusk emergence survey

As the garage was assessed as supporting low bat roosting potential a dusk emergence survey of the garage was undertaken (18/09/23) as per the following methodology:

- The emergence survey commenced 15 minutes prior to and for up to 1.5 hours after sunset to cover the main emergence period and when some bats may return;
- Bat activity such as bats leaving or returning to roost within buildings on site was recorded. In addition, commuting bats and foraging bats were recorded;
- Numbers and species of bats were recorded to determine the significance of any roosts identified; and
- Ecologists used full spectrum Batlogger M full spectrum detectors; and
- An InfiRay T2 Pro and a Hikmicro Mini 2+ Thermal Imaging cameras covered the west, south and east elevations of the garage.



Plate 1 InfaRayT2 Pro thermal camera

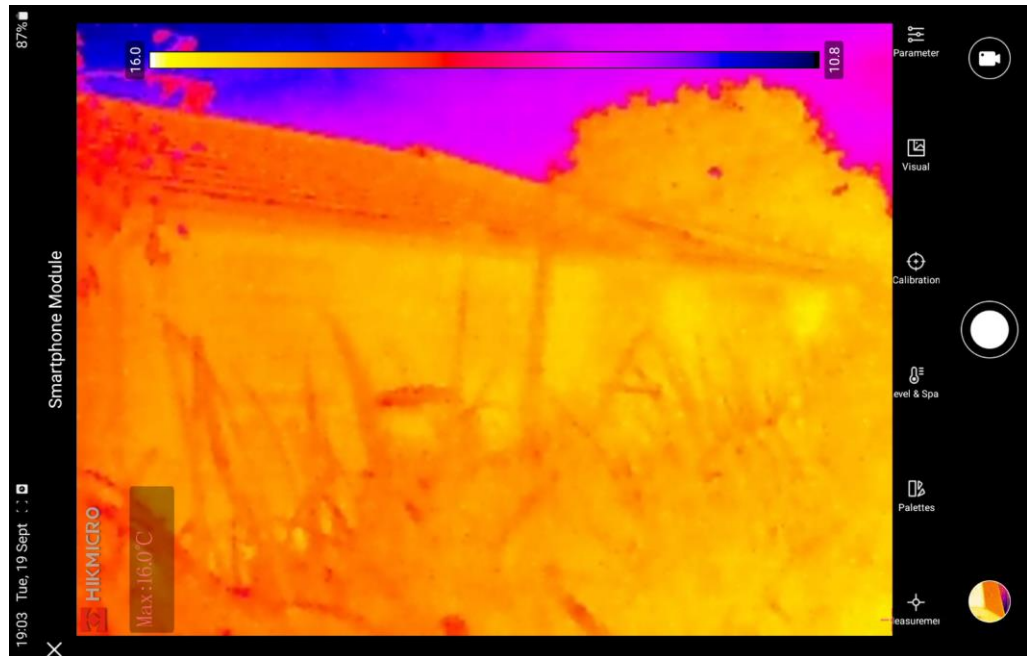


Plate 2 HikMicro Mini 2+ thermal camera

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 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 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 (CL29/0213) 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.

3.6

ASSESSMENT

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

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

4 Results

4.1 INTRODUCTION

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

4.2 BASELINE ECOLOGICAL CONDITIONS - DESK STUDY

4.2.1

Designated sites

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

Table 4.1 Relevant designated sites

Site name	Site designation
Borley's Wood*	CWS
Bull's Wood*	CWS
Gosbeck Wood	SSSI
Sandy Lane Pit	SSSI
Deben Estuary	SPA/Ramsar
Stour and Orwell Estuaries	SPA/Ramsar

* Listed on the Ancient Woodland inventory for England.

Locally designated sites

Two County Wildlife Sites (CWS) are located within 1km of the application site are listed below.

Borley's Wood is an ancient woodland enclosed in part by a dense mixed hedge composed of blackthorn, hawthorn, dogwood and hazel. A dense layer of hazel coppice and hawthorn forms the understorey, with a number of waterlogged rides crossing the wood. Although rather neglected and overshadowed they support an interesting flora including a number of wetland species, for example creeping-Jenny and ragged-robin. hairy St John's-wort is amongst a number of scarce ancient woodland indicator plants which have also been recorded in the wood.

Bulls Wood is located on a gently sloping plateau and lies adjacent to another large area of woodland which is part of the Shrubland Estate. It is an ancient woodland and listed in the Suffolk Ancient Woodland Inventory, compiled by English Nature. A number of very old trees and stumps are signs of the medieval status of this wood. A large proportion of Bull's Wood has been densely planted with conifers to the detriment of the native flora and fauna. Semi-natural vegetation is therefore restricted to the woodland margins. Field maple, wild cherry, ash and small-leaved lime are present here. The ground flora consists of dog's mercury and bluebell with some patches of early-purple orchid and primrose. A single main ride runs from east to west in the wood and is well vegetated with grass. Bull's Wood is a neglected woodland apart from some small-scale felling in one compartment.

Given the existing footpath networks/managed access present at (or adjacent to) most of the locally designated sites, and the scheme being for an extension to an existing garage and the conversion of that garage to provide ancillary accommodation for a family relative, no significant impacts are anticipated as a result of the proposed development.

Nationally designated sites

Gosbeck Wood is an ancient coppice-with-standards site with small additions of well-established secondary woodland. The ground flora is typical of woods of this type and locality and includes several uncommon species. The main tree communities present are wet ash-maple woodland, pedunculate oak, hazel-ash woodland and lowland hazel-pedunculate oak woodland. There is also a small area of pedunculate oak-hornbeam woodland and numerous clones of aspen (*Populus tremula*). Giant coppice stools are evidence of a long tradition of coppice management which has recently been re-introduced after a period of neglect.

Dog's mercury (*Mercurialis perennis*) is generally dominant but tufted hair-grass (*Deschampsia caespitosa*), creeping soft-grass (*Holcus mollis*) and bramble (*Rubus spp*) are locally abundant as is ivy (*Hedera helix*) in the area of secondary woodland. Notable species include spurge laurel (*Daphne laureola*), wood spurge (*Euphorbia amygdaloides*), herb Paris (*Paris quadrifolia*) and hairy woodrush (*Luzula pilosa*). The woodland rides are at present narrow and overshadowed, but meadowsweet (*Filipendula ulmaria*) and a few other grassland species persist on them.

Sandy Lane Pit displays the best development of the unique early middle-Pleistocene succession present in the area, spanning the Beestonian-Anglian Stages. A palaeosol ('fossil' soil horizon), considered to have a composite origin dating from both the Cromerian and early Anglian Stages, is developed on Kesgrave Sands and Gravels, thought to have been deposited by a former river (a proto-Thames) during the Beestonian Stage. The palaeosol is overlain in turn by a loess, out-wash sands and gravels, and glacial till – all correlated with the Anglian Cold Stage. The importance of the site lies in the well-developed palaeosol (representing a former land surface), and the stratigraphical interpretation of the sequence; both of which are subjects of current controversy.

The application site lies within a SSSI Impacts Risk Zone for Gosbeck Wood SSSI but does not meet any of the criteria for consideration (e.g. residential development of 50 units or more). Given the nature and limited size of the development, no significant impacts or effects are anticipated in relation to any of the features of the designated site.

Internationally designated sites

The Stour and Orwell Estuaries SPA and Ramsar sites comprise a large Internationally important network of estuaries and coastal habitats which qualify for important populations of overwintering birds including hen harrier (*Circus cyaneus*), redshank (*Tringa totanus*) and black-tailed godwit (*Limosa limosa islandica*) amongst other species. The number of overwintering waterfowl present has been estimated to number over 65,000 birds.

The Deben Estuary SPA and Ramsar site is primarily composed of Saltmarsh and intertidal mud flats and supports nationally important numbers of avocet (*Recurvirostra avosetta*), an Annex 1 species. Further Annex 1 species wintering on the site include golden plover (*Pluvialis apricaria*), hen harrier (*Circus cyaneus*) and short-eared owl (*Asio flammeus*).

Habitats Regulations Assessment

Where a development or project may, alone or in combination, have a 'likely significant effect' upon the features of the Natura 2000 or Ramsar site, the Habitats Regulations 2017 require a Habitats Regulations Assessment (HRA) to be undertaken. Advice from

NE states that increased housing located within 1km by foot and 13km by car of Natura 2000 sites may potentially cause disturbance to the interest features due to walkers (and dogs). Disturbance to bird species that breed and/or overwinter within the sites is considered to cause the greatest impact.

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

Given the scheme relates to the provision of ancillary accommodation for a family relative no significant impacts are anticipated, and no mitigation (e.g., a RAMS payment) is likely necessary.

4.2.2 *Priority habitats*

Assessment of the Magic Map database identified areas of orchard immediately to the north, west and south of Old Hall Cottage.

4.2.3 *Species*

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

Table 4.2 Protected/notable species within 2km of the application site.

Latin Name	Common Name	Designation
Amphibians and reptiles		
<i>Anguis fragilis</i>	Slow worm	Sch. 5
<i>Bufo bufo</i>	Common toad	Sch. 5
<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
Bats		
<i>Pipistrellus pipistrellus</i>	Common pipistrelle bat	EPS; Sch. 5
<i>Plecotus auritus</i>	Brown long-eared bat	EPS, Sch. 5, S. 41
Birds		
<i>Alauda arvensis</i>	Skylark	Red Status
<i>Alcedo atthis</i>	Kingfisher	Amber Status; WCA1i
<i>Anas platyrhynchos</i>	Mallard	Amber Status
<i>Apus apus</i>	Swift	Amber Status
<i>Columba oenas</i>	Stock dove	Amber Status
<i>Delichon urbicum</i>	House martin	Amber Status
<i>Emberiza citrinella</i>	Yellowhammer	Red Status, S. 41
<i>Falco tinnunculus</i>	Kestrel	Amber Status
<i>Linaria cannabina</i>	Linnet	Red Status
<i>Luscinia megarhynchos</i>	Nightingale	Red Status
<i>Muscicapa striata</i>	Spotted flycatcher	Red Status, S. 41
<i>Passer domesticus</i>	House sparrow	Red Status, S. 41
<i>Perdix perdix</i>	Grey partridge	Red Status

<i>Phylloscopus trochilus</i>	Willow warbler	Amber Status
<i>Poecile palustris</i>	Marsh tit	Red Status
<i>Prunella modularis</i>	Dunnock	Amber Status
<i>Pyrrhula pyrrhula</i>	Bullfinch	Amber Status
<i>Streptopelia turtur</i>	Turtle dove	Red Status, S. 41
<i>Strix aluco</i>	Tawny owl	Amber Status
<i>Sturnus vulgaris</i>	Starling	Red Status, S. 41
<i>Turdus iliacus</i>	Redwing	Red Status
<i>Turdus philomelos</i>	Song thrush	Red Status, S. 41
<i>Turdus pilaris</i>	Fieldfare	Red Status, WCA1i
<i>Tyto alba</i>	Barn owl	WCA1i
Invertebrates		
<i>Andrena florea</i>	Bryony mining bee	RDBGB.R
<i>Coenonympha pamphilus</i>	Small heath	RLGB.Lr(NT); S. 41
<i>Lasiommata megera</i>	Wall	RLGB.Lr(NT); S. 41
<i>Phyllocnistis xenia</i>	Kent bent-wing	RDBGB.VU
<i>Satyrium w-album</i>	White-letter hairstreak	RLGB.EN, S. 41, Sch. 5
<i>Tyria jacobaeae</i>	Cinnabar	S. 41
Other mammals		
<i>Arvicola amphibius</i>	Water vole	Sch. 5; S. 41
<i>Erinaceus europaeus</i>	Hedgehog	S. 41
<i>Lepus europaeus</i>	Brown hare	S. 41
<i>Meles meles</i>	Badger	PBA 1992
<i>Micromys minutus</i>	Harvest mouse	S. 41

4.2.4 *NE open source GCN records*

Assessment of Natural England's GCN class licence return data and eDNA pond survey records show the closest positive record (eDNA) to be located c. 3.1km east of the application site (dated 2015), 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.

The existing garage (Photos 1 and 2) is a single storey building of brick and render construction with plain/peg tile roof. The thatched Old Hall Cottage is located c. 10m to the south-west (Photo 3), whilst pond P1 (Photo 4) is located c. 20m to the south. Former orchards with areas of scrub, a vegetable growing area and some discrete areas of rough grassland (Photo 5) exist to the north, west and south of the site. Several native trees and a remnant hedgerow exist to the north of the garage and along the roadside with trees around the pond.

4.3.2 *Amphibians and reptiles*

a) Ponds

Pond P1 was drying up along a long narrow section with more water in at the southern end with lots of duckweed (*Lemna spp*) and a water lily (*Nymphaea sp*). The pond was assessed as supporting good habitat suitability for GCNs.

b) Terrestrial habitat

The application site itself is small and supports some shrubs and herbs with a hedgerow and trees to the north which could provide cover for amphibians including for overwintering. The lawn provides no suitable refuge habitat, though amphibians will forage over lawns during warm, wet nights (C. Whiting *pers. obs.*). The orchards, scrub and a vegetable growing area provide excellent terrestrial habitat for amphibians and reptiles with slow-worm recorded (Owner *pers. comm.*) along with some common amphibians.

When considering the above factors, the overall habitat suitability for amphibians and reptiles was assessed as moderate but given the small area of land that would be impacted only a small number of animals may be present at any one point in the year.

4.3.3

Bats

a) Building inspection

The garage roof is constructed with hand made plain tiles with several locations where bats could access under the tiles and roost on top of the bitumen felt. The roof has a very shallow slope with bats tending to prefer steeper roofs so they can easily fly out from between tiles or drop out from the eaves (NB Most bat species tend to glide down before going up when leaving roosts). No droppings were recorded on the roof tiles indicating any recent emerging bats.

No evidence of bats was recorded inside the garage with no feeding remains or any droppings. Therefore, the garage was assessed as supporting low bat roost potential with no evidence of any roosting bats internally and the roof having the potential to support single or small numbers of crevice dwelling species such as common pipistrelle.

b) Tree Roost Assessment

No suitable tree roosts were identified.

c) Foraging/commuting habitat

The hedgerow with trees to the north, the pond and orchard (to the south, west and north) offer high value bat commuting and foraging habitat.

d) *Dusk emergence survey (18/09/23)*

The survey was undertaken during optimal weather conditions with 10% cloud cover; a light breeze (BS1-2) and temperatures of 16°C at the survey start, dropping to 15°C at the end. Sunset was at 19:02. The survey commenced at 18:45 and ended at 20:38 when bat activity ceased.

No bats were observed leaving the garage roof and activity levels were low throughout with a common pipistrelle periodically observed flying through the site from the north side of the cottage towards the pond then round the south side of the cottage and occasionally in the opposite direction. A brief noctule registration was recorded with a bat seen flying over the orchard to the north.

4.3.4

Nesting birds

No evidence of nesting birds was recorded in the garage/store, but the ivy on the south side could potentially be used by small passerines such as wren (*Troglodytes troglodytes*) (Amber Status).

Adjacent trees and hedgerows to the north provide nesting and song perch habitat for a range of garden birds, while the former commercial orchards provide seasonal fruit resident and migrant bird species such as fieldfare (*Turdus pilaris*) (Red Status, WCA1i) and redwing (*Turdus iliacus*) (Red Status, WCA1i) which will appear in the UK during the late autumn winter period when temperatures drop significantly in Scandinavia and Russia.

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

4.3.6 *S. 41 habitats and species*
a) Habitats
No S. 41 habitats were recorded within the area where works are proposed, but a native hedgerow exists to the north with some trees, and the pond P1 (Photo 4) and former orchards (Photo 5) meet the qualifying criteria for S. 41 list habitats.

b) Species
Hedgehogs may forage over the lawn and will seek refuge within the bases of hedgerows/trees to the north. Fruit trees within the former commercial orchard and hedgerows could support some S. 41 list invertebrates including Lepidoptera and potentially stag beetle (*Lucanus cervus*) if any deadwood exists.

4.3.7 *Non-native invasive plants*
No non-native invasive species were recorded within the application site boundary.

4.4 **GEOGRAPHIC CONTEXT**

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

Table 4.3 Feature value based on geographic context

Feature	Value
Lawn, ruderal vegetation, pond, trees/shrubs and hedgerows.	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 alter and extend an existing garage to provide ancillary accommodation for a family relative.

The proposals are expected to result in the minimal loss of some adjacent rosemary and lavender bushes and some climbers on the garage and a small area of lawn. The existing plain/peg tile roof will be disturbed as the proposed extension will tie into the existing roof with the low potential for the works to impact any bats roosting.

The assessment and recommendations below provide preliminary recommendations for mitigation and enhancements for the proposed development. They are based on drawings provided by the client prior to the writing of this report and should be updated accordingly as the scheme is subsequently amended.

5.3 NEED FOR FURTHER SURVEYS

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

5.4 ASSESSMENT OF IMPACTS

The EclA assessment process (CIEEM, 2018) involves:

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

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

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

5.5

HABITATS AND VASCULAR PLANTS

a) Potential impacts

The works will be restricted in large part to a small area of garden with some mature rosemary and lavender bushes likely to require removal, whilst a small area of the adjacent lawn may be permanently lost, with further areas likely to be disturbed during the building works. Such impacts would be considered a negative effect at the Local level.

Any accidental damage to retained trees, hedgerows and/or the pond during construction would result in a significant negative effect at the Local level.

b) Mitigation

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

Given the lack of hard standing for the storage of materials, any temporary storage areas should be reinstated with bare ground re-seeded with grass seed.

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 the pond. Measures may include, but are not exclusive to:

- Locating any material storage (including any fuel storage or chemicals) away from the pond;
- 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 pond;
- 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 (e.g., for excavators);
- 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)⁸.

c) Residual effects

No significant residual effects are predicted.

5.6

AMPHIBIANS AND REPTILES

a) Potential impacts

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

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

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

b) Mitigation

See section 5.5.

To avoid impacts upon amphibians, including potentially GCNs, good practice precautionary methods should be followed for the scheme, to include the following measures:

1. Areas of lawn and ruderal vegetation immediately to the east of the site (but not in the wider garden) should be kept short with regular mowing prior to and during construction.
2. Excavations should be filled on the same day they are dug or covered overnight with ply boarding and any gaps filled with damp sharp sand;
3. If this is not feasible access ramps should be created to allow animals to escape and the excavations should be inspected daily and immediately prior to infilling. Any animals (except for GCN) present should be moved into retained hedgerows and/or other boundary habitats providing adequate cover;
4. Footings and concrete slabs should be poured during the morning where possible to ensure it has solidified prior to dusk to reduce the risk of animals coming into contact with wet concrete;
5. Any hand mixing of mortar or concrete should be on ply boarding over a tarpaulin which is folded over the boarding at the end of each day to prevent animals coming into contact;
6. Any excess concrete should be poured into a concrete skip, so it can then set to prevent animals coming into contact.
7. All building materials and waste materials should be stored on hardstanding or stored off the ground on pallets to reduce risk of animals seeking refuge; and
8. Should any GCNs (Appendix A3) 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. The poster in Appendix A3 should be erected in the welfare facilities provided for construction staff onsite.

⁸ <http://www.netregs.org.uk/media/1418/gpp-5-works-and-maintenance-in-or-near-water.pdf>

Downpipes taking water off the roofs should be sealed at ground level by using a leaf and debris screen⁹ or similar to prevent amphibians entering drains.

c) Residual effects

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

5.7

BATS

a) Potential impacts

i) Roosting bats

No impacts predicted based on the results of the emergence survey, though as bats are by nature secretive and transient in their use of roosts, a bat could potentially be disturbed during any building works such as the removal of the roof tiles (it is assumed it will be totally re-roofed) before the construction of the roof structure of the extension that will tie into the existing roof. Such an impact would be a negative effect at the Local level.

ii) Foraging and commuting habitats

Limited vegetation clearance combined with the retention of the trees, hedgerows and pond and key linear features mean no significant impacts are anticipated.

iii) Light disturbance

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

Lighting impacts relate to security lighting external to the buildings, and potentially from light spillage resulting from internal lighting once the buildings are in use. In this instance, impacts on the pond and the adjacent broadleaved trees are most relevant.

iv) Roofing membranes

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

b) Mitigation

i) Roost disturbance/loss

Based on the single emergence survey (albeit outside of the maternity season), the lack of any droppings internally and the shallow slope of the roof, no significant roosts are present in the garage. Therefore, no bat licence is considered likely to be required. To avoid harming any bats, the roof tiles should be removed by hand in the spring (e.g. mid-March to April) by hand. If any evidence of bats was encountered such as live bats or droppings, then work must stop and a licensed ecologist contacted to agree a way forward which may include further surveys and the securing of a bat licence.

ii) Foraging and commuting habitat

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

⁹ <https://www.drainagepipe.co.uk/leaf-and-debris-gully-110mm-p-D94G/>

iii) Light disturbance

Exterior lighting (as well as temporary security lighting during the construction phase) design must minimise lighting impacts upon retained natural habitats including boundary hedgerows and trees, particularly to the north and east of the site, and should follow current guidance as necessary^{10,11}:

- *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°K) and no UV component; and
- *Lighting design*: Lighting should be directed to where it is needed, with minimal horizontal spillage towards retained habitats including mature broadleaved trees and hedgerows. This can be achieved by restricting the height of the lighting columns/fixtures and the design of the luminaire, including the following measure:
 - Light columns/fixtures in general should be as short as possible as light at a low level reduces the ecological impact.
 - Luminaires with an upward light ratio of 0% should be mounted on the horizontal i.e., with no upward tilt.
 - If taller lights are required, and as a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill; and
 - PIR movement sensors and timers should be used to minimise the 'lit time'.

c) Residual effects

No residual effects anticipated.

5.8

NESTING BIRDS

a) Potential impacts

The work will be limited to the garage and an area of garden to the south. The building has the potential to support small passerines and therefore, any destruction of any active nests would be considered a significant negative effect at the Local level.

b) Mitigation

Habitat avoidance and mitigation as per sections 5.5 and 5.6.

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

c) Residual impact

The loss of the ivy on the south side and interior of the garages will result in a residual net loss of potential bird nesting habitat but given the abundance of potential nesting habitat within the wider gardens and the former orchards, no compensatory nest boxes are required.

5.9

OTHER S. 41 LIST HABITATS AND SPECIES

a) Potential impacts

Although no significant vegetation clearance is expected, construction works could accidentally damage hedgerows and a nearby pond.

¹⁰ <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting>

¹¹ www.eurobats.org/sites/default/files/documents/publications/publication_series/WEB_DIN_A4_EUROBATS_08_ENGL_NVK_28022019.pdf

The hedgerow to the north could be used by hedgehogs for nesting or overwintering. During construction, hedgehogs could potentially fall into open trenches resulting in entrapment and possible injury and mortality of individuals due to falling in or becoming in contact with caustic substances such as fresh concrete.

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

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

b) Mitigation

Habitat avoidance and mitigation as per section 5.5 and 5.6. Site clearance should always consider the potential presence of hedgehogs with vigilance, with no clearance of dense vegetation undertaken when temperatures are regularly below 6°C. Animals encountered at other times should be moved to suitable cover, e.g. base of hedgerows or in the grassland areas to the west of the application site.

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

The use of close board fencing should be minimised, with native species-rich hedgerows preferable where boundary features are required. If close board fencing were to be installed, then at least one hedgehog highway¹² should be provided at either end of the fencing run with signage.¹³

c) Residual effects

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

5.10 COMPENSATION

None required.

5.11 CUMULATIVE EFFECTS

The Mid Suffolk District Council website was searched on the 16 October 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.

The search returned a small number of applications for extensions/alterations to existing dwellings. Given the scale and type of the applications identified, no significant cumulative effects are considered likely.

5.12 ENHANCEMENT OPPORTUNITIES

Table 5.1 details a number of suggested enhancement measures which could be implemented to maximise biodiversity gains. A minimum of 4 of the 8 options listed 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
Birds	<ol style="list-style-type: none"> 1. Sparrow terraces (minimum of 2) could be erected on the north elevation. 2. Spotted flycatcher (x2) open-fronted boxes (Appendix A4) should be erected on walls with existing climbers which are preferred by the species. 3. Tree creeper box (x2) to be erected on suitable mature oak trees. 4. Starling boxes (minimum of 3 as they are colonial nesters) to be erected on trees or the walls of the existing cottage (west or north elevations under the eaves). <p>See Appendix A4.</p>
Bats	<ol style="list-style-type: none"> 5. One each of the three boxes in Appendix A5 to be erected a minimum of 5m high on the trunk of mature trees.
Wildlife friendly composting area	<ol style="list-style-type: none"> 6. A composting area (Appendix A6) could be created to provide a supply of sustainable organic fertiliser, at the same time creating a vital refuge for a variety of invertebrates, amphibians (e.g. common frog and common toad) and possibly reptiles (e.g. slow-worm and grass snake). <p>Composting areas are also likely to attract foraging birds (by day) and hedgehogs (at night).</p>
Stag beetle loggeries	<ol style="list-style-type: none"> 7. Stag beetle log loggeries/pyramids (Appendix A7) could be constructed (using suitable broadleaved logs – not conifers) and be positioned within shaded corners and edges of the garden (under tree canopy). <p>Loggeries can also support a range of fungi, dead wood invertebrates and solitary bees, which, in turn, will attract foraging small mammals, birds, amphibians and reptiles.</p>
Ornamental planting	<ol style="list-style-type: none"> 8. Any ornamental planting should utilise nectar rich plants for the benefit of pollinators and associated predators (e.g., foraging bats and hedgehogs). <p>Planting should include nectar rich climbers such as traveller's joy (<i>Clematis vitalba</i>) and honeysuckle (<i>Lonicera periclymenum</i>), which could be planted at 5ft intervals along existing hedgerows or trained up fences, posts, or trellises.</p>

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

5.13

CONCLUSIONS

With the avoidance measures and enhancement strategies suggested, the scheme will minimise biodiversity impacts and provide some enhancements in accordance with planning policy.

Measures proposed, notably in relation to the bat roost present, should be secured through an appropriate planning condition.

6 References

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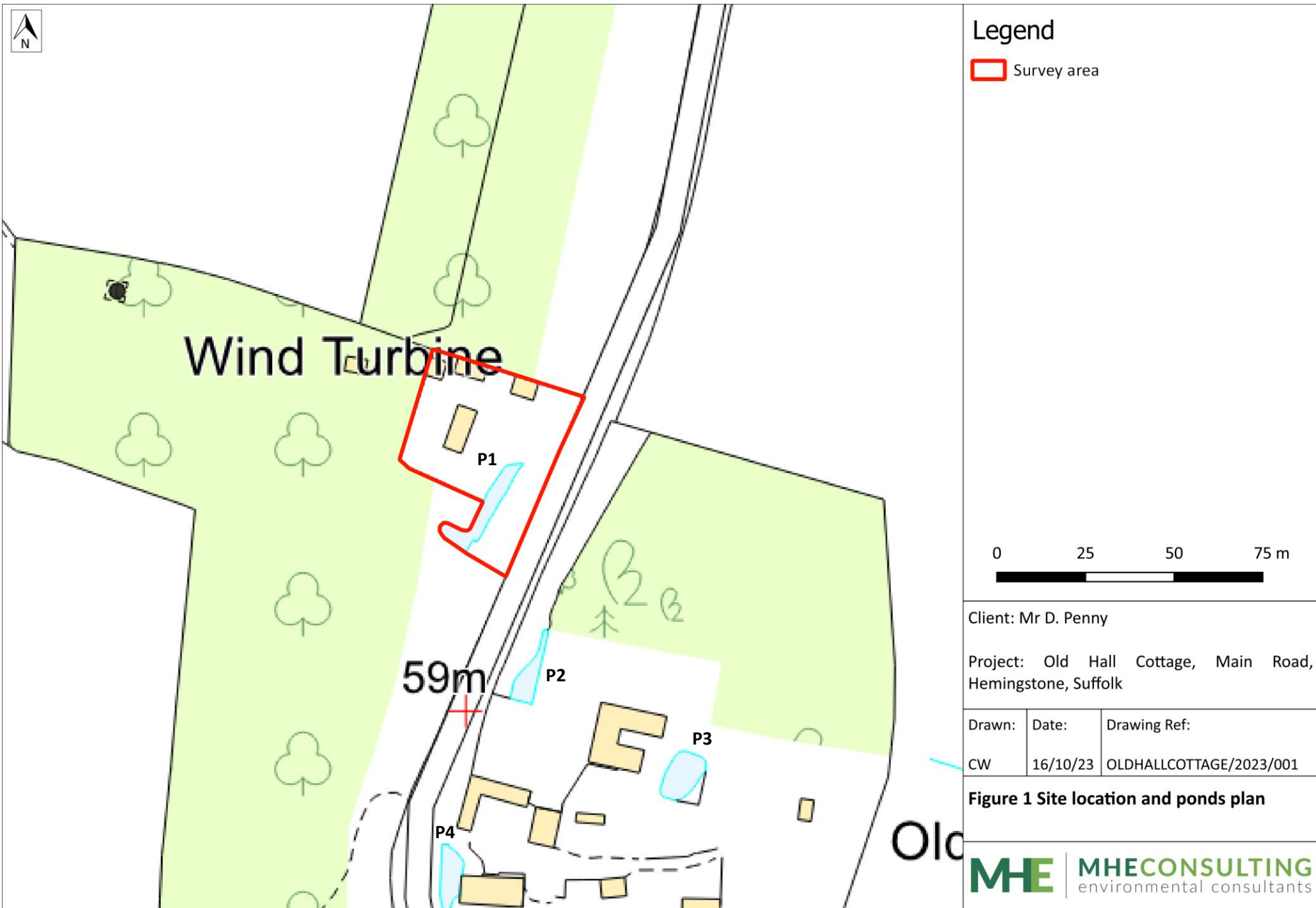
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Figures



Appendices

Appendix A1 Photos



Photo 1 South elevation of the garage with a mature rosemary and lavender bushes



Photo 2 East and south elevations of the garage



Photo 3 Old Hall Cottage



Photo 4 Pond P1



Photo 5 Former orchards



Photo 6 Felt roof – very cobwebby with no droppings internally

Appendix A2 EclA criteria

A2.1 General criteria for geographic context/value

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

Appendix A3 GCN poster

Great Crested Newt

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

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

Further information can be found at www.arguk.org



Appendix A4 Bird boxes

RSPB Sparrow terrace nest box

Product Code: R407816

Qty



£ 29.99

In Stock: [ADD TO BASKET](#)

Product Information | Product details | Ratings & Reviews

PROMOTIONAL NEST BOXES!

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





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

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

BARK BOXES
Conserve and Enhance

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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)

[Add to basket](#)

Category: bird and bat boxes

Source: Richard Green Ecology

<https://www.richardgreenecology.co.uk/swallow-nest-site-mitigation/>



Open Fronted Nest Box

£25.00

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

43 in stock

- 1 + [Add to basket](#)


Category: bird and bat boxes

Description Additional information Reviews (0)

Description


Height tbc
Width
Depth
Typical Weight

Visit the RSPB website

 Shop

Search via keyword or product code 

Log in

 0 items

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

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

 Print

Apex starling nestbox

Qty

Product Code: R405836

£ 23.99



In Stock

[ADD TO BASKET](#)

SAVE £2 WHEN YOU BUY TWO PROMOTIONAL NEST BOXES!

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



Appendix A5 Bat boxes



Woodstone multi-chamber box



Vincent Pro Box

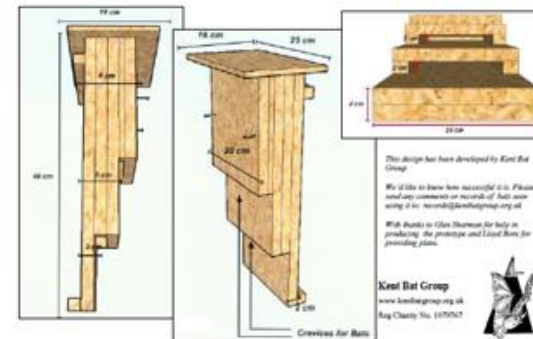
The Kent bat box

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 draught-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



This design has been developed by Kent Bat Group

We'd like to know how successful it is. Please send any comments or records of bats seen using it to: records@kentbatgroup.org.uk

With thanks to Glen Sturman for help in producing the prototype and Layout Boxes for providing plans.

Kent Bat Group
www.kentbatgroup.org.uk
 Reg Charity No. 1079767



Kent bat box

Appendix A6 Wildlife friendly composting area

How to build a wildlife friendly compost heap...

NB Commercially available alternatives could be installed e.g. <https://www.griggsagri.co.uk/hutton-compost-bin-230-litre.html>

- 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.



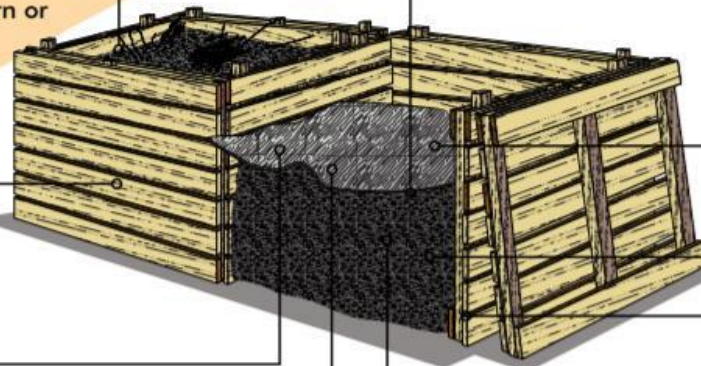
Snail - will feed on the compost and provide food for many different birds.



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.

Appendix A7 Stag beetle loggery

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 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



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



How to make a log pile

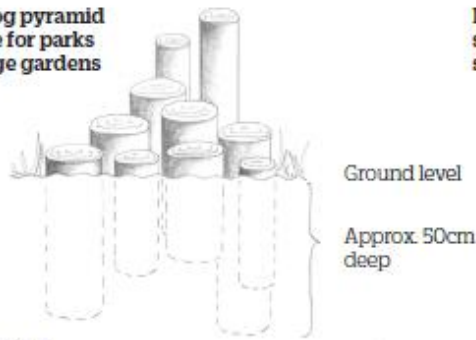
people's
trust for
endangered
species

- ▶ 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

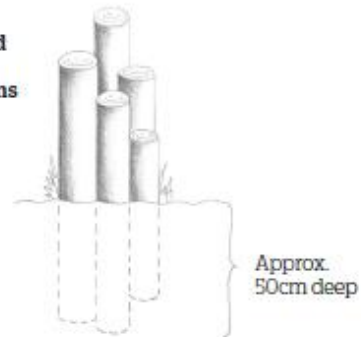
Your log pile will also benefit a range of other species including fungi, dead wood invertebrates and the animals that feed on them. It will be a great place for foraging small mammals, basking reptiles and potentially solitary bees.



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



**Log pyramid
suitable for
small gardens**



**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 Brown, Steve Heywood

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species

www.ptes.org
enquiries@ptes.org
020 7498 4533

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registered charity no. 274206

