Ecological Appraisal,

Bat Roost Assessment & Phase 2

Report

The Beaters Room, Conholt Park

Andover

Hampshire

SP11 9HA

July 2023

Wild Earth Ecology

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Project Details

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Quality Control

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1	Complete	04/07/2023	Laura Kahane		Ceridwyn Adkins	*C.Adkins*
This report remains valid for 12 months from date of issue. Survey data are valid for 12-24 months from the date the survey was undertaken.						

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It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to works.

[1] CIEEM (2017) *Guidelines on Ecological Report Writing*. Chartered Institute of Ecology and Environmental Management, Winchester.

Executive Summary

Purpose	• Ecologist Laura Kahane (a licenced bat Ecologist) was appointed by Conholt Nominees Ltd to undertake a Bat Roost Assessment and Ecological Appraisal for buildings at Conholt Park, Andover, Hampshire, SP11 9HA. • One emergence / re-entry survey was recommended to be undertaken to assess presence/absence and give confidence in likely absence within a structure in line with the Bat Conservation Trust best practice survey guidelines (Collins, 2016), during the bat activity season from May to August (inclusive) during fair weather conditions and utilising a minimum of four surveyors, or night vision aids (NVA's)/Infrared cameras to observe the identified features. This survey is required to support the planning application for the extension of an agricultural building. • The desk study has revealed that the site is located within an Impact Risk Zone (IRZ) with respect to Rushmore & Conholt Downs (SSSI) which states that Natural England should be contacted for certain development types. Given the scale and nature of the proposal, it does not fall into any of these categories, and it therefore considered that no further consideration is required with respect to this designation.
Methodologies	• A field survey, in the form of an extended Phase 1 Habitat Survey was undertaken. Habitats within the site were identified and mapped in compliance with the 'Handbook for Phase 1 habitat survey: a technique for environmental audit' (Joint Nature Conservation Committee, 2010). • During the survey work a PRA was undertaken, consisting of a desk study and field survey (internal and external assessment of all buildings), following best practice in line with the Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edn (Collins 2016). • An assessment was also undertaken of the likely presence or absence of protected and notable animal species within the zone of influence of the proposed development. • During the survey work undertaken, areas of species-poor improved grassland, scattered scrub, and buildings were identified within the site. A number of these habitats were recorded to be of suitability to support a range of protected species including bats and birds. • A web-based desk study was undertaken for designated sites and protected species and habitat records within 2 km of the site. • Data searches were requested from the Hampshire Bat Group (HBG) and Wiltshire & Swindon Biodiversity Records Centre (WSBRC) for all bat species records within 2 km of the site. • One phase 2 dusk emergence survey was carried out on June 29th 2023 under suitable weather conditions using two surveyors and three NVA's.

Key Issues	• Under the current development proposals, the works will affect areas of species-poor improved grassland, scattered scrub and buildings (B1) within the site boundary. Of the buildings, works are due to impact the northern aspect of B1 only. • The habitats to be affected by the proposed development are considered low botanical value. • Historic evidence of a nesting Barn swallow was also present in B2. • During the phase 2 dusk emergence survey, no roosting bats were seen throughout the survey effort. Moderate levels of common pipistrelle *Pipistrellus pipistrellus* (commuting and foraging), serotine *Eptesicus serotinus* (commuting only) and *Myotis* species (commuting only) activity was recorded around the building and predominantly within the gardens and mature treeline to the north-west and adjacent to the site. Recommendations Bats - As bats cannot be entirely ruled out, a precautionary method of work for contractors (applicable to the construction phase) and specifications for any new external lighting have been detailed in section 4.0 of this report. Nesting birds - All works should be undertaken outside of the nesting bird season (March to September inclusive for most species in the UK). If this is not possible, a nesting bird check will need to be carried out immediately prior to the start of work. If any active nests are present, work must be delayed until the young have fledged. Ecological Enhancement - Enhancements will be easy to integrate into the design of the development and suitable recommendations include native planting, bat and bird nesting boxes and hibernacula.

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1.0 Introduction & Background

Overview & Proposed Development

1.1 Wild Earth Ecology was commissioned by CF Craven (hereafter referred to as the 'client') to undertake a Ecological Appraisal (PEA & PRA) and Phase 2 Bat Survey of Conholt Park, Andover, SP11 9HD centred at grid reference SU 32832 55275 (hereafter referred to as the 'site'). The survey is required to support a planning application for the extension of an existing agricultural building.

Site Description

1.2. The survey and report undertaken followed the Bat Conservation Trust (2016) guidelines and the standard JNCC Phase 1 Survey Methodology, extended to assess the potential for the site to support protected species. The proposed development site is located in the village on Conholt within the parish of Chute, approximately 8.7km north-west of Andover, Hampshire. Parts of the wider Conholt Park estate falls within south Wiltshire and the eastern areas fall within the North Hampshire. The proposed site is located within the vice county of Wiltshire. Immediately surrounding the proposed development site are areas of agricultural land, residential dwellings and woodland (Map 1).



Map 1. Approximate boundary of the proposed development site (Copyright Google Maps, 2023).



Map 2. The proposed development site in the context of the wider landscape (Copyright Google Maps, 2023).

The wider landscape comprises areas of further agricultural, residential and wood pasture and parkland with some large areas of woodland to the north-east and south (Map 2). The surrounding habitats, particularly the agricultural land and woodland, are considered to provide suitable foraging and commuting opportunities for a number of bat species.

2.0. Methodology

Desk Study

2.1. Table 1 – Sources of biodiversity and ecological records

Source	*Information (search buffer 2 km from site centre/boundary)*
Hampshire Bat Group (HBG) Wiltshire Bat Group (WBG)	Key information regarding the confirmed presence and habitat of all bat species within a 2km radius of the site boundary, or up to the HBG/WBG records boundary. Provided via Wiltshire & Swindon Biodiversity Records Centre (WSBRC)
National Biodiversity Atlas (NBN)	Including a search radius of 2km from the site boundary.
Multi-Agency Geographic Information for the Countryside (MAGIC) and Joint Nature Conservation Committee (JNCC)	To obtain information on any designated sites of nature conservation interest within 2 km of the site and details of any European Protected Species licences issued within 2 km (http://www.magic.gov.uk/MagicMap.aspx).
Google Maps	To view aerial photographs, maps and mapnik data, to assess the ecological context of the site (http://acme.com/planimeter/).

Field Survey

2.2. Ecologist Laura Kahane AMRSB MRes BSc (Hons) undertook a Bat Roost Assessment and Ecological Appraisal (PEA) on 18th April 2023, when the weather was dry and bright.

2.3. The survey and report undertaken followed the Bat Conservation Trust (2016) good practice guidelines and are in accordance with our industry standards as set out by the Chartered Institute of Ecology and Environmental Management (CIEEM). The PEA follows the standard JNCC Phase 1 Survey Methodology, extended to assess the potential for the site to support protected species. This consisted of a walkover assessment of the site within the red line boundary provided, using a phase 1 habitat survey methodology (JNCC, 2010, as amended by the Institute of chartered Environmental assessment (IEA, 1995)). This is a standard technique for classifying and mapping British habitats. All areas within the site were successfully surveyed, with main plant species recorded and habitat types mapped. Indications of ecological value were recorded which included any presence or signs of any legally protected or rare species.

2.4. The surveyed also included a search to identify the presence of any invasive, non-native plant species (particularly those listed on schedule 9 of the Wildlife & Countryside Act 1981 (as amended) which include Japanese Knotweed *(Reynoutria japonica)* and Himalayan Balsam *(Impatiens glandulifera)*. Any existing trees on site were assessed for their potential to support roosting bats and birds.

Ecological Appraisal

2.5. The PEA survey identified the habitats present and their potential for protected species, particularly bats, birds, hedgehogs (*Erinaceus europaeus*), badgers (*Meles meles*), hazel dormouse (*Muscardinus avellanarius*), amphibians, reptiles and invertebrates following the standard guidelines set out by the Chartered Institute of Ecology and Environmental Management (CIEEM).

2.6. The survey focused upon the land within the red line boundary of the planning application.

2.7. The trees and other habitats to be affected within the site were assessed for their potential to support roosting and foraging bats, birds and other protected species.

Bats

2.8. Any trees to be affected by the proposed works were assessed visually for evidence of bats and assessed for features which increase the likelihood of bats roosting, such as storm damage, rot holes, ivy cover, flaying bark and splits in the trunk. Linear habitat features, both within and connecting to the site were visually assessed for their likely use as foraging and commuting corridors.

2.9. Other habitats on site were visually assessed for their likely use as foraging sites.

Amphibians

2.10. Any waterbodies within the site were assessed for their potential for use by amphibians and for features which increase likelihood of use as breeding sites for great crested newts (*Triturus cristatus*), such as suitable submergent vegetation, low water turbidity, absence of fish and low levels of use by waterfowl.

2.11. Other habitats on site were assessed for their likely use outside of the breeding season for both foraging and shelter purposes.

Reptiles

2.12. Open areas of habitat were visually assessed for suitability for reptiles and features which increase likelihood of use by reptiles, including the presence of tussocky vegetation, log and rock piles, basking spots and compost heaps.

Other Mammals

2.13. Areas of dense vegetated cover on site and adjacent to the site were assessed for their likely use by badgers, and attention was paid to the presence of any signs of current or historic badger activity such as setts and latrines.

2.14. Open areas of habitat were visually assessed for signs of mammal tracks, push throughs and latrines.

2.15. Areas of woodland, copse, tree lines, hedgerows and other boundary vegetation were assessed for their likely use by hazel dormice, or increased likelihood of use due to presence of hazel and other suitable food species.

Bat Roost Assessment

2.16. A bat building inspection of the buildings due to be impacted was undertaken in accordance with the following methodology.

Internal Inspection

2.17. All roof and wall features were investigated for signs of bats roosting and the access potential of the roof for bats. The surveyor searched for bats, bat droppings, likely access points, signs of feeding, dead bats, scratch marks and staining. A suitability assessment of the structure of the roof is made.

2.18. An investigation was carried out of features that may indicate bat presence. For example, gaps under roof and ridge tiles, or behind soffit boards and wooden fascia's. A search for bat droppings was made beneath each potential entry/exit point identified. The surveyor used a powerful, low heat LED torch, binoculars, an endoscope and a BatLogger M.

DNA Analysis:

2.19. Any droppings found were collected and sent to Swift Ecology for species identification for species identification.

Dusk emergence / re-entry survey

2.20. One emergence/re-entry survey was undertaken on 29th June 2023. Surveys were undertaken in line with good practice guidance detailed by the Bat Conservation Trust (Bat Surveys – Good Practice Guidelines 2016, 3rd edn).

2.21. The surveys were conducted by the following surveyors:

- Laura Kahane MRes BSc (Hons) AMRSB
- Martin Stanley-Jones
- Infrared camera's (x3)

2.22. Surveyors recorded bat activity using hand-held full spectrum Eleckon BatLogger M and Echometer Touch bat detectors. Analysis of recordings was undertaken after the surveys to confirm species identification. Survey results were recorded to include bat access points (if relevant), bat species, time, direction of travel, habitat featured used and type of activity (e.g. emergence, re-entry, commuting, foraging behaviour). All activity patterns, calls and behaviour within the surrounding area were identified and recorded.

2.23. A summary of the survey dates and weather conditions are provided in Table 2 below:

Table 2: Emergence and re-entry survey dates and weather conditions

Date	Survey Type	Temperature (°C)	Sunset Time	Weather Conditions
29/06/2023	Dusk Survey	16	21:25	Dry, light breeze, % cloud cover

Surveyor Information

2.24. Table 3 – Surveyor Information (PEA, PRA and Lead Surveyor in P2 Surveys)

Surveyor	Licences	Ecological Experience or qualification
Laura Kahane	Class licence CL18 (Bats) Licence reference: 2020-45059-CLS-CLS	MRes Ecology, Evolution & Conservation / BSc (Hons) Wildlife, Ecology & Conservation / Certificate in Ecological Consultancy / Associate Member of The Royal Society of Biology

Limitations and Assumptions

2.25. The desk study and field survey will not produce a comprehensive list of plants and animals as this will be limited by factors that influence their presence (e.g., activity and dormancy periods).

An assessment can however be made of the habitats within the survey area, their nature conservation value and potential to support protected or priority species.

2.26. Bats can utilise buildings seasonally, with frequent movement often caused by fluctuations in weather conditions. Therefore, they may arrive and begin utilising a site after it has been assessed for bats, or roost temporarily somewhere during the assessment. As a result, they're cryptic nature means there is potential for them to be present during the assessment, remaining undetected, especially during the daytime when they are inactive.

2.27 No other limitations were observed, or assumptions made during any part of the survey (desk or field study). It is considered that with the access gained and recording undertaken an accurate assessment of the site's ecological value has been made.

3.0 Results

Desk Study

Designated Sites (statutory)

3.1. Two statutory designated sites are present within 2km of the proposed development site. The site boundary falls within The North Wessex Downs Area of Outstanding Natural Beauty (AONB) and the Rushmore & Conholt Downs (SSSI) is split into four units and is located approximately 1km south-east of the site. The Rushmore & Conholt Downs (SSSI) comprises areas of broadleaved mixed and yew woodland, scrub and calcareous grassland mostly within favourable to recovering condition. This area is thought to have one of the oldest known juniper populations on English chalk and is designated for notable species such as two nationally scarce bryophytes *Aloina ambigua* and *Weissia sterilis* and historical records of Duke of Burgundy butterfly on highly floristic and diversity chalk grasslands.

3.2. The desk study has revealed that the site is located within an Impact Risk Zone (IRZ) with respect to Rushmore & Conholt Downs (SSSI) which states that Natural England should be contacted for certain development types. Given the scale and nature of the proposal, it does not fall into any of these categories, and it therefore considered that no further consideration is required with respect to this designation.

SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)	
1. DOES PLANNING PROPOSAL FALL INTO ONE OR MORE OF THE CATEGORIES BELOW?	2. IF YES, CHECK THE CORRESPONDING DESCRIPTION(S) BELOW. LPA SHOULD CONSULT NATURAL ENGLAND ON LIKELY RISKS FROM THE FOLLOWING:
All Planning Applications	
Infrastructure	Airports, helipads and other aviation proposals.
Wind & Solar Energy	
Minerals, Oil & Gas	
Rural Non Residential	
Residential	
Rural Residential	
Air Pollution	Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t).
Combustion	General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.
Waste	Landfill. Incl: inert landfill, non-hazardous landfill,

	hazardous landfill.
Composting	Any composting proposal with more than 500 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.
Discharges	Any discharge of water or liquid waste that is discharged to ground (ie to seep away) or to surface water, such as a beck or stream.
Water Supply	
Notes 1	
Notes 2	NUTRIENT IMPACT AREA. For new development with overnight accommodation Reg 63 of the Conservation of Habitats and Species Regulations 2017 must be applied and additional measures required. LPA to refer to Natural England□s Nutrient Neutrality advice.
GUIDANCE - How to use the Impact Risk Zones	/Metadata_for_magic/SSSI IRZ User Guidance MAGIC.pdf

Designated Sites (non-statutory)

3.3. No areas of non-statutory designation are located within 2km of the proposed development site.

Priority Habitats and Ancient Woodland

3.5. No areas of priority habitat are present on or adjacent to the site boundary.

3.6. A number of priority habitats are present within the wider area, including an area of deciduous woodland, lowland calcareous grassland, wood pasture and parkland, good quality semi-improved grassland, conifer woodland and ancient woodland. The closest of these is an area of unnamed deciduous woodland approximately 100m south-west of the immediate site boundary (Map 3). Nine areas of ancient woodland exist within 2km of the site boundary. The closest area of ancient woodland is Thornycombe Wood (ASW) located approximately 390m north-east of the site.



Map 3. Location of deciduous broadleaved woodland (priority habitat) located approximately 100m from the site boundary (Copyright MagicMaps, 2023).

Impacts and Mitigation

3.7. Given their distance from the site, no designated sites or areas of priority habitat will be directly affected through land take (other direct effects) of the development. The mitigation and enhancement measures set out in this report will effectively minimise any indirect effects of the development.

Field Survey

Timing and Conditions

3.8. Table 5 – Summary of conditions during survey

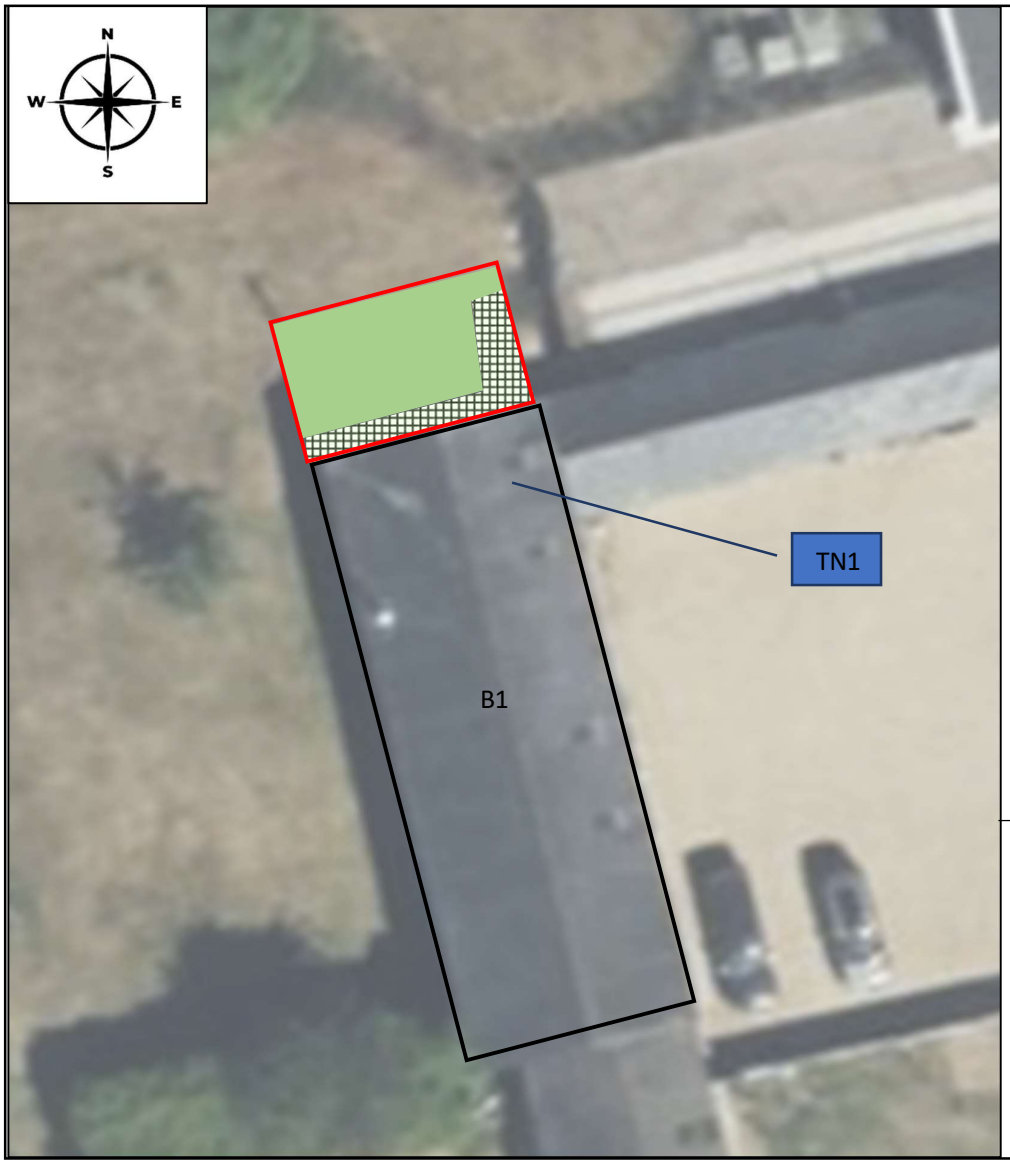
Survey Date:	18/02/2023
Survey Type:	Bat Roost Assessment & Ecological Appraisal
Temperature start:	11°C
Temperature finish:	11°C
Wind speed (Beaufort Scale):	0
Cloud Cover (Oktas Scale):	6
Precipitation:	0
Notes:	Conditions were fine and dry

Habitat groups

3.9. During the field survey, areas of species-poor improved grassland, scattered scrub and buildings were identified within the site.

3.10. Figure 1 illustrates the location and extent of all habitats recorded on site. It should be noted that not all botanical species present could be observed due to the time of year and that the habitat descriptions do not encompass full floral species lists (only dominant native species present within each habitat type) which were observed at the time of survey.

Figure 1. Habitat Map



Key

- Red line boundary and area of proposed works
- Species-Poor Improved Grassland
- Scattered Scrub
- Building
- TN# — Target Note Number

Target Notes:

TN1: Barn Swallow droppings & historical nest.

Project: Conholt Park, Andover, Hampshire, SP11 9HA

Figure 1: Habitat Plan

Date: May 2023

Contact: laura@wildearthecology.co.uk

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Species-poor improved grassland

3.11 A limited area of species-poor improved grassland is sited within the northern section of the proposed development boundary (see image 1 & 2). This area was recorded to have been subject to regular management as part of wider amenity grounds and held a sward height of between 2cm and 5cm, with areas being slightly more overgrown near the margins.

3.12. Dominant grassland species included Perennial ryegrass Lolium perenne (to approximately 80% coverage) with a low diversity of forb species included Dandelion *Taraxacum officinale agg.,* White clover *Trifolium repens, ordinary moss Brachythecium rutabulum, Greater plantain Plantago major,* Dock *Rumex spp,* herb Robert *Geranium robertianum* and Creeping buttercup *Ranunculus repens.* Areas of grassland found adjacent to the site boundary were consistent in having a ryegrass and white clover dominant coverage and species-poor sward.

3.13. Overall, this habitat is considered to be of low botanical value.



Image 1. View of areas of species-poor improved grassland habitat due to be impacted by the development from a northern-eastern view.



Image 2. View of area of species-poor improved grassland habitat due to be impacted by the development from a northern view.

Scattered Scrub

3.14. An area of marginal scattered scrub habitat on a coarse crushed gravel substrate can be found on the south and eastern section of the site boundary and within the area of impact (image 3 & 4) growing around the periphery of the building. This scattered scrub habitat intersperses with areas of bare ground on gravel is dominated by common nettle *Urtica dioica*, dock *Rumex spp*. and herb Robert *Geranium robertianum.* Meadow cranesbill *Geranium pratense, ordinary* moss *Brachythecium rutabulum* and garden daffodils *Narcissus spp* also feature within the scattered scrub area.

3.15. The area of scrub within the site is generally species-poor and of limited inherent ecological value, but are likely to provide some foraging, shelter and commuting opportunities for a range of species.

Impacts and Mitigation

3.16. It is understood that a limited area of scrub on site, namely the area surrounding the agricultural building due to be extended is due to be impacted under the current development masterplan. These scrub areas offer negligible potential to support common native reptile species such as

basking or hibernating slow worms *Anguis fragilis*. The scrub habitat on site also offers low potential to support Hedgehog currently in decline in England, a culturally valued, flagship species commonly found in gardens, hedgerows, and spoil heaps.



Image 3. Area of marginal scattered scrub habitat on the southern boundary.



Image 4. Area of scrub habitat encroaching on the building from a westerly view.

Schedule 9 Species

3.17. No schedule 9 (non-native, invasive) plant species were observed at the time of survey such as Cotoneaster *Cotoneaster sp.* or Cherry Laurel *Prunus laurocerasus*. It is illegal to cause the spread of schedule 9 species offsite and should be taken into consideration throughout the development process.

Bat Building Assessment

Building 1 (B1)

3.18. Following the building assessment inspections, the large agricultural barn building (B1) was assessed as having low potential to support roosting bats. During a single dusk emergence survey, carried out on 29th July 2023 during dry, fine weather conditions, no roosting bats were observed throughout the survey.

External

5.19. B1 is a single-storey agricultural building of timber construction with a foundation brick wall on the easterly aspect and timber cladding. It supports a simple pitched gable roof structure with Velux-style sky-light windows on the eastern elevation and slate roofing tiles. A single wood burner chimney exists on the western elevation (image 7-9) and electric flood lighting is fitted externally. Externally B1 was recorded to be in good condition and in daily use as a sporting estate staff meeting area and kitchen. On assessment the external timber cladding was observed to be tight-fitting and without crevices or gaps.



Image 5. View of the agricultural building (B1) from the northern-facing gable end.



Image 6. View of the agricultural building (B1) from the western aspect.

5.20. The pitched slate roof recorded a low number of displaced tiles on the western elevation of a suitable size which would provide roosting opportunities for low numbers (single) of crevice dwelling bat species (image 10-13). For the purposes of assessment, when surveyed by a licensed bat ecologist (2020-45059-CLS-CLS) with due consideration to Collins 2016, the agricultural building was classified as having low roost suitability. Image 13 shows the location of both potential roost features (PRF's) present on the west facing elevation of B1. This is defined as 'a structure with one or more potential roost features (PRF) that could be used by individual bats opportunistically, but do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats'. No field sign evidence synonymous with use of the property bats was recorded at the time of survey.



Image 7. View of the agricultural building (B1) from the eastern aspect/entrance.



Image 8 (left). View of the agricultural building (B1) from the western aspect.



Image 9 (left). Missing slate tile on western elevation of B1 on the north-western corner near to the gable end.

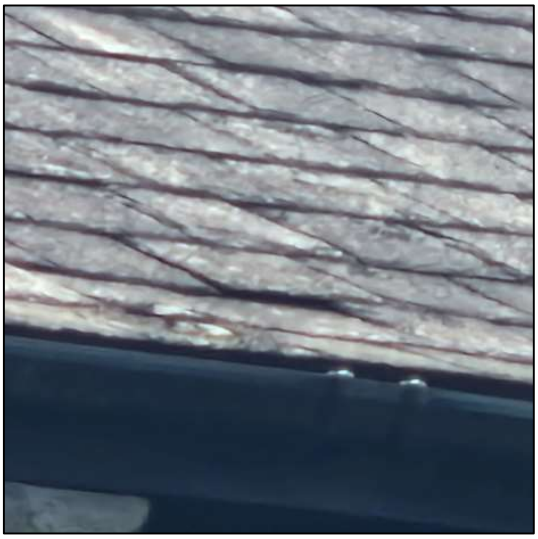


Image 10. Lifted slate tile on western elevation of B1 near to the chimney.



Image 11. Location of each potential roost feature (PRF) on B1.

Internal

5.21. Internally the barn comprised of an open vaulted exposed timber trussed frame with felt lining. The building has no internal voids, has concrete and wooden boarded flooring and measures approximately 18m L x 7m W x 5.5m H. The eaves are open allowing the ingress of common ivy in the northern gable end (image 15). Internally the walls are clad with wooden boarding and electric strip lighting is fitted throughout. The building was exposed to high levels of natural light due. A ladder and high powered, LED torch were used to thoroughly inspect the upper section of the apex concentrated on the area of proposed impact (image 16). A small number of mouse droppings were found at the northern end. No evidence of bats was found in B1. An inactive, historical, and degraded barn swallow nest was located in the north-eastern facing rafters of B1, but with no signs of current activity (image 17).

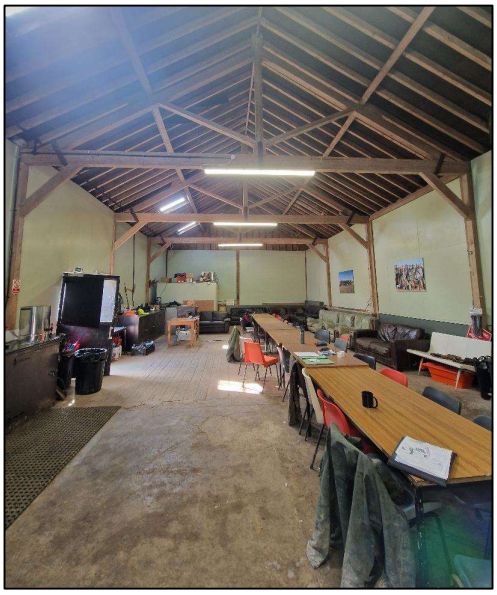


Image 12. Internal view of B1 from the northern end.

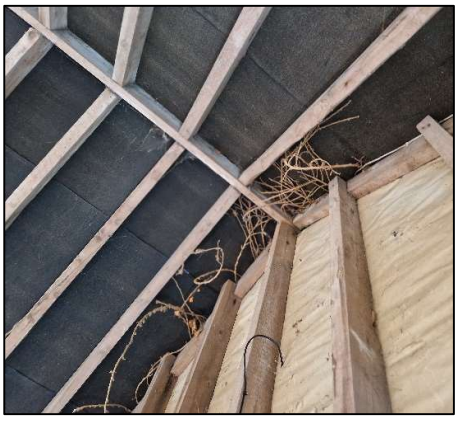


Image 13. Ingress of Ivy through gaps in eaves in gable end of B1.



Image 14. View of northern facing wall due to be impacted by the proposed extension.



Image 15. A historic barn swallow nest in the north-eastern facing rafters of B1.

Impacts and Mitigation

5.22. The northern-facing gable end wall of B1 will be directly impacted by the proposed development and has been initially assessed has having low potential to support bats which requires further assessment in accordance with current guidance (Collins, 2016). One emergence / re-entry survey was recommended and undertaken to assess presence/absence and give confidence in likely absence within a structure in line with the Bat Conservation Trust best practice survey guidelines (Collins, 2016). The dusk emergence survey was led by a licensed bat worker supported by further experienced surveyors during fair weather conditions, and within the optimum bat activity period bat (between May to August inclusive). Two surveyors and three NVA's were positioned in order to observe all aspects of the building and commenced a minimum of 15 minutes before sunset and lasted up to 2 hours after sunset. Surveyors used full-spectrum Elekon BatLogger M, and Echo Meter Touch 2 bat detectors for species identification. Canon XA30 camcorders (within built-in infrared capability) further supplementary infrared lighting to record bat activity. NVA's were utilised either to support surveyor observation of a PRF, or used as an additional surveyor where necessary, determined by the ecologist. Bat calls were subsequently analysed post-survey using BatExplorer and Kaleidoscope software by the lead surveyor. All camera footage was analysed post survey using VLC media player at a maximum of 1.5x playback speed.

3.23. It should be noted that additional survey types can include capture of bats using static nets in order to determine breeding status and the use of static bat detectors etc. if required. The most appropriate technique has been determined by the ecologist in order to answer the questions required by the British Standards.

Protected species

Nesting Birds

Desk Study

3.24. The study returned records of a number of protected, priority or notable bird species within 2km of the site, including the Wildlife & Countryside Act 1981 (as amended) Schedule 1 species including Long-tailed Tit *Aegithalos caudatus*, Skylark *Alauda arvensis,* Red-legged Partridge *Alectoris rufus* Mallard *Anas platyrhynchos*, Meadow Pipit, *Anthus pratensis,* Tree Pipit *Anthus trivialis*, Swift *Apus apus*, Grey Heron *Ardea cinerea*, Little Owl *Athene noctua*, Goldfinch *Carduelis carduelis* Treecreeper, *Certhia familiaris*, Greenfinch *Chloris chloris,* Black-headed Gull *Chroicocephalus ridibundus,* Jackdaw *Coloeus monedula,* Rock Dove *Columba livia,* Stock Dove *Columba oenas*, Woodpigeon *Columba palumbus*, Raven *Corvus corax,* Carrion Crow *Corvus corone*, Rook *Corvus frugilegus*, Cuckoo *Cuculus canorus*, Whitethroat *Curruca communis,* Lesser Whitethroat *Curruca curruca*, Blue Tit *Cyanistes caeruleus,* House Martin *Delichon urbicum*, Great Spotted Woodpecker *Dendrocopos major*, Lesser Spotted Woodpecker *Dryobates minor*, Yellowhammer *Emberiza citrinella*, Robin *Erithacus rubecula,* Kestrel *Falco tinnunculus*, Pied Flycatcher *Ficedula hypoleuca*, Chaffinch *Fringilla coelebs,* Brambling *Fringilla montifringilla*, Moorhen *Gallinula chloropus*, Jay *Garrulus glandarius,* Swallow *Hirundo rustica*, Herring Gull *Larus argentatus*, Linnet *Linaria cannabina*, Pied Wagtail *Motacilla alba yarrellii,* Pied Wagtail *Motacilla alba*, Spotted Flycatcher *Muscicapa striata*, Great Tit *Parus major*, House Sparrow *Passer domesticus*, Grey Partridge *Perdix perdix*, Coal Tit *Periparus ater*, Pheasant *Phasianus*

colchicus, Redstart *Phoenicurus phoenicurus,* Chiffchaff *Phylloscopus collybita,* Willow Warbler *Phylloscopus trochilus*, Magpie *Pica pica,* Green Woodpecker *Picus viridis.* It is also a conservation area for farmland birds including Corn bunting *Emberiza calandra* lapwing *Vanellus vanellus*, grey partridge *Perdix perdix* and stone curlew *Burhinus oedicnemus.*

3.25. Evidence of historical nesting Barn swallow *Hirundo rustica* (amber list species of conservation concern) was identified within B1 but with no further signs of activity. A data search revealed 34 records of swallows which have been observed to be nesting or foraging nearby. Swallows we're not active during the time of survey, but they are likely to build nests and breed within the building on opportunity.

3.26. The agricultural building on-site has potential to support other nesting birds. No evidence of owls was found to be present.

Habitat Assessment

3.27. The species-poor improved grassland, scattered scrub and buildings habitat within the site provide suitable nesting and/or foraging opportunities for a variety bird species which may be found in the local area. On this basis, recommendations with respect to this species group are set out below to ensure that they are safeguarded throughout the development works.

3.28. It is recommended that the trees within, or adjacent to the site are retained where possible. If any trees are due to be removed, they should be replaced with suitable native tree planting in order to ensure that opportunities for this species group remain following the completion of the development.

Impacts and Mitigation

3.29 All occupied birds' nests have legal protection from damage and destruction under the Wildlife & Countryside Act (1981). All works should therefore be undertaken outside of the nesting bird season (March to September inclusive for most species in the UK). If this is not possible, a nesting bird check will need to be carried out immediately prior to the start of work. If any active nests are present, work must be delayed until the young have fledged. The proposed loss of the narrow range of habitats (buildings, species-poor improved grassland and scattered scrub) on site would be inconsequential and is not expected to significantly impact breeding birds given the substantial amounts of superior habitat which surround the application.

3.30. Regardless of historical presence, the proposed re-development should seek to enhance the developed site for breeding birds by selecting planting schemes which aim to provide food, cover and nesting sites for birds. This could mean providing a layered structure through the selection of plants which will grow to different heights, and which provide a dense shrub layer (e.g. holly and hawthorn) and species which attract insects and/or produce berries in order to provide seasonal food resources. Shrubs, trees, and climbers can further disguise bare walls or fencing and create an attractive backdrop for lower-level species planted in front.

3.31. Consideration must be given to the provision of replacement nest sites for Barn swallows, and other target species of conservation concern within the development area to further enhance the value of the application site for breeding birds. Swallows prefer to nest high up inside of agricultural buildings, or where there is cover and should be encouraged to nest by attaching nest cups (to beams or rafters) or overhang boxes (to eaves/ridges) with an open bottom. Please note that alternatives fitted to the outside of a building without any significant cover or overhang are unsuitable and are unlikely to be occupied. These should be sited in an elevated

location, with easy access through an open section, such as a covered entrance of a porch or other overhanging structures (car port/log-store, etc) on B1 or other surrounding buildings that allow consistent access. These can also be fitted to features such as an open fronted porch, canopy or wood store which is integrated into the design. At least two swallow nest cups should be fitted inside this type of structure, in an attempt to attract this species back to the site following development.

Reptiles

Desk Study

3.32. The data search returned records of slow worm *Anguis fragilis* within 2km of the site. Of these, the closest records are a slow worm, located within 1.9km south-west of the site and dated 2016.

Habitat Assessment

3.33. Areas of species-poor improved grassland and scattered scrub within the site offer low potential to support basking or hibernating habitat for common reptile species, however these habitats are considered sub-optimal.

Impacts and Mitigation

3.34. Given that the proposed development will not result in loss of areas of reptile habitat it is not recommended that further survey work with respect to reptiles is carried out. However, as a precaution it is considered that the mitigation measures outlined below with respect to amphibians will safeguard any reptiles in the event that they are present within the site during the development works.

Amphibians

Desk Study

3.35. Records of common frog *Rana temporaria* and common toad *Bufo bufo* were returned by the data search from within a 2km radius of the site. Of these, the closest record lies approximately 1.6km north-east of the site and dated 2011. No records of great crested newts *riturus cristatus* were returned.

Habitat Assessment

3.36. No waterbodies have been identified within 500m of the proposed development site.

Impacts and Mitigation

3.37. Any vegetation to be removed should be done so carefully by hand in order to allow any animals which may be present to escape. Any animals remaining in the area should be carefully picked up in a gloved hand and moved to suitable habitat within the boundaries of the site.

Dormice

Desk Study

3.38. The data search returned two records of dormouse with a 2km radius of the site. The closest record is located with woodland 1.2km south-east from 1993.

Habitat Assessment

3.39. No evidence of dormice was found during the ecological appraisal of the site.

3.40. The scattered scrub habitat on site is of suboptimal value to dormice and does not provide adequate connectivity to suitable offsite habitat of elevated value to this species.

Impacts and Mitigation

3.41. It is understood that some areas of immature scattered scrub habitat will be lost in order to improve access for the completed development. However, given that the absence of dormice in the local area and the suboptimal nature of the habitat, it is not recommended that further survey work is carried out with respect to this species.

Hedgehogs

Desk Study

3.42. The data search identified a total of six records of live hedgehogs with a 2km radius of the site. Of these, the closest record is located approximately 1.5km north-east of the site and dated 2021.

Habitat Assessment

3.43 Areas of scattered scrub and species-poor improved grassland within the site provide suitable foraging, commuting and hibernating habitat for hedgehogs.

Impacts and Mitigation

3.44. Hedgehogs may be present on site and are likely to pass through the site. Hedgehogs are listed as a Priority Species for Conservation Action under the UK Biodiversity Action Plan and protected from harm in the UK under Schedule 6 of the Wildlife and Countryside Act 1981. Under the NERC Act 2006, the hedgehog is categorised as a 'Species of Principal Importance' for biodiversity.

3.45. Hedgehogs do not exhibit fight or flight behaviour and will therefore not move out of the way during works. Any areas of dense vegetation to be removed should be cleared carefully by hand and any hedgehogs encountered carefully removed to a safe place.

Badgers

Desk Study

3.46. The data search provided two records of badgers within a 2km x 2km square area of the site boundary.

Habitat Assessment

3.47. No badger setts or evidence of badgers were found on site. However, habitats within the surrounding area such as areas of woodland, treeline and agricultural land do offer foraging

opportunities for this species, and it is considered possible that they pass through the site on occasion.

Impacts and Mitigation

3.48. It is considered that the mitigation measures outlined above with respect to hedgehogs will safeguard any badgers in the event that they are present within the site during the development works. In addition, where appropriate it is recommended that wildlife access holes suitable for badgers are incorporated into any proposed fence-lines. 25cm by 20cm is suitable for badgers to pass through. Furthermore, any trenches or ditches created during the development should be covered at night or provide a means of escape for mammals that are likely to feature within the surrounding landscape such as badgers and brown hares.

Bats

Desk Study

3.49. The data search returned records of common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared *Plecotus auritus,* Natterers *Myotis nattereri,* Daubentons *Myotis daubentonii,* Myotis *spp. Myotis,* Leisler's *Nyctalus leisleri*, noctule *Nyctalus noctula* and serotine *Eptesicus serotinus* within the 2km search area. Of these, the closest record is for Natterers *Myotis nattereri* roosting approximately 1.6km north-east of the site and dated 1988. A further roost situated approximately 1.7km to the south-east was recorded in 2018 and featured common *Pipistrellus pipistrellus*, Serotine *Eptesicus serotinus* and Brown-longed eared *Plecotus auritus* species for which a European Protected Species Licence (EPSL) was applied for.

Habitat Assessment

3.50. Habitats within the site boundary, including the scattered scrub, species-poor improved grassland and buildings on site provide potential roosting, foraging and commuting opportunities for a range of bat species. On this basis, recommendations with respect to this species group are set out in the Bat Roost Assessment building inspection within this report to ensure that they are safeguarded throughout the development works.

Impacts and Mitigation

3.51 It is understood that no trees on or adjacent to the site will be impacted under the current development proposals. These features are of ecological value to foraging and commuting bats. Should any trees require removal, they should be replaced with suitable native planting to ensure that the existing biodiversity value of the site is maintained in the long term.

3.52. All retained trees should be protected throughout the development in accordance with British Standards BS 5837:2012. Root protection areas should be 12x the diameter at breast height (DBH) or the reach of the longest branch (whichever is greater), unless otherwise advised by a qualified arboriculturalist. Trees located off site but with their roots on site should also be protected. No materials should be allowed to be stored within these root protection areas and no heavy machinery should run over them.

<u>Lighting & Roofing materials</u>

3.53. Recommendations for any new external lighting which remains sensitive to bats and roofing material have been made in section 4.7-4.9 of this report.

Overview of Survey Results

3.54. The northern-facing gable end wall of B1 will be directly impacted by the proposed development and has been assessed has having low potential to support bats requiring a minimum of one further survey with four surveyors to observe the identified features.

3.55. These surveys should be undertaken in accordance with best practice guidelines detailed by the Bat Conservation Trust (Bat Surveys - Good Practice Guidelines 2016).

3.56. The guidelines state that this survey (being either dusk emergence or dawn re-entry) must be carried out between May and August, in suitable weather conditions.

3.57. Additional survey types can include capture of bats using static nets in order to determine breeding status and the use of static bat detectors etc. if required. The most appropriate technique will be determined by the ecologist in order to answer the questions required by the British Standards.

3.58. Surveyors will record bat activity using hand-held bat detectors, such as the Wildlife Acoustics EM Touch 2 or Elekon Batlogger, to confirm species identification. Calls will be analysed post survey to confirm species where necessary, infra-red cameras may be used to supplement surveyor views or as additional surveyors as determined by the ecologist. All footage will be analysed following the surveys to identify any bat activity which may have been recorded.

Emergence Survey Results

3.59. No roosting bats were observed throughout the survey effort (table 6).

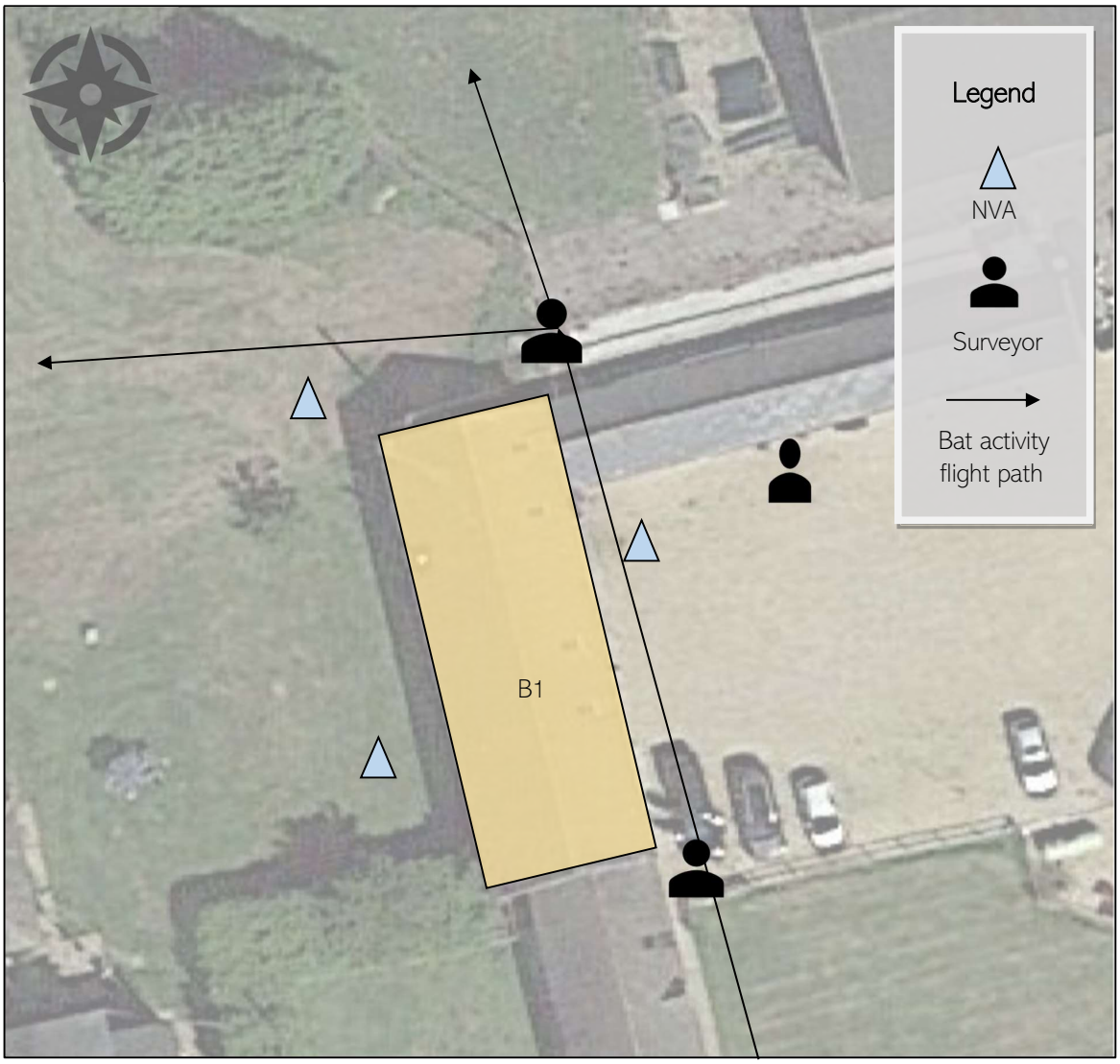
Table 6 – Emergence Survey Results Summary

Date	Species	Roost Type	No Bats	Structure	Location / PRF
29/05/2023 Start Time: 21:10 Sunset: 21:25 End: 22:25	No emergence recorded				
Observations: Moderate levels of common pipistrelle (commuting and foraging), serotine (commuting only) and Myotis species (commuting only) activity was recorded around the building and predominantly in the gardens and mature treeline to the north-west and adjacent to the site.					

3.60. Moderate levels of common pipistrelle (commuting and foraging), serotine (commuting only) and Myotis species (commuting only) activity was recorded around the building and predominantly in the gardens and mature treeline to the north-west and adjacent to the site.

3.61. The above survey was undertaken during the optimal survey season under suitable weather conditions. All aspects of the building could be surveyed, and all previously identified features

were fully visible and supplemented using NVA's. On this basis it is considered that the survey was not subject to any limitations.



Map 4. Surveyor location (Copyright Google Maps, 2023).

Impacts of Proposed Development

3.62. Table 7 – Summary of potential impacts of the proposed development on protected species

Species	Ecological Evaluation (including scale and nature of impact*)	Further survey recommendations
Bats	B1 – Low potential	One re-entry/emergence survey undertaken with no evidence of roosting bats observed. No further survey work recommended.
Nesting birds	Moderate	Works to be undertaken outside of the nesting bird season (March to September). If this is not possible, a nesting bird check will need to be carried out immediately prior to the start of work.
Hazel Dormouse	Negligible	No further surveys
Great Crested Newt	Negligible	
Reptiles	Negligible	
Amphibians	Low	
European Badger	Low	
West European Hedgehog	Low	

**Ultimate assessment of the scale and nature of impacts is dependent on the final design of the proposed development and exact habitats affected.*

4.0. Discussion & Enhancement Recommendations

Status of Bats on Site

4.1. Moderate use of the surrounding habitats including the woodland to the southeast and treeline to the northwest by bats was observed and opportunities to improve the site for foraging bats exist.

4.2. Following the single dusk emergence survey, it is considered that the site does not support a bat roost at this time. A moderate number of Common pipistrelle passes were observed commuting from the south using the building adjacent as a commuting flight path suggesting that there could be a roost near to the development (residential buildings or trees adjacent to the site boundary). Serotine and myotis bats were also recorded to be commuting overhead but did not exhibit roosting behaviours. As a result, no further surveys are considered necessary to determine B1's potential for roosting bats and they are understood to be likely absent. However, Bats can utilise buildings seasonally, with frequent movement often caused by fluctuations in weather conditions. Therefore, they may arrive and begin utilising a site, including the gaps observed, after it has been assessed for bats, or roost temporarily somewhere during the assessment. As a result, they're cryptic nature means there is potential for them to be present during, or after the assessment, remaining undetected, especially during the daytime when there are inactive meaning that their presence can never be entirely ruled out. Given that the proposed extension to the building is likely to include adaptations to, or adjoining to the current roof there is a low likelihood of finding unexpected bats at the time of works.

4.3. In order to avoid any negative impacts to protected species due to unexpected incidences of bats roosting in the building, following a precautionary method of work during any works to the

northern gable end and roof of B1 will aim to minimise and suitably avoid the risk of harm or disturbance. Reasonable Avoidance Measures (RAMs) to achieve this are outlined below. Impact on the bat species observed passing close to (or using adjacent habitats) the building whilst commuting is a key consideration. The method statement must be followed at all times.

4.4. Due to the low risk of impacts to bats, there are no restrictions for timings of work.

4.5. The following RAMs should be implemented during the construction phase;

Contractors must;

- Works must be undertaken carefully and slowly, by hand in removing roof tiles, wooden cladding, flashing, felt or timber on the roof or the north-facing gable end of B1.
- Prior to removal, the underside of each item removed should be carefully checked for the presence of bats before being discarded.
- If bats are discovered at any point during the works, all works must cease immediately, and Wild Earth Ecology 07930216662 be contacted for advice. A European Protected Species Licence would likely be required from Natural England in order to allow works to proceed, ensuring the continued ecological functionality of the site. If the Ecologist cannot be contacted, then the National Bat Helpline must be contacted on 0345 1300 228 before proceeding.
- If a bat is found, it must be carefully covered back up (with care to avoid crushing or injuring it). If this is not possible, it should be captured carefully using thick gloves and contained in a secure cardboard box with small holes for ventilation, and placed in a cool, quiet area until further advice can be sought which may include collection by a Bat Conservation Trust registered bat carer or roost visitor.

4.6. A copy of this statement must be kept on site and all times and communicated to all contractors or workers prior to works commencing.

Bat Sensitive Lighting

4.7. As foraging and commuting bats are present in the local area and using nearby buildings and habitat features as commuting flight lines, it is recommended that any new external lighting be directed to avoid light spillage onto vegetation or foraging features such as the hedgerow, grassland and treelines to the north and west of B1. Lighting should be directed onto the intended areas only. Bats are sensitive to light and could potentially avoid the area if access points or the surrounding areas become further lit. Minimising upward lighting by fitting lights with downward facing baffles, hoods cowls or shields will further prevent light pollution and mitigate the impact of any new lighting on bat species. These hoods should direct the light below the horizontal plane, at an angle less than seventy degrees. Limiting the height of lighting columns and directing light at a low level away from vegetation will further reduce the ecological impact of the light.

4.8. Any potential impact on bats can be minimised through the use of "warmer" lights as these are less penetrating than bright white lights (such as LEDs), as well as maintaining the brightness as low as possible (with settings which allow for a short illumination time) to provide some dark periods. Infrared motion sensors are strongly recommended, using a short timer to reduce the duration of lighting (triggered by larger objects or movement where possible) and reduce disturbance to bats. Additional fixed security or wall lights should be 'dimmable' with low light intensity which are readily available. Appropriate lighting options will prevent a negative impact on bats potentially using the habitats on site and should be approved by a suitably qualified Licensed Bat Ecologist.

Timber Treatment

4.9. Any use of timber-treatment or pest control treatment should be from the approved lists for safe use in or near bat roosts which can be found at: https://www.gov.uk/government/publications/bat-roosts-insecticides-and-timber-treatments/timber-treatment-products-suitable-for-use-in-or-near-bat-roosts. Other approved brands are also available and can be provided on request.

Roofing Materials

4.10. It is recommended that bitumen roof felt type 1F is used as lining in any new residential buildings (or if otherwise applicable), which meets building regulations. If the proposed new tile type, (if applicable) is one that will allow access to bats then breathable roofing membrane should be avoided as it is proven to cause entanglement and will lead to fatalities within bat roosts for a prolonged period.

Enhancement recommendations

4.11. Below is a summary of measures, which should be implemented on site to achieve a minimum no net loss of functional habitat for biodiversity from those areas due to be impacted, as well as to enhance the area for wildlife long-term;

Native Landscaping

4.12. A wildflower strip or margin within the surrounding grassland would help provide food for birds and invertebrates across the year. This should also help to indirectly support breeding populations that have suffered long term population declines. Alternatively, an area of retained grassland surrounding the proposed development equal to the area lost could be enhanced with a suitable species-rich wildflower seed mix. Any future landscaping planting should seek to enhance biodiversity, improve connectivity to the surrounding habitats and provide food and shelter for a wide range of faunal species. Non-invasive species should not be planted. Any invasive species found to be currently on site should be removed with care during vegetation clearance and disposed of appropriately.

4.13. A new mixed native hedgerow of at least 8m in length could be planted in a suitable location on or off-site to replace the small area of scrub habitat impacted. Ideally to improve connectivity, this should be planted to tie into the end of an existing hedge and with stock sourced locally. Hedgerow planting should be; notch-planted in double staggered rows (45cm using 5 plants per linear metre), with plants at 60-80cm height (except for holly), be individually staked with bamboo and spiral guards for protection while establishing, grown and managed to a 3m height include species of the following composition where possible; hawthorn 40%, hazel 30%, blackthorn 10%, spindle 5%, field maple 5%, holly 2.5%, wayfaring tree 5% and guelder rose 2.5%.

Deadwood Habitat Pile

4.14. To enhance the site for reptiles, amphibians, invertebrates and hedgehogs it is recommended that a log or brash pile is created on site in a secluded location adjacent to areas of suitable offsite habitat such as scrub, preferably with materials from the site.

Bat & Bird boxes

4.15. As records of a range of bat and bird species, including WaCA 1981 (as amended) and UK BAP priority species, have been returned from within the habitats surrounding the site, it is recommended that a number of roost/nest boxes are incorporated into the proposed development in order to improve the availability of roosting and nesting opportunities for these species group.

4.16. It is recommended that two 2FN Schwegler Bat Box or equivalent (dependant on product availability, e.g., Beaumaris Bat Box, Vivara Pro Woodstone Bat Box) are installed on suitable retained trees (such as those found northwest of B1), on B1, or on other surrounding buildings on site. These should ideally be made of woodcrete, and be positioned at least 3-5m high, in a south or south-west facing direction with a clear flight path to and from the entrance (free from obstruction) and away from artificial light such as sensor operated flood lights. Please note that the inclusion of a bat box on a building, does not mean that bats will be attracted to roosting within the building itself. The installation of bat boxes within the vicinity of the buildings will provide additional roosting habitat for bats. Bats often require time to locate new roosting sites, and it may be several years before a box is colonised.

4.17. It is recommended that the bird boxes to be installed within the completed development include at least one Schwegler 1B Nest Boxes, or equivalent (such as Vivara Pro WoodStone House Sparrow Nest Boxes, Vivara Pro WoodStone 32mm Nest Boxes and Vivara Pro WoodStone 28mm Nest Boxes). The varying sized nest holes will suit different species. These should be positioned facing northerly or easterly directions providing opportunities for birds such as house sparrow, blue tit, great tit, and nuthatch, and should be installed on suitable retained trees adjacent to the completed development or on the new building.

4.18. In addition to the above, consideration must be given to the provision of replacement nest sites for swallows, and other target species of conservation concern within the development area to further enhance the value of the application site for breeding birds. Two swallow nest cups could be installed on the existing building, or on an offsite building nearby. Swallows prefer to nest high up inside of agricultural buildings, or where there is cover and should be encouraged to nest by attaching nest cups (to beams or rafters) or overhang boxes (to eaves/ridges) with an open bottom. These should be sited in an elevated location, with easy access through an open section, such as a covered entrance of a porch or other overhanging structures on a building. At least two swallow nest cups should be fitted in an attempt to attract this species back to the site following development.

Other considerations

4.19 Biodiversity Net Gain

The environment Act 2021 will soon (autumn 2023) legally require all developments in England to incorporate a mandatory 10% biodiversity net gain (BNG) with the inclusion of ensuring maintenance of these habitats for a minimum of 30 years. The original concept is set out in policy and operates in parallel to the Environmental Impact Assessment (EIA) process required by legislation. The NPPF states that a. planning policies and decisions should contribute to and enhance the natural and local environment by minimising impacts on and providing net gains for biodiversity and b. should protect and enhance biodiversity and geodiversity as well as identify and pursue opportunities for securing measurable net gains for biodiversity. This means that BNG is now an integral part of planning decisions and should be factored in at an early stage to

improve biodiversity. Whilst it is understood that this development and application type is not one which requires a biodiversity net gain statement prior to secondary legislation being implemented, all efforts should be made within the planning stages to incorporate biodiversity net gain, where possible to remain in line with local policy. As a result, net gains sort under the NPPF can be satisfied with a 1% gain. Many local planning authorities already have a compulsory minimum BNG target for all developments of any scale or nature, up to 20%.

Connectivity is an important facet of habitats within BNG, as well as the proximity of replacement habitats to those lost. Further recommendations for any native landscaping of the area should include the use of;

- 'Wildlife-friendly' planting which should offer both food resources and shelter (where possible) for animals;
- Species which are native to the UK (e.g. Field maple, Rowan, hazel, oak, wild cherry, rowan, crab apple, hawthorn, blackthorn, Yew, Box).
- Wider-canopy or broadleaved tree species to replace those lost (e.g. maple, rowan, beech, silver birch, downy birch, hazel, oak).
- Species which are flowering/fruiting (e.g. Elder, cherry, silver birch, holly, blueberries, Yew)
- Species which are attractive to native invertebrates and pollinators, including those that are overwintering (e.g., winter cherry, native oaks, jasmine, plums, poplars, willows and honeysuckle). A bloom calendar can be utilised within a tree planting scheme to ensure that there is a succession of pollen and nectar availability throughout the seasons. (E.g. Pussy willow and blackthorn blooms early offering vital food sources for emerging mining bee's. Species such as Whitebeam or Rowan offer nectar sources at the end of the season.
- Connectivity for wildlife to use as sheltered corridors – this could include planting in a line and/or near within the proximity of other nearby tree's, hedgerows or densely vegetated areas. This can include structural and spatial planting so that the so that the canopies of trees on adjoining properties connect.
- Locally successful and climate change resilience species to optimise the chances of survival in local soil types, into the future. These species will typically have strong roots and be lower maintenance having adapted to flourish regionally or locally.
- No non-native, invasive species (e.g., rhododendron).

In preparation for upcoming mandatory BNG requirements, developers should be aware of the CIEEM recommended good practice principles to be followed, in conjunction with the mitigation hierarchy:

Mandatory BNG principles:

- Utilise the mitigation hierarchy to minimise impact on biodiversity
- Eliminate negative impacts on biodiversity that cannot be offset elsewhere
- Involve all pre-development and post-development stakeholders in forming mandatory net gain solutions

- Understand the potential risks and variable factors to achieving biodiversity net gain
- Determine a suitable method to secure measurable net gains for biodiversity
- Ensure the best possible outcomes from biodiversity net gain
- Offer nature conservation that exceed the BNG requirements
- Focus on generating long-term environmental benefits from biodiversity net gain
- Cover all areas of sustainability, incorporating economical and societal factors
- Communicate all biodiversity net gain outcomes with complete transparency

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6.0 Appendix

Appendix 1 – Protected Species Legislation

Bats

In England and Wales, all bat species and their roosts are legally protected under the Wildlife and Countryside Act (1981) (as amended); the Countryside and Rights of Way Act, 2000; the Natural Environment and Rural Communities Act (NERC, 2006); and by the Conservation of Habitats and Species Regulations (2019). You will be committing a criminal offence if you:

- Deliberately capture, injure or kill a bat
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time)
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat
- Intentionally or recklessly obstruct access to a bat roost

Barbastelle, Bechstein's, greater horseshoe, lesser horseshoe, brown long-eared, soprano pipistrelle, and noctule bats are all priority species under the UK Biodiversity Action Plan (UK BAP) and have also been adopted as species of principal importance in England under Section 41 of the NERC Act 2006.

Badgers

Badgers and their setts are afforded strict protection under the Protection of Badgers Act 1992. This Act consolidates past badger legislation and, in addition to protecting the badger itself, makes it an offence to damage, destroy or obstruct badger setts. Badgers are also protected under Schedule 6 of the Wildlife and Countryside Act 1981 (as amended), and listed under Appendix III of the Bern Convention, as a species that is in need of protection but may be hunted in exceptional instances. Only badger setts that are currently in use are covered by wildlife legislation.

Birds

All wild birds in the UK are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy the nest or its eggs. Some bird species, such as the barn owl Tyto alba, are listed in Schedule 1 of the 1981 Act and receive further protection, making it an offence to intentionally or recklessly disturb these birds whilst building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird. The NERC Act (2006) inserts a new schedule into the Wildlife and Countryside Act (1981) to protect the nests of some bird species that regularly re-use their nests, even when the nests are not in use. This protection currently applies to golden eagle, white-tailed eagle and osprey.

Reptiles

All British reptiles are listed under schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are therefore protected from intentional killing or injury. This is largely as a consequence of a national decline in numbers associated with habitat loss. Two scarcer native British reptiles (smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis*), are afforded 'full' protection. This legislation makes it an offence to intentionally or recklessly kill, injure, disturb, take, possess or sell these species (in all life stages). It is also illegal to damage, destroy or obstruct access to places they use for breeding, resting, shelter and protection. All species of reptile are priority species in the UKBAP and have been adopted as Species of Principal Importance under Section 41 of the NERC Act (2006) in England (Section 42 in Wales).

Amphibians

Great crested newts (GCN's) *Triturus cristatus* and their habitats are fully protected by the Conservation of Habitats and Species Regulations (2019) and partially protected under the Wildlife and Countryside Act 1981 (as amended). This legislation makes it an offence to kill, injure or capture GCN's, their young or eggs, or destroy / damage their ponds or places of shelter used for breeding or protection. The great crested newt is also a Priority species in the UK Biodiversity Action Plan (UKBAP), and had been adopted as a Species of Principal Importance in England under Section 41 of the NERC Act 2006. The natterjack toad *Epidalea calamita* is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of The Conservation of Habitats and Species Regulations 2019 making it a European Protected Species. The natterjack toad is also a priority species under the UK Biodiversity Action Plan. The pool frog *Rana lessonae* is protected under the Conservation (Natural Habitats & C.) Regulations 1994 (as amended). As a European protected species the deliberate capturing, disturbing, injuring or killing of this species is prohibited, as is damage or destruction of its breeding sites or resting places. The pool frog is also a priority species under the UK Biodiversity Action Plan due to a 100% decline over 25 years (1980-2005). Common toads *Bufo bufo* are also designated UKBAP species due to a serious decline of populations across large areas of southern, eastern and central England, thought to be mainly due to changes in habitat management, mortalities on the roads, and climate change.

Dormice

Hazel dormice and their habitats are fully protected by both the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations (2019). This legislation makes it an offence to kill, injure, disturb or capture dormice, or destroy or obstruct their resting or breeding places. The dormouse is also a priority species under the UK Biodiversity Action Plan and has been adopted as a species of Principal Importance in England under Section 41 of the NERC Act 2006 (section 42 in Wales) and so is protected from any adverse effects as a result of development.

Otters

Otters Lutra lutra are protected by both the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2019. This legislation makes it is illegal to; deliberately or recklessly kill, injure or capture an otter, deliberately or recklessly disturb or harass an otter, damage, destroy or obstruct access to a breeding site or resting place of an otter.

The otter is also a UK BAP Priority Species and has been adopted as a Species of Principal Importance in England under Section 41 of the NERC Act 2006 (Section 42 in Wales) and the Conservation (Scotland) Act in Scotland.

Water Voles

Water voles *Arvicola terrestris* are fully protected under the Wildlife and Countryside Act 1981 (as amended). This legislation makes it an offence to kill or injure water voles, and to damage, destroy or obstruct access to places used for protection or shelter, and to disturb water voles whilst they occupy such a place. The water vole is also a Priority species in the UK Biodiversity Action Plan, and had been adopted as a Species of Principal Importance in England under Section 41 of the NERC Act 2006.

White-clawed Crayfish

The white-clawed crayfish *Austropotamobius pallipes* is protected under the Wildlife and Countryside Act 1981 (as amended), making it a criminal offence to; intentionally or recklessly kill or injure a white-clawed crayfish, or sell or attempt to sell any part of this species. The Habitats Regulations (2019) provide further protection through the declaration of Special Areas of Conservation (SAC). This protection aims to prevent commercial harvesting of white clawed crayfish and prohibits their capture without a licence. The white-clawed crayfish is also a Priority species in the UK Biodiversity Action Plan (BAP), and has been adopted as a Species of Principal Importance in England under Section 41 of the NERC Act 2006.

Hedgehogs

Hedgehogs are UK Biodiversity Action Plan (BAP) species, and therefore must be taken into consideration as part of development planning. A recent report (Wembridge, 2011) shows that hedgehog numbers have declined by 25% in the last ten years.

Stag Beetles

Stag Beetles *Lucanus cervus* are protected under section 5 of the Wildlife and Countryside Act 1981 (as amended). This legislation prohibits: The killing, injuring or taking of Stag Beetles; the damage, destruction, or obstruction of access to any structure or place which Stag Beetles use for shelter or protection; or the disturbance of Stag Beetles while they are occupying a structure or place which they use for that purpose.

Appendix 2 - Planning Policy and Legislation

Planning and Biodiversity

The biodiversity policies which are most relevant are the National Planning Policy Framework (NPPF, 2012), Biodiversity 2020, the Biodiversity Action Plan for Hampshire and the Biodiversity Action Plan for Test Valley 2008.

National Planning Policy Framework (NPPF) 2019

NPPF aims to minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity. Chapter 15 'Conserving and enhancing the natural environment' details what local planning policies should seek to consider with regard to planning applications.

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);

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;

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.

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;

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

UK Biodiversity Action Plan & Habitats and Species of Principal Importance.

The UK Biodiversity Plan (BAP) was a programme designed to help conserve the UK's biodiversity. It led to the production of 436 action plans between 1995 and 1999 to help many of the UK's most threatened species and habitats to recover. A review of the UK BAP priority list in 2007 led to the identification of 1,150 species and 65 habitats that met the BAP criteria at UK level. Currently 56 Habitats of Principal Importance and 943 Species of Principal Importance are included within Schedule 41 of the NERC Act and these include species and habitats which were identified in the UK BAP and which continue to be considered to represent the conservation priorities of England in the UK Post-2010 Biodiversity Framework.

Species of Principal Importance and Habitats of Principal Importance are those identified as the most threatened and requiring conservation action under the Schedule 41 of the UK Biodiversity Action Plan & Habitats and Species of Principal Importance. Species include West European hedgehog, great crested newt dormouse and common toad *Bufo bufo*.

Wiltshire Biodiversity Action Plan (BAP) 2008

Background

Wiltshire's natural environment is arguably its greatest asset. Although Wiltshire is dominated by the vast sweeps of the chalk downs, its landscape is highly varied with intimate river valleys contrasting with open uplands and broad valleys. This range and distribution of landscapes and habitats is a result of the underlying geological characteristics of the land upon which natural processes and human activities have operated in turn influencing patterns of land use as well as ecological and cultural character.

The chalk which dominates the south and east of the county has produced the vast open downlands of Salisbury Plain, Marlborough Downs and Porton Down; much of these landscapes are of national importance, as recognised by the North Wessex Downs Area of Outstanding Natural Beauty (AONB) designation, and are also internationally important for populations of rare birds and calcareous grassland habitats. In the southwest of the county the chalk has given rise to wooded downlands including Cranborne Chase AONB due to different land uses and functions in this area, which supports a large proportion of Wiltshire's remaining ancient woodland resource. The limestone in the northwest of the county supports a network of ridges and valleys including part of the Cotswolds AONB, supporting important river corridors, ancient woodlands, limestone grasslands and internationally important populations of bats. The band of greensand and clay which runs through the county, dividing the limestone from the chalk includes the important ancient hunting forests of Braydon and the extensive wetlands of the Cotswolds Water Park.

Rivers are also an important feature of the county, helping to shape its landscape. The most extensive river system is the Salisbury Avon draining to the south; this chalk river is internationally important for its habitats and bird life (designated as a Special Area of Conservation "SAC"). The Bristol Avon drains much of the north of the county, forming an important corridor for wildlife through the landscape and providing valuable ecosystem services to hundreds of thousands of residents in Wiltshire's towns and the cites of Bristol and Bath further downstream. The upper reaches of the River Kennet also drain to the east; this is another internationally important chalk stream and floodplain. A small area in the north of the county also drains into the upper reaches of the Thames, an area which includes internationally important hay meadows within the floodplain.

All of these national and international designations help to demonstrate that Wiltshire has been bestowed with a remarkable proportion of the UK and Europe's most important landscapes and wildlife. Wiltshire's distinctive landscapes create its unique identity and character, while its

natural processes provide us with clean water, fresh air, and food, and its sensitive ecosystems underpin our entire natural environment.

Wiltshire's communities have played a vital role in shaping the natural environment we see today; without responsible land management and stewardship we would not still enjoy the relatively high-quality environments we enjoy today which have been all but lost from so many other parts of the country. However, at the same time Wiltshire's natural environment has undergone slow and steady decline over the past century and this has the potential to accelerate in the future due to increasing pressures on land use and the effects of climate change. Wiltshire's Local Development Framework (LDF) provides an opportunity to set policies to manage land use in order to protect, maintain and enhance our valuable natural environment for future generations.

Aims and Objectives

The aim of this topic paper is to gather evidence to inform and contribute towards the preparation of the Wiltshire LDF, particularly the development of Core Strategy policies related to the natural environment; these policies are required in order to achieve the relevant strategic objective "To protect and enhance the natural environment". In order to achieve this aim the following objectives have been addressed:

- Review all relevant legislation and policy which set the statutory framework for the LDF;
- Collate and review the latest relevant empirical research; Review the current local policy framework and its effectiveness through analysis of applications and consultation.
- Review available best practice / guidance;
- Consult with key stakeholders involved in protecting and enhancing the natural environment;
- Identify community aspirations through a public consultation of draft policy, a review of Community Area Plans and strategies, and analysis of previous public consultations;
- Identify other relevant plans and strategies in the county which LDF policies might contribute towards;
- Propose policy options to achieve the strategic objective; and Develop policy wording for the preferred option.