

30 Valley Road, Chandler's Ford, Eastleigh, SO53 1GP

Ecological Appraisal Report

April 2023

Hampshire Ecological Services Ltd
Consultant Ecologists

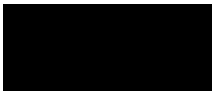
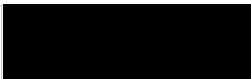
E: enquiries@hantsecology.co.uk

W: www.hantsecology.co.uk

T: 0771 456 8361

Ecological Appraisal Report
30 Valley Road, Chandler's Ford, Eastleigh, SO53 1GP
for
Hessan Ezad

Reference: 30 Valley Road, Chandler's Ford	
Revision	Issue date:
0	12/04/23

Prepared by:	Rev 0
 HANNAH YATES Ecologist	28/03/23
First review & Technical QA by:	
 VICTORIA RUSSELL Principal Ecologist	05/04/23
Second review & Technical QA by:	
 JOHN POLAND Principal Ecologist	06/04/23

This report represents sound industry practice; reports and recommends correctly, truthfully and objectively; is appropriate given the local site conditions; scope of works proposed and resources allocated to us by the client; and avoids invalid, biased, and exaggerated statements.

The author disclaims any responsibility to the client and others in respect of any matters outside the scope of the above. This report is confidential to the client and the author accepts no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

Contents

1	EXECUTIVE SUMMARY	5
2	INTRODUCTION.....	9
2.1	PURPOSE OF THIS REPORT	9
2.2	SITE DESCRIPTION	9
2.3	PROPOSED ACTIVITIES	9
2.4	CURRENT PLANNING STATUS.....	9
2.5	STRUCTURE OF THIS REPORT	10
3	METHODS	11
3.1	DESK STUDY	11
3.2	FIELD SURVEY.....	11
3.2.1	<i>General</i>	11
3.2.2	<i>Dates, time and weather</i>	11
3.2.3	<i>Personnel</i>	12
3.2.4	<i>Botanical surveys - Phase 1 Habitat Survey</i>	12
3.2.5	<i>Animal surveys</i>	13
	General	13
	Bats	13
	Badger.....	16
	Birds.....	16
	Widespread species of reptile.....	16
4	RESULTS	17
4.1	DESK STUDY	17
4.1.1	<i>Designated sites</i>	17
4.1.2	<i>European Protected Species</i>	17
4.2	HABITATS AND PLANT SPECIES.....	19
4.2.1	<i>Habitats</i>	19
4.2.2	<i>Plant species</i>	19
4.3	PROTECTED VERTEBRATES	19
4.3.1	<i>Bats</i>	19
	Bat roost suitability of buildings	19
	House	25
	Garage.....	25
	Shed	27
	Bat roost suitability of trees	27
	Commuting and foraging habitat.....	27
4.3.2	<i>Dormice</i>	27
4.3.3	<i>Badger</i>	27
4.3.4	<i>Birds</i>	27
4.3.5	<i>Widespread species of reptile</i>	27
5	INTERPRETATION AND EVALUATION	28
5.1	CONSTRAINTS ON THE SURVEY	28
5.1.1	<i>Constraints on survey data</i>	28
5.1.2	<i>Constraints on the mitigation, compensation and enhancement measures</i>	28
5.2	SURVEY REPORT EXPIRY.....	28
5.3	LEGAL CONTEXT	28
5.4	POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT	29

5.4.1	Desk study.....	29
5.4.2	Habitats and plants.....	29
5.4.3	Bats.....	30
	Bat roost suitability of buildings.....	30
	Bat roost suitability of trees.....	30
	Foraging and commuting habitat.....	30
5.4.4	Dormice.....	31
5.4.5	Badger.....	31
5.4.6	Birds.....	31
5.4.7	Widespread species of reptile.....	31
5.5	FURTHER SURVEY.....	32
5.5.1	Bats.....	32
5.5.2	Widespread species of reptile.....	32
5.6	ENHANCEMENT MEASURES.....	32
5.6.1	General.....	32
5.6.2	Bats.....	33
	New bat roost locations.....	33
	Lighting.....	33
5.6.3	Birds.....	34
5.6.4	Amphibians, reptiles and hedgehogs.....	35
5.7	REQUIREMENT FOR NATURAL ENGLAND LICENCES.....	35
5.7.1	European Protected Species (EPS) licences.....	35
5.7.2	Protection of Badgers Act (1992) licences.....	36
6	FIGURES.....	37
7	PHOTOGRAPHS.....	42
8	REFERENCES.....	43
9	APPENDIX A: PROTECTED SPECIES LEGISLATION.....	45
9.1	GENERAL.....	45
9.2	BATS.....	45
9.3	DORMICE.....	45
9.4	BADGER.....	46
9.5	BIRDS.....	46
9.5.1	Birds - general protection.....	46
9.5.2	Birds - specially protected species.....	46
9.6	WIDESPREAD SPECIES OF REPTILE.....	47
9.7	EUROPEAN PROTECTED SPECIES LICENCES.....	47
9.8	NATIONAL PLANNING CONTEXT.....	47
9.8.1	General.....	47
9.8.2	National Planning Policy Framework (NPPF).....	48
10	APPENDIX B: TARGET NOTES.....	50
11	APPENDIX C: PLANT SPECIES LISTS.....	52
12	APPENDIX D: OTHER ENHANCEMENTS FOR WILDLIFE.....	54
12.1	LAWN SEED MIX COMPOSITION.....	54
12.2	ORNAMENTAL PLANTING TO ATTRACT WILDLIFE.....	55
12.3	BIRD BOXES.....	57
12.4	INSECTS.....	58

EXECUTIVE SUMMARY

1. This report provides information from an ecological appraisal carried out by Hampshire Ecological Services Ltd for Hessian Ezad in connection with a proposal to demolish the existing buildings and construct three new dwellings at 30 Valley Road, Chandler's Ford, Eastleigh, SO53 1GP (approximate Ordnance Survey Grid Reference SU431214). The site location is shown in *Figures 1 and 2*; and a site plan is given in *Figure 3* (see *Section 6*).
2. An ecological appraisal was carried out during the daytime on the Hannah Yates BSc (Hons) and Phil Budd BSc.
3. The site consists of a house, garages, shed, driveway, a lawn edges with introduced shrubs, scrub and an area of broad-leaved woodland. The habitats are shown in the Phase 1 Habitat Survey map given in *Figure 4* (see *Section 6*) with plant species listed in *Appendix C*.
4. The majority of the habitats and plant species observed on site are widespread and common; the habitats are of negligible nature conservation value from a botanical perspective. The exceptions are the trees in the woodland. These are of high ecological value and should be retained and protected where possible (see *Section 5.4*).
5. No plant species listed on *Schedules 8 or 9 of the Wildlife and Countryside Act 1981* (as amended) were recorded on the site.
6. Three buildings on the site were assessed for their bat roost suitability. This identified the house and garages as both having low bat roost suitability and the shed as having negligible bat roost suitability. The house and garage will need bat activity surveys to either confirm that bats are likely not using the building or provide the basis of the information that would be required for a European Protected Species (EPS) licence (see *Section 5.5*).
7. As the shed has negligible bat roost suitability and its demolition will not impact the potential bat roost features on the house and garage, it can be demolished without further survey or constraints regarding bats (subject to any planning constraints).
8. All of the trees on site were identified as having negligible bat roost suitability at the time of the survey. Therefore, they can be felled (if necessary) or have tree surgery such as crown lifting without further survey or constraints regarding bats (subject to any planning constraints).
9. The woodland, mature trees and ornamental planting provide good quality foraging habitat and potential flight-lines for commuting bats on the site. These link to a network of hedges, tree-lines and strips of woodland in neighbouring gardens and provide links into and from the wider landscape. There is an area of ancient woodland c.455m north-west of the site and the Monk's Brooke is c.630m to the west of the site. Both of these provide high-quality foraging habitat for a number of different species of bat.

10. Changes in lighting can affect foraging and commuting bats. Therefore, no works should take place in the hours of darkness or under artificial lighting. In addition, no lighting should be directed onto retained vegetation, and security lights should operate on a timer, to avoid any negative impact on bats. Ideally any lighting installed should avoid spillage of greater than 0.1 lux (typical moonlight/ cloudy sky) onto any planted vegetation. However, it is in a highly lit area and as such this may not be possible due to existing light spill. If this is the case any new lighting should not increase the level currently experienced and, if at all possible, should reduce any light spill due to the type of lighting used and the use of protection such as hoods and cowls. The use of non-UV LED lighting (preferably using warm spectrum wavelengths) is strongly recommended to avoid the most deleterious impacts of lighting on biodiversity and bats in particular.
11. The woodland in the western part of the site (*Target Note 12*) as well as the introduced shrubs on the eastern edges provide suitable habitat for dormice on site and this extends into the adjacent gardens. However, it is suboptimal due to the absence of a shrub-layer and low number of species that could provide food sources (dormice need a variety of flowers, nuts and berries over a wide period of time to provide sufficient food). In addition, the site is isolated within suburban housing and as such there are no areas of woodland nearby that could allow dormice to colonise the site. Therefore, it is considered unlikely that dormice are present and as such no further surveys for this species are proposed.
12. No badger setts or evidence of badger activity was found.
13. All of the trees and bushes provide suitable habitat for nesting birds. The removal of any vegetation with the potential to support nesting birds should be undertaken outside of the bird breeding season (which is late February to August inclusive) to avoid the destruction of active bird nests and hence comply with the law (*Wildlife and Countryside Act 1981* (as amended)). If this is not possible, and vegetation has to be removed during the nesting season, then they should be inspected (by an ecologist) for nests immediately prior to removal of the vegetation or demolition of the buildings. If any active nests are found during the works, a 5m buffer zone should be established around it and be temporarily fenced off to prevent plant or personnel disturbing the nest until the end of the breeding bird season (or until the nest is no longer in use). Any active nests found within the buildings must be retained and work must be delayed in that area until the young have fledged and left the nest.
14. Some of the site is suitable foraging habitat for widespread reptile species such as slow-worms. Therefore, reptile surveys are needed between April and September in suitable weather conditions to establish whether reptiles are present or likely absence (see *Section 5.5*).
15. To minimise the impact on the retained trees, Heras fencing or similar should be used to protect the roots of the trees during construction. The guidance provided in BS 5837 *Trees in relation to Construction* provides further advice.

16. National Planning Policy Framework (NPPF 2021) states "*opportunities to incorporate biodiversity in and around developments should be encouraged*" as part of the consideration for "*presumption in favour of sustainable development*". Therefore, the following enhancements are proposed to provide a net gain in biodiversity:

- External lighting will not be installed near to or directed onto any retained vegetation or any planting carried out following construction to enhance the site so that light disturbance will not be a problem for bats;
- At least one woodstone bat box (*e.g.* Vivara Pro WoodStone Bat Box, Beaumaris Woodstone or similar) will be mounted on a mature tree on site, to provide suitable roosting opportunities for bats on the site;
- At least one of the new dwellings will have an integrated bat box. This provides a cavity that is incorporated into the external build structure to offer roosting space for bats;
- A least four boxes will be erected on site, including the following:
 - three or more swift boxes, such as Ibstock Eco-habitat or No. 18 Schwegler swift box, incorporated into the build structure;
 - one or more 32mm woodstone bird box, suitable for blue tits and great tits, mounted to a tree on site; and
 - one or more 28mm woodstone bird box, suitable for blue tits and coal tits, mounted to a tree on site.

The proposed bird boxes are summarised in *Table 5.4.5.1*.

17. The indicative locations of the proposed enhancement measures are given in *Figure 5* in *Section 6*.

18. This survey data is valid for a maximum of 12 months. If more than 12 months elapse after completion of all surveys, it may be advisable to conduct further survey work to obtain up-to-date information prior to commencement of construction to ensure protected species compliance.

19. The site is neither designated nor immediately adjacent to any designated areas of nature conservation. However, there are designated sites nearby (see *Table 4.1.1.1* in *Section 4.1.1*). None of these will be directly affected by this small-scale development and all links will be maintained.

20. The site is within 5km of Emer Bog SAC (c.3060m west) and the River Itchen SAC (c.2950m east). Both of these sites are designated due to the types of wetland habitats they include. As a result of its proximity, the impacts of this small-scale development on the SACs must be considered.

21. The works will cause increase to the number of dwellings on site and therefore to the number of people occupying the site. This could cause an increase in the recreational pressure, or pollution, on the internationally designated sites. Therefore, the local council may ask for compensation due to the extra dwellings on the basis that it could increase in the recreational pressure and/ or pollution, on the internationally designated sites.

22. The development of additional residential units within the district will produce additional waste water that in the absence of mitigation will impact on internationally designated nature conservation sites. New guidance on the impacts of nutrients was published by Natural England earlier this year. In the case of the river catchment of the River Itchen, phosphorus and nitrogen are causing environmental effects (previously only nitrogen was considered to need mitigation). Therefore, it is suggested that proposals are designed to ensure nutrient neutrality (this may require the advice of a hydrological expert). There are a number of mitigation schemes where developers can buy nitrate credits in order to offset the impacts of the proposals if it is not possible to achieve nutrient neutrality on site.

23. According to the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk), there have been five bat European Protected Species (EPS) licences granted, the closest of which is c.315m south-east of the site. Due to its close proximity, it is likely that any bats using the site are part of the same meta-population.

2 INTRODUCTION

2.1 Purpose of this report

This report provides information from an ecological appraisal carried out by Hampshire Ecological Services Ltd for Hessian Ezad in connection with a proposal to demolish the existing buildings and construct three new dwellings at 30 Valley Road, Chandler's Ford, Eastleigh, SO53 1GP (approximate Ordnance Survey Grid Reference SU431214). The is shown in *Figures 1* and *2* in *Section 6*.

2.2 Site description

The site consists of a house, garages, shed, driveway, a lawn edged with introduced shrubs, scrub and an area of broad-leaved woodland. A site plan is given in *Figure 3* in *Section 6*.

The site is on the south side of Valley Road, in Chandler's Ford. The immediate surroundings consist of residential housing in all directions. Beyond this, in the wider landscape, there are extensive areas of arable fields and grassland to the north and west. There are several large blocks of woodland to the north including an area of ancient woodland c.455m north-west of the site. The Monk's Brooke is c.630m to the west of the site.

2.3 Proposed activities

This survey was carried out in connection with a proposal to demolish the existing buildings on site and replace them with three new dwellings.

2.4 Current planning status

Planning permission has been applied for.

2.5 *Structure of this report*

This report is structured as follows:

- *Section 1* contains the executive summary;
- *Section 2* contains an introduction;
- *Section 3* describes the survey methods;
- *Section 4* describes the results;
- *Section 5* evaluates the findings;
- *Section 6* contains the figures including:
 - *Figure 1* gives aerial photographs showing the site location;
 - *Figure 2* gives an Ordnance Survey map showing the location of the site;
 - *Figure 3* gives a site plan showing the locations of the buildings surveyed;
 - *Figure 4* gives a Phase 1 Habitat Survey map for the site; and
 - *Figure 5* gives a plan of the proposed enhancement measures for the site.
- *Section 7* gives photographs of the site;
- *Section 8* lists the references;
- *Appendix A* lists key legislation and regulations;
- *Appendix B* gives the target notes;
- *Appendix C* lists the plant species recorded on site; and
- *Appendix D* lists other enhancements for wildlife (for information, not part of the planning application).

METHODS

3.1 Desk study

The *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk) was used to search for designated sites on or adjacent to the site including Local Nature Reserves (LNRs), National Nature Reserves (NNRs), Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites. The search area was 5km for SAC and SPA sites and 2km for LNRs, NNRs, Ramsar sites and SSSIs, as specified in Hampshire's *Biodiversity Checklist*. The search area is also 500m for Sites of Importance to Nature Conservation (SINCs) and ancient semi-natural and ancient replanted woodlands.

In addition, the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk) was used to search for granted European Protected Species (EPS) licences within 2km of the site.

A data search from the Hampshire Biodiversity Information Centre (HBIC) has not been commissioned in relation to this site.

3.2 Field survey

3.2.1 General

An ecological appraisal was carried out on this site. This type of survey is not designed to prove presence or absence of significant or protected species; it is used to highlight habitat that is suitable and to identify where further work to show presence or absence is required. However, in some circumstance's species can be ruled out because there is unsuitable habitat or barriers to inward migration.

Significant species were defined as follows:

- European Protected Species (listed on *Schedules 2 and 5 of the Conservation of Habitats & Species Regulations 2017*);
- nationally protected species under *Schedules 1, 5 and 8 of the Wildlife & Countryside Act 1981*, the *Protection of Badgers Act 1992* (as amended) and the *Deer Act 1991*;
- non-native pest species listed on *Schedule 9 of the Wildlife & Countryside Act 1981* (as amended);
- species listed as Critically Endangered, Endangered or Vulnerable on the *IUCN Red List*;
- all species listed on the *RSPB Birds of Conservation Concern 2015* as Red or Amber; and
- Nationally Rare or Nationally Scarce species.

3.2.2 Dates, time and weather

An ecological appraisal was carried out during the daytime on the 8th March 2023. The weather was 2°C and dry with 100% cloud cover and a light air (Beaufort scale 1).

3.2.3 *Personnel*

The survey was carried out by Hannah Yates BSc (Hons) who has over two years of post-qualification experience in ecological consultancy. She is experienced in undertaking roost surveys and is accredited under level 2 class bat licence 2015-11159-CLS-CLS. She was accompanied by Phil Budd BSc who is a highly competent ecologist trained in Phase 1 Habitat Survey and protected species surveys (including botanical expertise in *Schedule 9* species).

This report was reviewed by John Poland CEnv MCIEEM CBiol MSB, who is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM), a Chartered Environmentalist (CEnv), a Chartered Biologist (CBiol) and multi-species licence holder with 20 years of experience in ecological consultancy and Victoria Russell MCIEEM who is also a full member of the CIEEM and multi-species licence holder with over 23 years of experience in ecological consultancy.

All staff adhere to the Chartered Institute of Ecology and Environmental Management's (CIEEM) *Code of Professional Conduct*.

3.2.4 *Botanical surveys - Phase 1 Habitat Survey*

The botanical surveys in this report are based on the Phase 1 Habitat Survey methodology (Joint Nature Conservation Committee 2003) and involve the following elements: habitat mapping using a set of standard colour codes to indicate habitat types on a Phase 1 Habitat Survey map; and descriptions of habitats and features of ecological or nature conservation interest relating to locations on the Phase 1 Habitat Survey map.

Basic Phase 1 Habitat Survey methods are described in detail in Joint Nature Conservation Committee (JNCC, 2003). Limits to the method are discussed in Cherrill & McClean (1999).

Plant species lists were compiled for the various habitat types on the site. Subjective estimates of the relative abundance of species were added to the plant species list using a DAFOR scale. The DAFOR scale ranks species according to their relative abundance in a given parcel of land as follows: d – dominant, a – abundant, f – frequent, o – occasional, r – rare. The terms 'abundant' and 'rare' are used by convention and apply only to relative-abundance within the recorded area. It does not mean that species are 'rare' in the general sense.

Plant nomenclature in this report follows Poland & Clement (2009) for native, naturalised and garden species of vascular plant. Plant names in the text are given with scientific names first, followed by the English name in brackets.

3.2.5 *Animal surveys*

General

The habitat was assessed to determine whether or not it is suitable for those protected vertebrates that occur in the region. Initial surveys do not usually confirm species presence or absence, but obvious signs and incidental sightings of protected species would have been noted had they been encountered.

An assessment was made of the likelihood of protected vertebrates using the site. Taking into consideration the geographical region and habitat type, species and groups that might be encountered are:

- bats;
- dormice;
- badger;
- nesting birds; and
- reptiles.

According to aerial photographs (GoogleEarth™) and online Ordnance Survey 1:25,000 maps, there are no ponds within 500m or rivers on or adjacent to the site, therefore great crested newt, otter and water vole are not considered further.

The site has no suitable habitat for dormice within the boundary that could support foraging and/or commuting dormice, and so this species is not considered further.

Details of initial survey methods for each of the relevant species that might have been encountered are given below and an overview of the legal protection of the species and groups is provided in *Appendix A*.

Bats

General

The survey for bats concentrated on identifying foraging opportunities and potential roost locations or hibernation sites.

Building assessment

Because bats are crevice-dwelling mammals it is often difficult to thoroughly inspect buildings for bats and evidence of bats without a destructive search, which is not generally legal, practical or acceptable. Examples are where bats roost between the roofing felt and tiles, around window frames and behind barge boards. These areas cannot be inspected, but a surveyor would know that bats might roost here because there are places where bats could gain entry. A pipistrelle bat is small enough to fit into a match box and can roost in gaps just 14-20mm wide.

The buildings were assessed for their **bat roost suitability** according to the following factors that influence the likelihood of bat roosting:

- Surrounding habitat: whether there are potential flight-lines and bat foraging areas nearby.

- Construction detail: the type and construction of architectural features such as voids, barge boards, soffit boxes, lead flashing, cavity walls and hanging tiles that could be used by roosting bats. Some construction details and materials are more favourable to bat occupation than others.
- Building condition: whether the building has no roof or has a sound roof without any potential bat access points.
- Internal conditions: bats favour sheltered locations with a stable temperature regime, protection from the elements and little wind/light/rain penetration.
- Potential bat access points: whether there is flight and crawl access.
- Potential roosting locations: the presence of bat-accessible voids, cracks and crevices.

The risk of bat roosts being present will be lower where structures have:

- Urban setting with little greenspace.
- Heavy disturbance.
- Small, cluttered roof void (particularly for brown long-eared).
- Modern construction with few gaps or crevices that bats can fly or crawl through (although pipistrelles may still be present).
- Prefabricated of steel or sheet materials.
- Active industrial premises.

The above list provides generic criteria and there are exceptions to consider. For example, pipistrelle roost sites are often found in modern housing estates and therefore the absence of bats from such locations should not always be assumed.

Tree assessment

Detailed surveys of individual trees were not carried out. However, features such as holes and crevices that could be used by roosting bats were noted and their overall bat roost suitability was assessed. If any mature trees are subsequently to be removed or if tree surgery (*e.g.* crown-lifting) is required, then a bat survey at an appropriate time of year may be required.

Following the visual inspections, the building and trees are assigned a level of suitability for being used by roosting bats. This is based on the criteria in *Table 3.2.5.1* (Collins, 2016).

Table 3.2.5.1. Bat Roost Suitability.

Suitability	Description of roosting habitats	Description of commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats	Negligible habitat features on site likely to be used by commuting or foraging bats
Low	A structure/tree with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (<i>i.e.</i> unlikely to be suitable for maternity or hibernation).	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, <i>i.e.</i> not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland) or a patch of scrub.
Moderate	A structure/tree 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 status (with respect to roost type only)	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.
High	A structure/tree 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.	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. 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, tree-lined watercourses and grazed parkland. The site is close to and connected to known roosts.

Assessment of commuting and foraging habitat

Bats use a variety of habitats for foraging, in particular hedgerows, woods and water bodies, and roost in a range of structures including buildings, trees, bridges and caves. Areas that could be used for foraging were noted.

Badger

An initial assessment was carried out to identify areas that might be used by badger for commuting, foraging and sett-building within at least 30m of all areas potentially affected by the works (where access was possible). Evidence of badgers including setts, latrines, feeding signs and paths were searched for.

Birds

Habitat that might be used by nesting birds was identified. Different bird species use buildings, trees and shrubs, undergrowth or even open fields to nest. The suitability of the site for use by a range of bird species was assessed, giving consideration to factors such as cover, food, disturbance and other habitat requirements.

Widespread species of reptile

The site was assessed for widespread species of reptile, with particular attention paid to those features that could be used as basking areas (*e.g.* south-facing slopes), hibernation sites (*e.g.* banks, walls, piles of hardcore) and opportunities for foraging (rough grassland and scrub). The site was assessed for its suitability for each of the four widespread reptile species which have broadly similar habitat requirements. However, more specific requirements include the following (Beebee & Griffiths 2000):

- common lizards (*Zootoca vivipara*) use a variety of habitats from woodland glades to walls and pastures, although one of their favoured habitats is rough grassland;
- slow-worms (*Anguis fragilis*) use similar habitats to common lizards, and are often found in rank grassland, gardens and derelict land;
- grass snakes (*Natrix natrix*) have broadly similar requirements to common lizards with a greater reliance on ponds and wetlands, where they prey on common frogs; and
- adders (*Vipera berus*) use a range of fairly open habitats with some cover, but are most often found in dry heath.

Reptile activity is highly seasonal; they hibernate over the winter (October to March) and are active over the summer months. They become increasingly active as temperatures increase in spring, and in most years they are fully active by mid-April. Reproduction varies between species, but generally peaks in mid-summer when reptiles are at their most active. In late September/ October, activity begins to decrease as reptiles seek frost-free refuges for hibernation.

4

RESULTS**4.1 Desk study****4.1.1 Designated sites**

According to the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk), the site is neither designated nor immediately adjacent to any designated areas of nature conservation. However, there are other designated sites nearby. These are listed in *Table 4.1.1.1*.

Table 4.1.1.1. Statutory designated sites; non-statutory designated sites and ancient semi-natural and ancient replanted woodlands within the designated search areas of the site.

Level of designation	Designation	Name	Distance & direction from site
International	SPA	-	-
	Ramsar	-	-
	SAC	Emer Bog	c.3060m west
		River Itchen	c.2950m east
National	SSSI	Trodds Copse	c.1450m north-west
	NNR	-	-
County	LNR	Hocombe Mead	c.1080m north
		Valley Park Woodlands	c.1140m south-west
Local	SINC	-	-
	Ancient woodland	Ramalley Copse	c.455m north-west

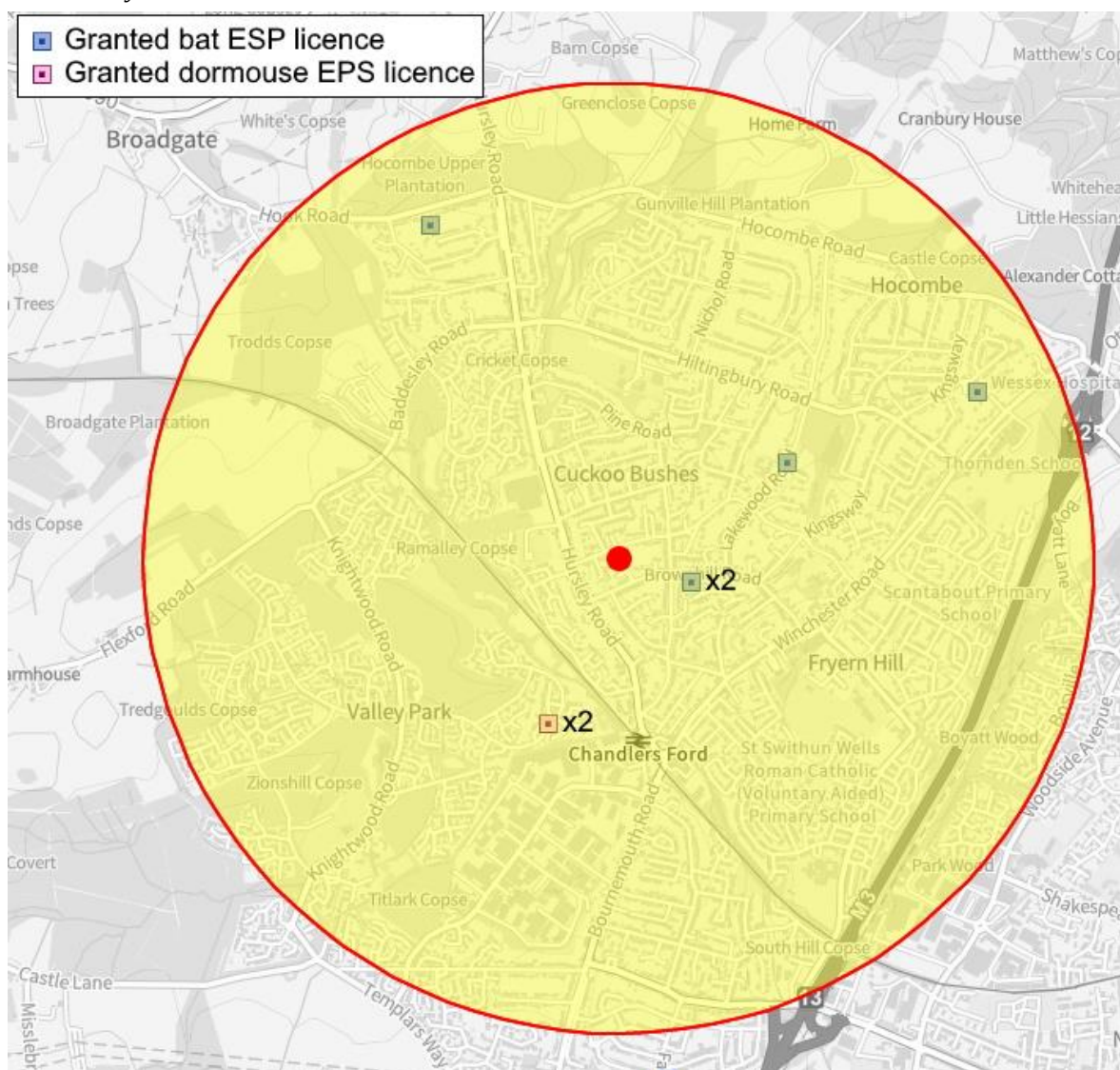
4.1.2 European Protected Species

According to the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk), there have been seven granted European Protected Species (EPS) licences within 2km of the site. These are listed in *Table 4.1.2.1*, and their locations are shown in *Figure 4.1.2.1*.

Table 4.1.2.1. Granted European Protected Species (EPS) licences within 2km of the site.

Species subject of licence	Type of habitat affected	Date licence was granted	Distance & direction from site
Brown long-eared, common pipistrelle, serotine, soprano pipistrelle	Resting place	22/03/2017	c.315m south-east
	Unknown	04/01/2018	
Dormouse	Breeding site and resting place	02/04/2013	c.755m south-west
		13/11/2014	
Soprano pipistrelle	Resting place	02/01/2021	c.815m north-east
Brown long-eared	Resting place	16/04/2018	c.1625m north-west
Common pipistrelle, soprano pipistrelle	Resting place	01/03/2016	c.1670m north-east

Figure 4.1.2.1. Location of sites with granted EPS licences within 2km of the site. The site location is shown by a red dot.



Reproduced with permission of Ordnance Survey under licence no. 100049977.

4.2 Habitats and plant species

4.2.1 Habitats

The lawn (*Target Note 5*) is dominated by the grass *Holcus lanatus* (Yorkshire fog) with some *Achillea millefolium* (Yarrow). The site is edged with introduced scrub to the north and east (*Target Notes 1-4*). The south-west part of the site consists of broad-leaved woodland (*Target Note 12*). There are also banks in the south-east corner of the site that are dominated by the evergreen creeper *Hedera helix* (Ivy) with some *Ilex aquilifolium* (Holly) bushes (*Target Notes 10, 11 & 16*).

The woodland has a canopy dominated by *Quercus robur* (English Oak) together with a *Pinus sylvestris* (Scots Pine) tree. The field-layer contains an abundance of the evergreen creeper *Hedera helix* (Ivy) together with occasional shade-tolerant herbs including *Geranium robertianum* (Herb-Robert) and *Geum urbanum* (Wood Avens). There is also an abundance of leaf-litter covering the woodland floor.

A Phase 1 Habitat Survey map showing the location of the various habitats is given in *Figure 4* in *Section 6*.

4.2.2 Plant species

No plant species listed on *Schedules 8 or 9* of the *Wildlife and Countryside Act 1981* (as amended) were recorded on the site.

Vascular plant species recorded from each habitat type (along with relative abundance) are given in *Appendix C*.

4.3 Protected vertebrates

4.3.1 Bats

Bat roost suitability of buildings

Three buildings on the site were assessed for their bat roost suitability: the house, the garages and the shed. The construction details and photographs of the buildings are summarised in *Table 4.3.1.1*.

Table 4.3.1.1. Summary of the buildings' construction details.

Type/Name	House	Garage	Shed
Description	A two-storey brick building with a pitched and hipped, tiled roof and a single-storey flat-roof to the rear.	A single-storey brick, triple garage with a defunct roof (<i>Target note 14</i>).	A single-storey outbuilding with a pitched roof.
No. of storeys	2	1	1
Roof type	Pitched and hipped	Pitched	Pitched
Roof cladding	Tile	Tile	Unknown – no safe access
Ridge	Tile	Tile	Unknown – no safe access
Wall type	Rendered brick	Brick	Unknown – no safe access
Exterior	Soffits (all elevation), dormer windows (north, east and south elevations), two chimneys, lead-flashing around dormers and chimney, hanging tiles (on dormers and west elevation)	Wooden cladding (north elevation), climbing plants (north and west elevations)	Climbing plants (all elevations)
Photos	North elevation 	North elevation 	North elevation Adjacent to site boundary and therefore not accessible

	East elevation 	East elevation 	East elevation 
	South elevation 	South elevation 	South elevation 

	West elevation 	West elevation 	West elevation 
Building dimensions	c.9.5m wide x c.8m long	c.9m wide x c.8.5m long	c.2m wide x c.4m long
Roof void description	Roof void 1: Cluttered and boarded 	No roof void – open to the ridge 	No roof void – open to the underside of the roof cladding 

	Roof void 2: Uncluttered with a floor lined with fibreglass insulation  Roof void 3: Boarded 		
Frame	Wooden beams and ridge beam	Wooden beams and ridge beam	Wooden beams
Roof lining	Bitumen roofing felt	Bitumen roofing felt	None
Roof void dimensions	Roof void 1: c.1m wide x c.2m long Roof void 2: c.4m wide x c.7m long	N/A - no roof void	N/A - no roof void
Roof void height	Roof void 1: 2.5m Roof void 2: 2m Roof void 3: N/A	N/A - no roof void	N/A - no roof void

Potential roosting locations	Behind the hanging tiles	Against the ridge beam and wooden beams	None
Bat evidence	None	None	None
Bat suitability	Low	Low	Negligible
Further surveys needed?	Yes, one dusk emergence survey	Yes, one dusk emergence survey	No

House

The majority of the roof of the house appears well-sealed and in good condition with a thick covering of moss. However, there are a few exterior features (hanging tiles) on the west elevation that provide potential roosting locations for bats. The locations and details of potential external roosting locations are illustrated in *Image 4.3.1.1*.

Image 4.3.1.1. Location of potential external roosting locations on the west elevation of the house.



Garage

The garage roof is in poor condition. There are large sections of the roof that have rotted away creating holes to the interior. The locations and details of potential bat access points are illustrated in *Images 4.3.1.2 and 4.3.1.3*.

Image 4.3.1.2. Location of potential bat access points on the south elevation of the garage.



Image 4.3.1.3. Location of potential bat access points on the south elevation of the garage.



Shed

Due to the lack of suitable roosting locations, the shed is classed as having negligible suitability to be used by roosting bats, following the criteria in *Table 3.2.4.1*.

Bat roost suitability of trees

All the trees on site had negligible bat roost suitability at the time of survey.

Commuting and foraging habitat

The woodland, mature trees and ornamental planting provide good foraging habitat for bats. These are part of a network of hedges, tree-lines and strips of woodland in neighboring gardens and provide links into and from the wider landscape. There is an area of ancient woodland c.455m north-west of the site and the Monk's Brooke is c.630m to the west of the site. Both of these provide high-quality foraging habitat for a number of different species of bat.

Bats follow linear landscape features such as lines of trees, hedges, buildings and waterways in order to commute from their roost sites to their feeding grounds. Likewise they use these features to navigate between feeding areas and alternative roosts.

4.3.2 *Dormice*

The woodland on site (*Target Note 12*) as well as the introduced shrubs provides suitable habitat for dormice on site and this extends into the adjacent gardens. However, it is suboptimal due to the absence of a shrub-layer and low number of species that could provide food sources (dormice need a variety of flowers, nuts and berries over a wide period of time to provide sufficient food).

4.3.3 *Badger*

No evidence of badger was found during the survey.

4.3.4 *Birds*

No nests were observed on site during the survey. However, all of the trees and bushes on site have the potential to support nesting birds during the breeding season.

4.3.5 *Widespread species of reptile*

The lawn is very short due to mowing and as such is unsuitable for reptiles due to the lack of cover and risk of predation. However, there is a section of low-growing scrub in the south-east corner of the site that is suitable foraging habitat for widespread species of reptiles such as slow-worms (see *Photos 3 & 4* in *Section 7* and *Target Notes 11 & 16*).

5 **INTERPRETATION AND EVALUATION**

5.1 **Constraints on the survey**

5.1.1 *Constraints on survey data*

The site visit was undertaken in March, outside the optimum survey season for protected species and plants. However, it is possible to assess the habitats present and their suitability for protected species. It should also be noted that, March is not an appropriate time of year to detect some non-native invasive species.

Detailed searches often result in the discovery of evidence of bats. However, although such surveys can identify the presence of bats it is more difficult to prove absence due to the crevice-dwelling nature of these elusive mammals. Bat droppings may be missed where there is debris to obscure them (and also, very old droppings generally crumble away to dust).

5.1.2 *Constraints on the mitigation, compensation and enhancement measures*

As the site is being cleared to buildings three new dwellings, the enhancement measures are limited to the new buildings and their gardens.

Further surveys are required to identify whether mitigation and/ or compensation measures are needed.

As the shed has negligible bat roost suitability no mitigation or compensation measures are required. However, as a hibernating butterfly was found inside the structure (*Target note 15*), it is recommended that the building be demolished in summer to avoid injuring or killing hibernating insects.

5.2 **Survey report expiry**

This survey data is valid for a maximum of 12 months. Bats frequently move around and adopt new roosting sites, therefore if more than 12 months elapse it may be advisable to conduct further survey work to obtain up-to-date information to advise work, thereby ensuring protected species compliance.

Given the mobility of bats, it is recommended that a walkover of the site to update the survey information is undertaken prior to the development commencing, if this does not occur before the end of April 2024.

5.3 **Legal context**

Habitat has been identified on site that is suitable for protected species. Different species are afforded different levels of protection; as detailed in *Appendix A*.

The site is not designated for its wildlife interest at an international, national or local scale.

5.4 Potential impacts of the proposed development

5.4.1 Desk study

According to the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk), the site is neither designated nor immediately adjacent to any designated areas of nature conservation. However, there are designated sites nearby (see *Table 4.1.1.1* in *Section 4.1.1*). None of these will be directly affected by this small-scale development and all links will be maintained.

The site is within 5km of Emer Bog SAC (c.3060m west) and the River Itchen SAC (c.2950m east). Both of these sites are designated due to the types of wetland habitats they include. As a result of its proximity, the impacts of this small-scale development on the SACs must be considered.

The works will cause increase to the number of dwellings on site and therefore to the number of people occupying the site. This could cause an increase in the recreational pressure, or pollution, on the internationally designated sites. Therefore, the local council may ask for compensation due to the extra dwellings on the basis that it could increase in the recreational pressure and/ or pollution, on the internationally designated sites.

The development of additional residential units within the district will produce additional waste water that in the absence of mitigation will impact on internationally designated nature conservation sites. New guidance on the impacts of nutrients was published by Natural England earlier this year. In the case of the river catchment of the River Itchen, phosphorus and nitrogen are causing environmental effects (previously only nitrogen was considered to need mitigation). Therefore, it is suggested that proposals are designed to ensure nutrient neutrality (this may require the advice of a hydrological expert). There are a number of mitigation schemes where developers can buy nitrate credits in order to offset the impacts of the proposals if it is not possible to achieve nutrient neutrality on site.

According to the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk), there have been five bat European Protected Species (EPS) licences granted, the closest of which is c.315m south-east of the site. Due to its close proximity, it is likely that any bats using the site are part of the same meta-population.

5.4.2 Habitats and plants

The habitats and plant species observed on site are widespread and common and as such have no conservation importance from a botanical point of view. The exceptions are the mature and semi-mature trees in the woodland that would take many decades to replace. These are of high ecological value and should be retained and protected.

Heras fencing or similar should be used to protect the roots of the trees during construction. The guidance provided in BS 5837 *Trees in relation to Construction* provides further advice on minimising the impact to retained trees on a development site.

5.4.3 *Bats*

Bat roost suitability of buildings

The house and garage both have low bat roost suitability. Therefore, further surveys will be required to either confirm that bats are likely not using the building or provide the basis of the information that would be required for a European Protected Species (EPS) licence (see *Section 5.5*).

The shed has negligible bat roost suitability. Its demolition will not impact the potential bat roost features on the house and garage. Therefore, it can be demolished without further survey or constraints regarding bats (subject to any planning constraints).

Bat roost suitability of trees

All of the trees on site had negligible bat roost suitability at the time of survey. Therefore, they can be felled (if necessary) or have tree surgery such as crown lifting without further survey or constraints regarding bats (subject to any planning constraints).

Foraging and commuting habitat

There is good quality foraging habitat for bats on and adjacent to the site and, as such, it is likely that bats are using the site for foraging and/ or commuting. Retaining the woodland or as many trees as possible will help minimise any potential impact to bat populations in the local area.

Changes in lighting can affect foraging and commuting bats. Therefore, no works should take place in the hours of darkness or under artificial lighting. In addition, no lighting should be directed onto retained vegetation (particularly the trees and woodland), and security lights should operate on a timer, to avoid any negative impact on bats.

Any lighting installed should avoid spillage of greater than 0.1 lux (typical moonlight/ cloudy sky) onto retained vegetation, particularly the trees and hedges. The use of non-UV LED lighting (preferably using warm spectrum wavelengths) is strongly recommended to avoid the most deleterious impacts of lighting on biodiversity and bats in particular. Ideally any lighting installed should avoid spillage of greater than 0.1 lux (typical moonlight/ cloudy sky) onto any retained vegetation. However, it is in a highly lit area and as such this may not be possible due to existing light spill. If this is the case any new lighting should not increase the level currently experienced and, if at all possible, should reduce any light spill due to the type of lighting used and the use of protection such as hoods and cowl.

5.4.4 *Dormice*

The woodland in the western part of the site (*Target Note 12*) as well as the introduced shrubs on the eastern edges provide suitable habitat for dormice on site and this extends into the adjacent gardens. However, it is suboptimal due to the absence of a shrub-layer and low number of species that could provide food sources (dormice need a variety of flowers, nuts and berries over a wide period of time to provide sufficient food). In addition, the site is isolated within suburban housing and as such there are no areas of woodland nearby that could allow dormice to colonise the site. Therefore, it is considered unlikely that dormice are present and as such no further surveys for this species are proposed.

5.4.5 *Badger*

Areas within 30m of development activities are usually searched for setts (where access is possible) as former guidelines suggest badgers and their setts could be disturbed by work using heavy machinery within 30m of a badger sett, light machinery within 20m, and light work (such as digging) within 10m.

As no badger setts were found on site, development works are free to proceed without further regard to this species, although if a badger sett is subsequently discovered within 30m of the proposed works then it may require a licence from Natural England to proceed. Guidance to what may be classed as disturbance to a badger (when occupying a sett) can be found at:

<https://www.gov.uk/guidance/badgers-protection-surveys-and-licences>.

5.4.6 *Birds*

All of the trees and bushes provide suitable habitat for nesting birds. The destruction of active bird nests is prohibited under the *Wildlife and Countryside Act 1981* (as amended). Therefore, any affected vegetation with the potential to support nesting birds should be cut to near ground level (approximately 30cm) outside the bird breeding season (which is late February to August inclusive). If this is not possible, and vegetation has to be removed during the nesting season, then it should be inspected (by an ecologist) for nests immediately prior to removal of the vegetation. If there are active nests then they should be retained and work must be delayed until the young have fledged and left the nest.

If any active nests are found prior to or during works, a 5m buffer zone should be established around them and be temporarily fenced off to prevent plant or personnel disturbing the nest until the end of the breeding bird season (or until the nest is no longer in use).

5.4.7 *Widespread species of reptile*

There is suitable foraging habitat for widespread reptile species such as (e.g. slow-worms) is present on site. Therefore, surveys are needed between April and September (see *Section 5.5*). The results of the reptile surveys will inform the need for mitigation for reptiles.

If reptiles are confirmed on site, they will need to be translocated to suitable habitat outside the development footprint, but within the boundaries of the site (*i.e.* an on-site translocation programme). A larger population may require more habitat to be retained, or an off-site translocation programme. The location and extent of any translocation area will be informed by the results of the survey.

5.5 **Further survey**

5.5.1 *Bats*

As the house and garage both have low bat roost suitability, at least one bat emergence survey should be carried out on each building (using at least three surveyors for the house and at least two surveyors for the garage to cover all aspects of these buildings) between mid-May and August. This gives sufficient information to either confirm that bats are likely not using the building or provide the basis of the information that would be required for a European Protected Species (EPS) licence.

5.5.2 *Widespread species of reptile*

As the development will impact suitable reptile habitat, reptile surveys should be carried out to establish whether reptiles are present. This is in line with Natural England's standing advice: (<https://www.gov.uk/reptiles-protection-surveys-and-licences>).

Standard methods involving placing 2x3ft sheets of heavy-duty roofing felt (artificial refugia) in areas where they are most likely to be used by reptiles (*e.g.* at the edges of bramble scrub, in tussocky grassland, *etc.*). So far as possible, the artificial refugia should be placed on slightly uneven ground so as not to lie completely flat (to create a varied microclimate). After a settling in period seven checks at reasonably spaced intervals should be undertaken. These must be carried out in suitable weather conditions (temperatures above 10°C and dry) at an appropriate time of year (April to September) when reptiles will be active.

5.6 **Enhancement measures**

5.6.1 *General*

From July 2021, the Government published the revised National Planning Policy Framework (Ministry of Housing, Communities and Local Government, 2021). The document sets out the government's planning policies for England and how these are expected to be applied. This replaces a previous version which was published in 2019. It states: "*at the heart of the Framework is a presumption in favour of sustainable development (paragraph 11).*"

It also states "*opportunities to incorporate biodiversity in and around developments should be encouraged*" as part of the consideration for "*presumption in favour of sustainable development*".

The updated National Planning Policy Framework (NPPF) also states (paragraph 170) that: "*Planning Policies and decisions should contribute to and enhance the natural and local environment by... minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.*"

The updated Planning Policy Guidance (PPG) for the Natural Environment, updated in July 2019 states (paragraph 020) that:

“Net gain in planning describes an approach to development that leaves the natural environment in a measurably better state than it was beforehand.”

The updated PPG provides examples of how biodiversity net gain can be achieved. Measures suggested include “creating new habitats” and “enhancing existing habitats”.

It is proposed that the enhancements to provide biodiversity net gain will also be in the form of the following:

- new bat roost provision;
- lighting restrictions (for both bats and other wildlife);
- new bird nesting provision and
- gaps under fencing for wildlife such as reptiles, amphibians and hedgehogs.

These enhancements are detailed in the following sections.

The need for mitigation and/ or compensation measures for the loss of house and garage will be informed by the results of the bat activity survey (dusk emergence survey).

5.6.2 *Bats*

New bat roost locations

It is proposed that an integrated bat box/ brick (*e.g.* a Habibat™ Bat Box or an Ibstock Enclosed Bat Box, a Schwegler Bat Tube or similar) is incorporated into at least one of the new dwellings. This will provide cavities that are incorporated into the external build structure to offer roosting space for bats. The bat features should be located on elevations near to retained vegetation. This will optimise potential roosting opportunities.

In addition, at least one bat box (*e.g.* Vivara Pro WoodStone Bat Box, Beaumaris Woodstone or similar) should be erected on a suitable mature tree within the site boundary, prior to the commencement of works.

Lighting

Changes in lighting can affect foraging and roosting bats. Therefore, no works should take place in the hours of darkness or under artificial lighting. In addition, no lighting should be directed onto the new roosts (particularly their exit points) and retained vegetation (particularly the trees). Any lighting installed should avoid spillage of greater than 0.1 lux (typical moonlight/ cloudy sky) near to or directly onto the roost entrances and vegetation so that light disturbance is not a problem. This is because lighting can impact bat populations directly by disturbing roosts and reducing their foraging area, or indirectly by severing commuting routes from roosts. Therefore, the following (modified from *Bats and lighting in the UK* (ILP 2018)) should be undertaken:

- **Aim of light** The light should be aimed to illuminate only the immediate area required by using as sharp a downward angle as possible. This lit area must avoid being directed at, or close to, any retained vegetation. A shield or hood can be used to control or restrict the area to be lit. Avoid illuminating at a wider angle as this will be more disturbing to foraging and commuting bats, as well as people and other wildlife.

For any security lighting, the following should also apply:

- **Power** It is rarely necessary to use a lamp of greater than 2000 lumens (150W) in security lights. The use of a higher power is not as effective for the intended function and will be more disturbing for bats.
- **Movement sensors** Many security lights are fitted with movement sensors which, if well installed and aimed, will reduce the amount of time a light is on each night. This is more easily achieved in a system where the light unit and the movement sensor are able to be separately aimed.
- **Timers** If the light is fitted with a timer this should be adjusted to the minimum to reduce the amount of 'lit time'.
- **Alternatives** The requirement for security lighting in each instance should be carefully considered and only used where absolutely necessary to deter crime.

The use of non-UV LED lighting (preferably using warm spectrum wavelengths) is strongly recommended to avoid the most deleterious impacts of lighting on biodiversity and bats in particular.

5.6.3 Birds

Three swift boxes will be built into or attached to the walls of the new buildings to provide new nest sites. Swift boxes can be supplied and installed by Hampshire Swifts <https://www.hampshireswifts.co.uk> and a new soffit or bespoke designs are available.

To maximise the number of species of bird attracted, several different types of bird boxes will be placed in various locations within the development site. It is not advisable to place many boxes with identical dimensions, because individuals of the same species would not tolerate each other's presence, especially in built-up areas that may have limited food resources. The proposed bird boxes are summarised in *Table 5.6.3.1*.

Table.5.6.3.1. Bird boxes to be erected within the site with additional details on positioning to increase chances of occupancy.

Type (example)	Typical species	No.	Height	Additional information
Vivara Pro Seville 32mm Woodstone Nest Box 	Blue tits, great tits	1	2-4m	- Position on a building or tree, angled north-east (away from prevailing winds) and tilt forward slightly. - Chances of occupation can be increased by positioning boxes near vegetation.
Vivara Pro Seville 28mm Woodstone Nest Box 	Blue tits, coal tits	1	2-4m	- Position on a building or tree, angled north-east (away from prevailing winds) and tilt forward slightly. - Chances of occupation can be increased by positioning boxes near vegetation.
Type (example)	Typical species	No.	Height	Additional information
Ibstock Eco-habitat  Mounted swift box 	Swifts	3	≥ 5m	- Either incorporate into the build structure or mounted on a building. - Position out of direct sunlight (below eaves on the north elevation), away from windows and in a straight line. - Should be in an open area so that it is less accessible to predators and birds are not obstructed as they leave the nest.

5.6.4 Amphibians, reptiles and hedgehogs

Any fencing will have 15cm x 15cm gaps beneath to allow wildlife such as reptiles, amphibians and hedgehogs to access the landscaping. This could be achieved by removing all or part of the baseboard/ gravelboard.

5.7 Requirement for Natural England licences

5.7.1 European Protected Species (EPS) licences

There need for a bat European Protected Species (EPS) licence or Bat Mitigation Class Licence (formerly Bat Low Impact Class Licence, if qualifying) site registration from Natural England will be assessed following the bat activity surveys on the house and garage.

A licence from Natural England permits activities that may otherwise be offences under the *Conservation of Habitats & Species Regulations 2017*.

Evidence is required from surveys in order to gather enough information about populations to support a licence application.

Survey data supporting licence applications must be up-to-date *i.e.* have been conducted within the current or most recent optimal survey season (May to September). Therefore, if licensable work is delayed until, during or after the next survey season, updated survey(s) will be required to support an application.

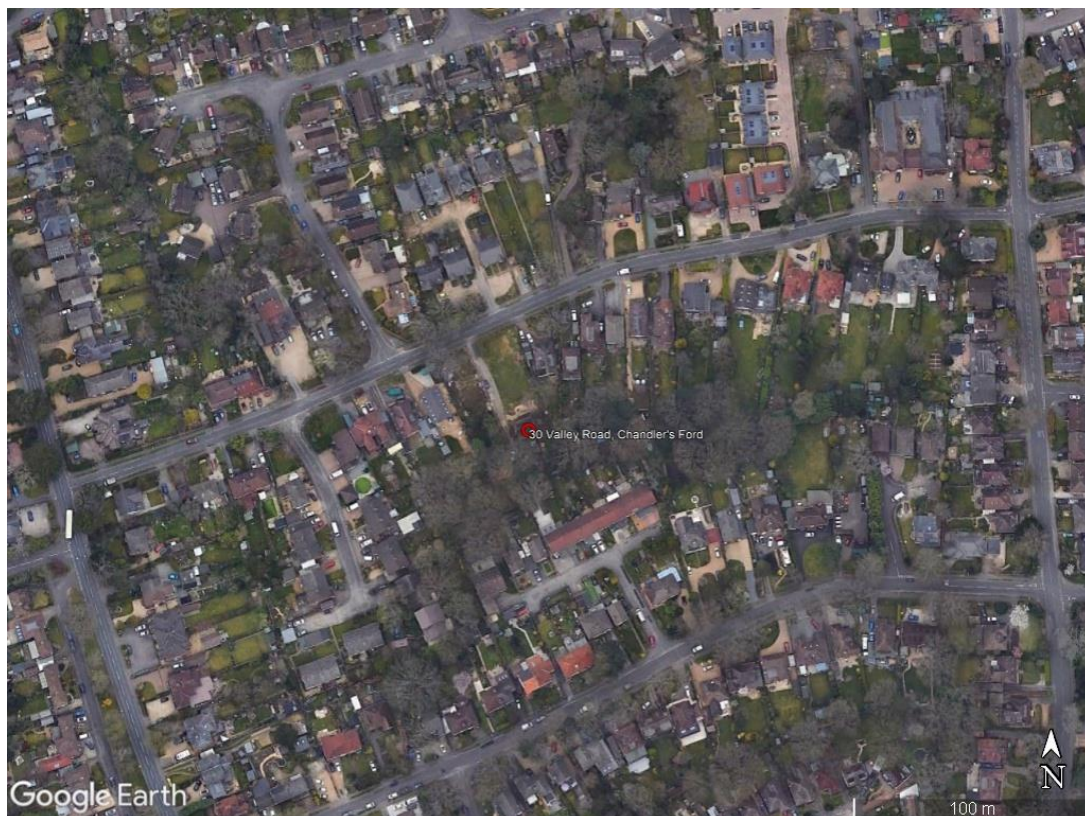
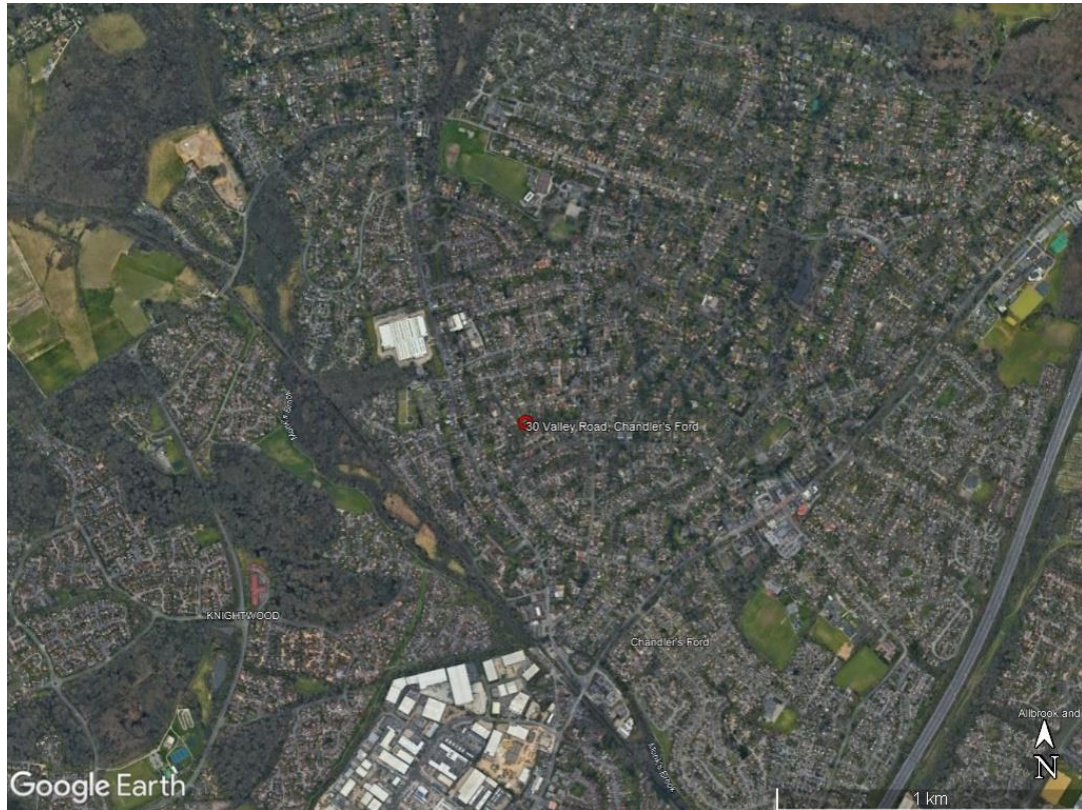
Natural England takes a minimum of 30-60 working days to process licence applications following receipt of all the relevant documentation. This includes an application form and a Method Statement. The latter includes a detailed mitigation strategy to eliminate or reduce impacts.

It is not possible to apply for a licence until full planning permission has been granted and any conditions relating to wildlife fulfilled, although Local Planning Authorities usually request the information prior to determining a planning application request. Additional time will be required where any revisions to a proposed mitigation strategy are necessary to obtain the licence.

5.7.2 *Protection of Badgers Act (1992) licences*

As no setts have been identified within (or close to) the site boundary, a licence is currently not required.

Figure 1. Aerial photographs showing the location of the site.



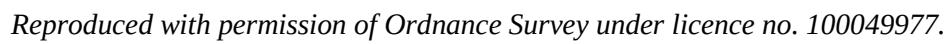


Figure 3. Plan showing the buildings surveyed and the site boundary (outlined in red).

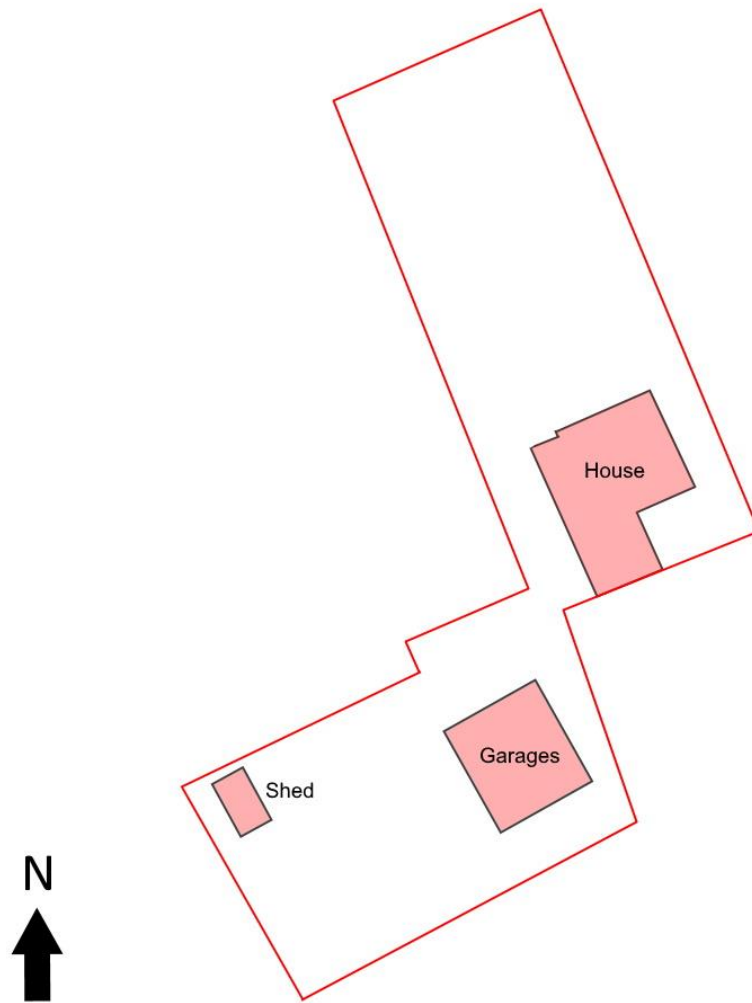


Figure 4. Phase 1 Habitat Survey map of the site.

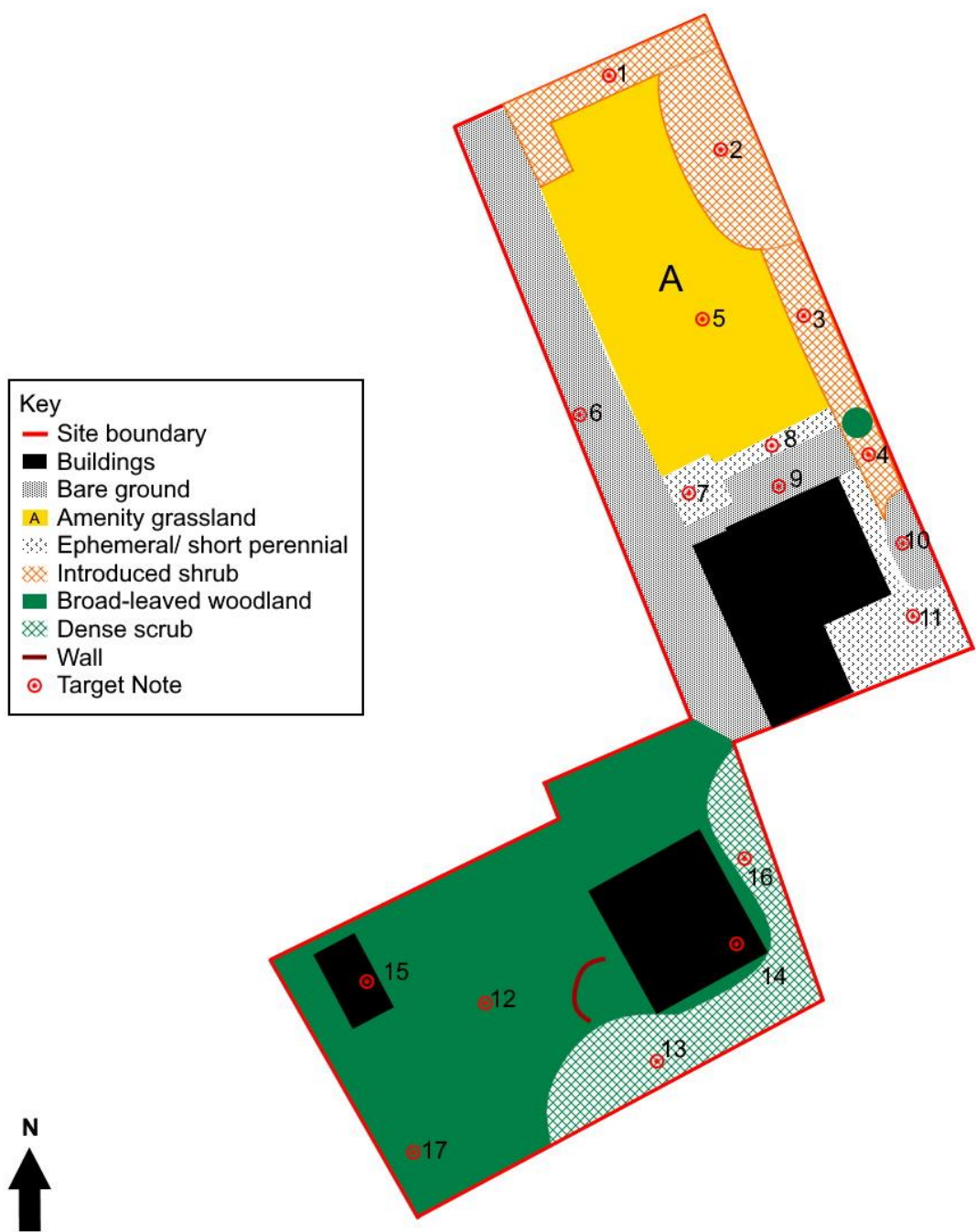
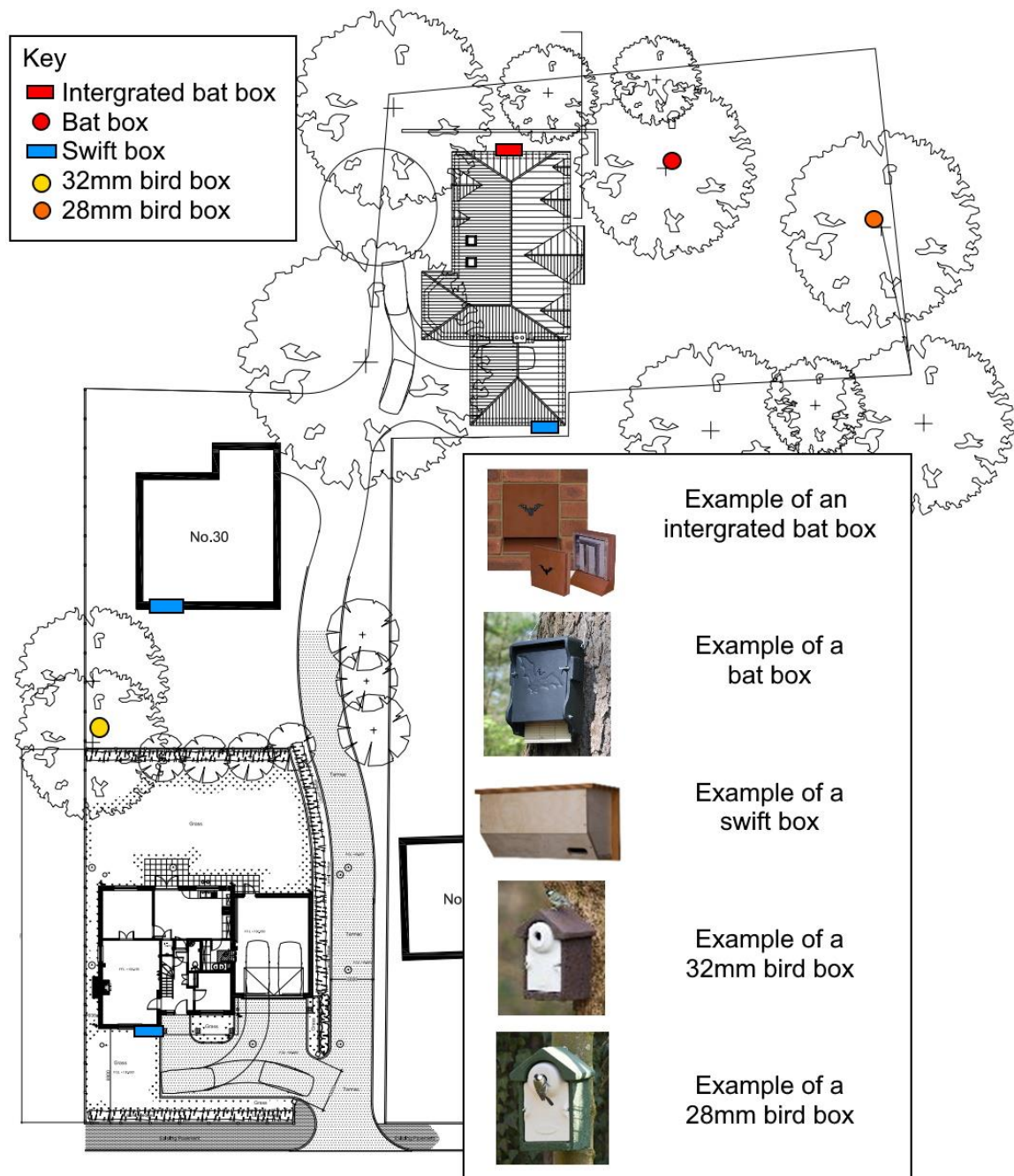


Figure 5. Plan showing the indicative locations of the proposed enhancement measures (not to scale).



PHOTOGRAPHS

Photo 1. The lawn edged with ornamental shrubs.



Photo 2. Broad-leaved woodland in the south-west part of the site.



Photo 3. Scrub behind the house.



Photo 4. Scrub behind a garage.



Beebee, T. and Griffiths, R. (2000). *Amphibians and Reptiles*. New Naturalist Series 87. Harper Collins, London.

Cherrill, A. & McClean, C. (1999). *Between-observer variation in the application of a standard method of habitat mapping by environmental consultants in the UK*. Journal of Applied Ecology, **36**, 989-1000.

Collins, J. (ed) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, 3rd edition. The Bat Conservation Trust, London.

English Nature (2006). *The Dormouse Conservation Handbook*, 2nd edition. English Nature, Peterborough.

HMSO (1981). *Wildlife and Countryside Act 1981*. HMSO, London.

HMSO (1992). *The Protection of Badgers Act*. HMSO, London.

HMSO (1996). *Wild Mammals (Protection) Act 1996*. HMSO, London.

HMSO (2000). *Countryside and Rights of Way Act*. HMSO, London.

HMSO (2017). *The Conservation of Habitats and Species Regulations 2017*. HMSO, London.

Institute of Lighting Professionals (2018). *Bats and artificial lighting in the UK*. Institute of Lighting Professionals, Warwickshire.

Joint Nature Conservation Committee (2003). *Handbook for Phase 1 Habitat Survey - a Technique for Environmental Audit* (revised reprint). Joint Nature Conservation Committee, Peterborough.

Ministry of Housing, Communities & Local Government (2021). *National Planning Policy Framework*. Ministry of Housing, Communities & Local Government, London.

Mitchell-Jones, A.J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

Multi-Agency Geographic Information for the Countryside (2008). www.magic.gov.uk. Accessed 10/03/23.

Natural England (2011). *Standing Advice for Protected Species*. Natural England, Peterborough. <http://www.naturalengland.org.uk/ourwork/planningtransportlocalgov/spatialplanning/standingadvice/advice.aspx>

Oldham R.S., et al (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10(4), 143-155.

Poland, J. and Clement, E. J. (2009). *The Vegetative Key to the British Flora*. John Poland in association with the Botanical Society of the British Isles, Southampton.

9 APPENDIX A: PROTECTED SPECIES LEGISLATION

9.1 General

This section briefly describes the legal protection afforded to the protected species identified in this report. It is for information only and is not intended to be comprehensive or to replace specialised legal advice. It is not intended to replace the text of the legislation, but summarises the salient points.

9.2 Bats

All species of British bat are listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receive full protection under *Section 9*. Protection was extended by the *Countryside and Rights of Way Act 2000* (the CRoW Act). This legislation makes it an offence to:

- intentionally kill, injure or take a bat;
- possess or control a bat;
- intentionally or recklessly damage, destroy or obstruct access to a bat roost; and
- intentionally or recklessly disturb a bat whilst it occupies a bat roost.

Bats are also European protected species listed on *Schedule 2* of the *Conservation of Habitats & Species Regulations 2017* which gives them full protection under *Regulation 43*. This legislation makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb a bat (in such a way as to be likely to significantly affect: (i) the ability of a significant group of bats to survive, breed or rear/nurture their young; or (ii) the local distribution or abundance of the species concerned);
- damage or destroy a breeding site or resting place of a bat; and
- possess, control, transport, sell, exchange a bat, or offer a bat for sale or exchange.

All bat roosting sites receive legal protection even when bats are not present (bats tend to reuse the same roost).

Several species of bat are included as a Priority Species in the UK Biodiversity Action Plan (UKBAP - JNCC (2003)) and also as species of principal importance for the conservation of biological diversity in England under *Section 74* of the CRoW Act.

All species of British bat are also protected under *Schedule 6* of the *Wildlife and Countryside Act 1981* (as amended). This protection relates specifically to trapping and direct pursuit of the species.

9.3 Dormice

Dormouse (*Muscardinus avellanarius*) is listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receives full protection under *Section 9*. This species is also listed as a European Protected Species on *Schedule 2* of the *Conservation of Habitats & Species Regulations*

2017, which gives it full protection under *Regulation 43*. Protection was extended by the *Countryside and Rights of Way Act 2000* (the CRow Act).

Under the above legislation it is an offence to:

- kill, injure or take an individual of such a species;
- possess any part of such species either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by such species for shelter, rest, protection or breeding;
- intentionally or recklessly disturb such a species whilst using any place of shelter or protection; or
- sell or attempt to sell any such species.

9.4 **Badger**

Badger (*Meles meles*) is protected in Britain under the *Protection of Badgers Act 1992* (as amended) and *Schedule 6* of the *Wildlife and Countryside Act 1981* (as amended).

The legislation affords protection to badgers and badger setts, and makes it a criminal offence to:

- wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so;
- interfere with a sett by damaging or destroying it;
- to obstruct access to, or any entrance of, a badger sett; or
- to disturb a badger when it is occupying a sett.

Guidance to what may be classed as disturbance to a badger (when occupying a sett) can be found at: <https://www.gov.uk/guidance/badgers-protection-surveys-and-licences>

9.5 **Birds**

9.5.1 *Birds - general protection*

All species of bird are protected under *Section 1* of the *Wildlife and Countryside Act 1981* (as amended). The protection was extended by the CRow Act.

The legislation makes it an offence to intentionally:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.

9.5.2 *Birds - specially protected species*

Certain species of bird are listed on *Schedule 1* of the *Wildlife and Countryside Act 1981* (as amended) and receive protection under *Sections 1(4)* and *1(5)* of the Act. The protection was extended by the CRow Act. The legislation confers special penalties where the above mentioned offences are committed for any such bird and also make it an offence to intentionally or recklessly:

- disturb any such bird, whilst building its nest or it is in or near a nest containing dependant young; or
- disturb the dependant young of such a bird.

9.6 *Widespread species of reptile*

Common lizard (*Zootoca vivipara*), grass snake (*Natrix natrix*), slow-worm (*Anguis fragilis*), and adder (*Vipera berus*) are listed under *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), in respect of *Section 9(5)* and part of *Section 9(1)*. This protection was extended by the CRow Act.

Under the above legislation it is an offence to:

- intentionally or deliberately kill or injure any individual of such a species; or
- sell or attempt to sell any part of the species alive or dead.

9.7 *European Protected Species Licences*

Where it is necessary to carry out an action that could result in an offence under the *Conservation of Habitats & Species Regulations 2017* it is possible to apply for a European Protected Species (EPS) licence from Natural England. Licences are only issued where Natural England are satisfied that three derogation tests are met. These are that the activity is for **imperative reasons of overriding public interest**, that there must be **no satisfactory alternative** and that **favourable conservation status of the species must be maintained**.

Consideration of these three derogation tests was previously left to Natural England as part of their deliberations on whether to grant a licence for the development activity after a planning consent has been issued. However, the regulations now require that **all** public bodies, *i.e.* **Local Planning Authorities** (LPAs), have regard to the requirements of the European Habitats Directive when carrying out their functions. As a result, LPAs **must** address the three derogation tests when considering a planning application that could impact upon any European Protected Species (EPS).

9.8 *National planning context*

9.8.1 *General*

Surveys should be completed in line with Natural England's *Standing Advice for Local Authorities* (<http://www.naturalengland.org.uk/ourwork/planningdevelopment/spatialplanning/standingadvice/default.aspx>), which states:

- Natural England will not comment on applications that are submitted without the relevant protected species surveys if there are no other issues (*i.e.* in relation to SSSIs or landscape).
- Natural England will not comment on scoping surveys that recommend further surveys where these have not been undertaken and submitted with the scoping reports.

In addition to the above, *Section 40* of the *Natural Environment and Rural Communities Act (2006)* imposes a new duty on all public authorities to have regard for biodiversity.

9.8.2 National Planning Policy Framework (NPPF)

From the 20th July 2021, the Government published the revised National Planning Policy Framework. The document sets out the government's planning policies for England and how these are expected to be applied. This replaces a previous version which was published in June 2019. It states: "*at the heart of the Framework is a presumption in favour of sustainable development (paragraph 11).*"

Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):

- an economic objective;
- a social objective; and
- an environmental objective.

The environmental objective is to "*contribute to protecting and enhancing our 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*".

Planning policies and decisions should contribute to and enhance the natural and local environment by "*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)*" and "*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*".

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.

Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted.

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.

It states that "*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*".

It should be noted that 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”.

The NPPF also encourages "*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*" and aims to “*promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity*”. This applies to non-statutory designated sites including Sites of Importance for Nature Conservation (SINCs) and equivalent county wildlife sites.

Early engagement with all necessary stakeholders, including expert bodies, is encouraged by the NPPF.

Target Note 1. Dense evergreen conifer (family *Cupressaceae*).

Target Note 2. A patch of dense bamboo.

Target Note 3. Planted scrub that is mostly *Prunus laurocerasus* (Cherry Laurel).

Target Note 4. Planted shrubs consisting of *Rhododendron* species (not the *Schedule 9 Rhododendron ponticum*) and *Lonicera nitida* (Wilson's Honeysuckle). There is also an overhanging *Quercus* species (Oak) tree.

Target Note 5. Amenity grassland dominated by *Holcus lanatus* (Yorkshire-fog) with some *Achillea millefolium* (Yarrow).

Target Note 6. The moss *Flammulina velutipes* fruiting on a tree stump on the edge of the driveway.

Target Note 7. A flowerbed containing *Rosa* species (a cultivated Rose), plus *Carex pendula* (Pendulous Sedge) and *Narcissus* hybrids (Daffodils).

Target Note 8. A strip of bare, cultivated soil with no vegetation evident.

Target Note 9. Bare ground with small tiles and larger stones.

Target Note 10. A steep bank covered in paving stones. It is vegetated with the evergreen creeper *Hedera helix* (Ivy) and the shade-tolerant herb *Geranium robertianum* (Herb-Robert) and dense bryophyte communities in part. Bryophytes include *Homalothecium sericerium*, *Brachythecium rutabulum* and *Bryoerythrophyllum recurvirostrum*.

Target Note 11. Ground covered with *Hedera helix* (Ivy) and some *Ilex aquilifolium* (Holly) scrub. This is likely shaded (in summer) by *Quercus* species (Oak) and *Pinus sylvestris* (Scots Pine) trees. This is suitable habitat for widespread species of reptiles such as slow-worms.

Target Note 12. Woodland with a canopy dominated by *Quercus robur* (English Oak) and a *Pinus sylvestris* (Scots Pine) tree. The field-layer containing an abundance of the evergreen creeper *Hedera helix* (Ivy) together occasional shade-tolerant herbs including *Geranium robertianum* (Herb-Robert) and *Geum urbanum* (Wood Aven). There is also an abundance of leaf-litter covering the woodland floor.

Target Note 13. A raised bank with young growth of *Ilex aquilifolium* (Holly) and *Prunus laurocerasus* (Cherry Laurel).

Target Note 14. The decaying roof of a garage covered with bryophytes and some *Geranium robertianum* (Herb-Robert) and *Geranium lucidum* (Shining Crane's-bill).

Target Note 15. A comma butterfly hibernating on the ceiling of a shed.

Target Note 16. Dense scrub dominated by *Ilex aquilifolium* (Holly) behind a garage. This is suitable habitat for widespread species of reptiles such as slow-worms.

Target Note 17. Several small *Prunus laurocerasus* (Cherry Laurel) bushes.

11 APPENDIX C: PLANT SPECIES LISTS

Species	TN 1	TN 2	TN 3	TN 4	TN 5	TN 6	TN 7	TN 10	TN 11	TN 12	TN 13	TN 14	TN 16	TN 17
Woody species														
Bamboo species	-	D	-	-	-	-	-	-	-	-	-	-	-	-
Cupressaceae species	D	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Hedera helix</i> (Ivy)	-	-	-	-	-	-	-	F	D	A	-	-	-	-
<i>Ilex aquilifolium</i> (Holly)	-	-	-	-	-	-	-	-	A	-	A	-	D	-
<i>Lonicera nitida</i> (Wison's Honeysuckle)	-	-	-	O	-	-	-	-	-	-	A	-	-	-
<i>Pinus sylvestris</i> (Scots Pine)	-	-	-	-	-	-	-	-	-	R	-	-	-	-
<i>Prunus laurocerasus</i> (Cherry Laurel)	-	-	F	-	-	-	-	-	-	-	-	-	-	A
<i>Quercus robur</i> (English Oak)	-	-	-	-	-	-	-	-	-	F	-	-	-	-
<i>Quercus</i> species (Oak)	-	-	-	R	-	-	-	-	-	R	-	-	-	-
<i>Rhododendron</i> species (ornamental rhododendrons)	-	-	-	A	-	-	-	-	-	-	-	-	-	-
<i>Rosa</i> species (a cultivated Rose)	-	-	-	-	-	-	O	-	-	-	-	-	-	-
<i>Rubus fruticosus</i> agg. (Bramble)	-	-	F	-	-	-	-	-	-	-	-	-	-	-
Herbs														
<i>Achillea millefolium</i> (Yarrow)	-	-	-	-	A	-	-	-	-	-	-	-	-	-
<i>Carex pendula</i> (Pendulous Sedge)	-	-	-	-	-	-	O	-	-	-	-	-	-	-
<i>Geranium lucidum</i> (Shining Crane's-bill)	-	-	-	-	-	-	-	-	-	-	-	O	-	-
<i>Geranium robertianum</i> (Herb-Robert)	-	-	-	-	-	-	-	-	F	-	O	O	-	-
<i>Geum urbanum</i> (Wood Avens)	-	-	-	-	-	-	-	-	-	O	-	-	-	-
<i>Holcus lanatus</i> (Yorkshire-fog)	-	-	-	-	D	-	-	-	-	-	-	-	-	-

<i>Narcissus</i> hybrid (Daffodils)	-	-	-	-	-	-	O	-	-	-	-	-	-	-
Bryophytes														
<i>Brachythecium rutabulum</i>	-	-	-	-	-	-	-	F	-	-	-	O	-	-
<i>Bryoerythrophyllum recurvirostrum</i>	-	-	-	-	-	-	-	F	-	-	-	O	-	-
<i>Flammulina velutipes</i>	-	-	-	-	-	-	-	F	-	-	-	O	-	-
<i>Homalothecium sericerium</i>	-	-	-	-	-	R	-	-	-	-	-	-	-	-
D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare														

These are not proposed as enhancements for the purposes of the planning application, but only for information purposes.

12.1 Lawn seed mix composition

The seed mixes in Table 12.1.1. are from Emorsgate Seeds and are suitable for lawns. Emorsgate are only given as an example and a local supplier is preferable. The mixes contain slow growing grasses, some with a selection of wildflowers that respond well to regular short mowing. The EG9 grass mixture for hedges and woodland contains a selection of grasses that are tolerant of a degree of shade.

Table 12.1.1. Emorsgate seed mix species composition.

EL1	
Species	Common Name
Flowering Species	
<i>Galium verum</i>	Lady's Bedstraw
<i>Leontodon hispidus</i>	Rough Hawkbit
<i>Leucanthemum vulgare</i>	Oxeye Daisy
<i>Lotus corniculatus</i>	Birdsfoot Trefoil
<i>Primula veris</i>	Cowslip
<i>Prunella vulgaris</i>	Selfheal
<i>Ranunculus acris</i>	Meadow Buttercup
<i>Trifolium pratense</i>	Wild Red Clover
Grasses	
<i>Agrostis capillaris</i>	Common Bent
<i>Cynosurus cristatus</i>	Crested Dogtail
<i>Festuca rubra</i>	Slender-creeping Red-fescue
<i>Phleum bertolonii</i>	Smaller Cat's-tail
EG1	
Species	Common Name
<i>Agrostis capillaris</i>	Common Bent
<i>Cynosurus cristatus</i>	Crested Dogtail
<i>Festuca rubra</i>	Slender-creeping Red-fescue
<i>Phleum bertolonii</i>	Smaller Cat's-tail
<i>Poa pratensis</i>	Smooth-stalked Meadow-grass
EG9	
Species	Common Name
<i>Agrostis capillaris</i>	Common Bent
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass
<i>Brachypodium sylvaticum</i>	False Brome
<i>Cynosurus cristatus</i>	Crested Dogtail
<i>Deschampsia cespitosa</i>	Tufted Hair-grass

<i>Festuca rubra</i>	Red Fescue
<i>Poa nemoralis</i>	Wood Meadow-grass

12.2 Ornamental planting to attract wildlife

Plants that attract insects are generally helpful and trees, shrubs and flowering plants can provide cover for wildlife. Therefore, to enhance the ecological value of the site, any replacement landscaping in the gardens should incorporate a mixture of native and non-native species of value to wildlife. This mixture will be planted to encourage a diversity of insects, which in turn will attract different species. Flowers that bloom throughout the year, including both annuals and herbaceous perennials, are beneficial. Night-flowering blossoms attract night-flying insects, which in turn provide prey for bats. Examples of suitable plant species that could be planted to encourage wildlife include those in Tables 12.2.1. and 12.2.2. Approximate flowering periods are listed in the tables.

Table 12.2.1. Native and non-native species that could be incorporated into the landscaping.

Species	Common Name	Approximate flowering period
<i>Achillea millefolium</i>	Yarrow	Early summer
<i>Aubretia</i> species	Aubretia	Spring to early summer
<i>Berberis darwinii</i>	Darwin's Barberry	Spring
<i>Iberis sempervirens</i>	Candytuft	Summer to autumn
<i>Centaurea montana</i>	Cornflower	Spring to summer
<i>Centaurea scabiosa</i>	Knapweed	Summer to autumn
<i>Centranthus ruber</i>	Red valerian	Summer to autumn
<i>Cornus sanguinea</i>	Dogwood	Summer
<i>Dianthus barbatus</i>	Sweet William	Summer
<i>Echinacea</i> species	Echinacea	Summer to autumn
<i>Erysimum</i> species	Wallflowers	Spring to early summer
<i>Glebionis segetum</i>	Corn marigold	Spring to summer
<i>Hebe</i> species	Hebes	Summer to autumn
<i>Hedera helix</i>	Ivy	Autumn
<i>Hesperis matronalis</i>	Dame's-violet	Spring to summer
<i>Hyacinthoides non-scripta</i>	English Bluebell	Spring
<i>Hylotelephium spectabile</i>	Ice plant 'Pink lady'	Early autumn
<i>Hypericum</i> species	St John's wort	Spring
<i>Ilex aquifolium</i>	Holly	Spring to summer
<i>Jasminum officinale</i>	Common White Jasmine	Summer to autumn
<i>Lavandula angustifolia</i>	Garden Lavender	Summer
<i>Leucanthemum vulgare</i>	Ox-eye daisy	Summer
<i>Limnanthes douglasii</i>	Poached egg plant	Summer
<i>Lonicera caprifolium</i>	Perfoliate Honeysuckle	Summer
<i>Lonicera etrusca</i>	Italian Honeysuckle	Summer to autumn
<i>Lonicera japonica</i>	Japanese Honeysuckle	Spring
<i>Lonicera periclymenum</i>	Honeysuckle	Summer to autumn

<i>Lunaria annua</i>	Honesty	Spring
<i>Malus domestica</i>	Apple	Spring
<i>Malus sylvestris</i>	Crab Apple	Spring
<i>Malva species</i>	Mallow	Summer to autumn
<i>Matthiola longipetala</i>	Night-scented stock	Summer
<i>Myosotis sylvatica</i>	Wood forget-me-not	Spring
<i>Nicotiana species</i>	Tobacco plant	Summer
<i>Oenothera species</i>	Evening primroses	Summer to autumn
<i>Papaver rhoeas</i>	Corn poppy	Summer
<i>Phacelia species</i>	Phacelia	Summer to autumn
<i>Primula vulgaris</i>	Primrose	Spring
<i>Rosa species</i>	Rose	Summer
<i>Rubus fruticosus</i> agg.	Bramble	Spring to summer
<i>Saponaria officinalis</i>	Soapwort	Summer
<i>Saxifraga fortunei</i>	Cherry pie	Summer to autumn
<i>Scabiosa species</i>	Scabious	Summer
<i>Silene dioica</i>	Red campion	Spring
<i>Silene noctiflora</i>	Night-scented Catchfly	Summer to autumn
<i>Silene vulgaris</i>	Bladder Campion	Summer
<i>Verbena species</i>	Vervain	Summer to autumn
<i>Viburnum lantana</i>	Wayfaring-tree	Spring to summer
<i>Viburnum opulus</i>	Guelder-rose	Summer

Table 12.2.2. Examples of suitable garden herbs that could be planted in and around the site to encourage wildlife.

Species	Common Name	Approximate flowering period
<i>Angelica species</i>	Angelica	Summer to autumn
<i>Borago officinalis</i>	Borage	Spring to early autumn
<i>Calendula officinalis</i>	English marigolds	Summer to autumn
<i>Foeniculum vulgare</i>	Fennel	Summer to early autumn
<i>Hesperis matronalis</i>	Dame's-violet, often sold as Sweet Rocket	Spring to summer
<i>Hyssopus officinalis</i>	Hyssop	Summer to early autumn
<i>Matthiola bicornis</i>	Night-scented Stock	Spring to autumn
<i>Melissa officinalis</i>	Lemon balm	Summer
<i>Monarda species</i>	Bergamot	Summer to early autumn
<i>Nicotiana species</i>	Tobacco-plant	Spring to autumn
<i>Oenothera species</i>	Evening-primroses	Summer
<i>Origanum vulgare</i>	Marjoram	Summer
<i>Rosmarinus officinalis</i>	Rosemary	Spring
<i>Saponaria officinalis</i>	Soapwort	Summer to autumn
<i>Silene noctiflora</i>	Night-scented Catchfly	Summer to autumn
<i>Silene vulgaris</i>	Bladder Campion	Spring to summer

<i>Tanacetum parthenium</i>	Feverfew	Summer to early autumn
<i>Thymus</i> species	Thyme	Summer

12.3 Bird boxes

It is not advisable to place many boxes with identical dimensions, because individuals of the same species may not tolerate each other's presence, especially in built-up areas with limited food resources.

Table 12.3.1. Bird boxes with additional details on siting them to increase chances of occupancy.

Type/ example	Typical species	Height	Additional information
Vivara Pro WoodStone House Sparrow Nest Box 	House sparrows	$\geq 2\text{m}$	- Can either be incorporated into the build structure or mounted onto a building. - Should be fixed onto a sturdy building, not onto fences or garden sheds due to its weight. - Position away from windows. - Position out of direct sunlight (below eaves on the north elevation), especially if not built into the build structure.
Vivara Pro Barcelona WoodStone Open Nest Box 	Robins, wrens	$\leq 2\text{m}$	- Mount on a tree or large shrub - Conceal amongst foliage to keep well-hidden from predators.
WoodStone Swallow Nest Bowl (Plywood board mounted) 	Swallows	$\geq 2\text{m}$	- Mount within a building with an open door or window - Leave a distance of at least 6cm between the top of the nest and the ceiling.

Vivara Pro WoodStone House Martin Nest 	House martins	≥ 5m	- Position out of direct sunlight (below eaves on the north elevation), away from windows and in a straight line. - Should be in an open area so that it is less accessible to predators and birds are not obstructed as they leave the nest.
Barn Owl Trust Nest Box 	Barn Owl	≥ 5m	- Mounted on a 'telegraph style' pole. - Best positioned facing open grassland for foraging opportunities and away from the prevailing weather.

12.4 Insects

Insect boxes (hotels or towers) should be installed in a sunny location close to vegetation. Bee-friendly and insect friendly plants should be located nearby so that the bees and insects using the boxes have food. Lavender, honeysuckle and buddleia are all pollinator-friendly plants. The boxes suggested in *Table 12.4.1* (especially the BeePot planter) have been chosen so that they form an attractive feature as part of the landscaping. Solitary bees are non-aggressive and as such are suitable for gardens with pets and children.

Table 12.4.1. Examples of insect boxes that could be erected on site.

Type	Species	Height	Additional information
Bee Brick 	Solitary bees	>1m from the ground	The Bee Brick should be positioned in a warm sunny spot, in a south-facing wall, with no vegetation in front of the holes
BeePot Bee Hotel 	Solitary bees	>1m from the ground	The BeePot should be positioned in a warm sunny spot, preferably on a south-facing wall, with no vegetation in front of the holes

Insect Tower 	Butterflies, solitary bees, lacewings and ladybirds	>1m from the ground	The different sections of the Insect Tower have been designed to provide a habitat for a variety of insect species. Suitable for mounting on buildings, trees or fences.
Urban Bee Nester 	Solitary bees and a range of other insects	Between 0.75m and 1.5m above ground	The selected canes and the holes are the optimum size for solitary bees but other insects may overwinter in the nester.
Urban Insect Hotel 	A wide range of insects	Between 0.75m and 1.5m above ground	Adding natural materials such as drilled canes, hollow stems or bark in the triangular spaces will encourage more insects to the hotel.
Bee and Bug Biome 	A wide range of insects	>1m from the ground	Best placed near vegetation. Provides plenty of nooks and crannies for insects such as ladybirds, earwigs and lacewings.