

Land to the rear of 82 St Johns Road, Hedge End, Southampton, Hampshire, SO30 4DU

Ecological Appraisal Report

November 2019

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Ecological Appraisal Report

Land to the rear of 82 St Johns Road, Hedge End, Southampton, Hampshire, SO30 4DU
for
Mr W Newman

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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.

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EXECUTIVE SUMMARY

1. This report provides information from an ecological appraisal carried out by Hampshire Ecological Services Ltd for Mr Newman in connection with a proposal to build a new dwelling on land to the rear of 82 St Johns Road, Hedge End, Southampton, Hampshire, SO30 4DU (approximate Ordnance Survey Grid Reference SU485122). The site location is shown in *Figures 1 and 2 in Section 6*.
2. An ecological appraisal was carried out during the daytime on the 10th September 2019 by Nicola Pyle BSc (Hons) MCIEEM and Calum Cooper BSc (Hons) GradCIEEM.
3. The site consists of a plot of undeveloped land, dominated by rough grassland, with a small area of coppiced *Corylus avellana* (Hazel) and a pile of garden waste. The boundaries of the site consist of wooden panel fences and hedgerows. A Phase 1 Habitat map is given in *Figure 3 in Section 6*.
4. No plant species listed on *Schedules 8 or 9 of the Wildlife and Countryside Act 1981* (as amended) were recorded on the site.
5. The tree on site was identified as having negligible bat roost suitability.
6. There is suitable foraging habitat for bats on and adjacent to the site. It is likely that bats are using the site for foraging and/or commuting. However, due to the size of the site, and the fact that there will be a garden associated with the new property, the loss of this habitat is unlikely to significantly detrimental to bats. Also, the high density of similar sized gardens surrounding it will continue to provide foraging and commuting habitat. Retaining and enhancing connectivity, *e.g.* extending the hedges around the edges of the site, will help minimise any potential impact to bat populations in the local area.
7. There is a very small amount of suitable habitat for dormice on site consisting of six *Corylus avellana* (Hazel) bushes. The site is surrounded by houses and of gardens to the east and west, resulting in isolation of the habitat on site. However, there is woodland to the west beyond the gardens and neighbouring properties. In addition, there is a well-known population of dormouse along the M27 corridor, *c.*170m to the west of the site. A nut search around the hazels for dormouse teeth marks was carried out, however, none were found.
8. According to aerial photographs (GoogleEarth™) and online Ordnance Survey 1:25,000 maps there is only one pond visible within 500m of the site. This is *c.*375m to the south-west and separated by woodland, residential gardens and a recent housing development. The site is highly isolated from suitable waterbodies, although the presence of small garden ponds in the nearby gardens cannot be ruled out. The majority of the site is grassland with a medium height sward, providing suitable terrestrial habitat for great crested newt. The site is surrounded by residential properties, roads and gardens in all directions, resulting in isolation from suitable

terrestrial habitat nearby. Given the lack of connectivity, it is thought unlikely that great crested newt will be present.

9. No badger setts or evidence of badger activity was found.
10. The removal of any affected 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 it should be inspected (by an ecologist) for nests immediately prior to removal of the vegetation. 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).
11. The rough tussocky grassland on site is suitable foraging habitat for widespread reptile species such as slow-worms. Therefore, reptile surveys are needed between March/ April and September to establish whether reptiles are present (see *Section 5.5*).
12. National Planning Policy Framework (NPPF 2018) 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 outline enhancements are proposed:
 - 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 bat brick (*e.g.* a Habibat™ Bat Box or an Ibstock Enclosed Bat Box or a Schwegler Bat Tube or similar) will be incorporated into the new dwelling.
 - To enhance the site for birds the following bird boxes will be placed in various locations within the development site, including;
 - one typical garden single chamber bird boxes (*e.g.* for blue and great tits) fixed to a tree at a height of 2-4m.
 - one open-fronted boxes (*e.g.* for robins and wrens) at a lower height and concealed among the foliage of shrubs.
 - one multi-chamber box suitable for house sparrows either built in or fixed to the north side of the new dwelling.
 - To enhance the site for invertebrates, a 'bug box' should be installed. The box should be suitable for a range of invertebrates. It will be positioned in a warm sunny spot, preferably on a south-facing wall, with no vegetation in front of the holes and ideally at a height of at least 1 metre from the ground.
13. If more than 12 months elapses 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.

14. The site is within 2.5km of the Solent and Southampton Water SPA and Solent Maritime SAC, as well as within 5km of the River Itchen SAC. This small-scale development will not directly affect the SAC and SPA. However, the impacts of this project (however slight) on the SPA and SACs will be considered by the LPA.
15. The development will cause a minimal increase to the population of Hedge End (one household), an area that already has had extensive new housing developments. Therefore, there is the potential for a small increase in recreational pressure, and pollution, on these internationally designated sites. However, in such a highly built up area this would be negligible. In addition, there are several open greenspaces in and around the residential areas of Hedge End such as Greta Park and St Johns recreation ground, which are more likely to be used by local and dog walkers given their proximity. Due to the potential increase in recreational pressure on the designated sites, it may still be necessary to make a financial contribution to the LPA towards the creation and maintenance of suitable alternative natural greenspaces (SANGS) in the local area.
16. There have been seven European Protected Species (EPS) licences granted within 2km of the site. Three of these are for dormouse in the same location to the north-west. The remaining four are for bats in three locations in all directions. These are listed in *Table 4.1.2.1.* and their locations are shown in *Figure 4.1.2.1.*

INTRODUCTION

2.1 Purpose of this report

This report provides information from an ecological appraisal carried out by Hampshire Ecological Services Ltd for Mr Newman in connection with a proposal to build a new dwelling on land to the rear of 82 St Johns Road, Hedge End, Southampton, Hampshire, SO30 4DU (approximate Ordnance Survey Grid Reference SU485122). The site location is shown in *Figures 1 and 2* in *Section 6*.

2.2 Site description

The site consists of a plot of undeveloped land containing grassland, hedgerows on the boundaries and a small number of trees. A site plan with the various habitats is given in *Figure 3* in *Section 6*.

The site lies on the north-west side of St Johns Road, at the rear of number 82. Access is from Norman Gardens to the north-west. The site is on the south-western edge of Hedge End. The immediate surroundings consist of neighbouring properties and their gardens in all directions. In the wider landscape, the urban area of Hedge End extends to the north and east and the city of Southampton to the west. The M27 motorway is nearby to the west, which provides a corridor of woodland, scrub and green space. Beyond Hedge End there are extensive areas of arable fields and pasture. The River Hamble is c.2km to the south-east of the site.

2.3 Proposed activities

This survey was carried out in connection with a proposal to build a new dwelling.

2.4 Current planning status

Planning permission is being 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; and
 - *Figure 3* gives a Phase 1 Habitat Survey map 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; and
- *Appendix C* lists plant species recorded on site.

3 **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 2002-2007* as Red or Amber; and
- Nationally Rare or Nationally Scarce species.

3.2.2 *Date, time and weather*

An ecological appraisal was carried out during the daytime on the 5th September 2019. The weather was warm (22°C) and dry with 10% cloud cover and a slight air (Beaufort scale 1).

3.2.3 *Personnel*

The survey was carried out by Nicola Pyle BSc MCIEEM who is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). She has over 12 years of experience in ecological consultancy and is a highly competent ecologist trained in preliminary ecological appraisals and protected species surveys. She is a multi-species licence holder and holds a Natural England licence allowing the disturbance and handling of bats for the purposes of survey in all counties of England (current Bat Class Licence Registration number 2015-18259-CLS-CLS). She was assisted by Calum Cooper BSc (Hons) GradCIEEM who has over four years of experience in ecological consultancy and is experienced in carrying out surveys for protected species.

This report was reviewed by Victoria Russell MCIEEM who is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) with over 22 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;
- great crested newts;
- badger;
- nesting birds; and
- reptiles.

According to aerial photographs (GoogleEarth™) and online Ordnance Survey 1:25,000 maps, there are no watercourses on or adjacent to the site. Therefore, otter, and water vole are 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.

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 potential 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 internal and external inspections, the 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 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 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 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.

Dormice

Habitat assessment

The site was assessed for habitat with the potential to support dormice. Habitats typically suitable for dormice include:

- deciduous woodland, with a dense understory, species-rich shrub-layer and thick ground cover;
- continuous, thick, wide hedgerows over 4m high with connections to nearby suitable woodland;
- hazel or sweet chestnut coppice; or
- thick continuous areas of scrub, particularly bramble, close to hedgerows or woodlands.

Hazel nut searches

Dormice open hazel nuts in a distinctive manner, and this survey technique is based on identifying the characteristically opened shells. The area beneath the canopy of each individual *Corylus avellana* (Hazel) on site is systematically searched for 20 minutes for hazel nuts opened by dormice. As this was an informal search, all five Hazels were searched together, broadly following the same methodology.

Great crested newt

All water bodies on the site or within 500m that could be used as breeding locations for this species were identified, and the suitability of terrestrial habitat for this species was considered. Great crested newts can travel up to 500m from pond to pond, and between ponds and terrestrial habitat. The suitability of terrestrial habitat was assessed with this in mind.

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), there are seven statutory designated sites within 5km of the site. These are listed in *Table 4.1.1.1.*

Table 4.1.1.1. Statutory designated sites within 5km of the site

Level of designation	Designation	Name	Distance & direction from site
International	SPA	Solent & Southampton Water	c.2,000m south-east, c.3,125m south, c.4,280m west & south-west
	Ramsar	Solent & Southampton Water	c.2,000m south-east
	SAC	Solent Maritime	c.2,000m south-east, east & south
		River Itchen	c.4,570m north-west
National	SSSI	Upper Hamble Estuary and Woods	c.1,200m south-east
	NNR	-	-
County	LNR	Netley Common	c.745m south-west
		Manor Farm	c.1,250m south-east
Local	SINC	-	-
	Ancient woodland	-	-

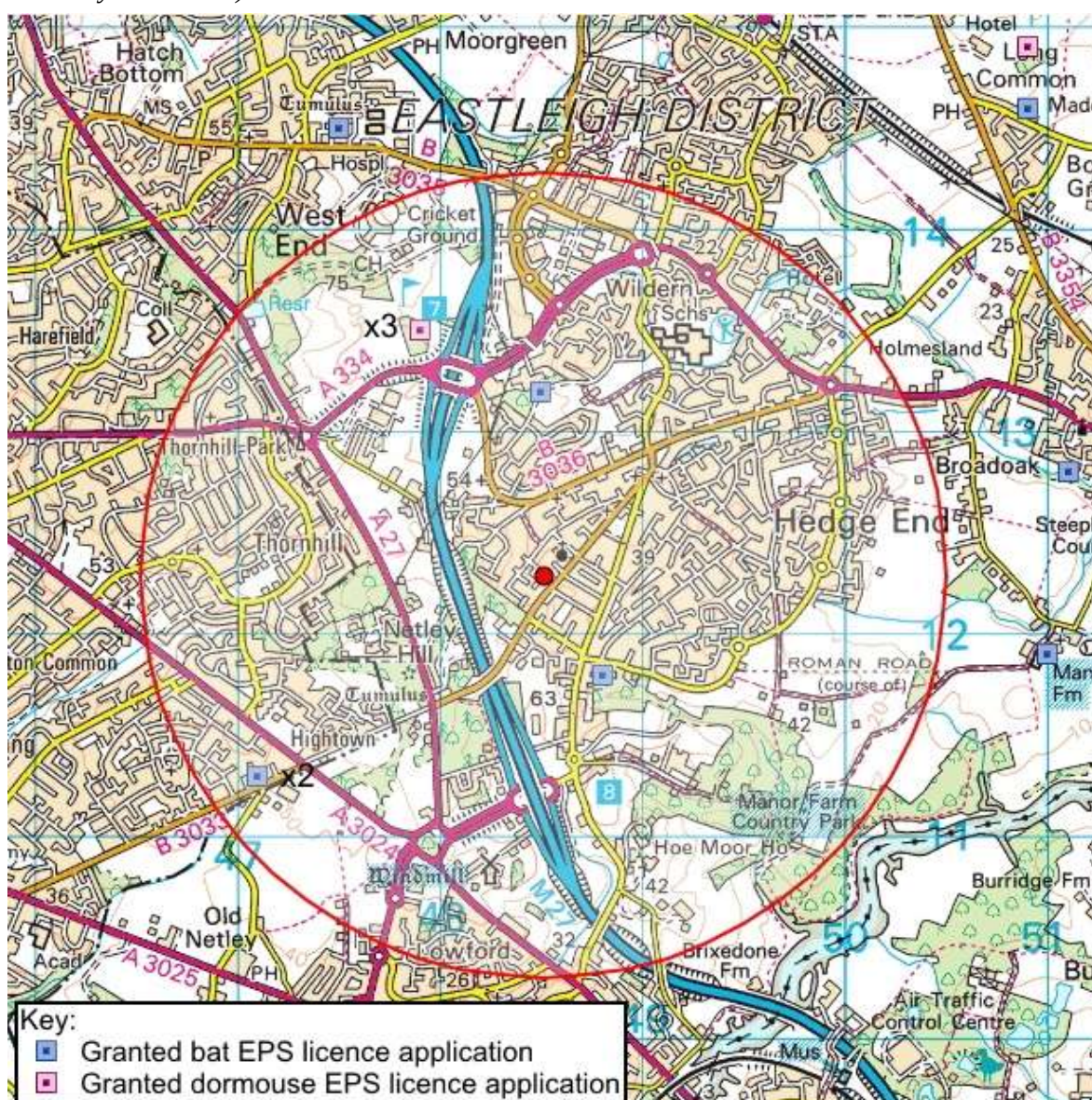
4.1.2 European Protected Species

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. Three of these are for dormouse in the same location. The remaining four are for bats in three locations. These EPS licences 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
Common pipistrelle	Resting place	29/04/2015	c.575m south-east
Common pipistrelle	Resting place	25/04/2013	c.900m north
Dormouse	Resting place & breeding site	19/11/2013	c.1,375m north-west
		15/05/2014	
		14/01/2015	
Common pipistrelle	Unknown	12/04/2014	c.1,730m south-west
	Resting place	01/05/2015	

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



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4.2 **Habitats and plant species**

4.2.1 *Habitats*

The site consists of a plot of undeveloped land dominated by rough grassland with a small area of coppiced *Corylus avellana* (Hazel) and a pile of garden waste. The boundaries of the site consist of wooden panel fences and hedges.

The rough grassland (*Target Note 1*) has a sward dominated by tussocks of the coarse grass *Arrhenatherum elatius* (False Oat Grass) together with *Holcus lanatus* (Yorkshire Fog). The grassland contains several common broad-leaved herbs, either scattered throughout or in patches. Species include *Anagallis arvensis* (Scarlet Pimpernel), *Epilobium parviflorum* (Hoary Willowherb), *Taraxacum officinale* agg. (Dandelion) and *Urtica dioica* (Common Nettle). There are also smaller amounts of *Calystegia sepium* (Hedge Bindweed), *Cirsium vulgare* (Spear Thistle), *Conyza sumatrensis* (Guernsey Fleabane), *Lapsana communis* (Nipplewort), *Oenothera biennis* (Common Evening-primrose), *Plantago lanceolata* (Ribwort Plantain), *Ranunculus repens* (Creeping Buttercup) and *Rumex obtusifolius* (Broad-leaved Dock). There are also small amounts of low-growing *Rubus fruticosus* (Bramble). There is also a pile of garden waste refuse near the centre of the site.

The north-eastern hedge (*Target Note 2*) is dominated by *Prunus laurocerasus* (Cherry Laurel) with a field layer of *Hedera helix* (Ivy).

The south-western hedge (*Target Note 3*) is dominated by *Ligustrum ovalifolium* (Garden Privet) with smaller amounts of *Prunus spinosa* (Blackthorn), and *Rubus fruticosus* (Bramble) growing through it. The field layer is dominated by *Hedera helix* (Ivy). Individual specimens of *Berberis dawsonii* (Darwin's Barberry), *Corylus avellana* (Hazel), *Crataegus monogyna* (Hawthorn) and *Ilex aquifolium* (Holly) are scattered throughout.

The patch of trees and bushes in the west corner of the site (*Target Note 4*) is dominated by *Corylus avellana* (Hazel) stools, some recently coppiced, with a single *Acer pseudoplatanus* (Sycamore) tree. The field layer is mostly bare ground with scattered *Hedera helix* (Ivy) and *Rubus fruticosus* (Bramble).

A Phase 1 Habitat Survey map showing the location of the various habitats is given in *Figure 3* 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.

A list of 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 the tree

The tree on site has no features that could be used by roosting bats such as broken limbs and crevices. Therefore, it has negligible bat roost suitability.

Commuting and foraging bats

The site provides a small patch of foraging habitat for bats. There is also a network of gardens, hedges and tree-lines providing links into and from the wider landscape, particularly to the wooded M27 corridor to the west. In addition, the River Hamble is nearby (to the south-east) and also provides high quality foraging habitat in the local area 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*

There is a very small amount of suitable habitat for dormice on site consisting of six *Corylus avellana* (Hazel), which have undergone coppice management in the past.

The *Corylus avellana* (Hazel) stool at *Target Note 4* provides suitable habitat for nesting, foraging and hibernating dormice. The site is surrounded by houses and of gardens to the east and west, resulting in isolation of the habitat on site. However, there is woodland to the west, beyond the gardens and neighbouring properties and there is a well-known population of dormouse along the M27 corridor, c.170m to the west of the site.

A nut search for dormouse teeth marks was carried out. No evidence of dormice was found.

4.3.3 *Great crested newt*

According to aerial photographs (GoogleEarth™) and online Ordnance Survey 1:25,000 maps there is only one pond visible within 500m of the site. This is c.375m to the south-west, separated by woodland, residential gardens and a recent housing development. The site is highly isolated from suitable waterbodies, although the presence of small garden ponds in the nearby gardens cannot be ruled out.

The majority of the site is grassland with a medium height sward, providing suitable terrestrial habitat for great crested newt. The site is surrounded by residential properties and gardens in all directions, resulting in it being isolated from any suitable terrestrial habitat nearby.

In addition, according to the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk), there have been no great crested newt EPS licences within 2km of the site. There is been one great crested newt record c.650m south-east of the site.

4.3.4 *Badger*

No evidence of badgers was found during the survey.

4.3.5 *Birds*

All the trees and bushes on the site have the potential to support nesting birds during the breeding season. There are many bird species on the UK and Local BAP (or in the RSPB *Birds of Conservation Concern*) that could be using this site for nesting and foraging.

4.3.6 *Widespread species of reptile*

The vegetation on site is very suitable for widespread species of reptiles such as slow-worm, especially the rough grassland. The majority of the site is grassland with a medium height sward, with piles of garden clippings/compost and some low-growing scrub. This provides suitable foraging habitat and hibernation sites for reptiles (see *Section 7* for photographs).

5 ***INTERPRETATION AND EVALUATION***

5.1 ***Constraints on survey***

There were no constraints to the survey.

5.2 ***Survey report expiry***

This survey data is valid for a maximum of 12 months. Therefore, if more than 12 months elapses it may be advisable to conduct further survey work to obtain up-to-date information to advise work, thereby ensuring protected species compliance.

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 seven statutory designated sites within 5km of the site including SPA and SACs. None of these will be directly affected by this small-scale project.

As the site is within 2.5km of the Solent and Southampton Water SPA and Solent Maritime SAC, as well as within 5km of the River Itchen SAC the impacts of this project on the SPA and SACs must be considered, however slight. These sites are designated for the coastal and wetland habitat they contain.

The development will cause a minimal increase to the population of Hedge End (one household), an area that already has had extensive new housing developments. Therefore, there is the potential for a small increase in recreational pressure, and pollution, on these internationally designated sites. However, in such a highly built up area this would be negligible. In addition, there are several open greenspaces in and around the residential areas of Hedge End such as Greta Park and St Johns recreation ground, which are more likely to be used by local and dog walkers given their proximity. Due to the potential increase in recreational pressure on the designated sites, it may still be necessary to make a financial contribution towards the creation and maintenance of suitable alternative natural greenspaces (SANGS) in the local area.

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.

5.4.3 *Bats*

Bat roost suitability of tree

The tree on site has negligible bat roost suitability.

Foraging and commuting

There is suitable foraging habitat for bats on and adjacent to the site. It is likely that bats are using the site for foraging and/or commuting. However, due to the size of the site, and the fact that there will be a garden associated with the new property, the loss of this habitat is unlikely to significantly detrimental to bats. Also, the high density of similar sized gardens surrounding it will continue to provide foraging and commuting habitat. Retaining and enhancing connectivity, *e.g.* extending the hedges around the edges of the site, will help minimise any potential impact to bat populations in the local area.

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 retained vegetation (particularly the hedges), and security lights should operate on a timer, to avoid any negative impact on bats.

Any lighting installed should avoid spillage of greater than 1 lux onto retained vegetation. The use of non-UV LED lighting (preferably using warm spectrum wavelengths) is strongly recommended so as to avoid the most deleterious impacts of lighting on biodiversity and bats in particular.

5.4.4 *Dormice*

The current proposals will impact a very small, isolated amount of suitable habitat for dormouse habitat (a small number of coppiced hazels, isolated from other suitable habitat). Therefore no impacts are anticipated on dormice in the area and no further surveys are currently proposed.

5.4.5 *Great crested newt*

There is suitable terrestrial habitat for great crested newt on the site. However, the limited connectivity to nearby ponds and other suitable habitat reduces the suitability of the site.

Given the lack of connectivity, it is thought unlikely that great crested newt will be present. However, as a precautionary measure, it is proposed that the vegetation clearance of the site will be carried out under ecological supervision.

5.4.6 *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:

http://www.naturalengland.org.uk/Images/WMLG16_tcm6-11814.pdf.

5.4.7 *Birds*

All 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 any active nests are found 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).

5.4.8 *Widespread species of reptile*

Suitable foraging and hibernating habitat for widespread reptile species such as slow-worms is present on site. Therefore, further surveys are needed (see *Section 5.5*).

5.5 *Further survey*

5.5.1 *Widespread species of reptile*

As the development will impact suitable reptile habitat, reptile surveys should be carried out between March/ April and September 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 1m x 0.5m 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).

5.6 **Outline enhancement measures**

5.6.1 *General*

From the 24th July 2018, 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 March 2012. It states: "*at the heart of the Framework is a presumption in favour of sustainable development (paragraph 11).*"

5.6.2 *Bats*

Enhancing the site for bats could be as simple as including hanging tiles or timber cladding on the exterior of the new building. Alternatively, bat bricks (*e.g.* a Habibat™ Bat Box or an Ibstock Enclosed Bat Box or a Schwegler Bat Tube or similar) provide cavities that are incorporated into the build structure to offer roosting space for bats.

Therefore, it is proposed that at least one bat brick (*e.g.* a Habibat™ Bat Box or an Ibstock Enclosed Bat Box or similar) are incorporated into the new dwelling. These bat features should be located on elevations near to retained vegetation. This will optimise potential roosting opportunities.

No lighting should be installed near to or directed onto the retained 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.

5.6.3 *Birds*

To allow the site to be cleared for development without harm to nesting birds (so as to comply with the law – the *Wildlife and Countryside Act 1981* (as amended)), any affected vegetation with the potential to support nesting birds should be cut to near ground level (approximately 30cm) outside the bird breeding season (late February to August inclusive).

In addition, the site will be enhanced for birds. To maximise the number of species of bird attracted, 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 with limited food resources.

The bird boxes will consist of the following:

- one typical garden single chamber bird box (*e.g.* for blue and great tits) fixed to a tree or large shrub at a height of 2-4m;
- one open-fronted box (*e.g.* for robins and wrens) at a lower height and concealed among the foliage of shrubs; and
- one multi-chamber box suitable for house sparrows either incorporated into the build structure or fixed to the north side of the new building.

The proposed bird boxes are summarised in *Table 5.6.6.1*.

Table.5.6.6.1. 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
Schwegler 1B  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.
1SP Schwegler Sparrow Terrace  WoodStone Build-in House Sparrow Nest Box  Vivara Pro WoodStone House Sparrow Nest Box 	House sparrows	1+	≥ 2m	- Either incorporate into the build structure or mount on sturdy building. Do not fix onto fences or garden sheds due to its weight. - 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.
Vivara Pro Barcelona WoodStone Open Nest Box 	Robins, wrens	1	≤ 2m	- Mount on a tree or large shrub - Conceal amongst foliage to keep well-hidden from predators.

5.6.4 *Widespread species of reptile*

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). If this is not possible or a larger population is present (which requires more habitat to be retained) an off-site translocation programme will be necessary. The location and extent of any translocation area will be informed by the results of the survey.

5.6.5 *Invertebrates*

To enhance the site for invertebrates, a 'bug box' should be installed. The box should be suitable for a range of invertebrates. It will be positioned in a warm sunny spot, preferably on a south-facing wall or fence, with no vegetation in front of the holes. Ideally it should be positioned at a height of at least 1 metre from the ground.

Bee-friendly and insect friendly plants will be located nearby so that the bees and insects using the box have food. Lavender, honeysuckle and buddleia are all pollinator-friendly plants. Ideally, box should be chosen so it 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.

5.7 ***Requirement for Natural England licences***

5.7.1 *European Protected Species (EPS) licences*

Currently there is no need for an EPS licence. If great crested newts are suspected, or the scope of work increases, further survey work will be required and an EPS licence may be necessary.

An EPS 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 an EPS licence application.

Survey data supporting EPS licence applications must be up-to-date *i.e.* have been conducted within the current or most recent optimal survey season. Therefore, if surveys show protected species are present, and any 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 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 an EPS 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.

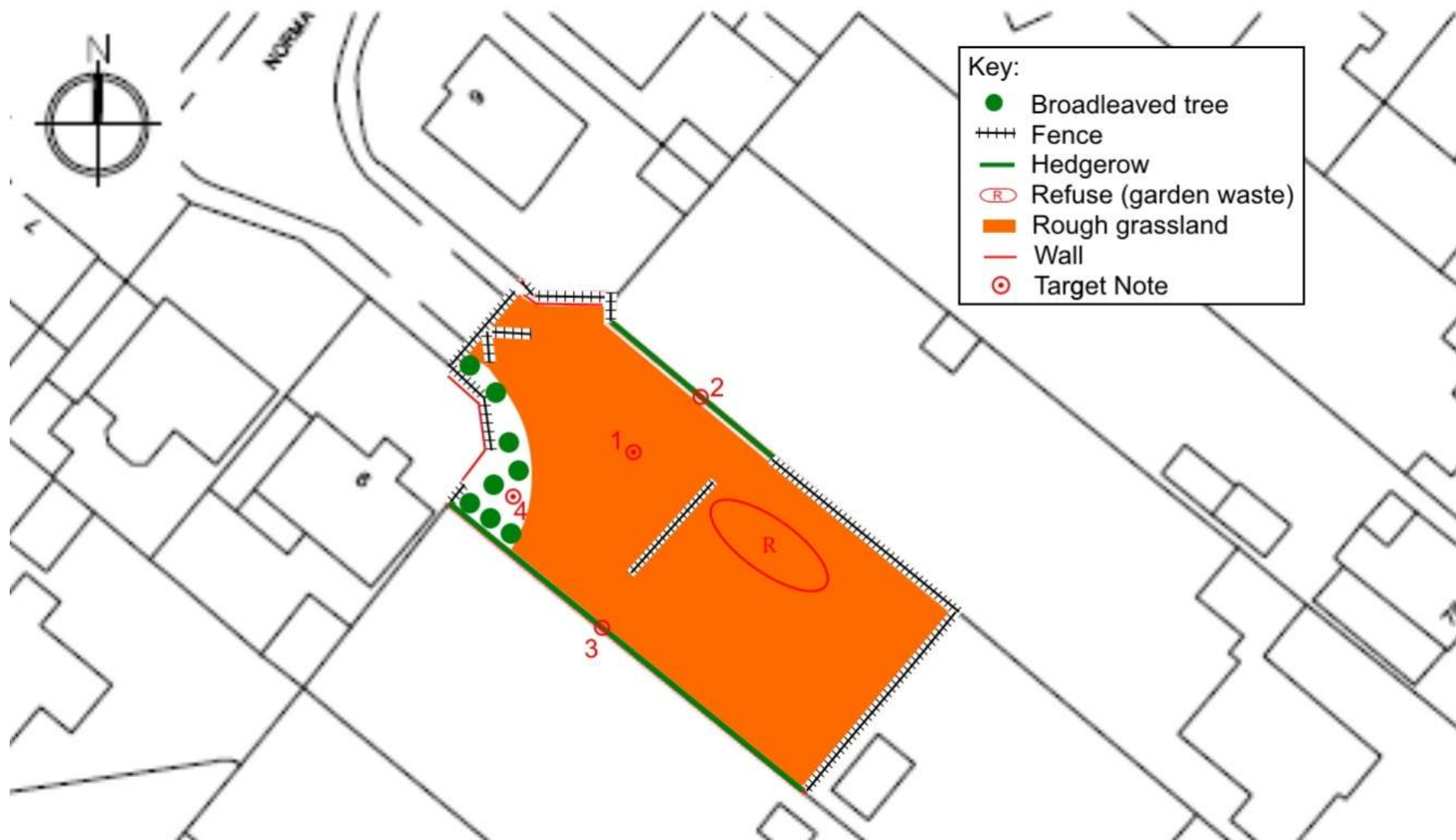


Figure 2. Ordnance Survey map showing the location of the site (as indicated by red arrow).



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Figure 3. Phase 1 Habitat Survey map.



PHOTOGRAPHS

Photo 1. Entrance to the site from Norman Gardens, facing south-east.



Photo 2. North-eastern hedge and fence.



Photo 3. Rough grassland, facing south-east.



Photo 4. Corylus avellana (Hazel) coppice stools and bare ground, in the west corner of the site.



Photo 5. Pile of garden waste near the centre of the site.



Photo 6. South-east fence and south west hedge.



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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***

Muscardinus avellanarius (dormice) are listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receive 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 ***Great crested newt***

Triturus cristatus (great crested newt) 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.

The great crested newt is included as a Priority Species in the UK Biodiversity Action Plan (UKBAP) and also as a species of principal importance for the conservation of biological diversity in England under *Section 74* of the CRow Act.

9.5 ***Badger***

Meles meles (badger) 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: http://www.naturalengland.org.uk/Images/WMLG16_tcm6-11814.pdf

9.6 **Birds**

9.6.1 *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.

9.6.2 *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.

9.7 **Widespread species of reptile**

Zootoca vivipara (common lizard), *Natrix natrix* (grass snake), *Anguis fragilis* (slow-worm), and *Vipera berus* (adder) 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.

9.8 **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).

9.9 *National planning context*

9.9.1 *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.

9.9.2 *National Planning Policy Framework (NPPF)*

From the 24th July 2018, 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 March 2012. 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 development requiring appropriate assessment because of its potential impact on a habitats site is being planned or determined*”.

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. Rough grassland dominated by tussocks of the coarse grass *Arrhenatherum elatius* (False Oat Grass) together with *Holcus lanatus* (Yorkshire Fog). The grassland contains several common broad-leaved herbs either scattered throughout or in patches including *Anagallis arvensis* (Scarlet Pimpernel), *Epilobium parviflorum* (Hoary Willowherb), *Taraxacum officinale* agg. (Dandelion) and *Urtica dioica* (Common Nettle). There are also smaller amounts of *Calystegia sepium* (Hedge Bindweed), *Cirsium vulgare* (Spear Thistle), *Conyza sumatrensis* (Guernsey Fleabane), *Lapsana communis* (Nipplewort), *Oenothera biennis* (Common Evening-primrose), *Plantago lanceolata* (Ribwort Plantain), *Ranunculus repens* (Creeping Buttercup) and *Rumex obtusifolius* (Broad-leaved Dock). There are also small amounts of low-growing *Rubus fruticosus* (Bramble). There is also a pile of garden waste near the centre of the site

Target Note 2. Hedge dominated by *Prunus laurocerasus* (Cherry Laurel) with a field layer of *Hedera helix* (Ivy).

Target Note 3. Hedge dominated by *Ligustrum ovalifolium* (Garden Privet) with smaller amounts of *Prunus spinosa* (Blackthorn) and *Rubus fruticosus* (Bramble) growing through it. The field-layer is dominated by *Hedera helix* (Ivy). Individual specimens of *Berberis darwinii* (Darwin's Barberry), *Corylus avellana* (Hazel), *Crataegus monogyna* (Hawthorn) and *Ilex aquifolium* (Holly) are scattered throughout.

Target Note 4. A patch of trees and bushes in the corner of the site. They are dominated by *Corylus avellana* (Hazel) stools, some recently coppiced, with a single *Acer pseudoplatanus* (Sycamore) tree. The field layer is mostly bare ground with some scattered *Hedera helix* (Ivy) and *Rubus fruticosus* (Bramble).

11 **APPENDIX C – PLANT SPECIES LISTS**

Species	Rough Grassland	SW Hedgerow	NE Hedgerow	Coppiced Hazel
a) Woody				
<i>Acer pseudoplatanus</i> (Sycamore)	-	-	-	R
<i>Berberis dawinii</i> (Darwin's Barberry)	-	R	-	-
<i>Buddleja davidii</i> (Buddleja)	R	-	-	-
<i>Corylus avellana</i> (Hazel)	-	R		D
<i>Crataegus monogyna</i> (Hawthorn)	-	R	-	-
<i>Hedera helix</i> (Ivy)	-	F	D	O
<i>Ilex aquifolium</i> (Holly)	-	R	-	-
<i>Ligustrum ovalifolium</i> (Garden Privet)	-	D	-	-
<i>Prunus laurocerasus</i> (Cherry Laurel)	-	-	D	-
<i>Prunus spinosa</i> (Blackthorn)	-	O	-	-
<i>Rubus fruticosus</i> (Bramble)	R	O	-	O
b) Herbs				
<i>Agrostis capillaris</i> (Common Bent)	R	-	-	-
<i>Anagallis arvensis</i> (Scarlet Pimpernel)	A	-	-	-
<i>Arrhenatherum elatius</i> (False Oat Grass)	D	-	-	-
<i>Bromopsis ramosa</i> (Hairy Brome)	R	-	-	-
<i>Calystegia sepium</i> (Hedge Bindweed)	O	-	-	-
<i>Chenopodium album</i> (Fat-hen)	R	-	-	-
<i>Cirsium vulgare</i> (Spear Thistle)	O	-	-	-
<i>Conyza sumatrensis</i> (Guernsey Fleabane)	O	-	-	-
<i>Epilobium parviflorum</i> (Hoary Willowherb)	F	-	-	-
<i>Euphorbia x pseudovirgata</i> (Twiggy Spurge)	R	-	-	-
<i>Galium aparine</i> (Cleavers)	R	-	-	-
<i>Geranium robertianum</i> (Herb Robert)	R	-	-	-
<i>Geum urbanum</i> (Wood Avens)	R	-	-	-
<i>Holcus lanatus</i> (Yorkshire Fog)	D	-	-	-
<i>Hypericum perforatum</i> (Perforate St John's-wort)	R	-	-	-
<i>Lamium purpureum</i> (Red Dead Nettle)	R	-	-	-
<i>Lapsana communis</i> (Nipplewort)	O	-	-	-
<i>Oenothera biennis</i> (Common Evening-primrose)	O	-	-	-
<i>Oxalis corniculata</i> (Procumbent Yellow-sorrel)	R	-	-	-
<i>Papaver rhoeas</i> (Common Poppy)	R	-	-	-
<i>Pentaglottis sempervirens</i> (Green Alkanet)	R	-	-	-
<i>Plantago lanceolata</i> (Ribwort Plantain)	O	-	-	-

<i>Plantago major</i> (Greater Plantain)	R	-	-	-
<i>Ranunculus repens</i> (Creeping Buttercup)	O	-	-	-
<i>Rumex obtusifolius</i> (Broad-leaved Dock)	O	-	-	-
<i>Senecio jacobaea</i> (Ragwort)	R	-	-	
<i>Silene latifolia</i> (White Campion)	R	-	-	
<i>Sonchus oleraceus</i> (Smooth Sow-thistle)	R	-	-	
<i>Stellaria media</i> (Common Chickweed)	R	-	-	
<i>Taraxacum officinale</i> agg. (Dandelion)	A	-	-	
<i>Trifolium repens</i> (White Clover)	R	-	-	
<i>Urtica dioica</i> (Common Nettle)	A	-	-	
<i>Viola x wittrockiana</i> (Garden Pansy)	R	-	-	
D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare				