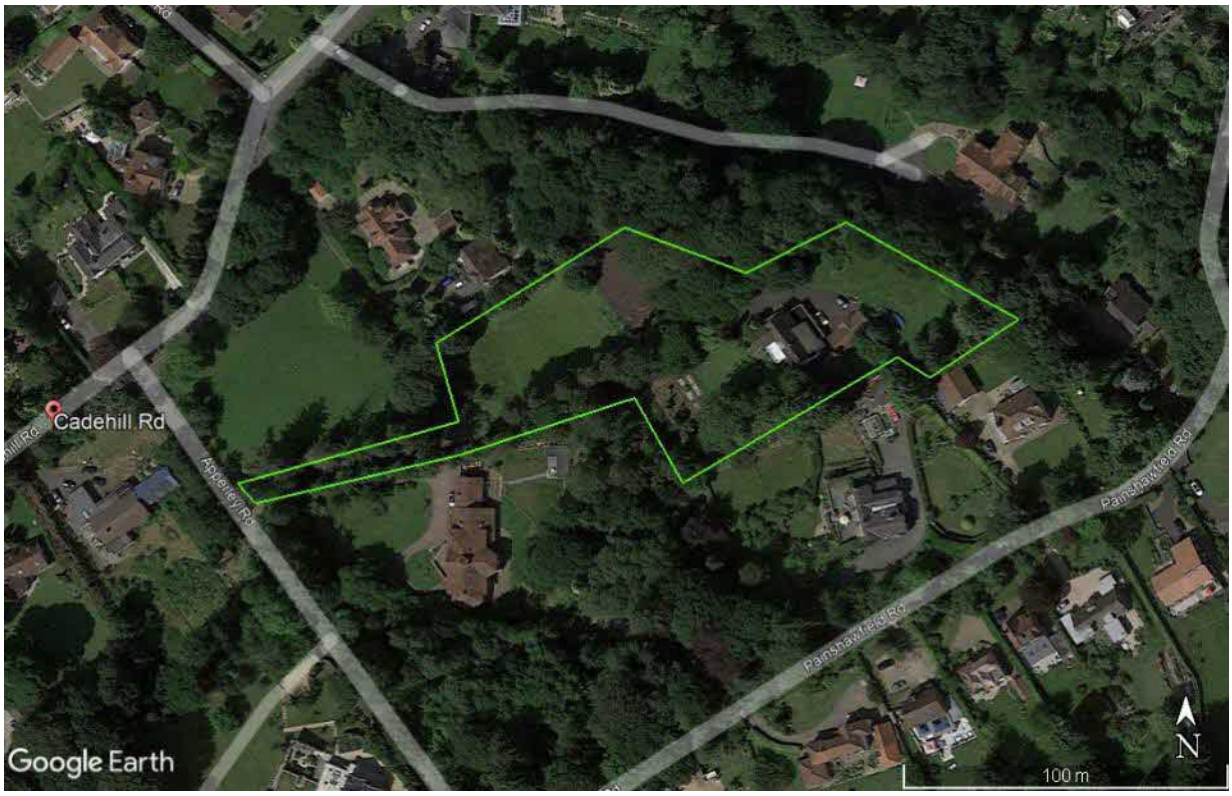
ECOLOGICAL IMPACT ASSESSMENT & BAT SURVEY

3 APPERLEY ROAD, STOCKSFIELD



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R01	Draft	9.8.22	1st draft	MEM	RM	ADM
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R03	Update	8.9.22	Loft void inspection	MEM		
R04	Update	22.11.22	Amendments to plans	MEM		

ENVIRONMENTAL RECORDS DATA

Unless requested otherwise, the information below can be used by the Local Environmental Records Centre. E3 has an agreement with the Environment Records Centre North East whereby any information included in the below table can be stored.

Species	Recorder	Date	Location	Abundance	Comment
Common pipistrelle	E3 Ecology	July 2022	NZ0635 6087	Individual	Roost
Soprano pipistrelle	E3 Ecology	July 2022	NZ0635 6087	Two	Roost
Noctule	E3 Ecology	July 2022	NZ0635 6087	Individual	Foraging
Barn Owl	E3 Ecology	July 2022	NZ0635 6087	Individual	Foraging
Tawny Owl	E3 Ecology	July 2022	NZ0635 6087	Pair with young	Nesting in woodland
Swallows	E3 Ecology	July 2022	NZ0635 6087	Individual	Foraging

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A. SUMMARY

E3 Ecology Ltd was commissioned to undertake an ecological impact assessment (EcIA) of a parcel of land at 3 Apperley Road, where it is proposed to demolish the existing house and garage and build a new dwelling. In addition a single new property will be constructed on the existing hard tennis court to the north west of the existing house. A desk study was completed, including consultation with DEFRA's MAGIC website and the Environmental Records Information Centre North East (ERIC NE), and an ecological walkover and bat risk assessment survey was undertaken in April 2022 in order to inform this assessment. Bat presence/absence surveys were undertaken in July 2022 and eDNA survey of an adjacent pond in June 2022.

The results of the desk study indicate that there are no statutorily protected sites within 2km of the proposed development site. The site does not lie within a Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ) for this type of development. No non-statutorily protected sites were highlighted within 2km during the desk study. Three European Protected Species (EPS) bat mitigation licences have been granted within 2km, all for non-breeding pipistrelle, with the nearest around 715m to the south west. Woodland adjacent to the site is listed as priority deciduous woodland and on the national forestry inventory as broadleaf.

The proposed development site measures approximately 0.77ha and is dominated by the house and mature gardens, bordered by mature trees, with a small area of woodland to the north. The invasive species rhododendron and cotoneaster were recorded within the garden. Overall, the habitats on site are of local value.

The habitats in the local area are of high suitability for foraging and commuting bats.

There are two buildings on site which were subjected to detailed external and internal inspections: These comprise the house and adjacent single storey garage block. The house is two storey with single storey extensions, of painted pebbledash construction with a tiled roof. Walls are tightly sealed but there are a small number of potential bat access routes associated with dormer hanging shingles, occasional slipped slates, missing mortar and broken or lifted PVC and timber fascia boards. The garage block is single storey, of brick/render construction with a concrete tile roof which is lined with timber/plywood. There are gaps associated with missing mortar under ridge tiles and around the roof edge, at the edge of PVC cladding and internally occasional missing bricks. Overall, both buildings are considered to be of moderate suitability given the good quality setting. A single mature beech tree is considered to be of moderate suitability for bats; this is to be retained. All other trees on site are of low-negligible suitability.

The bat presence/absence surveys on 6th July 20202 recorded a common pipistrelle day roost in the house used by a single bat. On 28th July two soprano pipistrelle emerged from a similar location. Small numbers of common and soprano pipistrelle and noctule bats were recorded foraging around and commuting over the site, particularly around the woodland edge. No evidence of maternity use was found, and the building has only a low residual risk of being used for hibernation purposes during the winter.

eDNA survey of a pond within the adjacent garden in June found no evidence of great crested newts. A possible tawny owl nest was identified within the woodland, a barn owl was observed during one of the dusk surveys and swallow were foraging in the garden but none were seen nesting within the buildings. Mammal trails were recorded on the woodland edge to the north and south, with deer prints identified in the southern area. Deer are known to be regularly present around the garden. The site is considered to be of up to local value for birds, badgers, common toad and hedgehog, with other protected and priority species likely to be absent.

Ecological Receptor	Impact	Mitigation
Habitats		
Woodland & Trees	Loss and damage/disturbance.	Woodland areas will be retained within the development proposals. Four small trees and a small tree group are identified as being lost for the new build. All other semi-mature to mature garden trees will be retained. Trees should be replaced on a 2:1 basis. Retained woodland and trees, in particular the mature beech to the north of the new build, will be protected from disturbance during construction by heras fencing erected prior to works commencing. All works will follow BS5837-2012 good practice guidelines and in accordance with the Arboricultural Impact Assessment.
Grassland	Loss and degradation during construction and operational phase although grassland loss will be minimal as the new build house will be on the existing tennis court.	Wildflower bulb planting and additional hedgerow/shrub mosaics will be incorporated into the landscape proposals.
Invasive species	Spread of rhododendron and cotoneaster on and off site.	Works will be undertaken to a precautionary invasive species method statement.
Biodiversity (general)	Loss of biodiversity as a result of development of the site.	Retention of as much higher value habitat as possible. Habitat losses are to be balanced on site through habitat enhancement and creation so that the development provides a net gain in biodiversity.
Species		
Bats	Timing of works impacting on bats during particularly sensitive periods.	As good working practice, the following key elements of work to the house and garage will not be completed during the bat hibernation period (November to end of February inclusive): Demolition of stone/brickwork Re-structuring/re-pointing of existing stone/brickwork Keying in of new build sections to existing stone/brickwork Removal of roof covering

	Harm/disturbance to bats	**A Natural England development licence will be required prior to works commencing on the house which may impact on bat roosts.** All works will follow the approved Natural England method statement, which will include: Pre-commencement site induction for key contractors on site carrying out work which may affect bats A concrete-type bat box will be erected on a suitably mature tree, in an undisturbed section of the site prior to the commencement of works, to act as interim roosting habitat during construction and will be retained in situ following completion of the development. The box will be used as a receptor for translocated bats (see below). Pre-commencement inspection of confirmed and potential roosting areas by the ecologist. Sensitive dismantling of the roosting areas under ecological supervision, taking care not to harm bats in the process. If bats are found, the ecologist will capture the bat(s) by hand, check the health of the bat and transport it to the aforementioned bat box. If bats cannot be safely captured, they will be excluded from the roost using standard exclusion devices. These will be fitted by, or under supervision of, the ecologist and will remain in place for a minimum of five consecutive nights of suitable weather, in accordance with the most up to date edition of the Bat Workers Manual[1]. No exclusion will take place during the hibernation period (November to end Feb inclusive). In the event that bats are found during works when the project ecologist is not on site, works will stop in that area and the ecological consultant will be contacted immediately. If it is necessary to move the bats for their safety, this will be undertaken by a licensed bat handler. Timber treatments that are toxic to mammals will be avoided. If required, timber treatment will be carried out in the spring or autumn. Both pre-treated timbers and timber treatments will use chemicals classed as safe for use where bats may be present (see https://data.jncc.gov.uk/data/e5888ae1-3306-4f17-9441-51a5f4dc416a/Batwork-manual-3rd-edn.pdf - Chapter 10).

[1] At the time of issue of this report, the latest version is: Mitchell-Jones, A.J. & McLeish, A.P. (2012) The Bat Workers' Manual (3rd Edition). Pelagic Publishing, Exeter.

	Loss of soprano and common pipistrelle day roosts and other potential roosting features, including some which could be used during winter for hibernation.	Roosting opportunities will be provided in the new structure. These will be built-in to the structure in the form of: 4 built in bat boxes
	Loss of potential moderate suitability tree	The mature beech tree to the north of the site near the tennis court will be retained, with no lighting installed in this area.
	Increased lighting affecting foraging/commuting areas potentially used by bats (and other nocturnal wildlife).	Light levels around modified/newly installed roost locations and foraging/commuting areas will be low level, below 2m in height, and low lux (below 1 lux 5m from the light source). Light spillage to areas used by foraging or commuting bats, e.g. the surrounding woodland, must be less than 2 lux. Warm-light LEDs with very low UV will be used, with cowls designed to accurately target which areas are lit. Where security lights are required, these will be of minimum practicable brightness, be set on a short timer and will be motion sensitive only to larger objects.
	Small loss of bat foraging/commuting habitat.	Landscape planting to include native plants bearing flowers, nectar and fruits which are attractive to invertebrates, thereby helping to maintain the food resource for bats and wildlife generally.
Amphibians	Harm/disturbance to common amphibians, including common toad	Works will be undertaken to a precautionary amphibian method statement.
Birds	Harm/disturbance to nesting birds if vegetation clearance is carried out during the bird breeding season	A pre-commencement check for nesting birds will be undertaken by a suitably experienced ornithologist if vegetation clearance/building demolition is undertaken between March and August inclusive.
	Loss of bird foraging opportunities of up to local value	Landscape planting to include plants bearing flowers, nectar and fruits which are attractive to invertebrates, thereby helping to maintain the food resource for birds and wildlife generally
	Loss of bird nesting opportunities of up to local value	Installation of six bird nest boxes – two each of hole, open fronted and sparrow terrace box types. Boxes should be min 2m high and ideally north to east facing, near foraging habitat and with direct flight access.
Badger	Potential for badger setts to be created within 30m of working area and	A checking survey will be undertaken within 3 months prior to works commencing to confirm badger setts remain absent.

	harm/disturbance to badger	
Hedgehog	Harm/disturbance to hedgehog	Works will be undertaken to a precautionary hedgehog method statement including a hand search of suitable refugia prior to removal.
	Loss of hedgehog foraging habitat of local value	Landscape planting will include areas of dense shrubs to provide cover for hedgehogs and berry bearing species to provide a foraging resource.
	Creation of barriers to hedgehog movement	Close boarded fences will be avoided, or gaps 13cm x 13cm will be provided in fences between gardens and landscaped areas to allow hedgehogs to forage and commute across the site.
Wildlife (general)	Entrapment of wildlife during construction if trenches are left open overnight	Any excavations left open overnight will have a means of escape for wildlife that may become trapped in the form of a ramp at least 300mm in width and angled no greater than 45°.

ADDITIONAL ENHANCEMENT RECOMMENDATIONS

The development presents an opportunity to ecologically enhance the site and it is a planning requirement to provide a net gain in biodiversity as part of the development. The following enhancements are recommended:

Landscape planting is to be designed to enhance structural diversity and will include plants bearing flowers, nectar and fruits which are attractive to invertebrates, thereby helping to maintain food resources for wildlife in general.

Woodland edge wildflower grassland to be incorporated into the landscaping proposals.

Creation of hedgehog/amphibian hibernacula or habitat piles within the more densely vegetated areas of garden.

Provision of at least one integrated bird nesting opportunity suitable for species such as swift, house sparrow, starling, house martin and/or swallow, one bat roosting feature in the new building on site and one integrated/wall mounted bat and bird feature within the refurbished house. Bird nesting opportunities should ideally be north to east facing and a minimum of 2m high (swift 4m+). Bat roosting features should be a minimum of 3-4m high, on gable ends or at eaves height. Both should be near suitable foraging habitat and away from windows.

Installation of 5 additional bird nest boxes (in addition to 6 detailed above) and 5 bat boxes in the trees on site.

Management/control of invasive species where not removed by development.

Good working practice

Timber treatments that are toxic to mammals will be avoided. If required, timber treatment will be carried out in the spring or autumn. Both pre-treated timbers and timber treatments will use chemicals classed as safe for use where bats may be present (see https://data.jncc.gov.uk/data/e5888ae1-3306-4f17-9441-51a5f4dc416a/Batwork-manual-3rd-edn.pdf - Chapter 10).

The local planning authority is likely to require the means of delivery of the mitigation to be identified. It is recommended that mitigation, compensation and enhancement proposals are incorporated into the planning documents.

Provided that the above recommendations are implemented, it is anticipated that the proposals may proceed with no significant adverse effect on protected or notable habitats and species. Ecological opportunities including landscaping focussed on biodiversity, control of non-native invasive species and bat and bird nest box provision, contributing to local and national conservation targets.

If you are assessing this report for a local planning authority and have any difficulties interpreting plans and figures from a scanned version of the report, E3 Ecology Ltd would be happy to email a PDF copy to you. Please contact us on 01434 230982.

B. INTRODUCTION

E3 Ecology Ltd was commissioned by Sands Group in April 2022 to undertake an EcIA and bat survey of a proposed development site at 3 Apperley Road, Stocksfield, Northumberland.

This assessment has been prepared taking account of the Chartered Institute of Ecology and Environmental Management's (CIEEM) "Guidelines for Ecological Impact Assessment in the UK and Ireland" (2019).

B.1 AUTHOR, SURVEYORS & QUALIFICATIONS

The author's professional qualifications and survey licences are detailed in the table below, as well as those of additional lead surveyors who completed survey work at the proposed development site:

TABLE 1: LEAD SURVEYORS

Name	Position	Professional Qualifications	Natural England Survey Licence Numbers
Mary Martin	Director	BSc MCIEEM	2015-12822-CLS-CLS (Bats)
Declan Ghee	Associate Director	BSc ACIEEM Field Identification Skills Certificate Level 4 (certified)	2016-26454-CLS-CLS (GCN*) 2018-38363-CLS-CLS (Bats)
Jessica Wilson	Senior Ecologist	BSc MSc ACIEEM	2015-16469-CLS-CLS (GCN*) 2019-40053-CLS-CLS (Bats)
Rosie Mackenzie	Graduate Ecologist	BSc MSc	
Lizzie Collins	Graduate Ecologist	BSc MSc	
Joanne Appleby	Lead Surveyor	-	

*GCN: Great Crested Newt

Further details of experience and qualifications are available at www.e3ecology.co.uk.

All surveyors have the knowledge, skills and experience identified within the relevant CIEEM Competencies for Species Survey guidance, or were under the supervision of a surveyor with the required competencies.

B.2 OBJECTIVES

The objectives of the assessment are to:

- Establish baseline ecological conditions and determine the importance of ecological features present or potentially present within the survey area;
- Complete comprehensive building inspections to search for evidence of bat use;
- Establish the bat roosting suitability of any buildings, structures or trees which may be present on site and at risk of impact by the development;
- Identify and describe potentially significant ecological constraints and effects associated with the proposed development;
- Make recommendations for design options to avoid significant effects on important ecological resources at an early stage of development planning where possible;
- Identify the potential requirement for further surveys on protected species and habitats which may be present on site;
- Set out the mitigation, compensation and enhancement measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects;
- Identify how these measures could be secured; and
- Identify any requirements for post-construction monitoring of the site.

B.3 PROPOSED DEVELOPMENT SITE

The site is located in Stocksfield, at an approximate central grid reference of NZ0635 6087.

The figures below illustrate firstly the survey boundary and secondly the broad habitats present on site and within an approximate 500m buffer zone.

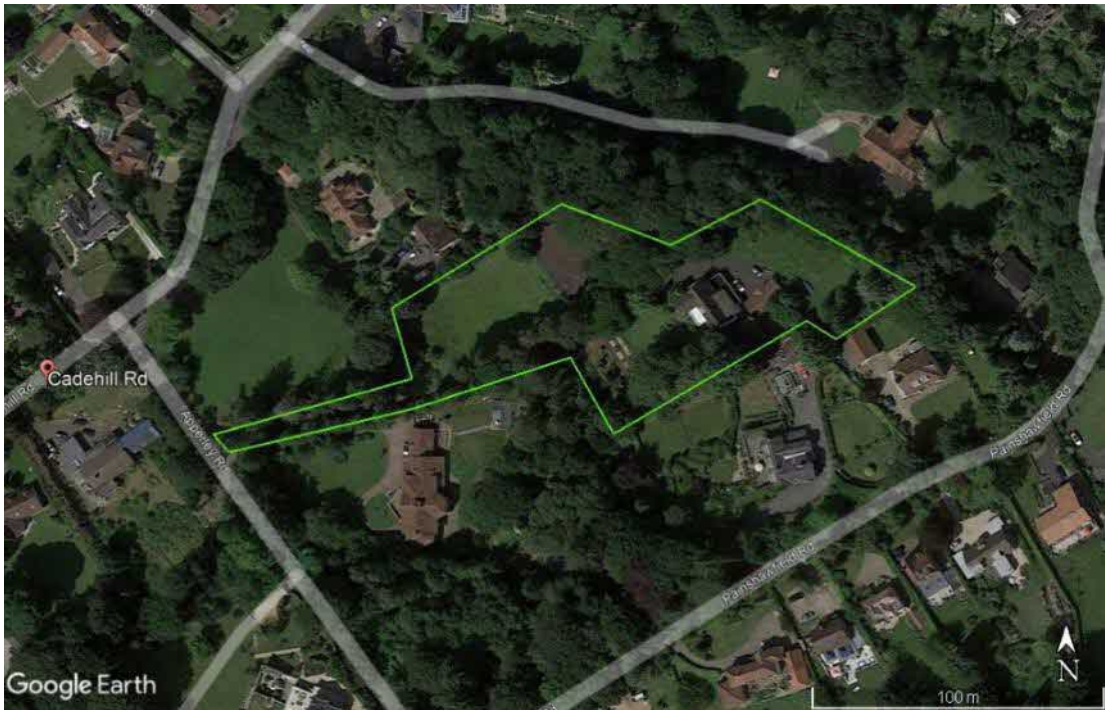
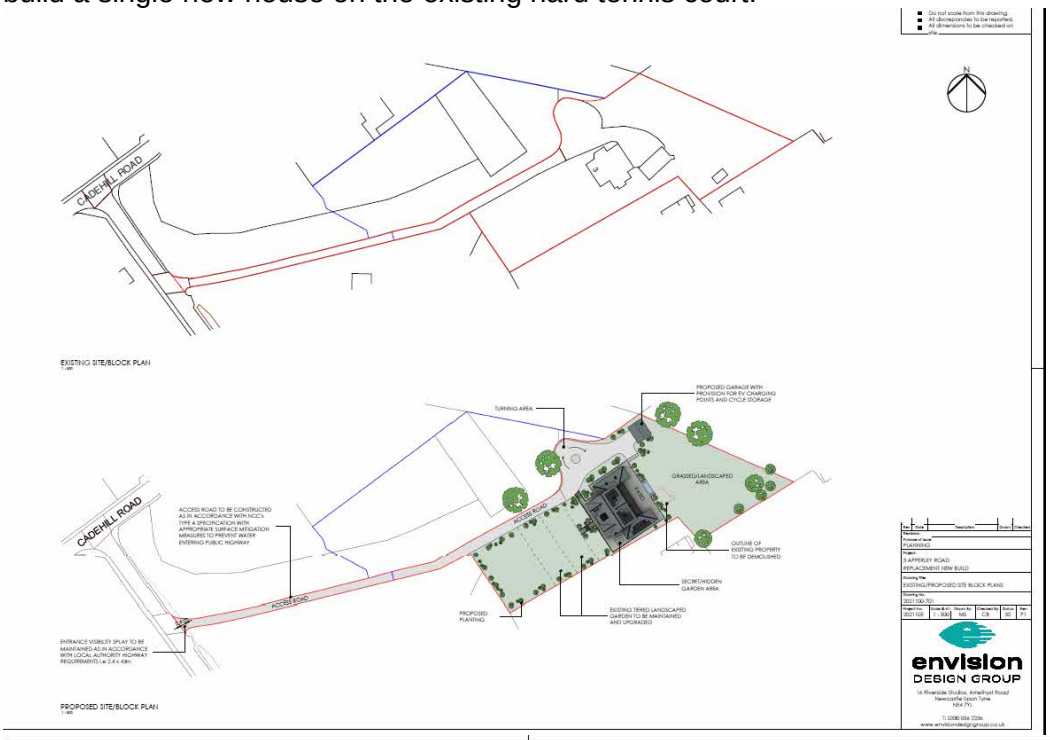


FIGURE 1: SITE BOUNDARY
(Reproduced under licence from Google Earth Pro.)

FIGURE 2: SITE AND 500M SETTING
(Reproduced under licence from Google Earth Pro.)

B.4 DEVELOPMENT PROPOSALS

It is proposed to demolish the existing house and garage, build a new dwelling in its place, and build a single new house on the existing hard tennis court.



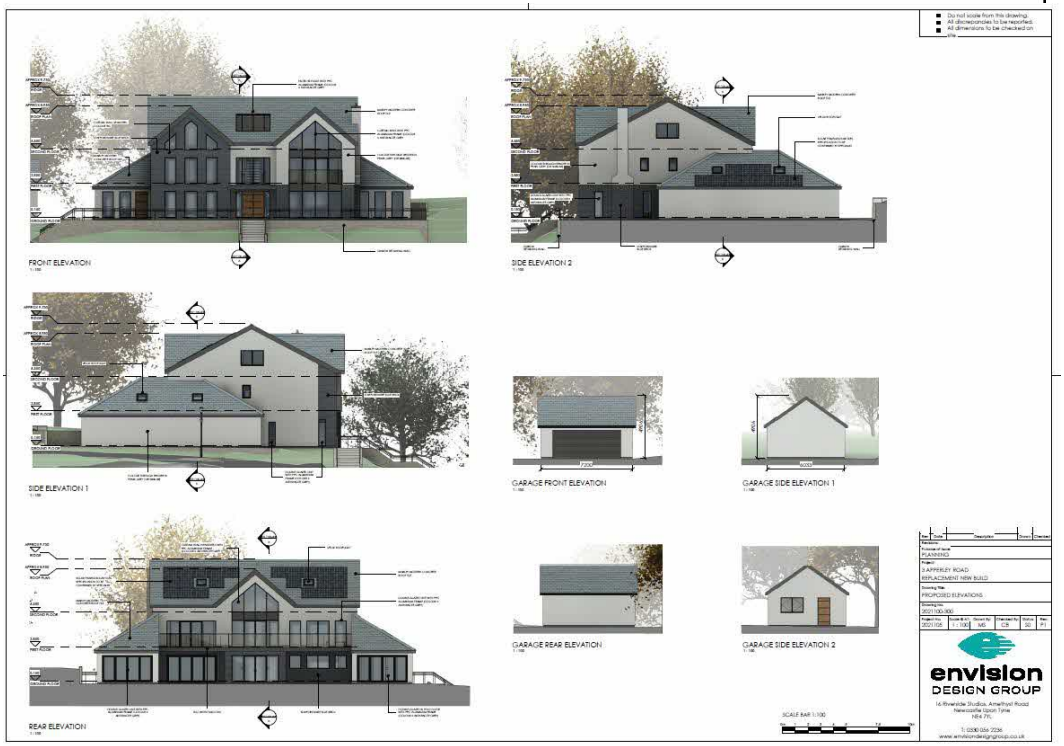


FIGURE 3: DEVELOPMENT PLANS: TOP TWO SHOW REFURBISHED EXISTING HOUSE AND NEW GARAGE; 3RD SHOWS THE LOCATION OF THE NEW BUILD (COURTESY OF ENVISION GROUP.)

C. METHODOLOGY

C.1 SCOPE OF STUDY

The scope of the study, in terms of the survey area and the desk study area, is based on professional judgement. The likely zone of influence of the proposal has been considered, including both potential direct effects, such as habitat loss, and potential indirect effects, such as disturbance. Consideration has been given to potential effects both during the construction and operational phases of the development.

For this site the survey area comprised the green line boundary as defined within the figures in section B.

In some circumstances field signs and habitat suitability may indicate the potential presence of nearby protected species and/or habitats immediately adjacent to the site which may fall within the zone of influence. In this scenario, if access was available the survey boundary was extended to include these areas. If access was not possible at the time of initial survey, the ecological impact assessment and required mitigation measures have been prepared taking this limitation into account.

The desk study included an assessment of land-use in the surrounding area and a data search covering a 2km buffer zone (see below for further detail).

The following types of ecological receptors have been considered:

Statutorily designated sites for nature conservation;
Non-statutorily designated sites for nature conservation;
Species protected by law;
Species and/or habitats listed under the NERC Act (2009) as being of principal importance for conservation of biodiversity; and
Species and/or habitats listed in relevant local biodiversity action plans.

Further details on planning and legislative context are provided in the appendices of this report.

C.2 DESK STUDY

Initially, the site was assessed from aerial photographs and 1:25,000 Ordnance Survey maps.

Following this, a data search was submitted to the Local Records Centre in August 2022, requesting data relating to protected or otherwise notable species and non-statutory sites for nature conservation within 2km of the survey area.

In addition, a search was made of the MAGIC website[2] for all statutorily protected sites for nature conservation within 2km of the survey area, as well as notable habitats or species records.

C.3 FIELD SURVEY

An ecological walkover survey of the site was completed, comprising a phase 1 habitat survey and a preliminary appraisal for protected and otherwise notable species.

C.3.1 PHASE 1 HABITAT SURVEY & PROTECTED SPECIES APPRAISAL

C.3.1.1 PHASE 1 HABITAT SURVEY METHODOLOGY

The field survey of the proposed site was conducted using the methodology of the Joint Nature Conservation Committee's Phase 1 Habitat Survey, as outlined in their habitat-mapping manual[3]. Each parcel of land was assessed by a trained surveyor and classified as one of ninety habitat types. These were then mapped and the habitat information supplemented by dominant and indicator species codes and target notes where appropriate. Where areas within the study area do not fall into the Phase 1 Habitat Survey classification, alternative methods of classification have been used.

C.3.1.2 PRELIMINARY PROTECTED/NOTABLE SPECIES APPRAISAL METHODOLOGY

A preliminary appraisal of the site was completed to search for field signs or evidence of protected or notable[4] species and to assess the suitability of habitats to support such species.

When conducting the survey, particular focus was concentrated on, but not restricted to, the following taxa:

Amphibians, including great crested newt (GCN)
Badger
Notable butterfly species
Non-native invasive species
Otter

[2] MAGIC Website: www.magic.gov.uk
[3] Handbook for Phase 1 habitat survey, A Technique For Environmental Audit, JNCC, 2010
[4] To include national priority species as listed in Section 41 of the NERC Act (2006) and local or regional priority species as listed within the relevant Biodiversity Action Plan

Bats	Red squirrel
Birds	Reptiles
Brown hare	Water vole
Fish	White-clawed crayfish
Hedgehog	

Assessment of habitat suitability to support such species was based on professional judgement and experience, species-specific habitat preferences, knowledge of local and broad geographical species distribution and connectivity to other areas of suitable habitat.

Where it is considered likely that there is a significant risk of protected or otherwise notable species being affected, or where habitats are of particularly high value, additional specialist survey work has been recommended. Further survey work may also be recommended where development proposals have the potential to affect statutorily designated sites in the vicinity.

BATS

The potential suitability of the habitats within the survey area and surrounding landscape in relation to commuting and foraging bats was classified as negligible, low, moderate or high, based on BCT guidelines and using the surveyor's professional judgement.

A daytime assessment was made of all structures affected by the proposed development, in order to evaluate their suitability to support bat roosts, and, where present, to record field signs of use by bats.

Buildings/structures were inspected both externally and internally where access was available. Binoculars and extendable ladders were used to assist with the inspection for potential roosting features and bat field signs, such as droppings, feeding remains, grease/urine staining, corpses/skeletons or bats themselves.

Where possible, species identification was either confirmed visually, through DNA analysis of droppings or acoustically through further survey work at dusk or dawn. If endoscope use or handling of bats were required to identify particularly cryptic species or to assess roost type, this was completed by appropriately licensed individuals and minimised where possible to reduce disturbance.

Structures were categorised as having negligible, low, moderate or high suitability to be used by roosting bats, based on guidelines provided by the Bat Conservation Trust[5] and detailed within the table below.

TABLE 2: ASSESSMENT OF BAT ROOSTING SUITABILITY OF BUILDINGS/STRUCTURES & TREES
(TO BE APPLIED USING PROFESSIONAL JUDGEMENT, TAKEN FROM TABLE 4.1 OF BCT'S BAT SURVEY GUIDELINES)

Suitability	Roosting Habitats
Negligible	Negligible habitat features on site likely to be used by roosting 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 by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.

[5] Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

Moderate	A building/structure or 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 – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A building/structure or 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.

Note that any comments within this report on the state or condition of buildings/structures relate solely to their potential use by bats and must not be taken as a professional assessment of the structural integrity or safety of the structures.

GREAT CRESTED NEWTS

With specific reference to great crested newts, where ponds are present on or within 500m of the site and were accessible at the time of survey, the breeding suitability was appraised using the Habitat Suitability Index[6] (HSI). This method provides a numerical index of between 0 and 1 to aid in assessing habitat suitability in an objective manner, 0 indicating unsuitable habitat and 1 representing optimal habitat. The HSI for the great crested newt incorporates ten factors which are considered to have a significant effect on habitat suitability:

Geographic location
Pond area
Pond permanence
Water quality
Pond shading
Presence of waterfowl
Presence of fish
Pond density in local area
Terrestrial habitat suitability
Pond macrophyte cover

Once field data is collected, the values recorded for each factor are converted to a value between 0 and 1, and the following calculation provides the overall score.

$$HSI = (SI_1 * SI_2 * SI_3 * SI_4 * SI_5 * SI_6 * SI_7 * SI_8 * SI_9 * SI_{10})^{1/10}$$

The score is then classified into one of five suitability categories from “poor” to “excellent”.

C.3.1.3 SURVEY EQUIPMENT

High-powered torch
Binoculars
Camera
Extendable ladders

C.3.1.4 SURVEY DATES & ENVIRONMENTAL CONDITIONS

The table below details the environmental conditions during the survey.

TABLE 3: SURVEY CONDITIONS

Date	Temperature (^{0}C)	Cloud Cover (%)	Precipitation	Wind Conditions (Beaufort scale)
12.4.22	9	100	Dry	Still
8.9.22	15	100	Dry then heavy rain	Still

[6] Oldham *et al*, 2000.

C.3.2 BAT PRESENCE/ABSENCE SURVEY

C.3.2.1 SURVEY EFFORT

The level of survey effort employed has taken account of the guidance provided by the Bat Conservation Trust (BCT)[7] including updated 2022 guidance, and summarised within the table below.

TABLE 4: RECOMMENDED NUMBER AND TIMING OF PRESENCE/ABSENCE SURVEY VISITS REQUIRED TO PROVIDE CONFIDENCE IN NEGATIVE PRELIMINARY ROOST ASSESSMENT RESULTS (FROM TABLE 7.1 AND TABLE 7.3 BCT GUIDELINES)

	Low Roost Suitability*	Moderate Roost Suitability	High Roost Suitability
Recommended minimum number of survey visits for presence/absence survey to give confidence in a negative result	One survey visit. One dusk emergence or dawn re-entry survey (structures). For trees with low roost suitability, no further surveys required.	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey or two dusk surveys supported by thermal imagery.	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn.
Recommended timings for presence/absence surveys	May to August	May to September with at least one of the surveys between May and August	May to September with at least two of the surveys between May and August

***** *If a structure is classified as having low suitability for bats an ecologist should make a professional judgement on how to proceed based on all of the evidence available. If sufficient areas of a structure have been inspected and no evidence found (and is unlikely to have been removed by weather or cleaning or be hidden), then further surveys may not be appropriate.*

Note: Where a roost is confirmed as being present, further surveys may be required to fully characterise the roost

The recommendations provided above are guidelines and it is recognised by BCT that '*the number of visits could be adjusted (up or down) if necessary by the ecologist, bearing in mind the site-specific circumstances*'.

Details of dates, timings, weather, and surveyor numbers and names are provided in the results section.

C.3.2.2 SURVEY METHODS

Activity surveys were undertaken in suitably mild conditions when bats are active. Surveyors were positioned to ensure coverage of all high-risk areas of the site, including any potential flight-lines from structures within the site to adjacent cover such as woodland blocks. If bats were recorded within the site before bats were seen in the wider area, or seen flying into the site, it is assumed that roosts are present within the site.

All surveyors used both Batbox Duet bat detectors to listen for bats and Anabat Express detectors, at each surveyor location, to record and better identify bat species.

Timings for observations of key bat activity such as emergence, first records of each species and commuting routes were recorded. All data were recorded using the Anabat Express for future reference and to allow confirmation of species identification through call analysis (using

[7] Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

Analook software), and to capture brief echolocation calls that could not be reliably identified in the field[8]. Field survey recorded numbers of bats detected, feeding activity, flight paths, species (as far as is practicable), and social calls.

A total of 12 person-nights work was undertaken. In addition, surveyor coverage of the site was supplemented with the use of an infra-red / thermal camera to aid observation of bat activity in lower light levels, which is particularly useful for later emerging species. Figures provided within the results section of this report illustrate the approximate location of each surveyor, monitoring point and camera.

C.3.2.3 SURVEY EQUIPMENT

Duet bat detectors
Anabat Expresses
Light meter
Infra-red video camera
Infra-red torches and floodlights

C.3.3 DATA ANALYSIS

All bat calls were analysed using Analook with calls identified to species where possible, referencing call parameters as detailed within Russ (2012)[9] and Middleton et al (2014)[10].

If identification to species is not practicable, then where possible calls are identified to genus.

C.3.4 EDNA SURVEY

One pond was identified via Ordnance survey mapping lying within 250m, which was within the adjacent garden. This pond was surveyed.

The survey was conducted using the eDNA survey methodology as published by Biggs *et al.* (2014)[1] and following national guidelines including those issued by Natural England in their Great Crested Newt Mitigation Guidelines (English Nature, August 2001). All work was undertaken by surveyors with Natural England licences.

Environmental DNA (eDNA) is released from organisms into the environment and potential sources include faeces, mucus, shed skin and carcasses. In water, detectable eDNA persists for 7-21 days, with the time dependent on environmental conditions. Samples taken for analysis should therefore be collected within or shortly after the great crested newt breeding season (mid-April to June) to ensure that any eDNA released by the species whilst in the ponds is collected. After this period, any great crested newt eDNA present may deteriorate to the point where it is no longer detectable during analysis.

C.3.4.1 SURVEY EQUIPMENT

The following equipment is required for each pond surveyed:

Sterile 30ml ladle

[8] Reviewing data recorded by surveyors using Duet detectors and the Anabat data indicated that reliable *Myotis* records increased through Anabat use, particularly once conditions were too dark for visual cues to assist in identification, when there was a lot of bat activity, and with bats in clutter. It also reduces errors where pipistrelles in clutter can be mis-identified as *Myotis* bats.
[9] Russ, J. (2012) British Bat Calls: A Guide to Species Identification. Pelagic Publishing
[10] Middleton, N., Froud, A. and French, K. (2014) Social Calls of the Bats of Britain and Ireland. Pelagic Publishing

Sterile 1l plastic bag, ideally self supporting
Sterile 10ml pipette
Six sterile 50ml centrifuge tubes containing 35ml ethanol and markers
Sterile gloves

C.3.4.2 Survey Methodology

The method used for sample collection and analysis is that of Biggs *et al.* (2014)[11]. Samples were collected during a single visit, with no restrictions on time of day. Care was taken not to enter the water when sampling to present disturbance of the substrate and minimise the risk of cross contamination and sterile gloves were be worn throughout sample collection.

During the visit the weather, including air temperature, wind, precipitation and cloud cover, was recorded. Samples were not taken in heavy rain as this has the potential to increase cross contamination.

The following steps were taken during the sample collection:

20 sampling locations were identified around the pond. These were evenly spaced around the pond where possible and care was taken to ensure that areas where suitable egg-laying plants were present were sampled.
Prior to collecting samples, the water column was mixed with a ladle, with care taken not to disturb the sediment.
The ladle was used to collect 20 samples from the perimeter of the pond and pour them into a 1l plastic bag.
Once all 20 samples were added, the bag was sealed and shaken vigorously to mix them together.

A pipette was then used to transfer 15ml of the water sample into each of 6 centrifuge tubes, which already contain an ethanol solution, stirring the contents of the 1l bag each time as the eDNA can fall to the bottom.
Each tube was then shaken for 30 seconds to mix the water and the ethanol solution.
The samples were then stored at room temperature prior to being sent to the laboratory for analysis. Laboratory analysis uses qPCR techniques.

This survey protocol is detailed within the advice document by Biggs *et al.* (2014).

C.3.4.3 Survey Conditions

Table 5: eDNA Survey Conditions

Date	Temperature	Cloud Cover	Precipitation	Wind Conditions
26.6.22	15	50	Dry	F1

[11] Biggs *et al.* (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5: Technical advice note for field and laboratory sampling of great crested newt environmental DNA. Freshwater Habitats Trust, Oxford.

C.4 SURVEY CONSTRAINTS

Certain plant species may not be identifiable throughout the year. However, it is considered that sufficient botanical identification was possible to facilitate a robust assessment of habitats for the purposes of this report.

Trees were only assessed from ground level and from within the site. Furthermore, tree assessments may sometimes need to be undertaken in summer, while in full leaf, which may obscure potential roosting features during the assessment of bat roosting potential. However, the trees were assessed from various angles on site using good quality binoculars and professional judgement was used based on the tree characteristics to supplement the assessment. Where trees could not be confidently assessed, further survey has been recommended.

The bat survey completed at the site will provide reasonably typical data for the season in which it was undertaken, and internal field signs are likely to reflect activity over the preceding active season. Assessment of the bat use of the site at other times of year and the potential impacts of the proposed development is based on professional judgement. This is an approach supported by the Bat Conservation Trust Good Practice Guidelines[12].

C.5 ASSESSMENT METHODOLOGY

The relative value of the ecological receptors (habitats, species and designated sites) was assessed using a geographical frame of reference. For designated sites this is generally a straightforward process with the assigned designation generally being indicative of a particular value, e.g. Sites of Special Scientific Interest are designated under national legislation and are therefore generally considered to be receptors of national value. The assignment of value to non-designated receptors is less straightforward and as recognised by the Guidelines for Ecological Impact Assessment produced by CIEEM[13], is a complex and subjective process and requires the application of professional judgement.

When assessing the value of species and habitats, relevant documents and legislation are considered including the lists of species and habitats of principal importance annexed to the NERC Act (2006) and those provided within relevant local Biodiversity Action Plans. Data provided through consultation is also considered. These data sources can provide context at a local, regional and national scale.

The table below provides examples of receptors of value at different geographical scales.

TABLE 6: ECOLOGICAL RECEPTOR VALUATION

Level of Value	Examples
International	An internationally designated site or candidate site.
	A site meeting criteria for international designation.
	A substantial* area of a habitat listed on Annex I of the EC Habitats Directive or smaller areas of such habitat, which are considered likely to be essential to maintain the functionality of a larger whole.
	The site is of functional importance** to a species population with internationally important numbers (i.e. >1% of the biogeographic population)
National	A nationally designated site.

[12] Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

13 Chartered Institute for Ecology and Environmental Management (2019) Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal

TABLE 6: ECOLOGICAL RECEPTOR VALUATION	
Level of Value	**Examples**
	A substantial* area of a habitat listed as a Habitat of Principal Importance within Section 41 of the NERC Act (2006) or smaller areas of such habitat, which are considered likely to be essential to maintain the functionality of a larger whole.
	The site is of functional importance** to a species population with nationally important numbers (i.e. >1% of the national population)
Regional	An area of habitat that falls slightly below the criteria necessary for designation as a SSSI but is considered of greater than county value.
	The site is of functional importance** to a species population with regionally important numbers (i.e. >1% of the regional population)
County	A Local Wildlife Site (LWS) or equivalent, designated at a County level
	A substantial* area of a habitat listed within the relevant County Biodiversity Action plan or smaller areas of such habitat, which are considered likely to be essential to maintain the functionality of a larger whole.
	The site is of functional importance** to a species population of county value (i.e. >1% of the county population)
District	A Local Wildlife Site (LWS) or equivalent, designated at a District level
	A substantial* area of a habitat listed within the relevant District Biodiversity Action plan or smaller areas of such habitat, which are considered likely to be essential to maintain the functionality of a larger whole.
	The site is of functional importance** to a species population of district value (i.e. >1% of the district population)
Parish	Area of habitat or species population considered to appreciably enrich the habitat resource within the context of the parish.
	Local Nature Reserves
Local	Habitats and species that contribute to local biodiversity but are not exceptional in the context of the parish.
Low	Habitats that are unexceptional and common to the local area.
Substantial defined as 'of considerable size or value within that area based on professional judgement, rather than a small, inconsequential area'* * Functional importance defined as 'a feature which, based on professional judgement, is of importance to the day to day functioning of the population, the loss of which would have a detectable adverse effect on that population',*	

The site lies within Stocksfield Civil Parish which covers approximately 1748 ha and is mainly villages and agricultural land.

D. RESULTS

D.1 DESK STUDY

D.1.1 PRE-EXISTING INFORMATION

D.1.1.1 ORDNANCE SURVEY MAPPING AND AERIAL PHOTOGRAPHY

The figures in Section B show that the general land use in the surrounding area is residential housing with large mature gardens.

The most recent aerial photograph of the site (2021) indicates that habitats on site are dominated by the house and mature woodland gardens. Historic imagery suggests that the site has remained largely unchanged since at least 2002 although the garage was re-roofed sometime between 2011 and 2013. A new house was built to the south west around 2007.

D.1.1.2 MAGIC WEBSITE[14]

PROTECTED SITES

There are no statutorily designated sites within 2km of the site.

HABITATS

The woodland areas to the north and south west are listed as deciduous woodland priority habitat and these, as well as parts of the wooded garden, are listed on the national forestry inventory as broadleaf woodland.

SPECIES

No granted GCN European Protected Species (EPS) mitigation licences, GCN survey licence returns or eDNA survey records (2017-2019) are shown within 2km of the site.

There are three records of granted EPS mitigation licences for works affecting bats within 2km, the nearest located approximately 715m from the site. These are all for non-breeding common or soprano pipistrelle bats.

D.1.1.3 PREVIOUS SURVEY WORK BY E3

Survey of other properties in Stocksfield, including another property on Apperley Road, has identified day roosts used by both pipistrelle species and foraging *Myotis* and noctule bats.

D.1.1.4 LOCAL KNOWLEDGE

The son of the former owner, whose parents had lived at the property for many years, reported wood pigeon, pheasant, roe deer and grey squirrel using the site/adjacent woodland for many years. They had not seen red squirrel or badger and were not aware of any roosting bats in the house.

D.1.2 CONSULTATION

LOCAL RECORD CENTRE

The table below summarises the records provided by the local records centre. The full data search results can be provided on request.

[14] Multi Agency Geographic Information for the Countryside (MAGIC) www.magic.gov.uk

TABLE 7: CONSULTATION RECORDS			
Species	**No. of Records**	**Closest distance (m – if sufficient record resolution provided)**	**Most recent date**
Amphibian			
Common Frog	2		24/02/2012
Common Toad	2		2002
Great Crested Newt	1	905	1985
Palmate Newt	1		24/02/2012
Insect - butterfly			
Dark Green Fritillary	3		27/07/1976
Dingy Skipper	3		16/08/1976
Grizzled Skipper	1		01/05/2018
Small Heath	1		2002
Wall	3	635	22/08/2004
White-letter Hairstreak	14	1543	08/08/2009
Reptile			
Common Lizard	1	1058	1961
Grass Snake	2	1058	1961
Slow-worm	1	1058	1946
Terrestrial mammal			
Bats (unidentified)	12	206	04/07/2014
Brandt's Bat	1	706	26/04/2017
Brown Hare	5	1597	04/05/2018
Brown Long-eared Bat	18	288	13/08/2017
Common Pipistrelle	355	141	30/08/2017
Daubenton's Bat	1	1544	14/05/2010
Eastern Grey Squirrel	178	153	01/10/2018
Eurasian Badger	28	663	14/06/2018
Eurasian Otter	35	583	27/04/2019
Eurasian Red Squirrel	181	58	20/09/2012
European Water Vole	1	725	22/05/2020
Hazel Dormouse	1	1356	1975
Lesser Noctule	2	1838	13/08/2014
Myotis Bat species	18	260	10/07/2017
Natterer's Bat	16	715	26/07/2013
Noctule Bat	23	260	23/05/2017
Nyctalus Bat species	3	1024	18/07/2014
Pipistrelle Bat species	31	282	01/09/2019
Soprano Pipistrelle	161	250	15/07/2020
West European Hedgehog	16	328	20/04/2020
Whiskered Bat	1	871	09/05/2014
Whiskered/Brandt's Bat	3	769	25/08/2015

The records centre also provided over 1500 records of birds; the nearest record where distance was provided was swift, 275m away.

In addition, the records centre provided information relating to the non-statutory designated sites shown in the below figure, which lie within the search area:

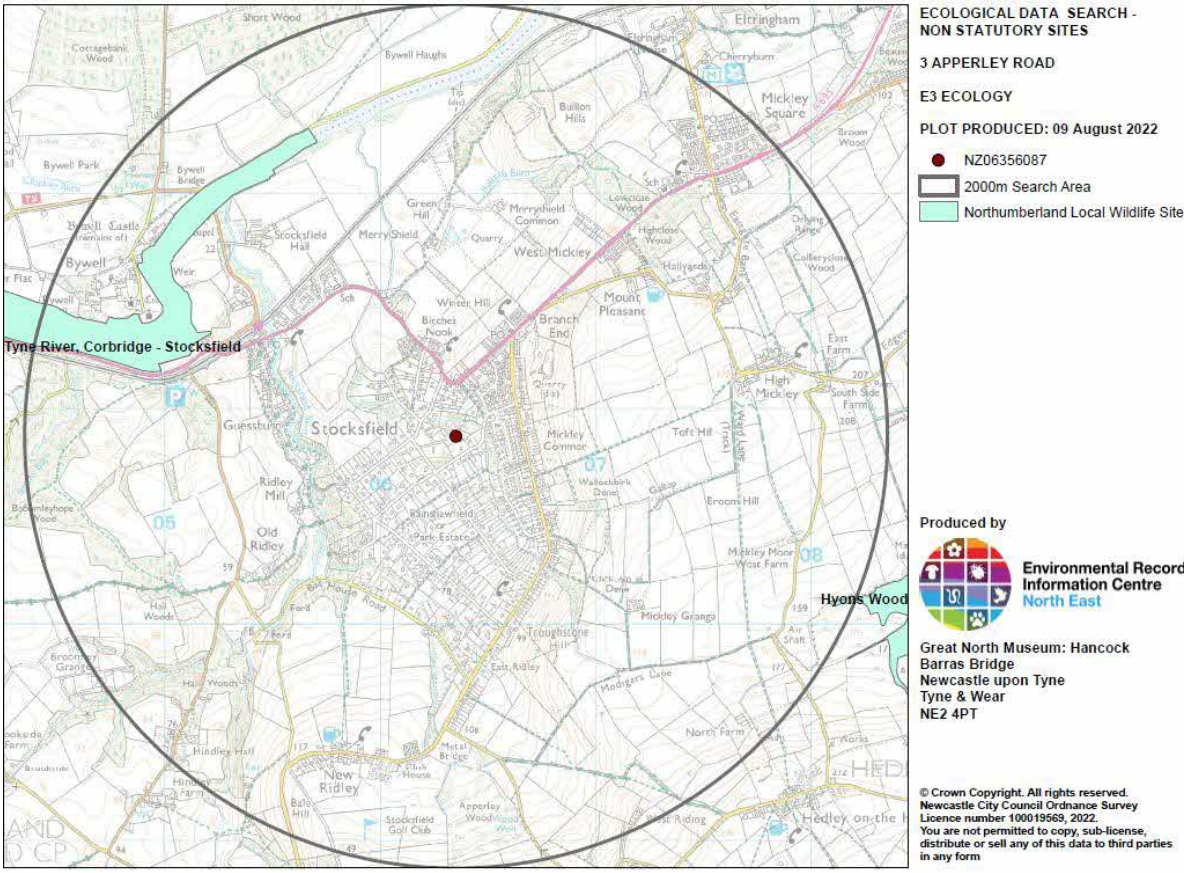


FIGURE 4: NON-STATUTORY DESIGNATED SITES WITHIN 2KM (ERIC NE)

D.2 FIELD SURVEY

D.2.1 HABITATS

The proposed development site covers approximately 0.77ha and is dominated by the house and garden. Within that, the proposed new build plot is approximately 0.13ha. The site comprises a large detached two storey house, garages/stores, hard tennis court, hard standing and mature woodland gardens. It lies within Stocksfield, with residential development of a similar nature, interspersed by woodland, on all sides.

D.2.1.1 PHASE 1 HABITAT MAP

The habitats present within the survey area are illustrated within the figure below and described in more detail below.

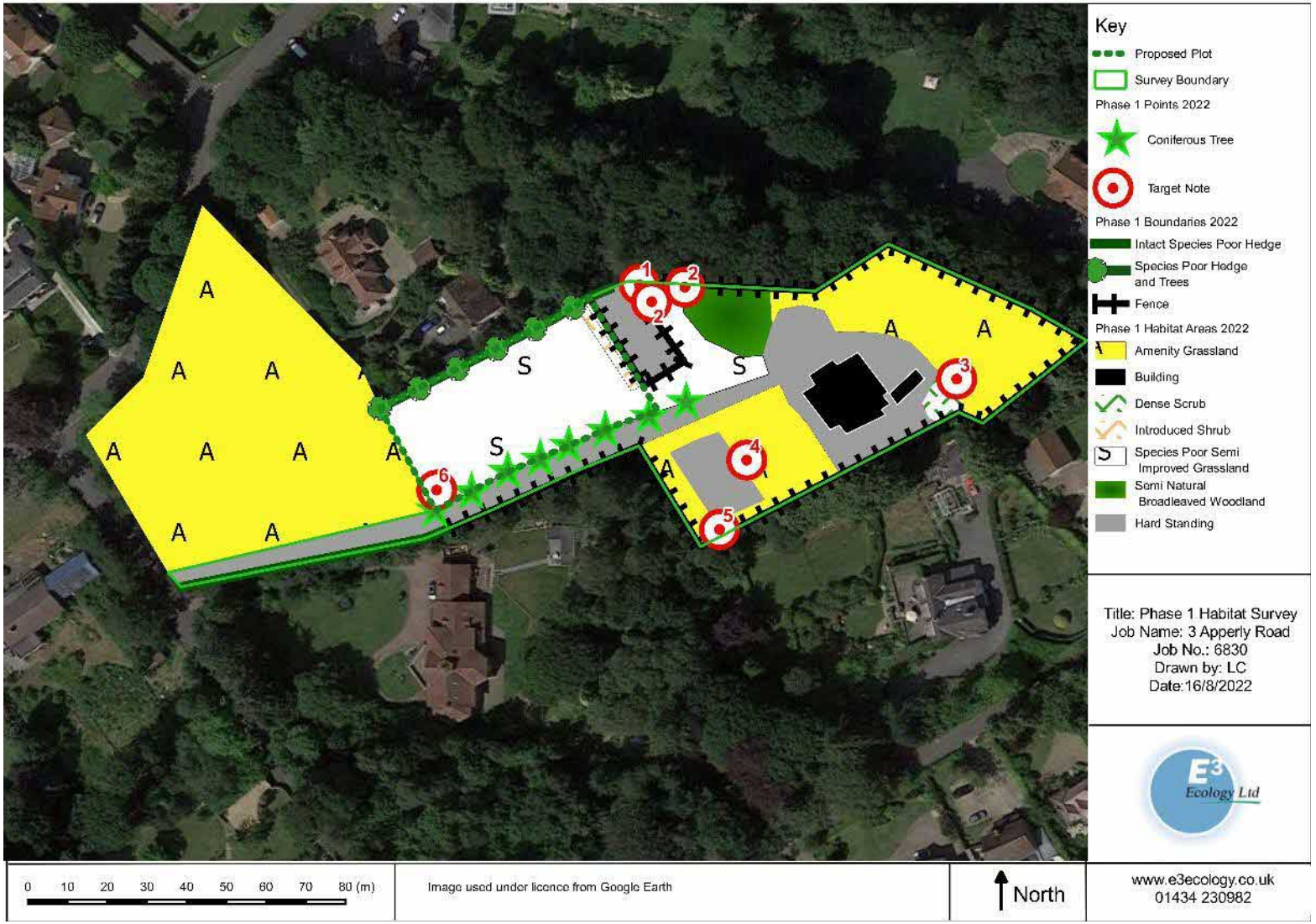


FIGURE 4: HABITAT MAP

D.2.1.2 TARGET NOTES

TARGET NOTE 1
Large beech tree heading to veteran status with tree house.

TARGET NOTE 2
Mammal tracks into the garden from the adjacent woodland. No definite evidence of badger seen; deer are known to be present.

TARGET NOTE 3
Derelict greenhouse

TARGET NOTE 4
Cotoneaster growing on wall in lower terraced garden.

TARGET NOTE 5
Well used deer trail from woodland into lower terrace, with deer prints recorded.

TARGET NOTE 6
Rhododendron is present along the edge of the drive/bottom of the garden area.

D.2.1.3 HABITAT DESCRIPTIONS

WOODLAND GARDEN

There are mature woodland gardens around the house and tennis court, with a terraced garden to the front, the upper part of which is laid to grass and the lower terraces now a mix of hard standing and gravel with some shrubs. Cotoneaster and rhododendron, both listed as invasive species, were recorded within the garden. The trees range from young to mature, with oak *Quercus robur*, yew *Taxus baccata*, holly *Ilex sp*, beech *Fagus sylvatica*, Scots pine *Pinus sylvestris*, silver birch *Betula pendula*, juniper *Juniperus* sp, various cypress *Cupressus sp.* and a range of ornamental species present. Amenity grassland areas are around 80/20 grass to forb ratio, mown to around 2-3cm and with less than 6 species/m^2. Species recorded were primarily perennial rye grass *Lolium perenne*, fescue *Festuca sp*, Yorkshire fog *Holcus lanatus*, daisy *Bellis perennis*, dandelion *Taraxacum officinale* and creeping buttercup *Ranunculus repens*. A small former vegetable garden lies to the rear of the garage, with a small area of bramble *Rubus fruticosus* scrub.

To the north west of the house is a hard tennis court, also surrounded by the wooded garden. The grass area immediately to the east of the tennis court, which was around 2-3cm at the time of survey, has a greater species diversity (6-8 species/m^2) than the more formal amenity areas to the front and rear of the house but still more reflective of amenity/poor semi-improved grassland. Grass to forb ratio is approximately 50/50 but also with a reasonable covering of moss. Species recorded here include fescues, meadow grass *Poa sp*, broadleaf plantain *Plantago major*, daisy, daffodils *Narcissi sp.*, ribwort plantain *Plantago lanceolata*, chickweed *Stellaria media,* common mouse ear *Cerastium fontanum* and ground ivy *Glechoma hederacea*. On the bank adjacent to the woodland, wood anemone *Anemonoides nemorosa*, wood rush *Luzula sylvatica*, daffodils and numerous holly saplings were present. A mature beech, heading to veteran status, is present on the northern edge of this grassland, with a tree house. This had a number of upward facing knot holes, therefore at risk of weather ingress, however these could potentially lead to cavities suitable for roosting bats and breeding birds. A former kitchen garden lies to the south of the garage block.






PLOT

The proposed building plot is also part of the garden, lying to the north of the drive and north west of the house. It is poor semi-improved sloping grassland, likely to have been formerly more managed as amenity grassland when the house was occupied. The grassland was around 5-8cm high at the time of survey, with around 50/50 grass to forb ratio, though this varies across the site (average 6-8 species/m^2) and forbs are common garden species. Species included fescues, meadow grass, broadleaf plantain, daisy, ribwort plantain, chickweed, common mouse ear with creeping buttercup, Yorkshire Fog and patches of field wood rush *Luzula campestris*. To the west the area becomes more rank, with creeping buttercup, broadleaf dock *Rumex obtusifolius*, nettle *Urtica dioica* and ground elder *Aegopodium podagraria* more dominant. An ornamental border runs along the eastern end, with young to mature trees bordering the site including Scots pine along the driveway, horse chestnut *Aesculus hippocastanum*, sycamore

Acer pseudoplatanus, holly, cypress, oak, elder *Sambucus nigra*, rhododendron, laurel *Laurus nobilis* and a weeping silver birch *Betula pendula 'Youngii'* interspersed with some bramble.

HEDGE

A managed beech hedge runs along the south western edge of the drive. To the north of the proposed plot an ornamental hedge with trees forms the boundary.

BUILDINGS & HARDSTANDING

The house and garage lie to the eastern end of the plot and these are bordered by hard standing parking and terraced/courtyard areas. A long drive leads into the site from the west. A hard tennis court lies to the north east of the site and lower terraced gardens are now mainly gravel/hard core.




FENCES
Boundaries are a mix of post and wire fencing in poor condition and close boarded fencing adjacent to houses.

SURROUNDING HABITATS
The site lies within Stocksfield, with residential development of a similar nature, interspersed by woodland, on all sides.

D.2.1.4 HABITAT ASSESSMENT

The site is considered to be of up to local value for the habitats it supports.

D.2.2 SPECIES

BATS
See following section of report.

GREAT CRESTED NEWT
A pond is shown on OS mapping within the adjacent garden to the south. This is approximately 65m from the proposed new build and around 4.5m x 3.5m. The owners of the pond said that this had formerly been infilled and had been re-instated during 2020/21. Only a small area was rain filled, with a gravel base and low concrete/brick walls.

A further small former pond, approximately 3m x 2m, within the woodland edge was found to be filled with leaf litter and therefore not suitable for further survey.

TABLE 8 - HABITAT SUITABILITY INDEX (HSI) SCORES

	SI Scores	
Suitability Index (SI)	**Pond 1**	**Pond 2**
Location	1	1
Area	0.05	0.05
Permanence	0.1	0.1
Water Quality	0.67	0.67
Shade	1	0.2
Water Fowl	1	1
Fish	1	1
Pond Density	0.45	0.45
Terrestrial Habitat	0.67	0.67
Macrophytes	0.3	0.3
HSI Score	**0.445**	**0.379**
Suitability Rating	Poor	Poor

The habitats present on the proposed development site are broadly suitable for use by GCN in their terrestrial phase, offering sheltered foraging opportunities in the grassland, shrubs and woodland. Intervening terrestrial habitats between the identified waterbodies and the site are also broadly suitable.

eDNA survey undertaken of pond 1 found no evidence of great crested newts.

RESULTS

Date sample received at Laboratory: 07/07/2022
Date Reported: 20/07/2022
Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
0715	3 Apperley Road, Pond 1	NZ06277 60786	Pass	Pass	Pass	Negative	0

GCN is considered likely to be absent from the site however common amphibians, including common toad, may be present on occasion. If present, the site is likely to be of up to local value to these common amphibian species.

BIRDS

The mature trees and shrubs will provide nesting habitat for a range of woodland and urban species, with regular wood pigeon activity recorded. No evidence of nesting birds was recorded within the garage block or externally around the house. A barn owl and swallows were seen foraging over the site during a dusk survey and tawny owl were thought to be nesting within the woodland. The former owner also reported regularly seeing pheasants using the garden.

Overall, the site is considered to be of local value to birds.

BADGER

No evidence of badger was recorded on site or on woodland edges where accessible, but the surrounding wooded areas provide potentially suitable sett creation habitat if sufficiently undisturbed, and if present they may forage across the site at times.

The site is therefore considered to be of local value to badger.

REPTILES

Overall, the site is considered to lack the typical mosaic of habitat types and vegetation structures used by reptiles. Furthermore, there are no recent records of reptiles within 2km of site and no reptiles or field signs were seen during the survey. They are therefore considered likely to be absent from the site.

RED SQUIRREL

The wooded garden and surrounding woodland provide suitable habitat for the species although grey squirrel are known to be present and were seen on the outskirts of the village on the day of the survey. Most red squirrel records pre-date 2006, with a single 2012 record and none more recent. Red squirrel are most likely to be absent.

INVERTEBRATES

The site generally lacks significant amounts of key larval food-plants for priority butterfly species and also lacks typically favoured habitat mosaics. Notable populations of priority butterfly species are considered likely to be absent.

OTTER, WATER VOLE & WHITE-CLAWED CRAYFISH

There are no aquatic habitats on site. A small water course lies approximately 30m to the north, although this appears to be culverted to the west and potentially again to the east. If the watercourse is suitable for otter, they may occasionally forage across the site; the other species are likely to be absent.

OTHER NATIONAL PRIORITY AND LOCAL BAP SPECIES

The site contains some suitable habitat for hedgehog and common toad and is considered to be of local value for these species.

D.2.3 BAT PRELIMINARY ROOST ASSESSMENT

D.2.3.1 HABITATS

FORAGING HABITATS & COMMUTING ROUTES

Mature gardens and woodland provide good quality foraging habitat and the site is well linked to the woodland.

SHELTERED FLIGHT AREAS

There are no built sheltered flight areas for foul weather foraging or light sampling on site although the trees will provide shelter from winds.

ALTERNATIVE ROOST LOCATIONS

There are numerous alternative roosting opportunities in the nearby residential dwellings within the village.

D.2.3.2 BUILDINGS/STRUCTURES

Descriptions of the buildings are detailed below.

Where recorded, field signs that confirm bat use are in bold.

BUILDING 1: HOUSE

Two storey, painted pebble dash, with various single and two storey extensions, all well sealed

Tiled roof, generally in good condition with occasional slipped or raised tiles

PVC cladding to single storey extensions is broken in places providing potential gaps and there are also potential gaps between the cladding and wall particularly on the rear extension.

Timber windows, some rotted but appearing tightly sealed to walls

Timber fasciae to gables with potential gaps between these and tiles

Overhanging roof area has some missing timbers beneath

Front dormer clad with timber shingles, a small number of which are lifted or warped.

No external field signs

There are 6 small loft voids in the property, shown in figure below:

Loft 1 runs along the rear eaves of the property. This is mono-pitched with a maximum height of around 0.75m and is around 3m wide, is lined with traditional felt and is very cluttered. The majority has a high level of insulation which, with the narrow space, makes inspection of the northern end difficult.

Loft 2 interlinks with loft 1 and is a smaller space but similar description; again it had a high level of insulation

Loft 3 runs along part of the front of the house, is around 0.5m high at its peak and around 1m wide. Roof is again lined with traditional sarking.

Loft 4 was only visible through holes knocked into the wall during the asbestos survey therefore could not be fully inspected. It had no insulation and is L-shaped, with the western section being around 2.5-3m high. The remaining area is as per loft 3. The

brick gable appeared well sealed. Old wasp's nest and small pile of sticks indicate potential gaps around this area.

Loft 5 and 6 connect either side of a partially dismantled brick chimney breast and run along the ridge of the property. They are around 1.2m high, lined with traditional sarking and with no insulation. Gable walls were in good condition. Old mortar torching present on floor. No visible sign of potential access routes into lofts.

No internal or external field signs

Overall the building is considered to be of moderate suitability for roosting bats






BUILDING 2 - GARAGE

Single storey; ground rises to rear leading to parts of this elevation being roughly half the height of the front.

Rendered brick, in good condition externally but occasional bricks missing internally

Concrete pantile roof, generally in good condition but some missing mortar between tiles and walls, and under ridge tiles

Internally divided into a double garage, 5 stores and a W.C. The majority are open to the ridge, with a small void over the W.C.. and one store.

- Roof lined with timber/plywood
- No internal or external field signs

Overall building considered to be of moderate suitability for roosting bats






A small number of ancillary buildings including a derelict green house, former barbeque area and gazebo are present around the house. All are of negligible suitability for bats.

D.2.3.3 TREES

Trees within the garden generally are of low to negligible suitability, with a mature beech to the north west potentially of moderate suitability should the upward facing knotholes lead to any deeper less exposed crevices.

D.2.3.4 OVERVIEW OF BAT SUITABILITY

TABLE 9: OVERVIEW OF HABITATS AND SETTING[15]

	NEGLIGIBLE	LOW	MODERATE	HIGH
HABITATS AND COVER WITHIN 200M	City Centre	Open, exposed arable or pasture with no hedges, amenity grassland, or relatively built up	Hedges and trees linking site to wider countryside, mature linked gardens	Excellent cover with mature trees/ woodland and/or good hedges
HABITATS WITHIN 1KM	City Centre	Little tree cover, few hedges, arable dominated, scattered green spaces	Semi-natural habitats e.g. trees, hedgerows	Good network of woods, wetland and hedges
ALTERNATIVE ROOSTS WITHIN 1KM	City centre	Numerous alternative roosting opportunities of a similar nature	A number of similar buildings in the local area	Few alternative buildings and site of good quality for roosts
SETTING	Inner city	Urban with little green space	Built development with green-space, wetland, trees	Rural Lowland with woodland and trees.
DISTANCE TO WATER/ MARSH	>1km	500m-1000m	200m-500m	<200m
DISTANCE TO WOODLAND/ SCRUB	>1km	500m-1000m	200m-500m	<200m
COMMUTING ROUTES	Isolated by development, major roads, large scale agriculture	No direct potential flyways linking site to wider countryside	Some potential commuting routes to and from site	Site is well connected to surrounding area with multiple flyways

[15] Building and habitat risk assessment technique audited in a research project with York University which compared the risk assessment scoring with the results of detailed field assessment for over 100 sites. Statistically significant associations were found between habitat setting and building features and the presence of absence of different bat species. For example habitat connections and nearby woodland were significant for brown long-eared bats and the presence of species-rich grassland is important for many species.

TABLE 10: OVERVIEW OF BUILDING/STRUCTURES[2]				
	NEGLIGIBLE	LOW	MODERATE	HIGH
AGE (APPROX.)	Modern	Post 1940's	1900-1940	Pre 20th C
BUILDING/ COMPLEX TYPE	Industrial complex of modern design	Single, small building	Several smaller buildings, larger single structures	Traditional farm buildings, large country house, large hospital/school
BUILDING - STOREYS	N/A	Single storey	Multiple storeys	Multiple storeys with large roof voids
STONE/BRICK WORK	No detectable crevices	Well pointed, limited or superficial gaps	Some cracks and crevices	Poor condition, many deep crevices, thick walls
ROOF COVERING	Modern sheet materials, tightly sealed, very well sealed roof tiles	Good condition or very open, not weatherproof, modern sheet materials, generally well sealed roof tiles	Some potential access routes e.g. raised, slipped or missing slates or tiles, low number of gaps in bedding/end mortar	Numerous gaps, not too open, e.g. uneven stone slates, many gaps in mortar
ADDITIONAL FEATURES	None	Very limited features with potential access	Some features with low number of potential access points	Numerous or good quality gaps in features such as hanging tiles, cladding, barge boards, soffits
EXTERNAL LIGHTING	Extensive security lights covering much of the site	Widespread areas above 2 lux at night	Intermittent lights of low intensity	Minimal
BUILDING USE	Very noisy, dusty	Regular use	Intermittent use	Disused

Overall, the site is situated in an area of high suitability for bats.

Based on the assessment table, the buildings are considered of low to moderate suitability for roosting bats, but assessed as moderate taking into account the setting.

D.2.4 BAT PRESENCE/ABSENCE SURVEY

D.2.4.1 DUSK SURVEY SURVEYORS, TIMINGS & CONDITIONS

Date	Start	End	Sunset	Sunset Temp (°C)	End Temp (°C)	Cloud %	Precipitation	Wind (Force)
06/07/2022	21:30	23:15	21:45	16	13	80	Dry	1
28/07/2022	21.00	22.45	21.16	20	15	80	Dry	0

Date	Lead Surveyor	Assistant surveyors
06/07/2022	L Collins	J Birtwistle, J Longbone, A Gamble, K Moore, G Armstrong
28/07/2022	J Appleby	G Iacob, S Velazquez, M Guraliuc, K Moore, C Bron

D.2.4.2 6 JULY 2022 DUSK SURVEY RESULTS

The survey was undertaken in warm (16°C), dry weather.

A common pipistrelle day roost was identified in the house with one bat emerging at 22.17 (~3 lux, 32 minutes after sunset). Roost location was on the south side of the dormer roof on the western elevation, from underneath the roof overhang as shown in picture below figure. No bats were observed emerging from the garage.

There was regular bat activity throughout the survey with the first bat observed being a soprano pipistrelle at 21:51, 6 minutes after sunset at around 21lux, entering the site from the north. Common pipistrelles, soprano pipistrelles and noctules were observed foraging in the trees to the north of the house and in the gardens to the west and grassland to the south. No more than 3 bats were seen at any one time although more may have been present within the woodland.

A tawny owl was recorded foraging in the garden to the west and 2 tawny owl chicks were observed calling from the trees in the south of the site, with 1 chick observed perching on a branch in this area.

The figure below provides a summary of the results of dusk emergence survey. More detailed data is available on request.

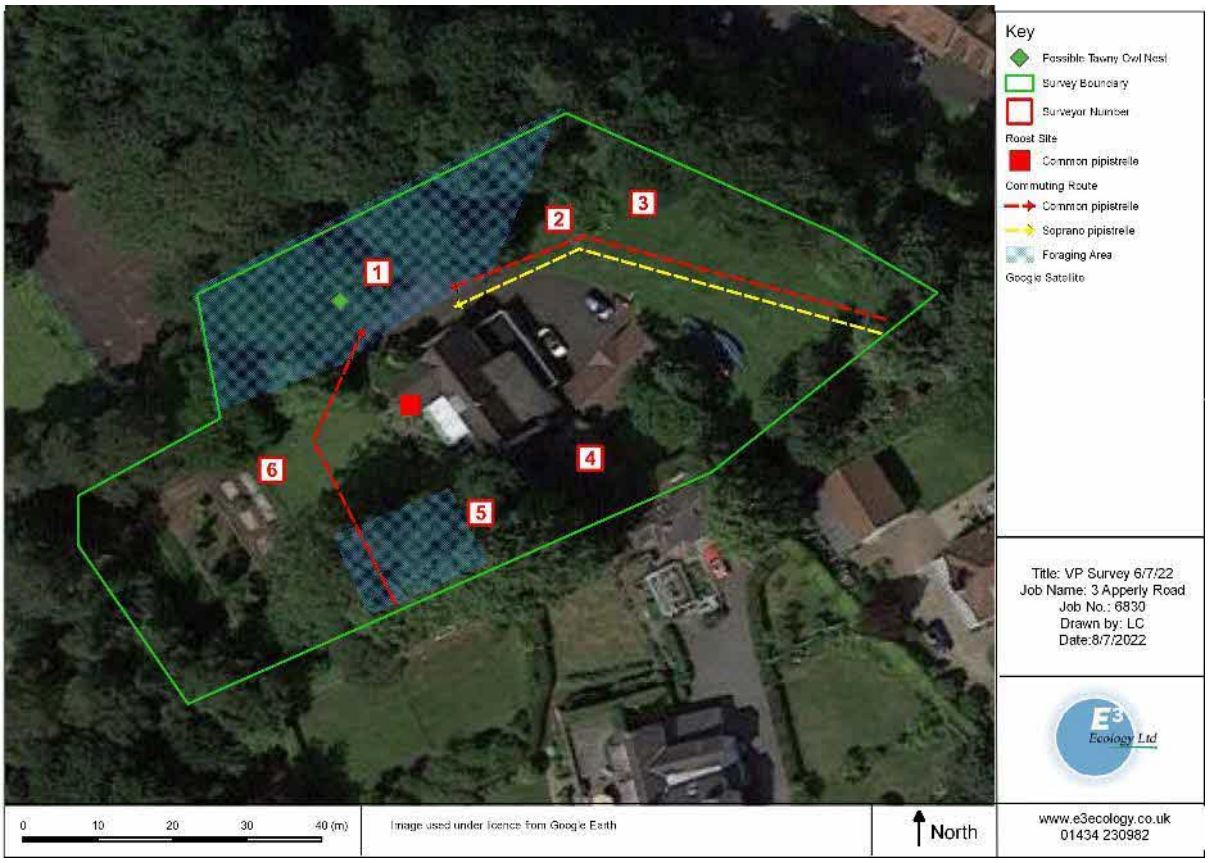


FIGURE 5: SUMMARY OF DUSK SURVEY RESULTS
(Reproduced under licence from Google Earth Pro.)

D.2.4.3 28TH JULY 2022 DUSK SURVEY RESULTS

Survey was undertaken in ideal conditions for bat activity. The first bat activity was recorded at 21.08, 8 minutes prior to sunset within the woodland to the north, with a single common pipistrelle bat pass, with activity generally starting around 21.25 (lux ~13), again focussed mainly around the woodland. Common and soprano pipistrelle and occasional noctule were recorded, with a single Myotis bat later on in the survey.

A single roost was identified within the house, with two soprano pipistrelle emerging from a similar location to the common pipistrelle roost identified earlier in the month (21.43, ~2.6 lux).

The figure below provides a summary of the results of survey. More detailed data is available on request.

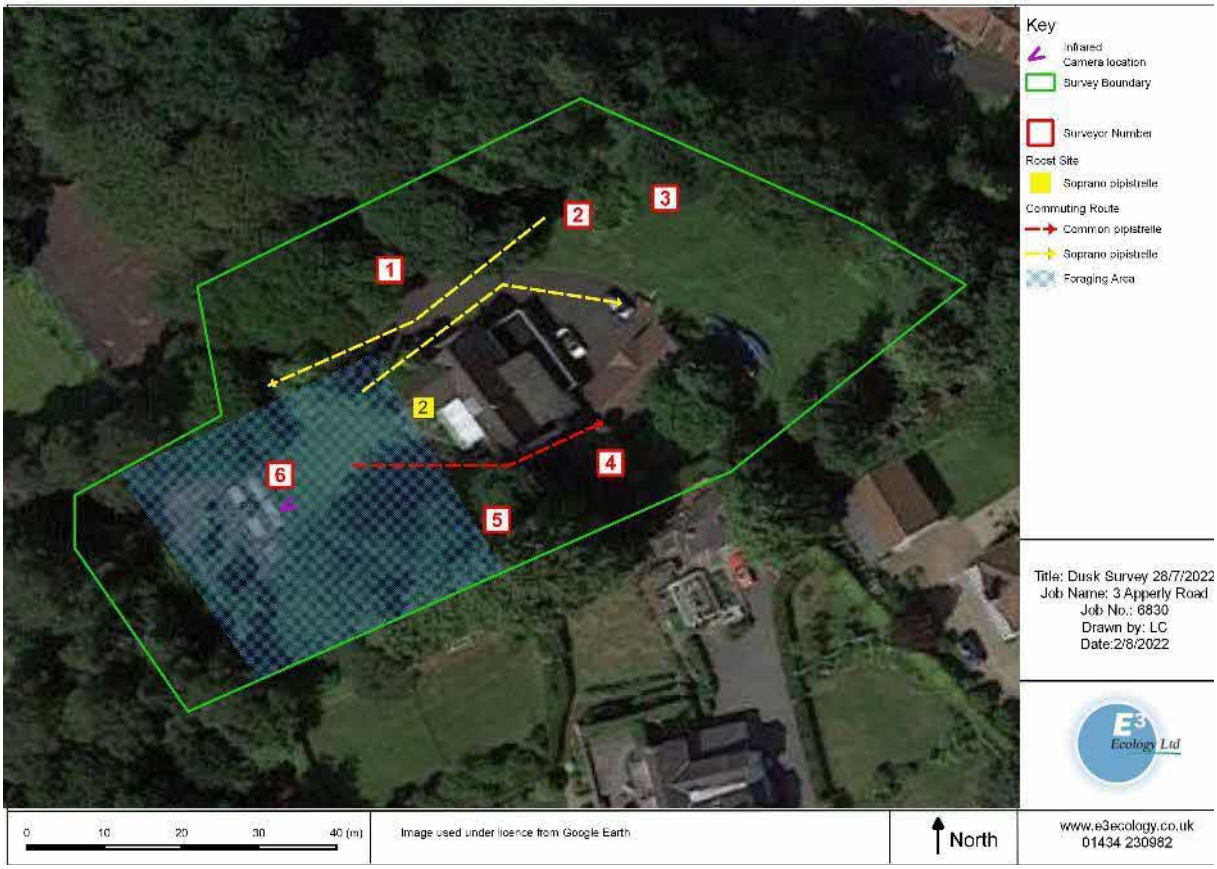


FIGURE 6: SUMMARY OF DUSK SURVEY RESULTS
(Reproduced under licence from Google Earth Pro.)

D.2.5 BAT SURVEY ASSESSMENT

The habitats on site are considered to be of local value to foraging and commuting bats.

Day roosts used by one common pipistrelle and two soprano pipistrelle bats have been recorded in the house. No evidence of a maternity roost was recorded in the peak survey period. There is residual low risk of use of the building by low numbers of pipistrelle bats over winter.

E. IMPACT ASSESSMENT & RECOMMENDATIONS

E.1 POTENTIAL IMPACTS, MITIGATION, COMPENSATION & FURTHER SURVEY

The likely impacts of the proposed development, without appropriate targeted mitigation and/or compensation, are detailed in the table below.

It should be noted that if development does not happen within 12 months of the last survey, an updating survey will be required, ideally to be undertaken between May and August. Works to the house will require a Natural England licence and this will require a site visit within the 3 months prior to the application submission. If this is after April 2023, this will be in the form of a dusk survey.

Ecological Receptor	Impact	Mitigation
Habitats		
Woodland & Trees	Loss and damage/disturbance.	Woodland areas will be retained within the development proposals. Four small trees and a small tree group are identified as being lost for the new build. All other semi-mature to mature garden trees will be retained. Trees should be replaced on a 2:1 basis. Retained woodland and trees, in particular the mature beech to the north of the new build, will be protected from disturbance during construction by heras fencing erected prior to works commencing. All works will follow BS5837-2012 good practice guidelines and in accordance with the Arboricultural Impact Assessment.
Grassland	Loss and degradation during construction and operational phase although grassland loss will be minimal as the new build house will be on the existing tennis court.	Wildflower bulb planting and additional hedgerow/shrub mosaics will be incorporated into the landscape proposals.
Invasive species	Spread of rhododendron and cotoneaster on and off site.	Works will be undertaken to a precautionary invasive species method statement.
Biodiversity (general)	Loss of biodiversity as a result of development of the site.	Retention of as much higher value habitat as possible. Habitat losses are to be balanced on site through habitat enhancement and creation so that the development provides a net gain in biodiversity.
Species		
Bats	Timing of works impacting on bats during particularly sensitive periods.	As good working practice, the following key elements of work to the house and garage will not be completed during the bat hibernation period (November to end of February inclusive): Demolition of stone/brickwork

		Re-structuring/re-pointing of existing stone/brickwork Keying in of new build sections to existing stone/brickwork Removal of roof covering
	Harm/disturbance to bats	**A Natural England development licence will be required prior to works commencing on the house which may impact on bat roosts.** All works will follow the approved Natural England method statement, which will include: Pre-commencement site induction for key contractors on site carrying out work which may affect bats A concrete-type bat box will be erected on a suitably mature tree, in an undisturbed section of the site prior to the commencement of works, to act as interim roosting habitat during construction and will be retained in situ following completion of the development. The box will be used as a receptor for translocated bats (see below). Pre-commencement inspection of confirmed and potential roosting areas by the ecologist. Sensitive dismantling of the roosting areas under ecological supervision, taking care not to harm bats in the process. If bats are found, the ecologist will capture the bat(s) by hand, check the health of the bat and transport it to the aforementioned bat box. If bats cannot be safely captured, they will be excluded from the roost using standard exclusion devices. These will be fitted by, or under supervision of, the ecologist and will remain in place for a minimum of five consecutive nights of suitable weather, in accordance with the most up to date edition of the Bat Workers Manual[16]. No exclusion will take place during the hibernation period (November to end Feb inclusive). In the event that bats are found during works when the project ecologist is not on site, works will stop in that area and the ecological consultant will be contacted immediately. If it is necessary to move the bats for their safety, this will be undertaken by a licensed bat handler. Timber treatments that are toxic to mammals will be avoided. If required, timber treatment will be carried out in the spring or autumn. Both pre-treated timbers and timber treatments will use chemicals

[16] At the time of issue of this report, the latest version is: Mitchell-Jones, A.J. & McLeish, A.P. (2012) The Bat Workers' Manual (3rd Edition). Pelagic Publishing, Exeter.

		classed as safe for use where bats may be present (see https://data.jncc.gov.uk/data/e5888ae1-3306-4f17-9441-51a5f4dc416a/Batwork-manual-3rd-edn.pdf - Chapter 10).
	Loss of soprano and common pipistrelle day roosts and other potential roosting features, including some which could be used during winter for hibernation.	Roosting opportunities will be provided in the new structure. These will be built-in to the structure in the form of: 4 built in bat boxes
	Loss of potential moderate suitability tree	The mature beech tree to the north of the site near the tennis court will be retained, with no lighting installed in this area.
	Increased lighting affecting foraging/commuting areas potentially used by bats (and other nocturnal wildlife).	Light levels around modified/newly installed roost locations and foraging/commuting areas will be low level, below 2m in height, and low lux (below 1 lux 5m from the light source). Light spillage to areas used by foraging or commuting bats, e.g. the surrounding woodland, must be less than 2 lux. Warm-light LEDs with very low UV will be used, with cowls designed to accurately target which areas are lit. Where security lights are required, these will be of minimum practicable brightness, be set on a short timer and will be motion sensitive only to larger objects.
	Small loss of bat foraging/commuting habitat.	Landscape planting to include native plants bearing flowers, nectar and fruits which are attractive to invertebrates, thereby helping to maintain the food resource for bats and wildlife generally.
Amphibians	Harm/disturbance to common amphibians, including common toad	Works will be undertaken to a precautionary amphibian method statement.
Birds	Harm/disturbance to nesting birds if vegetation clearance is carried out during the bird breeding season	A pre-commencement check for nesting birds will be undertaken by a suitably experienced ornithologist if vegetation clearance/building demolition is undertaken between March and August inclusive.
	Loss of bird foraging opportunities of up to local value	Landscape planting to include plants bearing flowers, nectar and fruits which are attractive to invertebrates, thereby helping to maintain the food resource for birds and wildlife generally

	Loss of bird nesting opportunities of up to local value	Installation of six bird nest boxes – two each of hole, open fronted and sparrow terrace box types. Boxes should be min 2m high and ideally north to east facing, near foraging habitat and with direct flight access.
Badger	Potential for badger setts to be created within 30m of working area and harm/disturbance to badger	A checking survey will be undertaken within 3 months prior to works commencing to confirm badger setts remain absent.
Hedgehog	Harm/disturbance to hedgehog	Works will be undertaken to a precautionary hedgehog method statement including a hand search of suitable refugia prior to removal.
	Loss of hedgehog foraging habitat of local value	Landscape planting will include areas of dense shrubs to provide cover for hedgehogs and berry bearing species to provide a foraging resource.
	Creation of barriers to hedgehog movement	Close boarded fences will be avoided, or gaps 13cm x 13cm will be provided in fences between gardens and landscaped areas to allow hedgehogs to forage and commute across the site.
Wildlife (general)	Entrapment of wildlife during construction if trenches are left open overnight	Any excavations left open overnight will have a means of escape for wildlife that may become trapped in the form of a ramp at least 300mm in width and angled no greater than 45°.

E.2 RESIDUAL & CUMULATIVE IMPACTS

Provided that the measures detailed in the above table are implemented, no significant residual adverse impacts are envisaged.

No cumulative impacts have been identified during the impact assessment.

E.3 MONITORING

Given the nature of the proposed mitigation and compensation strategy, no monitoring is proposed.

E.4 ADDITIONAL ENHANCEMENT RECOMMENDATIONS

The development presents an opportunity to ecologically enhance the site and it is a planning requirement to provide a net gain in biodiversity as part of the development. The following enhancements are recommended:

Landscape planting is to be designed to enhance structural diversity and will include plants bearing flowers, nectar and fruits which are attractive to invertebrates, thereby helping to maintain food resources for wildlife in general.

Woodland edge wildflower grassland to be incorporated into the landscaping proposals.

Creation of hedgehog/amphibian hibernacula or habitat piles within the more densely vegetated areas of garden.

Provision of at least one integrated bird nesting opportunity suitable for species such as swift, house sparrow, starling, house martin and/or swallow, one bat roosting feature in the new building on site and one integrated/wall mounted bat and bird feature within the

refurbished house. Bird nesting opportunities should ideally be north to east facing and a minimum of 2m high (swift 4m+). Bat roosting features should be a minimum of 3-4m high, on gable ends or at eaves height. Both should be near suitable foraging habitat and away from windows.

Installation of 5 additional bird nest boxes (in addition to 6 detailed above) and 5 bat boxes in the trees on site.

Management/control of invasive species where not removed by development.

Good working practice

Timber treatments that are toxic to mammals will be avoided. If required, timber treatment will be carried out in the spring or autumn. Both pre-treated timbers and timber treatments will use chemicals classed as safe for use where bats may be present (see https://data.jncc.gov.uk/data/e5888ae1-3306-4f17-9441-51a5f4dc416a/Batwork-manual-3rd-edn.pdf - Chapter 10).

The local planning authority is likely to require the means of delivery of the mitigation to be identified. It is recommended that mitigation, compensation and enhancement proposals are incorporated into the planning documents.

F. CONCLUSIONS

Provided that the recommendations in this report are implemented, it is anticipated that proposals may proceed with no significant adverse effect on notable species and/or habitats. Ecological enhancement opportunities include landscaping focused on biodiversity, control of non-native invasive species and bat and bird nest box provision, contributing to local and national conservation targets

APPENDICES

APPENDIX 1 – COPYRIGHT, CONFIDENTIALITY & LIABILITY

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APPENDIX 2 - PLANNING POLICY AND LEGISLATIVE CONTEXT

NATIONAL PLANNING POLICY

The table below details the key paragraphs from the National Planning Policy Framework (NPPF)[17] relating to the natural environment:

TABLE 11: NATIONAL PLANNING POLICY FRAMEWORK: CONSERVING AND ENHANCING THE NATURAL ENVIRONMENT	
Statement	**Paragraph**
Planning policies and decisions should contribute to and enhance the natural and local environment by: a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate; d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate	*174*
Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework[18]; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.	*175*
Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads[19]. The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.	*176*
When considering applications for development within National Parks, the Broads and Areas of Outstanding Natural Beauty, permission should be refused for major development[20] other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of: a) the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy; b) the cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and c) any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated	*177*
Within areas defined as Heritage Coast (and that do not already fall within one of the designated areas mentioned in paragraph 176), planning policies and decisions should be consistent with the	*178*

[17] National Planning Policy Framework (July 2021), Department for Communities and Local Government,
[18] Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality.
[19] English National Parks and the Broads: UK Government Vision and Circular 2010 provides further guidance and information about their statutory purposes, management and other matters.
[20] For the purposes of paragraphs 177 and 178, whether a proposal is 'major development' is a matter for the decision maker, taking into account its nature, scale and setting, and whether it could have a significant adverse impact on the purposes for which the area has been designated or defined.

TABLE 11: NATIONAL PLANNING POLICY FRAMEWORK: CONSERVING AND ENHANCING THE NATURAL ENVIRONMENT	
Statement	**Paragraph**
special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate, unless it is compatible with its special character.	
To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity[21]; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation[22]; and b) 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.	*179*
When determining planning applications, local planning authorities should apply the following principles: a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest; c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons63 and a suitable compensation strategy exists; and d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.	*180*
The following should be given the same protection as habitats sites: a) potential Special Protection Areas and possible Special Areas of Conservation; b) listed or proposed Ramsar sites[23]; and c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.	*181*
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.	*182*

Section 40 of the Natural Environment and Rural Communities Act 2006, places a duty on all public authorities in England and Wales to have regard, in the exercise of their functions, to the purpose of conserving biodiversity.

Planning Practice Guidance[24] states:

[21] Circular 06/2005 provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.
[22] Where areas that are part of the Nature Recovery Network are identified in plans, it may be appropriate to specify the types of development that may be suitable within them.
[23] Potential Special Protection Areas, possible Special Areas of Conservation and proposed Ramsar sites are sites on which Government has initiated public consultation on the scientific case for designation as a Special Protection Area, candidate Special Area of Conservation or Ramsar site.
[24] Planning Practice Guidance: Natural Environment (www.planningguidance.communities.gov) Updated July 2019

Planning authorities need to consider the potential impacts of development on protected and priority species, and the scope to avoid or mitigate any impacts when considering site allocations or planning applications. (para. 016)

Information on biodiversity and geodiversity impacts and opportunities needs to inform all stages of development (including site selection and design, pre-application consultation and the application itself). An ecological survey will be necessary in advance of a planning application if the type and location of development could have a significant impact on biodiversity and existing information is lacking or inadequate. (para. 018)

Even where an Environmental Impact Assessment is not needed, it might still be appropriate to undertake an ecological survey, for example, where protected species may be present or where biodiverse habitats may be lost. (para. 018)

As with other supporting information, local planning authorities should require ecological surveys only where clearly justified. Assessments should be proportionate to the nature and scale of development proposed and the likely impact on biodiversity. (para. 018)

The National Planning Policy Framework encourages net gains for biodiversity to be sought through planning policies and decisions. Biodiversity net gain delivers measurable improvements for biodiversity by creating or enhancing habitats in association with development. Biodiversity net gain can be achieved on-site, off-site or through a combination of on-site and off-site measures. (para. 022)

PROTECTED SPECIES LEGISLATION

The table below details the relevant legislation for the protected species covered within the scope of the survey.

TABLE 12: SUMMARISED SPECIES LEGISLATION

Species	Relevant Legislation	Level of Protection
Bats (All species)	Protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended Classified as protected species under The Conservation of Habitats and Species Regulations 2017 (as amended) Bats are also protected by the Wild Mammals (Protection) Act 1996	The WCA (1981) and The Conservation of Habitats and Species Regulations 2017 (as amended) make it an offence to: Intentionally kill, injure, or take any species of bat Intentionally or recklessly disturb bats Intentionally or recklessly damage destroy or obstruct access to bat roosts
Otter	Protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended Classified as protected species under The Conservation of Habitats and Species Regulations 2017 (as amended) Otters are also protected by the Wild Mammals (Protection) Act 1996	The WCA (1981) and The Conservation of Habitats and Species Regulations 2017 (as amended) make it an offence to: intentionally kill, injure, or take otters intentionally or recklessly disturb otters intentionally or recklessly amage destroy or obstruct access to otter holts or any place used by the animal for shelter or protection
Great Crested Newt	Protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended Classified as protected species under The Conservation of Habitats and Species Regulations 2017 (as amended)	The WCA (1981) and The Conservation of Habitats and Species Regulations 2017 (as amended) make it an offence to: intentionally kill, injure, or take great crested newts intentionally or recklessly disturb great crested newts intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection

TABLE 12: SUMMARISED SPECIES LEGISLATION		
Species	**Relevant Legislation**	**Level of Protection**
Red Squirrel	Full protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended Red squirrels are also protected by the Wild Mammals (Protection) Act 1996	The WCA (1981) makes it an offence to: intentionally kill, injure, or take red squirrels intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection or disturb red squirrels whilst they are using such a place.
Birds	Protection under the Wildlife and Countryside Act (1981) as amended with the exception of some species listed in Schedule 2 of the Act	The WCA (1981) makes it an offence to (with exceptions for certain species): Intentionally kill, injure or take any wild bird Intentionally take, damage or destroy nests in use or being built (including ground nesting birds) Intentionally take, damage or destroy eggs Species listed on Schedule 1 of the WCA or their dependant young are afforded additional protection from disturbance whilst they are at their nests
White-clawed Crayfish	Partially protected by the Wildlife and Countryside Act (1981)	The WCA (1981) makes it an offence to: Take a white-clawed crayfish from its habitat Sell, offer for sale, advertise for sale, possess or transport for the purposes of selling any live or dead white clawed crayfish
Badger	Protection of Badgers Act 1992 Badgers are also protected by the Wild Mammals (Protection) Act 1996	The Protection of Badgers Act (1992) makes it an offence to intentionally or recklessly: Damage a badger sett or any part of it Destroy a badger sett Obstruct access to, or any entrance of a badger sett Disturb a badger whilst it is occupying a badger sett
Water Vole	Full protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended Water voles are also protected by the Wild Mammals (Protection) Act 1996	The WCA (1981) makes it an offence to: intentionally kill, injure, or take water voles intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection or disturb water voles whilst they are using such a place
Common reptiles (Slow-worm, Adder, Grass Snake, Common Lizard)	Partially protected by the Wildlife and Countryside Act	The WCA (1981) makes it an offence to: intentionally kill or injure these animals sell, offer for sale, advertise for sale, possess or transport for the purposes of selling any live or dead animals or part of these animals
Under the Countryside and Rights of Way Act 2000 (CROW Act) the offence in section 9(4) of the Wildlife and Countryside Act 1981 of damaging a place of shelter or disturbing those species given full protection under the act is extended to cover reckless damage or disturbance.		

INVASIVE SPECIES LEGISLATION

The table below details the legislation in relation to invasive species and lists those invasive species most likely to be found in this region.

TABLE 13: SUMMARISED INVASIVE SPECIES LEGISLATION		
Relevant Legislation	**Description of Offence**	**Species** *(Covered by the Legislation and most likely to be found in this Region)*
Listed on Part II of Schedule 9 of the Wildlife and Countryside Act (1981 as amended)	Section 14 of the WCA (1981) states: if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence.	Himalayan balsam Cotoneaster Montbretia Japanese knotweed Giant hogweed Rhododendron Pirri-pirri bur New Zealand pygmyweed Giant rhubarb Japanese rose

PROTECTED SITE LEGISLATION

CONTEXT IN REGARD TO THE UK'S EXIT FROM THE EUROPEAN UNION

As of 1st January 2021, the UK is no longer bound by the Birds Directive and Habitats Directive. However, the Conservation of Habitats and Species Regulations still applies, which formerly acted to transpose the Birds Directive and the Habitats Directive into English and Welsh law. These are still referred to below for contextual purposes, as designated site citations and conservation objectives may not have been updated following the changes to applicable legislation and may still refer to the Directives.

STATUTORILY DESIGNATED SITES

Ramsar Site

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention recognises wetlands as important ecosystems and includes a range of wetland types from marsh to both fresh and salt water habitats. The wetlands can also include additional areas adjacent to the main water-bodies such as river banks or coastal areas where appropriate.

Special Protection Area (SPA)

SPAs are classified by the UK Government under the EC Birds Directive and comprise areas which are important for both rare and migratory birds.

Special Areas of Conservation (SAC)

SACs are designated under the EC Habitats Directive and are areas which have been identified as best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 unless they are offshore.

Sites of Special Scientific Interest (SSSI)

SSSIs are designated as sites which are examples of important flora, fauna, or geological or physiographical features. They are notified under the Wildlife and Countryside Act 1981 with improved provisions introduced by the Countryside and Rights of Way Act 2000.

National Nature Reserve (NNR)

NNRs are designated by Natural England under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981 and support important ecosystems which are managed for conservation. They may also provide important opportunities for recreation and scientific study.

Country Parks

Country Parks are statutorily designated and managed by local authorities in England and Wales under the Countryside Act 1968. They do not necessarily have any nature conservation importance, but provide opportunities for recreation and leisure near urban areas.

Local Nature Reserves (LNR)

LNRs are designated under the National Parks and Access to the Countryside Act 1949 by local authorities in consultation with Natural England. They are managed for nature conservation and used as a recreational and educational resource.

NON-STATUTORILY DESIGNATED SITES

Non-Governmental Organisation Property

These are sites of biodiversity importance which are managed as reserves by a range of NGOs. Examples include sites owned by the RSPB, the Woodland Trust and the Wildlife Trusts.

Local Wildlife Site (LWS)

These are sites defined within the local plans under the Town and Country Planning system and are material considerations of any planning application determination. They are designated by the local authority although criteria for designation can vary between authorities.

PRIORITY SPECIES

Although not afforded any legal protection, national priority species (species of principal importance, as listed in Section 41 of the NERC Act (2006)), and local and regional priority species, as detailed within the relevant biodiversity action plans, are material considerations in the planning process and as such have been assessed accordingly within this report.

The tables below detail the species/species groups and habitats listed as priorities within the biodiversity action plans of the main Local Planning Authorities' within the north-east of England.

TABLE 14: BIODIVERSITY ACTION PLANS

Northumberland Biodiversity Action Plan					
Species			**Habitats**		
Barn Owl	Bats	Black Grouse	Blanket Bog	Built Environment	Brownfield Land
Coastal Birds	Common Seal	Dingy Skipper	Calaminarian Grassland	Coastal heathland	Fen, Marsh & Swamp
Dormouse	Farmland Birds	Freshwater Fish	Gardens & Allotments	Heather Moorland	Lowland Heathland
Freshwater Pearl Mussel	Garden Birds	Great Crested Newt	Lowland Meadows & Pastures	Maritime Cliffs & Slopes	Native Woodland
Grey Seal	Hedgehog	Otter	Ponds, Lakes & Reservoirs	Recreational & Amenity Space	Reedbed
Red Squirrel	River Jelly Lichen	Upland Waders	Rivers & Streams	Rocky Shore, Reefs & Islands	Saline Lagoons
Violet Crystalwort	Water Rock-bristle	Water Vole	Saltmarsh & Mudflat	Sand Dunes	Transport Corridors
White-Clawed Crayfish			Trees & Hedgerows	Upland Hay Meadows	Whin Grassland
Durham Biodiversity Action Plan					
Species			**Habitats**		
Barn Owl	Coastal Birds	Farmland Birds	Native Hedgerows	Veteran Trees, Parkland and Wood Pasture	Woodland and Scrub
Nightjar	Spotted Flycatcher	Upland Birds	Ponds, Lakes & Reservoirs	Lowland Fen	Rivers & Streams
Urban and Garden Wildlife	Freshwater Fish	Grass Snake	Blanket Bog and Upland Wet Heath	Calaminarian Grassland	Upland Calcareous Grassland

TABLE 14: BIODIVERSITY ACTION PLANS					
Great Crested Newt	Reptiles	Chalk Carpet Moth	Upland Dry heath and Acid Grassland	Upland Haymeadows	Upland Screes and Rock Habitats
Cistus Forrester	Dark Green Fritillary	Dingy Skipper	Brownfield Sites	Built Structures	Coastal Habitats
Glow Worm	Grayling	Green Hairstreak	Lowland Heath	Lowland Meadows & Pasture	Magnesian Limestone Grassland
Least Minor Moth	Mud Snail	Northern Brown Argus	Transport Corridors	Waxcap Grassland	
Northern Dart	Round Mouthed Whorl Snail	Small Pearl-bordered Fritillary			
White Clawed Crayfish	White-letter Hairstreak	Badger			
Bats	Brown Hare	Dormouse			
Harvest Mouse	Hedgehog	Otter			
Pine Marten	Polecat	Red Squirrel			
Water Vole	Water Shrew	Black Poplar			
Juniper	Pale Bristle-Moss	Yellow Marsh Saxifrage			
Newcastle and North Tyneside Biodiversity Action Plan					
Habitats			**Species**		
Brownfield Land	Transport Corridors	Open Water & Wetland	Amphibians	Dingy Skipper	Otter
Rivers and Watercourses	Managed Urban Greenspace	Native Woodland	Urban Birds	Water Vole	Red Squirrel
Lowland Grassland	Scrub, Shrub & Hedgerow	Buildings and Structures	Hedgehog	Slow Worm	Bumblebee
Estuary & Coastal			Brown hare	Farmland Birds	Bats
Tees Valley Biodiversity Action Plan					
Species				**Habitats**	
Barn Owl	Ringed Plover	Grey Partridge	Tree Sparrow	Traditional Orchards	Semi-natural Broadleaved Lowland Woodland
Little Tern	Corn Bunting	Shelduck	Wagtail Yellow	Reedbeds	Rivers & Streams
Bittern	Swift	Purple Milk-vetch	Water Violet	Arable field Margins	Roadside Verges
Globeflower	Pepper saxifrage	Tufted Sedge	Knotted hedge-parsley	Lowland Meadows	Sand Dunes
Yellow Star of Bethlehem	Burnt Orchid	Green Winged Orchid	Strawberry Clover	School Grounds	Maritime Cliffs and Slopes
Flat Sedge	Small Leaved Lime	Black Poplar	Lyme Grass	Grazing Marsh	Hedgerows
Scarlet Wax Cap	White-letter Hairstreak	Grayling	Dingy Skipper	Gardens and Allotments	Saline Lagoons
Blomer's Rivulet	Crescent Striped	Forester	Large Red-Belted Clearwing	Marsh and Saltmarsh	Ponds, Lakes & Reservoirs
Fen Wainscot	Shore Wainscot	Eccentric Grass Snail	Moss Chrysalis Snail	Parks and Recreation Grounds	Lowland Heath
Moss Chrysalis Snail	Bats (except common pipistrelle)	Brown Hare	Harvest Mouse	Brownfields	Churchyards and Cemeteries
Harbour Seal	Water Vole	Common Lizard	Slow Worm		
Great Crested Newt	Bullhead	Salmon	Brown Trout		
European Eel	Brook Lamprey	Sea Lamprey	River Lamprey		
Cumbria Biodiversity Action Plan					
Species			**Habitats**		

TABLE 14: BIODIVERSITY ACTION PLANS					
Red Wood Ant	Wall Mason Bee	a ground beetle *Dyschirius angustatus*	Rivers	Lakes, Ponds and Tarns	Hedgerows
a ground beetle *Bembidion testaceum*	Oxbow Diving Beetle	Barn Owl	Traditional Orchards	Wood-Pasture & Parkland	Semi-natural Woodland
Song Thrush	Pearl Bordered Fritillary	High Brown Fritillary	Lowland Dry Acid Grassland	Calcareous Grassland	Hay Meadows and Pastures
Marsh Fritillary	Netted Carpet	Least Minor	Coastal and Floodplain Grazing Marsh	Heathland	Fen, Marsh and Swamp
a caddisfly *Glossosoma intermedium*	Freshwater Crayfish	Variable Damselfly	Bogs	Montane Habitats	Rock habitats
White-faced Dragonfly	Atlantic Salmon	Schelly	Calaminarian Grasslands	Previously developed land	Coastal Habitats above High Water
Vendace	Southern silver Stiletto-fly	Northern Silver Stiletto-fly	Coastal Intertidal Habitats	Coastal Saline lagoons	Coastal Subtidal Habitats
River Jelly Lichen	a lichen *Lobaria amplissima*	Pink Waxcap			
Medicinal Leech	Whiskered Bat	Brandt's Bat			
Natterer's Bat	Daubenton's Bat	Noctule			
Common Pipistrelle	Soprano Pipistrelle	Brown Long-eared Bat			
Red Squirrel	Water Vole	Hazel Dormouse			
Sandbowl Snail	a whorl snail *Vertigo geyeri*	Slender Green Feather-moss			
Great Crested Newt	Natterjack Toad	Pillwort			
Juniper	Northern Hawksbeard	Small White Orchid			