

Ecology Report

PROPOSED NEW DWELLINGS
Belynna Cottage, Nayland Road, Leavenheath, Suffolk

April 2021



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

TELEPHONE | 01986 788791

EMAIL | millhouseecology@gmail.com

REPORT PRODUCED BY:

MHE Consulting Ltd
Mill House
Homersfield
Harleston
IP20 0ET

01986 788791
07766 771305
millhouseecology@gmail.com

ARCHITECTS:

Roger Balmer Design
Fountain House Studio
East Bergholt
Colchester
CO7 6TB

01206 299477
enquiries@rogerbalmerdesign.co.uk

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Contents

EXECUTIVE SUMMARY

1	INTRODUCTION	1
1.1	BRIEF	1
1.2	SITE LOCATION AND DESCRIPTION	1
2	PLANNING POLICY AND LEGISLATION	1
2.1	INTRODUCTION	1
2.2	PLANNING POLICY	1
2.3	LEGISLATION	2
3	METHODOLOGY	4
3.1	INTRODUCTION	4
3.2	DESK SURVEY	4
3.3	FIELD SURVEY	4
3.4	SURVEY CONSTRAINTS	6
3.5	SURVEYORS	6
4	RESULTS	8
4.1	INTRODUCTION	8
4.2	BASELINE ECOLOGICAL CONDITIONS - DESK STUDY	8
4.3	BASELINE ECOLOGICAL CONDITIONS – FIELD SURVEY	11
4.4	GEOGRAPHIC CONTEXT	13
5	ASSESSMENT AND RECOMMENDATIONS	14
5.1	INTRODUCTION	14
5.2	DESCRIPTION OF PROPOSED DEVELOPMENT	14
5.3	NEED FOR FURTHER SURVEYS	14
5.4	ASSESSMENT OF IMPACTS	14
5.5	HABITATS AND VASCULAR PLANTS	15
5.6	BATS	16
5.7	NESTING BIRDS	18
5.8	OTHER S. 41 LIST HABITATS AND SPECIES	18
5.9	SCHEDULE 9 INVASIVE PLANT SPECIES	18
5.10	COMPENSATION	18
5.11	CUMULATIVE EFFECTS	19
5.12	ENHANCEMENT OPPORTUNITIES	19
5.13	CONCLUSIONS	21
6	REFERENCES	22

Figures

Figure 1 Location plan

Figure 2 Ponds plan

Appendices

Appendix A1 Photos

Appendix A2 SBIS data search map

Appendix A3 EclA criteria

Appendix A4 Bat boxes

Appendix A5 Bird boxes

Appendix A6 Wildlife friendly composting area

Executive Summary

MHE Consulting Ltd were instructed to undertake an ecological survey and assessment of land adjacent to Belynna Cottage, Leavenheath, Suffolk. A planning application is to be submitted to Babergh District Council to construct a replacement dwelling.

The application site comprises an existing bungalow with areas of lawn, hard standing, hedgerows, trees and a small orchard. Some outbuildings also exist within the applicant's land holding but will be unaffected by the proposed development.

An inspection of the bungalow roof void found evidence of day roosting pipistrelle (*Pipistrellus pipistrellus*) bats with a small number of droppings below the ridge. The hedgerows and trees offer *Moderate* foraging and commuting habitat value for bats. No trees exist within the application site that support potential bat roosting niches.

The site offers some potential refuge and possibly hibernation habitat for hedgehog (*Erinaceus europaeus*) within hedgerows along the northern and eastern site boundaries, whilst the lawns provide foraging habitat. Hedgerows and trees provide bird nesting, song perch and foraging habitat, whilst a small orchard provides a seasonal food source for resident and migrant bird species.

The lawns provide foraging habitat for amphibians at night during heavy dews and rainfall, but the site is not considered likely to support great crested newts (*Triturus cristatus*) due to the lack of ponds within 250m of the site with arable farmland to the north and east. The lawn areas provide no suitable reptile refuge or foraging habitat, whilst hedgerows would provide refuge habitat including potentially for overwintering but given the lack of suitable habitat adjacent to the site no populations are likely on site.

Recommendations are made to avoid wildlife offences and ecological impacts. Where impacts cannot be avoided, 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 and compensation.

1 Introduction

1.1 BRIEF

MHE Consulting Ltd were instructed to undertake an ecological survey and assessment of land adjacent to Belynna Cottage, Leavenheath, Suffolk (TM; Figure 1). A planning application is to be submitted to Babergh District Council to construct a replacement dwelling with garage, a kitchen garden, parking and vehicular access. Some additional trees and hedgerows are planned as part of the site landscaping.

The ecological survey and this report are necessary to:

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

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

1.2 SITE LOCATION AND DESCRIPTION

The application site (Photos 1 to 5, Figure 1) comprises an existing bungalow with areas of lawn, hard standing, hedgerows, trees and a small orchard. Some outbuildings also exist within the applicant's land holding but will be unaffected by the proposed development.

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 recently revised in February 2019. 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 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/779764/NPPF_Feb_2019_web.pdf Policies of particular relevance to development and biodiversity include 170, 175, 176 and 177.

170. 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.

175. 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 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 incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

176. 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, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

177. 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 environment. Supporting documents used to plan, deliver and monitor development across the Babergh District Council area can be found at <https://www.midsuffolk.gov.uk/planning/planning-policy/adopted-documents/babergh-district-council/>. Mid Suffolk and Babergh District Councils are currently in the process of developing 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 detail relevant to this scheme. Species afforded legal protection are referred to by their relevant schedule (“Sch.”) within the act, i.e. “Sch. 1” (birds), “Sch. 5” (other animals), or “Sch. 8” (plants).

Invasive plant species such as Japanese knotweed (*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, Natural England open source GCN survey data, 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; and
- Historical biological records provided by SBIS.

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 grass snake (*Natrix helvetica*)³;
- Mammals including badgers (*Meles meles*)⁴ and bats²;
- Breeding birds⁵ including Red and Amber status⁶ species; and
- S. 41⁷ list habitats such as hedgerows, and 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 26 March 2021 to 1) record habitats present; and 2) assess the value of the habitats present for protected and notable species. A list of vascular plants and a description of the vegetation was made, including the location and extent of any Schedule 9 (WCA 1981) plants.

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'.

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

No ponds or waterbodies exist within 250m of the application site. The terrestrial habitat suitability of the site was assessed with respect to refugia and foraging habitat based on the known habitat preferences of GCN and widespread amphibians such as common frog (*Rana temporaria*), smooth newt (*Lissotriton vulgaris*), and common toad (*Bufo bufo*).

b) Reptiles

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

3.3.3 *Bats*

a) Preliminary Roost Assessment

An existing bungalow and some small timber sheds were assessed for their 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).

b) Tree roost potential

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

1. All potential roosting cavities (e.g. natural cavities, rot holes, woodpecker holes, splits, peeling bark) were inspected from the ground using binoculars where necessary;
2. All potential niches would be assigned a category according to Bat Conservation Trust (BCT) protocols (Collins, 2016). These categories are listed below:
 - High Suitability: Trees with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitat;
 - Moderate Suitability: Trees with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation;
 - Low Suitability: A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential. However, the tree(s) are of a size and age that elevated surveys may result in features being found; or features which may have limited potential to support bats; and
 - Negligible Suitability: Trees with negligible bat roost potential.
3. Where potential niches existed, niches below 5m high were physically inspected, using ladders 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; and

4. All potential roosting niches were checked for the presence of bats (alive or dead), faecal staining, fur and/or scratch marks around the entrance and droppings within the cavities or attached to the trunk/bough below the entrance.

c) Foraging and commuting habitat

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

3.3.4 *Nesting birds*

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

3.3.5 *Badger*

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

3.3.6 *S. 41 list habitats and species*

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

3.3.7 *Non-native invasive plant species*

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

3.4 SURVEY CONSTRAINTS

Given the nature of the habitats present on the site and the survey carried out, the timing of the survey visit was considered appropriate for this report. No access was granted to survey the nearby ponds P1 to P3 for their suitability to hold GCNs and other amphibians.

3.5 SURVEYORS

The initial site walkover and pond assessment was undertaken by Christian Whiting BSc (Hons) MSc MCIEEM MEECW who has over 20 years' experience working as an ecologist and holds NE survey licences for bats (2015-14745-CLS-CLS – Bat Survey Level 2, and GCNs (Class A licence 2015-17633-CLS-CLS).

He is a Registered Consultant (Registration RC089) on NE's Bat Mitigation Class Licence. He is registered on the 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 the Environment Agency's and IDB water vole organisational and class licences respectively. His main areas of expertise are bats, vascular plants, amphibians and reptiles, otter (*Lutra lutra*) and water vole.

Christian was assisted by Alex Gregory an assistant ecologist and undergraduate student studying Environmental management at Harper Adams University, and currently undertaking an industrial placement with MHE Consulting Ltd.

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
Breach Grove-Kingsland Lane	CWS*
Grange Wood	CWS*
Leadenhall Wood	CWS*
Rowley Grove	CWS*
Arger Fen	SSSI*
Edwardstone Woods	SSSI*
Stour and Orwell Estuaries	SPA; Ramsar

*Listed in Natural England's Ancient Woodland Inventory

Locally designated sites

No Local Nature Reserves (LNR) exist within 2km of the application site though four County Wildlife Sites (CWS) which are located within 2km are listed below.

Breach Grove-Kingsland Lane CWS is an ancient woodland which has been considerably disturbed in recent years due to the construction of several buildings and a cinder track extending along the length of the wood. Medium aged oaks (*Quercus* sp.) dominate the canopy, with hazel (*Corylus avellana*), holly (*Ilex aquifolium*), elder (*Sambucus nigra*) and cherry (*Prunus avium*) also present. Kingsland Lane, a green lane, borders the woodland to the west, linking Leavenheath with the Nayland road. The lane is bordered on both sides by ditches and mature hedges. The hedges support a good diversity of plants, including three scarce Suffolk species; betony (*Stachys officinalis*), common cow-wheat (*Melampyrum pratense*) and wood spurge (*Euphorbia amygdaloides*).

Grange Wood CWS is an ancient woodland located to the south of Leavenheath village. The canopy is dominated by oak standards with a wild cherry understorey and stands of ash (*Fraxinus excelsior*) holly and small-leaved lime (*Tilia cordata*) elsewhere. Bluebell (*Hyacinthoides non-scripta*), dog's mercury (*Mercurialis perennis*) and bramble (*Rubus fruticosus* agg.) comprises the ground flora. A large earthwork situated at the eastern end of the wood is of regional historical importance.

Leadenhall Wood CWS is an ancient woodland located just north of the village of Leavenheath. The wood is mostly ash and small-leaved lime coppice interspersed with stands of mature cherry and oak. In the wetter areas of the wood birch (*Betula* sp.) dominates.

Rowley Grove CWS is an ancient woodland comprising small-leaved lime standards with hazel coppice and oak standards scattered throughout. Ash, field maple (*Acer*

campestre), small-leaved lime coppice and elm (*Ulmus sp.*) are also present, though to a lesser extent. Several ancient woodland indicator plants flourish in Rowley Grove, including bluebell, wood millet (*Milium effusum*), thin-spiked wood sedge (*Carex strigosa*) and wood melick (*Melica uniflora*). The wood is enclosed by a ditch and bank and is managed largely for shooting.

Given the limited size of the development and with public rights of way either passing through or following the site boundaries of Leadenhall Wood, Breach Grove and Grange Wood, no significant ecological effects are anticipated.

Nationally designated sites

Arger Fen Site of Special Scientific Interest (SSSI) and Suffolk Wildlife Trust Reserve comprises a mosaic of habitats at different altitudes on scarp slopes of clay overlain with sand and gravels. Areas of fen, wet grassland and alder-carr woodland dominate the lower part of the slopes, with extensive areas of woodland found higher up on drier sandy soils and dry acidic grassland at the top.

The woodland is dominated by stands of hazel, ash and English oak (*Quercus robur*), with wild cherry, small-leaved lime, sweet chestnut (*Castanea sativa*) and diseased elm. Part of the wood is enclosed by a bank and there is evidence of coppicing which suggests the wood (in part) is of ancient origins. More recently, some areas have been replanted with conifers; bracken and bramble dominate the ground flora beneath the conifers though bluebells and other ancient woodland indicator plants persist beneath older broadleaved stands.

A series of neglected wet meadows and fens exist in the valley bottom, a lack of recent grazing or mowing is reflected in the plant communities found here; meadowsweet (*Filipendula ulmaria*) and common nettle (*Urtica dioica*) are dominant, with horsetail (*Equisetum arvense*) found in the wettest areas. More typical wet meadow forbs persist around the margins, including species such as purple loosestrife (*Lythrum salicaria*), marsh marigold (*Caltha palustris*) and ragged robin (*Lychnis flos-cuculi*). Bent grasses (*Agrostis spp.*) and fescues (*Festuca spp.*) dominate the short acid grassland at the top of the hill, with old ant hills providing additional ecological interest. The site is of particular value to invertebrates, birds and badgers.

Edwardstone Woods SSSI comprises an inter-related group of ancient woodlands, namely Park and High Woods, Stallington Wood, Priory Down Wood and Couper's Wood. The site displays a transition from the predominantly ash-maple-hazel woods of Mid Suffolk to the small-leaved limes of South Suffolk. A coppice with standards structure predominates each constituent woodland, with the rides and margins supporting a diverse ground flora typical of Suffolk boulder-clay soils. Park and High woods are over 500 years old; Stallington Wood is situated in a steep valley with medieval banks. The nationally scarce wild service tree (*Sorbus torminalis*) is present in Priory Down Wood whilst Couper's Wood has been planted with poplar (*Populus sp.*).

Prime stands of small leaved lime and hornbeam (*Carpinus betulus*) can be found throughout the site, with frequent large English oak and ash, occasional wild cherry, localised sweet chestnut, aspen (*Populus tremula*), field maple and silver birch (*Betula pendula*) also present. Shrub species include hazel, spindle (*Euonymus europaeus*), holly, crab apple (*Malus sylvestris*) and both Midland (*Crataegus laevigata*) and common hawthorn (*Crataegus monogyna*).

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

Internationally designated sites

Stour and Orwell Estuaries Special Protection Area (SPA) and Ramsar designated site are large Internationally important networks of estuaries and coastal habitats which qualify for important populations of overwintering birds including hen harrier (*Circus cyaneus*), redshank (*Tringa totanus*), black-tailed godwit (*Limosa limosa islandica*) amongst other species. The number of overwintering waterfowl on the estuaries has been estimated at over 65,000 birds.

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.

Financial contributions towards the RAMS will normally be the LPA's preferred mechanism for securing mitigation, and no further assessment will be made within this document. However, for replacement dwelling no RAMS financial contribution is required.

4.2.2 *Priority habitats*

Some mixed broadleaved woodland exists c.40m south-west of the application site on the opposite side of the main road (A143).

4.2.3 *Species*

No protected or notable species records exist from within the survey area, but relevant records exist for within 250m (**in bold**) and 2km of the application site boundary (where geographical precision is < 1km) are provided in Table 4.2.

Table 4.2 Protected/notable species within 2km of the site (SBIS)

Latin Name	Common Name	Designation
Amphibians		
<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

Reptiles		
<i>Anguis fragilis</i>	Slow worm	Sch. 5, S. 41
<i>Natrix helvetica</i>	Grass snake	Sch. 5, S. 41
<i>Zootoca vivipara</i>	Common lizard	Sch. 5, S. 41
Birds		
<i>Apus apus</i>	Swift	Amber Status
<i>Delichon urbicum</i>	House martin	Amber Status
<i>Emberiza citrinella</i>	Yellowhammer	Red Status, S. 41
<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>Prunella modularis</i>	Dunnock	Amber Status
<i>Pyrrhula pyrrhula</i>	Bullfinch	Amber Status
<i>Streptopelia turtur</i>	Turtle dove	Red Status, S. 41
<i>Sturnus vulgaris</i>	Starling	Red Status, S. 41
<i>Turdus philomelos</i>	Song thrush	Red Status, S. 41
<i>Turdus viscivorus</i>	Mistle thrush	Red Status
<i>Tyto alba</i>	Barn owl	WCA1i
Bats		
<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
<i>P. Pygmaeus</i>	Soprano pipistrelle	EPS, Sch. 5, S. 41
<i>Plecotus auritus</i>	Brown long-eared	EPS, Sch. 5, S.41
Other Mammals		
<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
<i>Muscardinus avellanarius</i>	Hazel dormouse	EPS; Sch. 5; S. 41
<i>Mustela putorius</i>	Polecat	S. 41
Plants		
<i>Euphorbia exigua</i>	Dwarf spurge	RLGB/ENG.VU
<i>Spergula arvensis</i>	Corn spurrey	RENG.VU
Invertebrates		
<i>Coenonympha pamphilus</i>	Small heath	RLGB.Lr(NT), S. 41
<i>Lasiommata megera</i>	Wall	RLGB.Lr(NT), S. 41
<i>Lucanus cervus</i>	Stag beetle	Sch. 5; S. 41

Assessment of Natural England's GCN class licence return data and eDNA pond survey records show the closest positive record to be located c. 1.19km west of the application site (dated 2019).

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 application site (Photos 1 to 5, Figure 2) comprises an existing bungalow with a formal garden of mostly lawn to the west and south with areas of hard standing (Photos 1 to 3).

A line of mature conifers and a timber panel fence (Photo 4, Figure 2) marks the majority of the western site boundary. A gappy hawthorn hedge H1 exists on the road side of the fence. A mature blackthorn (*Prunus spinosa*) and hawthorn hedgerow H2 (Photo 4) exists along the northern boundary and extends around the eastern site boundary. Timber panel fences exist along much of the southern site boundary. A hedgerow H3 marks the eastern site boundary with a conifer hedgerow H4 marking part of the roadside and southern site boundary (Figure 2).

A large area of lawn exists where the new dwelling is proposed which is dominated by grasses with some forbs and garden weed species. A small orchard exists to the east of where the new dwelling is proposed (Photo 5).

4.3.2 *Amphibians and reptiles*

a) Terrestrial habitat

The overall terrestrial habitat suitability of the site for amphibians and reptiles relates to dispersal and refuge/cover habitat provided by the boundary hedgerows whilst the lawn area provides potential foraging habitat for amphibians overnight when it rains. The site is not considered likely to support GCNs due to the lack of ponds within 250m of the site with arable farmland to the north and east.

The lawn areas provide no suitable refuge or foraging habitat for reptiles, whilst hedgerows would provide refuge habitat including potentially for overwintering but given the lack of suitable habitat adjacent to the site no populations are likely on site.

4.3.3 *Bats*

a) Building survey

The bungalow has rendered walls and a slate roof. An inspection of the bungalow roof void found a light scatter of pipistrelle droppings (Photo 6) indicating the presence of a transitional or day roost.

b) Tree Roost Assessment

No trees exist on site that have the potential to support roosting bats.

b) Commuting and foraging habitat

The site offers some foraging and commuting habitat for bats (e.g. boundary hedgerows and tree) was assessed as *Moderate* (Collins, 2016).

4.3.4 *Nesting birds*

Mature conifers along part of the western site boundary and hedgerow H2 offers potential nesting, foraging and song perch habitat for various species of garden bird including small passerines such as dunnock (*Prunella modularis*) (Amber Status; S. 41 List), song thrush (*Turdus philomelos*) (Red List; S. 41 List), blackbird (*Turdus merula*) and wren (*Troglodytes troglodytes*). The orchard provides seasonal foraging opportunities for frugivorous birds (e.g. blackberries and elderberries) whilst supporting the invertebrate prey of insectivores.

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

Hedgerow H2 is an intact native species hedgerow and therefore meets the qualifying criteria for a S. 41 list hedgerow habitat.

b) Species

The boundary hedgerow H2 provides suitable refuge habitat for hedgehogs and could potentially support some S. 41 list invertebrates. The lawn areas provide foraging habitat for hedgehog. The orchard meets the qualifying criteria for a S. 41 orchard habitat.

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, trees and hedgerows	Local
Amphibians	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

The construction of a replacement dwelling will result in the permanent loss of some lawn habitat, a small number of trees and the demolition of the existing bungalow which supports a small number of common roosting bats.

The assessment and recommendations provide preliminary recommendations for mitigation, compensation and enhancements for the proposed development. They are based on the most recent drawings provided by Roger Balmer Design and information available at the time of writing and should be updated accordingly as the scheme is subsequently amended.

5.3 NEED FOR FURTHER SURVEYS

An initial dusk emergence and/or dawn swarming bat survey is required during May to June inclusive to determine the nature of the roosts in the bungalow with the PRA survey finding only a light scatter of droppings below the ridge indicating the absence of any significant roosts. A further survey would be required during June to September inclusive if no bats are observed roosting during the first survey to provide sufficient information to determine the type of roost. If

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.

No significant habitat manipulation, clearance, or change from current management regimes should occur prior to development, other than as specified below without advice from a suitably experienced ecologist.

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 proposed development will result in the loss of a small area of lawn and a small number of fruit trees considered insignificant at the local level.

b) Mitigation

Retained hedgerows, trees (including the orchard) and areas of lawn should be protected with temporary fencing (e.g. Heras) to prevent above ground damage and Root Protection Areas (RPAs) should be used to inform the detailed design.

c) Residual effects

No significant residual impacts are predicted. The loss of lawn habitat and a small number of trees will be compensated by the proposed tree planting and lawn areas. Additional tree planting over and above that needed for compensation for any trees to be felled will deliver a biodiversity enhancement along the proposed hedgerow planting once established.

5.6 AMPHIBIANS AND REPTILES

a) Potential impacts

The proposed dwelling will result in the permanent loss of a small area of lawn which provide potential amphibian foraging habitat considered an insignificant negative effect at the local level. Ground-breaking and construction activities may also result in the potential entrapment, injury and mortality of amphibians due to the presence of trenches (including caustic substances such as wet concrete) and building materials which animals can seek refuge within and then suffer injury/death when the materials are moved.

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 amphibians becoming trapped (Muir *et al.* 2012) and impact upon amphibians. Such impacts could also result in permanent negative effects upon low numbers of individuals.

No impacts on reptiles are predicted. Combined, the above impacts could result in negative ecological effects on individual animals at the local level.

b) Mitigation

The following good practice measures should be followed:

- The existing lawn should be kept short up to the point of commencing groundworks

- If amphibians are active (i.e. early February to October inclusive) any longer vegetation (>300mm) should be trimmed to ground level using a 2-stage cut with the first cut to c. 150 mm above ground level; the area should be left overnight, before cutting to ground level (after a visual inspection).
- Excavations at other times must be filled on the same day as excavation where possible to prevent animals falling in. Where this is not possible the trenches must be covered overnight with ply/OSB sheets and damp sand used to fill any gaps. Larger excavations should have mammal ladders (e.g. rough planks securely placed at an angle to allow safe egress) installed;
- Open excavations will be inspected for the presence of amphibians, reptiles, and small mammals immediately prior to filling with any aggregates or concrete;
- Concrete pours will be undertaken in the morning to allow them to harden prior to the evening when amphibians become active, or must be covered overnight;
- Excess cement/concrete must be disposed of in such a way as to prevent contact with animals, e.g. poured into a concrete skip and covered;
- Any caustic materials (e.g. concrete) to be hand mixed must be on ply boarding over a tarpaulin which is folded over the boarding at the end of each day's use to prevent animals coming into contact;
- All building materials will be stored on areas of hard standing (e.g. gravel) or stored off the ground on pallets, and not on areas of vegetated ground;
- All building demolition waste must be removed from site as promptly as possible. Any waste that must be stored on site temporarily will be stored within skips which must rest on areas of hard standing to prevent animals from seeking refuge; waste should be removed as promptly as possible to prevent animals seeking refuge;
- Unless connected directly with no impediments such as silt traps or sumps, raised or sealed hoppers must be used for drainpipe connections; and
- Roadside gullies, if used, should be situated ≥ 100 mm from kerbs to maintain function while reducing the probability of animals falling in, OR a wildlife friendly kerb should be installed. In addition, amphibian (gully pot) ladders must be installed into each gully pot⁸.
- **Should any GCNs, works should stop immediately, and advice be sought from a suitably experienced ecologist. A poster to aid GCN identification (Appendix A4) should be erected in any welfare facilities on site.**

c) Residual effects

No significant residual effects are predicted. The proposed landscaping comprising tree and hedgerow planting once established will deliver a positive effect.

5.7

BATS

a) Potential impacts

i) Building roosts

The demolition of the bungalow will likely result in the loss of pipistrelle day roosts considered significant at the local level.

ii) Foraging and commuting habitats

No habitat loss predicted.

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

⁸ <https://www.thebhs.org/shop/the-bhs-amphibian-gully-pot-ladder>

population recruitment. This is considered a potential significant effect at the local scale.

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).

b) *Mitigation*

i) Roosts

The demolition of the bungalow will require a bat European Protected Species Mitigation licence to legalise the destruction of the roosts present. The existing slate roof need to be removed by hand and any bats encountered would be moved to bat boxes erected on retained trees.

ii) Light disturbance

Exterior lighting (as well as temporary security lighting during the construction phase) design must minimise lighting impacts upon boundary habitats and should follow current guidance as necessary^{9,10}:

- *Type of lamp (light source)*: Light levels should be as low as possible as required to fulfil the lighting need. Exterior lighting should have a maximum of 7.5 to 10 lux and LED lights should be used using the warm white (or amber) spectrum, with peak wavelengths >550nm (2700 or 3000°K) and no UV component; and
- *Lighting design*: Lighting should be directed to where it is needed, with minimal horizontal spillage towards retained habitats including 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'.

iv) Roofing membranes

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

c) *Residual effects*

The loss of the bat roosts in the bungalow will result in a significant residual effect which will require compensation (see S. 5.10). The proposed landscaping including some hedgerow and specimen tree planting will deliver a positive effect once they have matured.

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

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

5.8

NESTING BIRDS

a) *Potential impacts*

The loss of a small number of trees is considered an insignificant effect at the local level. The construction of the new dwelling and a 3 bay garage followed by the demolition of the bungalow could result in the disturbance and potential physical damage to nests considered a negative effect at the local level.

b) *Mitigation*

As per 5.5.

c) *Residual impact*

No significant effect.

5.9

OTHER S. 41 LIST HABITATS AND SPECIES

a) *Potential impacts*

The small loss of lawn habitat will result in an insignificant negative effect on hedgehog foraging habitat. Existing hedgerows and the orchard could be accidentally damaged by working machinery, whilst 2 mature and 1 immature fruit tree require removal. Together these impacts are considered a significant negative effect at the local level.

During the construction phase hedgehogs could potentially fall into open trenches, resulting in entrapment and possible injury and mortality of individuals due to falling in or via contact with caustic substances such as fresh concrete. Such impacts would result in negative effects upon individuals.

b) *Mitigation*

As per 5.5.

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.

The use of close board fencing should be avoided, with native species-rich hedgerows preferable where boundary features are required. If close board fencing were to be installed, then at least one hedgehog highway¹¹ should be provided at either end of the fencing run with signage.¹²

c) *Residual effects*

Direct impacts upon S. 41 habitats and species will be avoided. Any new tree and/or hedgerow planting would deliver a positive effect (with a time lag) for hedgehogs and S. 41 invertebrates.

5.10

COMPENSATION

The loss of lawn habitat could be compensated by creating more lawn habitat where the existing bungalow stands, whilst existing lawn areas could be enhanced by overseeding by a suitable wildflower seed mix¹³.

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

¹² <https://ptes.org/shop/just-in/hedgehog-highway/>

¹³ <https://wildseed.co.uk/mixtures/view/25>

The loss of 3 fruit trees should be compensated by planting a minimum of 3 heritage fruit tree varieties¹⁴ using Suffolk cultivars.

The loss of bat roosts will require compensation through the provision of bat boxes on retained mature trees on site. The number and type of boxes (Appendix A5).

The compensation measures proposed will help off-set biodiversity losses on the site. Enhancements are proposed in section 5.12 below.

5.11 CUMULATIVE EFFECTS

The Babergh District Council website was searched on the 25 February 2021 for significant planning applications within 1km of the application site dating back by two years. Numerous householder applications were returned comprising extensions and/or alterations to existing dwellings as well as two small-scale residential schemes (DC/19/01303; DC/19/01849). Refused and withdrawn applications were not considered in relation to cumulative ecological effects. Applications considered relevant are listed below:

- Permission was granted (DC/19/01303) to construct a detached chalet bungalow and cartlodge following the demolition of an existing bungalow at Orchard Farm, Locks Lane, Leavenheath. No ecology report was submitted with the application.
- Permission was granted (DC/19/01849) to erect 4 four dwellings following demolition of existing buildings at The Lion Inn, Honey Tye, Leavenheath. A bat survey report submitted with the application found no evidence of bats roosting in the buildings to be demolished and low bat foraging and commuting activity within the survey area. No significant negative effects on roosting bats were anticipated; a single condition relating to wildlife sensitive lighting was included in the delegated officer's report.

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

5.12 ENHANCEMENT OPPORTUNITIES

To minimise losses and maximize ecological enhancement opportunities, biodiversity enhancements will be implemented as part of the scheme (Table 5.1).

Table 5.1 Biodiversity enhancements

Feature	Enhancement suggestion
1. Ornamental planting and nectar rich climbers	Any ornamental planting should utilise nectar rich plants for the benefit of pollinators and associated predators e.g., foraging bats and hedgehogs. 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 5-10m intervals along hedgerows, fences and walls or trained up posts or trellises.
2. Hedgerow planting	Some new hedgerow planting could be provided along the roadside frontage to strengthen the existing hawthorn

¹⁴ www.applesandorchards.org.uk

	<p>hedgerow if the existing mature conifers are removed. Hawthorn should form a major proportion (40 – 50%) of the hedgerow along with e.g. plum cherry (<i>Prunus cerasifera</i>) (5%) and wild privet (<i>Ligustrum vulgare</i>) (5%). All 3 species provide food for birds and mammals and help reduce cat predation. The remaining 40 – 50% of the hedgerow should include a minimum of 5 of the following species:</p> <ul style="list-style-type: none"> • Common dogwood (<i>Cornus sanguinea</i>): Berries are eaten by wildlife; • Crab apple (<i>Malus sylvestris</i>): Provides blossom (insects) and fruit (wildlife); • Dog rose (<i>Rosa canina</i>): Provides nectar (insects), and hips for small mammals; • Field maple (<i>Acer campestre</i>): The seeds are eaten by small mammals; • Guelder rose (<i>Viburnum opulus</i>): Berries are eaten by wildlife; • Hazel (<i>Corylus avellana</i>): Provides autumn food for small mammals; • Holly (<i>Ilex aquifolium</i>): Provides screening and refuge habitat all year round and berries; • Hornbeam (<i>Carpinus betulus</i>): Provides seeds for small mammals; and • Spindle (<i>Euonymus europaeus</i>): The seeds are eaten by wildlife.
3. Flowering lawns	Any lawn areas disturbed during the works and new areas created could be established as flowering lawns seeded or turfed with a suitable flowering lawn seed mixture ¹⁵ or turf ¹⁶ , following supplier guidance on creation and long-term management.
4. Bat boxes	<p>One bat box could be erected under the south facing soffit/eaves of the new dwelling, positioned away from windows and doors (exact locations agreed with a suitably experienced ecologist).</p> <p>Bat boxes could be wall mounted, such as the Kent bat box and or integrated into the wall of each dwelling (e.g., Schwegler 1FE and Ibstock bat box) (Appendix A5).</p>
5. Small passerine bird boxes	Bird boxes (Appendix A6) for house sparrow, robin and wren could be erected on retained outbuildings.
6. Composting area	A composting area (Appendix A7) could be created to provide a supply of sustainable organic source of fertiliser, and 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).

¹⁵ E.g. <https://www.bostonseeds.com/products/wildflowers-seed/wildflower-seed-mixtures-20/bs12m-low-growing-wildflower-meadow-seeds.html>? or <https://wildseed.co.uk/mixtures/view/56/flowering-lawn-mixture>

¹⁶ <https://www.wildflowerlawnsandmeadows.com/wild-flower-turf/extra-floristic-low-flowering-lawn-turf-with-wild-orchid-seed/> or <https://www.turfonline.co.uk/meadowmat/species-rich/>.

	Composting areas are also likely to attract foraging birds (by day) and hedgehogs (at night).
--	---

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

5.15

CONCLUSIONS

The proposed mitigation, compensation and enhancement measures should ensure the proposed scheme avoids net losses of biodiversity and will maximise biodiversity enhancements provided within the application site boundary.

Measures proposed should be secured through appropriate planning conditions as per the British Standard (BS 42020:2013¹). These could include conditions specific to breeding birds (e.g. BS 42020:2013 D.3.2.1), bats (e.g. BS 42020:2013 D.3.5), and/or with a Biodiversity Method Statement (e.g. BS 42020:2013 D.2.1) to detail mitigation, compensation, and enhancement implementation.

6 References

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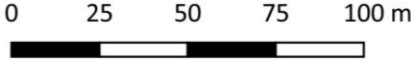
Waring, S., Essah, E., Gunnell, K. and Bonser, R. (2013) Double jeopardy: the potential for problems when bats interact with breathable roofing membranes in the United Kingdom. *Architecture & Environment*, 1 (1). pp. 1-13.

Figures



Legend

 Application site boundary

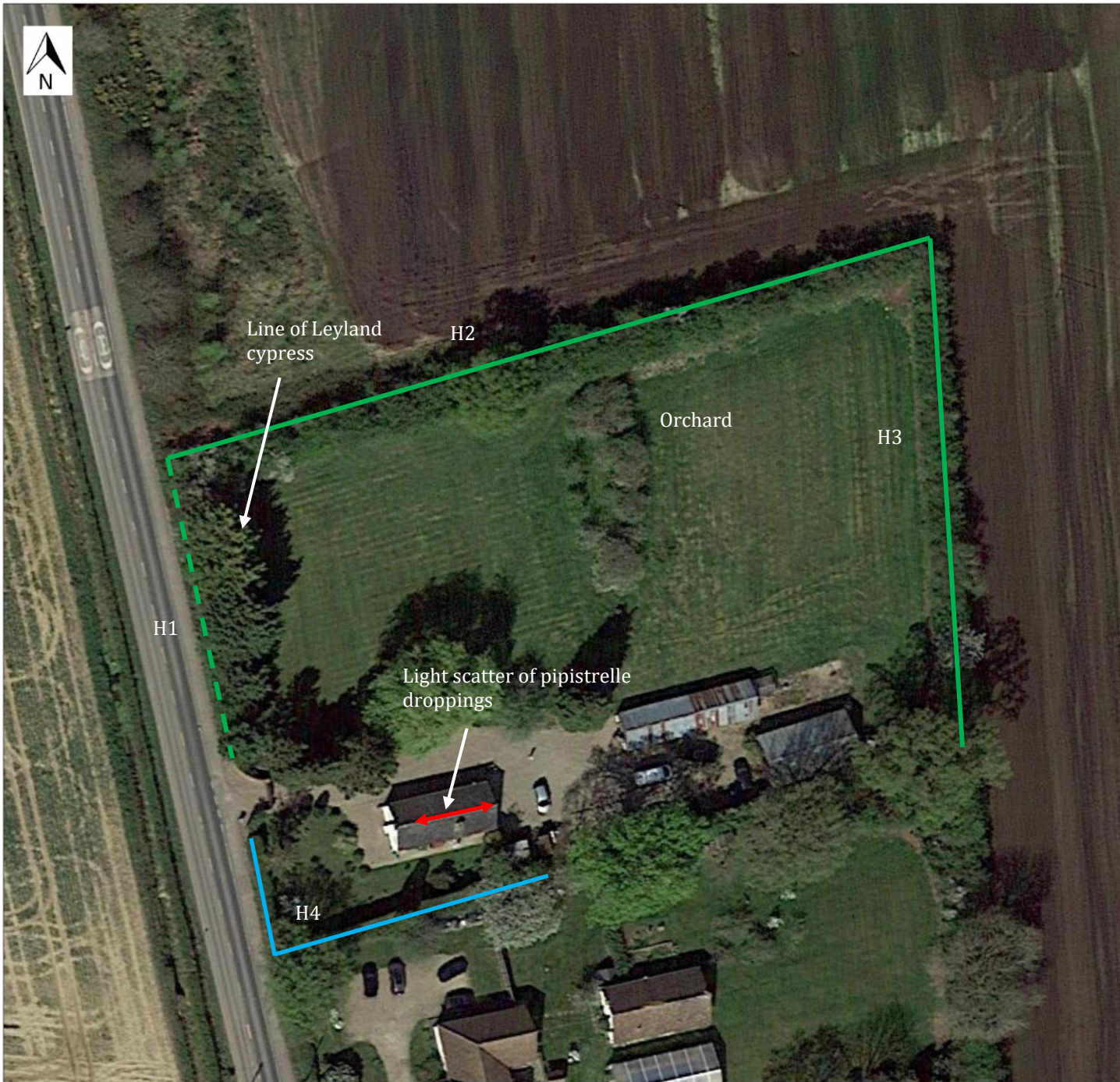


Client: Mr and Mrs Brennan

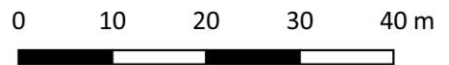
Project: Belynna Cottage, Leavenheath

Drawn:	Date:	Drawing Ref:
AG	24/03/21	BELYNACOTTAGE/001

Figure 1 Site location plan



Legend



Client: Mr and Mrs Brennan		
Project: Belynna Cottage, Leavenheath		
Drawn:	Date:	Drawing Ref:
AG	31/03/21	BELYNACOTTAGE/002

Figure 2 Habitats plan

Appendices

Appendix A1 Photos



Photo 1 East and north elevations of bungalow



Photo 2 West elevation of bungalow



Photo 3 Timber sheds by the east elevation



Photo 4 Tree line of conifers along the western site boundary with a native hedgerow H2 along the northern boundary

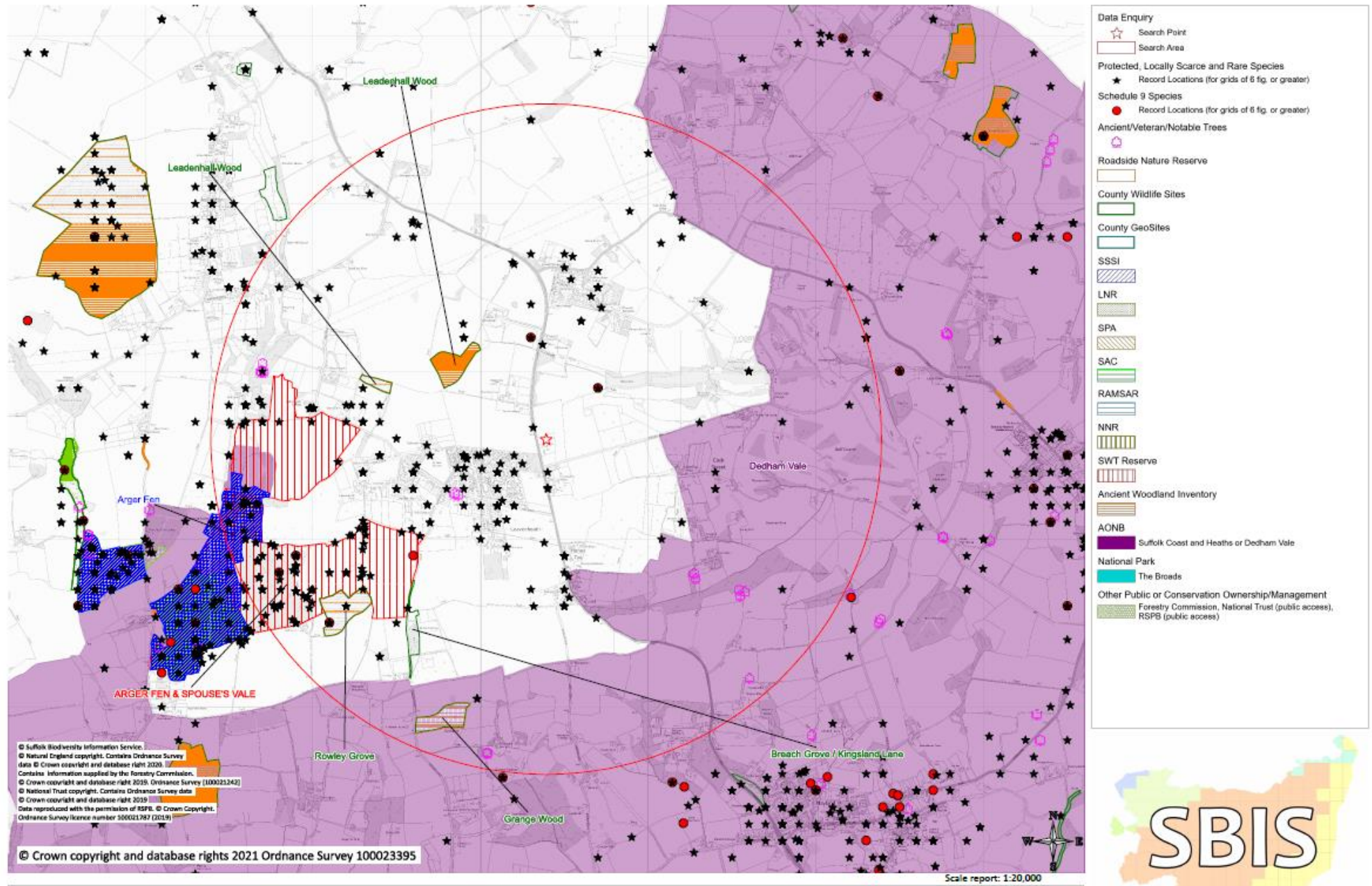


Photo 5 Mature fruit trees to east of the proposed dwelling



Photo 6 Pipistrelle dropping in the roof void

Appendix A2 SBIS data search map



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Scale report: 1:20,000

Appendix A3 EclA criteria

A3.1 General criteria for geographic context/value

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

Appendix A4 GCN 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



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

Appendix A5 Bat boxes

Built-in WoodStone Batbox



Schwegler 1FE

Ibstock Enclosed Bat Box



Select product (6)

Smooth Wood Stone
15 x 15 cm

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

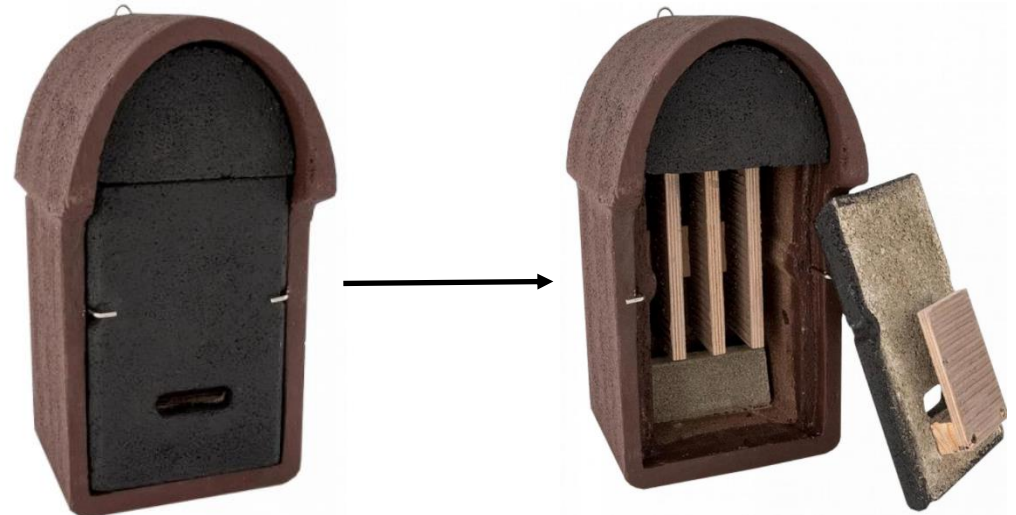
Box to be made from untreated rough-sawn timbers
Timber should be a 25mm thick
The box should be rafterproof and draught-free
Crevices can be between 15 and 25 mm wide
Fixing may be by use of brackets, durable bolts or wires

Local fix

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



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Large Multi Chamber WoodStone Bat Box

Appendix A6 Bird boxes

We're still open for business - read our [Brexit](#) and [Covid-19](#) statements



Promotions

Equipment shop

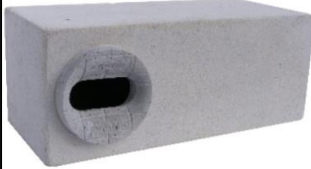
Bookstore

Magazines

Gifts

Clearance

Schwegler Lightweight Swift Box Type 1A



Temporarily out of stock: [order now to get this when available](#)
£58.99
#208155

Price: £58.99

ADD TO BASKET

[About this product](#) | [Specification](#) | [Customer reviews](#) | [Related products](#)

- ✓ Designed to be built into cavity walls
- ✓ Compact design

Alternatives



WoodStone Build-in Swift Nest Box A
Durable WoodStone nest box for integrating into external walls
£28.99



WoodStone Build-in Swift Nest Box B
Attractive design that can be built into brickwork
£24.95

About this product

RSPB Sparrow terrace nest box

Product Code: H407816

Qty 1

£ 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



In Stock

ADD TO BASKET



Appendix A7 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.



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



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



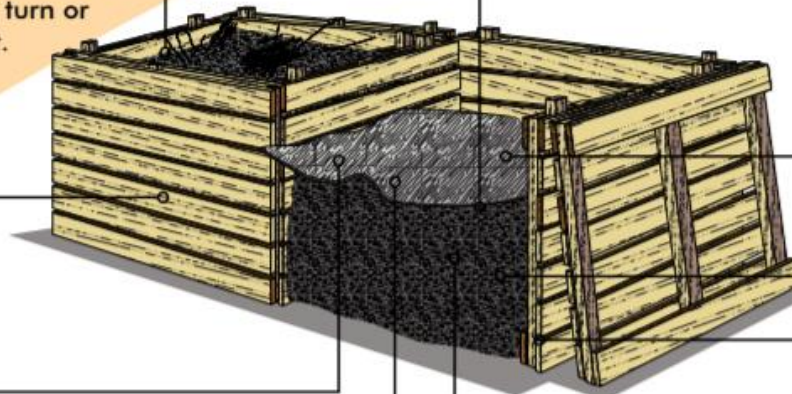
Worm - a healthy compost heap needs worms.



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



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.

