

ECOLOGICAL IMPACT ASSESSMENT
OF
SPRINGFIELD, REGIL



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VALIDITY

Due to the dynamic nature of ecological conditions the results of the survey(s) and related conclusions and recommendations as contained within this report should only be considered valid for up to 12 months from the date the last survey was undertaken.

Any alterations to the site proposals may invalidate the recommendations contained within this report.

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Non-Technical Summary

Abricon Ltd. was commissioned by Martin Brice to undertake an Ecological Impact Assessment in order to establish the likely impacts of the proposed development at Springfield, The Street, Regil, Bristol, BS40 8BD. The assessment was extended to include a desktop study of any nearby statutory and non-statutory sites for nature conservation, as well as an examination of local species records.

An Extended Phase 1 Habitat Survey of the land was undertaken in July 2022, with the aim of identifying any features, habitats and rare or protected species which would constitute potential constraints to the development taking place, and assessing the ecological value of the survey area, in order to make recommendations for any further actions which may be required.

The Extended Phase 1 Habitat Survey was subsequently followed up with the completion of three bat emergence/re-entry activity surveys. The aim of this survey was to assess the levels of bat foraging/commuting activity present within the site.

It is understood that the proposed plans for the site include demolition of the existing dwelling and garage and erection of larger replacement dwelling and garage/workshop outbuilding in similar locations with associated landscaping. Site plans are provided in Appendix C at the end of this document.

The results of this ecological impact assessment have highlighted the requirement for further actions, which are summarised in the table below:

Species/Groups	Phase	Action(s) Required
Habitats, Badgers, Dormice, Hedgehogs, Reptiles, Amphibians	Site Clearance/Construction	Protection of habitats and measures to minimise risk to protected species through the implementation of a CEMP.
Birds	Demolition/Site Clearance	Demolition works and any clearance of vegetation following timings and methods outlined in 6.3.
	Construction	Provision of two artificial House Martin nests as a compensation for the loss of nests present on the house.
Bats	Design	Artificial lighting designed sensitively to minimise impacts of artificial lighting on boundary hedgerows/features and other adjacent habitats of value to foraging/commuting bats.
	After planning permission has been granted, prior to works starting on site	A Bat Mitigation Licence (BML) will be required from Natural England, in order to allow works which would otherwise be illegal.
Great Crested Newt	Prior to Planning Determination	An eDNA survey of the pond on-site and off-site pond is recommended. Further great crested newt surveys (and a population assessment) are likely required following traditional methodology if presence is determined. A mitigation licence from Natural England may then be required following these surveys.
Ecological Enhancements	Design and Construction	Ecological enhancements should be included within new developments to deliver a net gain for biodiversity. Recommendations made in Section 6.6.

With the above mitigation and enhancement measures, it is considered that the proposed development can avoid/minimise the potential impacts on the species considered within this assessment, and result in no net loss for biodiversity within the site. Following the successful implementation of the above ecological enhancement measures, it is considered that the proposed development will likely result in a minor net gain in the site's value for biodiversity.

1 Introduction

1.1 Survey Background, Aims & Objectives

- 1.1.1 Abricon Ltd. was commissioned by Martin Brice to undertake an Ecological Impact Assessment in order to establish the likely impacts of the proposed development at “the site” at Springfield, The Street, Regil, Bristol, BS40 8BD. The assessment was extended to include a desktop study of any nearby statutory and non-statutory sites for nature conservation, as well as an examination of local species records.
- 1.1.2 An Extended Phase 1 Habitat Survey of the land was undertaken in July 2022, with the aim of identifying any features, habitats and rare or protected species which would constitute potential constraints to the development taking place, and assessing the ecological value of the survey area, in order to make recommendations for any further actions which may be required.
- 1.1.3 The Extended Phase 1 Habitat Survey was subsequently followed up with the completion of three bat activity survey, comprising two emergence and one re-entry survey. The aim of the emergence surveys was to identify whether bats are using the building, for what purpose, and in what numbers. This allows for an accurate assessment of the likely impacts of the proposed development on bats and makes recommendations for mitigation and/or licensing as appropriate.

1.2 Site Location & Description

- 1.2.1 The site is in a rural location of the village Regil in North Somerset, approximately 5km to the south-west of the city of Bristol. The land within the ownership boundary is approximately 0.14ha. The site is centred on National Grid Reference: ST 53808 62131.
- 1.2.2 The site is made up of a detached dwelling surrounded by semi-mature amenity garden with ornamental planting, shrubs and some scattered trees. A spring runs through the site and hedgerows are present in all site boundaries. The northern section of the site comprises hardstanding, a single-storey garage, a small shed and a greenhouse.
- 1.2.3 The wider landscape is rural, and is predominately characterised by agricultural land, hedgerows and scattered mature trees. Pockets of woodlands are located approximately 1.25km to the north of the site in Winford. Chew Valley Lake is located 2.5km to the south-east of the site. The site lies within protection Zone C of the North Somerset and Mendip Bat Special Area of Conservation (SAC).



Figure 1 – Site Location (highlighted) – Accessed on 20/10/2022

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1.3 Proposed Development

- 1.3.1 It is understood that the proposed plans for the site include demolition of the existing dwelling and garage and erection of larger replacement dwelling and garage/workshop outbuilding in similar locations and associated landscaping.

2 Methodology

2.1 Desk Study

- 2.1.1 A desk study of existing ecological records for the site and surrounding land was conducted in September 2022.
- 2.1.2 Records of protected species and non-statutory sites for nature conservation were received from Bristol Regional Environmental Records Centre (BRERC) from within 2km of the site.
- 2.1.3 Only records from the past ten years (since 2012) were considered within this report, to ensure that the ecological baseline of the site and the surrounding area was established from up-to-date information. Statutory designated sites within 2km of the development site were obtained from the UK Governments Countryside Geographic Information Website (MAGIC). Data was used in conjunction with an assessment of site plans and aerial photographs. In addition, the Natural Environment and Rural Communities (NERC) Act 2006 was consulted.

Table 1 – Consultees for the Desk Study

Consultee	Information Provided
MAGIC Website	Statutory sites for nature conservation
BRERC	Local species records and non-statutory sites for nature conservation
NERC Act 2006	National priority species and habitats

2.2 Field Survey

- 2.2.1 A preliminary ecological appraisal was conducted on 4th July 2022 by Jana Prapotnikova BSc MCIEEM and Lara Moore QualCIEEM. The first stage of the assessment is to complete a Phase 1 Habitat Survey following the standard methodology (JNCC, 2010). A phase 1 habitat survey is the standard technique for classifying and mapping British habitats, and the aim is to provide a record of habitats that are likely to be ecologically important. Following this the site and nearby surrounding land (where possible) was assessed for the presence of, or potential for, protected or notable species to be present, and an assessment was made on the likely impacts of the proposed development on such species.
- 2.2.2 This survey on its own cannot always determine the presence/likely absence of a species, nor does it provide a conclusive list of botanical species. It is intended to inform the requirement for, as well as the details of, Phase 2 surveys for species and important features.
- 2.2.3 It was 17°C and overcast at the time of survey.

2.3 Building Inspections

- 2.3.1 The house and garage on site was inspected externally on the 4th July 2022 by Jana Prapotnikova (NE class 2 licence holder) and internally on the 25th July 2022 by Dan Flew (NE class 2 licence holder) in order to identify any evidence of use by bats and nesting birds.
- 2.3.2 To assist in a thorough search for bats the following equipment was used:
- Binoculars
 - Million candle power spotlight (Clulite CB2)
 - Head torch
 - Digital camera

Bats

2.3.3 Signs of bats looked for include:

- Bats (alive or dead)
- Droppings
- Staining
- Feeding signs
- Smell
- Social calling

Birds

2.3.4 Signs of nesting birds looked for include:

- Birds (alive or dead)
- Nests (current or disused)
- Droppings
- Feeding signs
- Eggs

2.4 Bats – Ground Level Tree Assessment

2.4.1 The trees on site were subject to a ground level assessment by Jana Prapotnikova and Lara Moore on 4th July 2022. Binoculars and high-powered torches were used to inspect the trees for evidence of bat roosting features, as listed below:

- Natural holes
- Woodpecker holes
- Cracks/splits in major limbs
- Loose bark
- Hollows/cavities
- Dense epicormic growth
- Birds and bat boxes

2.4.2 Each tree was then assigned a value in terms of its suitability for roosting bats, in accordance with 'Bat Surveys – Good Practice Guidelines 2nd edition (Hundt, 2012)'.

2.5 Bats – DNA Analysis

2.5.1 During the internal building inspection undertaken on the 25th July 2022, >50 droppings which could not be identified to species level were found scattered within the roof voids. A collection was sent to Swift Ecology for DNA analysis in order to determine the species from which they were derived, the droppings were found to be brown long-eared bat droppings.

2.6 Bat Emergence/Re-Entry Surveys

2.6.1 Bat emergence/re-entry surveys can aid a building inspection by positive confirmation of access and egress points into and out of a structure. This method also allows recordings of bat echolocation calls for species identification to help determine the use and importance of a roost. Emergence surveys may also identify new roost areas where no evidence of bats was found during inspection.

2.6.2 Due to the presence of bat droppings in/on the house and the "high suitability" of the garage a total of three separate bat surveys were completed on the dwelling, comprising two dusk emergence surveys and one dawn re-entry survey. The surveys were undertaken by surveyors observing bats and their activity in the field using non-invasive and non-disturbing techniques. Emergence/re-entry surveys are based on the Bat Conservation Trust's (BCT) survey guidelines 'Bat Survey for Professional Ecologists - Good Practice Guidelines' (Collins, 2016).

2.6.3 The surveyors were situated at key locations to ensure that all aspects of the building were observed at all times, particularly those areas that had the highest potential to be used by

bats and/or were evidence of bat use was found. The dusk activity surveys commenced approximately 15 minutes prior to sunset and continued for approximately 1.5 hours after sunset (or until it was too dark to see); whilst dawn surveys started approximately 1.5 hours prior to sunrise and continued until approximately 15 minutes after sunrise.

2.6.4 Any bats observed were recorded. Information included;

- Time;
- Emergence or entry points;
- Direction of flight;
- Use of landscape;
- Flight characteristics;
- Size;
- Height above ground and;
- Behaviour.

2.6.5 Five surveyors were present during the dusk emergence/dawn re-entry surveys of the house and the garage. At least one licenced/experienced bat surveyor was present on each of the surveys. Surveyor locations are displayed in Figure 3 below.

2.6.6 The bat detectors used during the emergence surveys were: Echometer Touch 2 Pro (Wildlife Acoustics) with iPad/Samsung Galaxy Tablet, and Elekon Batscanner and Elekon Batscanners were paired with Anabat Express detectors for recording purposes. Analysis of recorded sound files was subsequently undertaken using Analoow and Kaleidoscope software.

Table 2 – Weather Conditions for Emergence/Re-Entry Surveys

Structure	Date	Sunset/Sunrise	Survey Time		Weather
			Start	Finish	
House and Garage	25/07/22	21:09	Start	20:54	17°C, Rain: No, Cloud Cover: 4/8, Wind 2/12
			Finish	22:29	16°C, Rain: No, Cloud Cover: 2/8, Wind: 2/12
House and Garage	09/08/22	05:47	Start	04:17	16°C, Rain: No, Cloud Cover: 0/8, Wind 1/12
			Finish	06:02	14°C, Rain: No, Cloud Cover: 0/8, Wind: 0/12
House and Garage	21/09/22	19:12	Start	18:57	17°C, Rain: No, Cloud Cover: 8/8, Wind: 0/12
			Finish	20:42	14°C, Rain: No, Cloud Cover: 8/8, Wind: 0/12



Figure 2 - Bat Emergence/Re-Entry Surveys - Surveyor Locations

2.7 Personnel

- 2.7.1 Dan Flew has worked in the consultancy sector since 2011 with a focus on protected species, particularly bats. Dan holds Natural England and Natural Resources Wales Class 2 licence for bats as well as a NE Class 1 licence for great crested newts and a NE barn owl survey licence, and he holds an MSc in related subjects.
- 2.7.2 Chris Poole MSc ACIEEM has been working in environmental consultancy since 2018. Chris's primary experience includes project management, preliminary ecological appraisals, phase 1 habitat surveys, protected species surveys and ecological clerk of works, and he holds a BSc and MSc in related subjects.
- 2.7.3 Stephanie Benden has been working in environmental consultancy since 2018. She holds a BSc and MSc in related subjects. Her primary experience comprises report writing, reptile translocations, completion of bat emergence/re-entry surveys and analysis of bat sound files.
- 2.7.4 Jade Lemm has been working in environmental consultancy since 2019. Jade's primary experience includes protected species surveys and ecological clerk of works, and she holds a BSc and Postgraduate Diploma in related subjects.
- 2.7.5 Lara Moore BSc QualCIEEM has been working in environmental consultancy since 2019. Her primary experience comprises technical report writing, the completion of bat emergence/re-entry surveys and analysis of bat sound files.
- 2.7.6 Jana Prapotnikova has worked in consultancy sector since 2006 with a focus on mammalian ecology, particularly bats and badgers. Jana runs Abricon's Ecology Department as well as being involved in project delivery. She has managed various ecological projects and has expertise in a range of ecological survey techniques including Phase 1 habitat assessments and a variety of protected species surveys (e.g., the aforementioned mammal species as well as reptiles and great crested newts). Jana also devises ecological mitigation schemes for a variety of protected species. She is well versed in producing preliminary ecological appraisals, BREEAM/CSH Ecology Assessments, protected species licences, Ecological Impact Assessments (EclA), Construction Environmental Management plans, Biodiversity Enhancement Schemes and Ecological Design Strategies. Jana holds Natural England and Natural Resources Wales Class 2 licence for bats as well as Natural England Class and Natural Resources Wales Class 1 licence for great crested newts. She is also a Registered

Consultant of the Bat Low Impact Class Licence (BLIC) and holds a CSCS card. Jana is a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM).

- 2.7.7 Lucy Goreham, Kelsie Cracknell, Skye Anderson, Ruby Batt, Lainey Wilkinson, Rachel Haynes, Lloyd Price, Amy Knapp, Max Alwyn and Mel West work as Field Surveyors for Abricon Ltd. Their primary experience comprises the completion of bat emergence surveys.

2.8 Great Crested Newts

Identification of Suitable Water Bodies

- 2.8.1 Water bodies occurring within 250m of the site and on the near side of any substantial boundaries (i.e. major roads) were identified using OS maps and aerial photography. A 250m buffer is considered sufficient for the size of the site and scale of the proposals.

2.9 Limitations

General Ecological Constraints

- 2.9.1 This survey only offers a “snapshot” of the site conditions and takes no account of seasonal differences, or of any species which may take up residence subsequently.

Site Specific Constraints

- 2.9.2 The roof void within the house or the garage were not inspected internally during the initial visit on 4th July due to lack of access, however both were later inspected prior to the dusk emergence survey on the 25th July.

3 Desk Study Results

3.1 Statutorily and Non-Statutorily Designated Sites for Nature Conservation

3.1.1 One statutory designated site and 15 non-statutory designated sites were identified within 2km of the development site. Further details are provided in Table 2 below.

Table 2 - Designated Sites within 2km

Site Name	Designation	Reason for Designation	Approximate Distance from Site
Statutory Sites			
Plaster's Green Meadows	Site of Special Scientific Interest (SSSI)	Unimproved and species-rich meadow	0.9km to the south-west
Non-Statutory Sites			
Chewstoke Brook (North Somerset)	Site of Nature Conservation Interest (SNCI)	Running water (stream) and associated marginal habitats and semi-natural broad-leaved woodland	0.6km to the south
Field east of Whitting Street	SNCI	Unimproved neutral grassland. Majority of site lies within Chew Valley Scientific Nature Areas (SNA)	0.6km to the north-east
Fields west of Lower Strode	SNCI	Unimproved neutral grassland, site lies within Chew Valley SNA	0.7km to the south
Upper Strode Meadows	SNCI	Neutral grassland	0.7km to the south-west
Plaster's Green Grasslands	SNCI	Diverse un-and semi-improved neutral grassland, some traditionally managed as meadows, including Priority Habitat Lowland Meadows	0.9km to the south-west
North-Hill Field	SNCI	Semi-improved neutral grassland	0.9km to the east
Chewstoke Brook (BANES)	SNCI	Protected fauna, woodland and stream with notable species.	1.3km to the south-east
North Chewstoke Brook	SNCI	Semi-natural broadleaved woodland	1.3km to the east
Land around Redding Pit Lane	SNCI	Unimproved and semi-improved neutral grassland, and semi-natural broad-leaved woodland	1.5km to the north
Spring Farm Grasslands	SNCI	Acid and neutral grassland with marsh	1.6km to the north
Babylon Brook (BANES)	SNCI	Unimproved and semi-improved neutral grassland	1.7km to the south-east

Tavern Scott Field	SNCI	Unimproved neutral grassland	1.7km to the north-east
Butcombe Common	SNCI	Neutral grassland with scrub, stream and mire/bats Lies within Chew Valley SNA	1.8km to the west
Sage's Farm Fields	SNCI	Unimproved and semi-improved neutral grassland with marshy grassland, stream and scrub	1.9km to the south-west
Breech Hill Common	SNCI	Unimproved and semi-improved neutral grassland, unimproved calcareous grassland, semi-natural broadleaved woodland and scrub	2km to the south-east

3.1.2 The nearest designated site identified was Plaster's Green Meadows SSSI (Site of Special Scientific Interest), which is located approximately 0.9km to the south-west of the site.

3.1.3 The site is situated in a rural location in Regil and is located within consultation Zone C of the North Somerset and Mendip Bats Special Area of Conservation (SAC) (Burrows, 2017).

3.2 Protected Species

3.2.1 The data search identified no protected species records within the site boundary. However, a number of records of protected species were returned from within the 2km search area since 2012. A selection of these considered most relevant are detailed in Table 3 below.

3.2.2 It should be noted that a lack of records does not constitute proof of the absence of a species from an area and can often be put down to a lack of ecological recording.

Table 3 – Protected Species Records within 2km (2012-2022)

Common Name	Scientific Name	Number of Records	Year of Most Recent Record	Additional Information
Bats				
Greater Horseshoe	<i>Rhinolophus ferrumequinum</i>	4	2012	Four roost records returned including 2 maternity roosts – closest record approximately 1.2 km to south-west.
Lesser Horseshoe	<i>Rhinolophus hipposideros</i>	6	2016	Six roost records including 2 maternity roosts – closest record approximately 0.7km to south-west.
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	1	2014	One roost record returned, approximately 2km to the south-east.
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	4	2017	Four roost records returned, the closest is located 0.7km to the north-east.
Serotine	<i>Eptesicus serotinus</i>	4	2017	Four roost record returned (2017), record is located 0.7km to the north-east.

Noctule	<i>Nyctalus noctula</i>	3	2014	Three roost records returned, the closest record is approximately 2km to the south-east.
Brown Long-eared Bat	<i>Plecotus auritus</i>	3	2017	Three roost records returned including one maternity roost - closest record (2017) located 0.3km to the north-west.
Reptiles				
Grass Snake	<i>Natrix helvetica</i>	1	2012	One record returned, located approximately 2km to the south-east.
Birds				
Barn Owl	<i>Tyto alba</i>	14	2019	Fourteen records returned (2019) approximately 1.4km to the south-west.

3.3 NERC Species and Habitats of Principal Importance

3.3.1 Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 lists a number of species (943) and habitats (56) of principal importance in England; a selection of those considered potentially relevant to the site are detailed in Table 4 and Table 5.

Table 4 – NERC Species of Principal Importance (a selection of 16 species out of 943)

Common Name	Scientific Name
<i>Bats</i>	
Barbastelle Bat	<i>Barbastella barbastellus</i>
Bechstein's Bat	<i>Myotis bechsteinii</i>
Brown Long-eared Bat	<i>Plecotus auritus</i>
Greater Horseshoe Bat	<i>Rhinolophus ferrumequinum</i>
Lesser Horseshoe Bat	<i>Rhinolophus hipposideros</i>
Noctule Bat	<i>Nyctalus noctula</i>
Soprano Pipistrelle Bat	<i>Pipistrellus pygmaeus</i>
<i>Reptiles</i>	
Adder	<i>Vipera berus</i>
Grass Snake	<i>Natrix helvetica</i>
Slow-worm	<i>Anguis fragilis</i>
<i>Amphibians</i>	

Great Crested Newt	<i>Triturus cristatus</i>
<i>Terrestrial Mammals</i>	
Dormouse	<i>Muscardinus avellanarius</i>
Otter	<i>Lutra lutra</i>
West European Hedgehog	<i>Erinaceus europaeus</i>
<i>Birds</i>	
House sparrow	<i>Passer domesticus</i>
Skylark	<i>Alauda arvensis</i>

Table 5 – NERC Priority Habitats (a selection of 8 habitats out of 56)

Habitats	
Arable field margins	Hedgerows
Lowland mixed deciduous woodland	Ponds
Lowland calcareous grassland	Rivers
Traditional orchards	Wood pasture and parkland

4 Field Survey Results and Evaluation

4.1.1 The following section describes the habitats and notable species (or signs of) recorded during the field survey. Please refer to the following figures and appendices:

- Figure 33 – Phase 1 Habitat Survey Plan
- Appendix A – Wildlife Legislation and Policy
- Appendix B – Site Photographs
- Appendix C – Proposed Site Plans
- Appendix D – Precautionary Method of Working
- Appendix E – Outline Mitigation Plan
- Appendix F – Mitigation and Enhancement Plan

4.2 Habitats

Buildings

4.2.1 The site contained several buildings, which were located central and north to the site. A brief description of these buildings can be found below:

Table 6 - Building Descriptions

Building	Description
House	<p>The building was a two-storey detached structure with an L shaped gable roof comprising double Roman clay tiles on main roof and lean-to section. A rotunda featured the eastern elevation with lead covered cone roof, the eaves were solid plastic (PVC) on the north, eastern and southern elevation. Wooden fascia boarding was present on the western elevation of the house.</p> <p>The roof void (approximately 1.8m high throughout) had a bitumen lining, breezeblock walls internally and insulation inside the void.</p>
Garage	<p>The garage was a single storey rendered building with a gable pitch roof covered with double Roman clay tiles. PVC fascia boarding or soffits are present on the eastern, northern and southern elevations.</p> <p>Internally the space is primarily used for storage purposes. Timber beam span the width of the garage and it is lined with non-breathable membrane.</p>

Amenity Grassland

4.2.2 A well-managed amenity grassland represented majority of the site, with the sward height of below 5cm during the time of the survey. Species present included perennial rye grass *Lolium perenne*, smooth-meadow grass *Poa pratensis*, common daisy *Bellis perennis*, herb robert *Geranium robertianum*, broadleaved dock *Rumex obtusifolius*, selfheal *Prunella vulgaris*, primrose *Primula vulgaris*, and white clover *Trifolium repens*.

Ornamental Planting

4.2.3 Sections of ornamental flower planting were present within the amenity grassland and adjacent hard-standing areas. These areas were primarily comprised of non-native, ornamental species. An area of ornamental planting was also featured south to the house, these species included willow-leaf pear *Pyrus salicifolia* Pall., orange daylily *Hemerocallis fulva* (L.), tree peony *Paeonia* sp., catmint *Nepeta* sp., cape fuchsias *Phygелиus capensis* to name a few.

Scattered Trees and Shrubs

- 4.2.4 In the southern corner of the site, a semi-mature horse chestnut *Aesculus hippocastanum* and elder *Sambucus nigra* trees are present. A mature ash *Fraxinus excelsior* with extensive ivy cover was located on the western boundary, just further south to the ash was a mature silver birch *Betula pendula* tree. Several mature beech *Fagus sylvatica* trees had been felled on the western boundary prior to the site inspection. On the northeast section of the site, semi-mature willow *Salix sp.* and elder *Sambucus nigra* were present.

Hedgerow

- 4.2.5 All of the site boundaries consist of species-poor hedgerows (approximately 1-2m high and 1m wide). An intact beech *Fagus sylvatica* hedgerow was present on the north boundary with specimens of hawthorn *Crataegus monogyna*, blackthorn *Prunus*, hazel *Corylus avellana*, and elder, particularly on the north-eastern corner. A section of hedge approximately 2m in height and 1m wide was featured on the western and south-west boundary and mostly comprised beech, hazel, hawthorn, elder and bramble *Rubus fruticosus*. An intact hedgerow approximately 30m in length was located on the eastern boundary of the site, it featured species such as beech, hazel, ash, hawthorn, blackthorn, holly *Ilex aquifolium*, white snowberry *Symphoricarpos x doorenbosii* and dogwood *Cornus sanguinea* but also some non-native species.

Water bodies

- 4.2.6 Three small spring fed ponds and spring were featured in approximately centre of the site, the spring was slow flowing and runs approximately 30m in length to the south of the site. The spring was bordered by rocky banks and ornamental planting with introduced species. Plant species featured in the northern-most pond and spring include calla lily *Zantedeschia aethiopica*, Sage *Salvia officinallis*, Harts tongue fern *Asplenium scolopendrium* and yellow flag *Iris pseudacorus*.

Dry Ditch

- 4.2.7 Seasonally dry ditch runs along the north-eastern and eastern site boundary. The spring connects to this ditch. The north eastern section of this ditch was dry at the time of the survey, whereas the eastern part contained some water.

Hardstanding

- 4.2.8 Hardstanding areas (driveway and parking) were situated to the north of the house and was located the north and east of the garage. A patio area was located to the south of the building and a concrete path was positioned adjacent to the house on the eastern elevation.

Evaluation

- 4.2.9 All the habitats on site are common and widespread within the local landscape, and, with the exception of the hedgerows, are not included within the NERC Act 2006 list of Priority Habitats. The botanical species found in these habitats are also common and widespread.

Figure 3 - Extended Phase 1 Survey Map



4.3 Badger and Hedgehogs

- 4.3.1 The records search identified no badger *Meles meles* records from within 2km of the site.
- 4.3.2 No badger setts, or other field signs indicating the presence of a nearby sett (e.g. latrine pits, guard hairs or footprints) were identified within the site boundary, although the habitats present within the site and the local area were considered to be suitable to support badgers. No evidence of foraging activity was recorded within the site, although the amenity grassland within the site likely provides a foraging resource for local badger groups looking for worms and grubs.
- 4.3.3 The records search identified no hedgehog *Erinaceus europaeus* records from within 2km of the site.
- 4.3.4 While no evidence of hedgehog was identified during the field survey, the site (mainly hedgerows and shrubs) likely offer suitable foraging and sheltering opportunities for this species.

Evaluation

- 4.3.5 While there is the potential for badgers to utilise the site for foraging/commuting purposes, no setts or evidence of sett building, or evidence of foraging activity was identified onsite. As a result, the site was considered to be of no more than low value for foraging badgers.
- 4.3.6 While no evidence of hedgehog was identified onsite, the site may support populations of hedgehogs. The site was considered to be of local value for hedgehogs.

4.4 Bats

Extended Phase 1 Survey

Buildings

House

- 4.4.1 Evidence of bats was found during both internal and external inspection of the house. Approximately 10 bat droppings were found stuck on the external wall of the rotunda. The physical characteristics of the droppings indicated that they were likely derived from pipistrelle *Pipistrellus sp.* bats. Furthermore, approximately 50 bat droppings were found inside the main roof void near the southern gable wall. The physical characteristics of those droppings indicated that they were likely derived from long-eared *Plecotus sp.* bats.
- 4.4.2 Features were present on the exterior and interior of the building that were considered to be suitable for use by bats for roosting. These included:
- Roof voids.
 - Space between the underlay and roof tiles.
 - Gaps beneath the lead flashing around the air vent, chimneys and where the rotunda ties in the main roof.
 - Gaps underneath the wooden/lead fascia and barge boarding on all elevations (including rotunda).
 - Underneath the lifting/slipped tiles throughout.
- 4.4.3 Access points to these features included:
- Gaps beneath the tiles.
 - Damaged roof lining.
 - Gaps beneath lifted lead flashing.
 - Gaps underneath the fascia and barge boarding.

Garage

- 4.4.4 No evidence of bats was found during the inspection of the garage.
- 4.4.5 Features were present on the exterior and interior of the garage that were considered to be suitable for use by bats for roosting. These included:

- Interior.
- Space between the underlay and roof tiles.
- Gaps underneath the fascia boarding northern and southern and northern elevations.
- Underneath the lifting/slipped tiles throughout.

4.4.6 Access points to these features included:

- Gaps beneath the tiles.
- Damaged roof lining.
- Gaps underneath the fascia and barge boarding.

Ground Level Tree Assessment

4.4.7 All trees within the site boundary were subject to a ground level tree assessment during the initial Extended Phase 1 Habitat survey of the site. No obvious features that were potentially suitable to support roosting bats were recorded.

Site

4.4.8 The ponds and ornamental planting that forms a portion of the site provides suitable foraging habitat for bats, in conjunction with the hedgerows along all the site boundaries. Off-site Chewstoke Brook (SNCI) which features a broad-leaved woodland may support populations of roosting bats, which would likely utilise the habitats within the site (as well as other areas of open countryside surrounding the woodland) for foraging, as well as for commuting through to access other roosting sites or foraging grounds in the local landscape.

Evaluation

Buildings

4.4.9 The garage was considered to be of 'high' suitability for roosting bats in accordance with BCT guidelines. Due to the presence of bat droppings on both the exterior and interior roof void, the house was treated as a 'confirmed' roost.

4.5 Bat DNA Analysis

4.5.1 DNA analysis of the droppings collected from the house roof void confirmed that they were derived from brown long-eared bats *Plecotus auritus*. For locations of the bat droppings see Appendix B and Figure 3 above.

4.6 Bat Emergence/Re-Entry Surveys

Summary

- 4.6.1 The house and garage were subject to three separate surveys each, which is in line with BCT survey guidelines for buildings of 'high' suitability for roosting bats or confirmed roosts.
- 4.6.2 Two common pipistrelle were recorded entering the house from the eastern elevation of the house underneath the rotunda roof overhang. This was recorded during the dawn re-entry survey on 09/08/2022. One common pipistrelle was seen re-entering near the TV aerial on the southern elevation of the building.
- 4.6.3 One long-eared bat was seen entering near the chimney on the northern pitch on the eastern elevation of the house.
- 4.6.4 No roosting bats were recorded during the other two surveys of the house.
- 4.6.5 No bats were recorded entering/emerging the garage during the surveys, and therefore roosting bats were considered likely absent from this building.
- 4.6.6 Over the course of these surveys, a total of eight bat species were incidentally recorded within the site, comprising: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, long-eared *Plecotus sp.*, noctule *Nyctalus noctula*, serotine *Eptesicus serotinus*, myotis *myotis sp.* lesser horseshoe *Rhinolophus hipposideros* and greater horseshoe *Rhinolophus ferrumequinum*.

House and Garage - Dusk Emergence Survey – 25th July 2022

- 4.6.7 No bats were observed emerging from the house or garage during the dusk emergence survey.
- 4.6.8 Most of the activity during the survey comprised of common pipistrelle and soprano pipistrelle foraging in the garden and commuting past the building.
- 4.6.9 At 21:30 (21 minutes after sunset) myotis *sp.* were seen commuting up and down the Street that runs adjacent to the site on the eastern boundary.
- 4.6.10 Greater horseshoe bat passes were recorded by a surveyor located to the south-east of the garage, they were heard and not seen so the flight path could not be determined.
- 4.6.11 Five species were incidentally recorded during the emergence survey, comprising common pipistrelle (133 passes), soprano pipistrelle (102 passes), serotine (41 passes), greater horseshoe (9 passes), myotis *sp.* (7 passes), noctule (2 passes) and long-eared (1 pass).

House and Garage – Dawn Re-entry Survey – 09th August 2022

- 4.6.12 Two common pipistrelle were seen re-entering underneath the overhang on the rotunda above the window situated on the eastern elevation of the house. One was seen entering (Appendix B – EN1) at 04:49 (58 minutes before sunrise) and the second bat was seen entering one minute later at 05:00 entering the same feature (Appendix B – EN2).
- 4.6.13 One common pipistrelle was seen re-entering near the TV aerial on the southern elevation of the house (Appendix B – EN3) at 05:20 (27 minutes before sunrise). The exact feature was not identified during the survey, but it is likely the bat could be roosting underneath a roof tile.
- 4.6.14 One long-eared bat was seen entering near the chimney on the northern pitch on the eastern elevation of the house (Appendix B – EN4) of the house at 04:46.
- 4.6.15 Majority of the bats recoded comprised of common pipistrelle, from 05:00 – 05:19, three common pipistrelle bats were seen foraging near the telephone pole on the eastern boundary of the site near the Street.
- 4.6.16 Five species were incidentally recorded during the dawn re-entry survey, comprising common pipistrelle (165 passes), soprano pipistrelle (47 passes), long-eared (8 passes), noctule (6 passes), and serotine (5 passes).
- 4.6.17 No bats were seen entering or emerging from the garage.

House and Garage – Dusk Emergence Survey – 21st September 2022

- 4.6.18 No bats were seen emerging from the house or garage during this survey.
- 4.6.19 The highest number of passes during the course of the survey was serotine, they were seen commuting through the garden and foraging near the trees to the south of the house.
- 4.6.20 Several myotis passes were recorded during this survey, the passes were heard and not seen by a surveyor positioned to the south of the house.
- 4.6.21 Greater horseshoe was seen commuting at 19:41 (29 minutes after sunset) from the road on the eastern boundary through the garden to the field. At the same time, two greater horseshoe bats were recorded commuting over the site by a surveyor located on the eastern boundary.
- 4.6.22 Eight species were incidentally recorded during the dusk emergence survey, comprising serotine (137 passes), common pipistrelle (85 passes), soprano pipistrelle (30 passes), myotis (30 passes), noctule (8 passes), long-eared (2 passes), greater horseshoe (2 passes) and lesser horseshoe (2 passes).

4.7 Birds

- 4.7.1 During the building inspection the house was noted to be utilised for nesting/roosting by house Martin *Delichon urbicum*. Three nests were present on the north and south facing elevations and all were active (contained fledgelings) during the initial inspection and during the bat activity surveys.
- 4.7.2 The scattered trees, hedgerow and areas of introduced shrubs/soft landscaping within the site provide opportunities for nesting birds. However, the amenity grassland generally supported a relatively low diversity and abundance of wildflower species, and therefore the diversity of invertebrates that these habitats support is also considered likely to be relatively low.

Evaluation

- 4.7.3 The house displayed several active house Martin nests on the north and south facing elevations, underneath the eaves of the house. Additionally, the overall site provides nesting opportunities for bird species within the hedgerow and trees on the boundaries of the site.

4.8 Dormouse

- 4.8.1 The data search identified no records of dormouse *Muscardinus avellanarius* within 2km of the site.
- 4.8.2 No signs of dormice *Muscardinus avellanarius* were encountered during the survey. The site contains some habitat that dormice may utilise, in the form of hedgerows. However, the hedgerows are of limited abundance and quality of food available for this species (species poor and managed hedgerows).
- 4.8.3 Considering that individuals will usually remain in proximity (within 70m) of their nests (Bright et al., 2006), the variety of food resources available on site is unlikely to be sufficient to sustain individuals.

Evaluation

- 4.8.4 The hedgerows on the site boundaries were considered to be sub-optimal to support nesting and foraging dormice species, although they do provide some commuting opportunities for this species.

4.9 Great Crested Newt

- 4.9.1 The data search identified no records of great crested newt *Triturus cristatus* within 2km of the site.
- 4.9.2 Three spring fed ponds and spring was present within the site boundary. Observation of OS maps and aerial photography identified no further ponds within 250m of the site.
- 4.9.3 The amenity grassland that constitutes the majority of the site provides sub-optimal terrestrial habitat for great crested newts, and therefore likely provide less shelter from predation for great crested newts. The spring feeding the ponds on site contains flowing water, and although flowing water is not favoured by these species, the flow on site wasn't considered to be prohibitive (not too fast). Numerous hibernacula features were present throughout the site in the form of log piles, leaf litter and the understory of the hedgerows and shrubs.

Evaluation

- 4.9.4 The amenity grassland and hardstanding within the development area near the house and garage are of limited suitability/value for great crested newts.
- 4.9.5 The ponds, hedgerows, the shrub planting and log/habitat piles on site are of high value to great crested newts (if present).

4.10 Reptiles

- 4.10.1 The data search identified no records of reptiles within 2km of the site.

4.10.2 The amenity grassland that constitutes the majority of the site featured a relatively short sward at the time of the survey. The amenity grassland likely supports a relatively short sward throughout the year (well-managed) and is therefore considered to provide very limited shelter or foraging opportunities for reptiles, whereas piles of cuttings found within the southern corner of the site may provide opportunities for reptiles within the site. Furthermore, the hedgerows on the site boundaries may provide suitable hibernation opportunities for common reptile species, such as grass snakes and slow worms.

Evaluation

4.10.3 As with great crested newts, the amenity grassland and hardstanding within the development area provides sub-optimal habitat for reptiles due to lack of shelter, but the hedgerows, shrubs and habitat piles provide suitable shelter opportunities.

4.11 Other Protected or Notable Species

4.11.1 There were no indications during the survey or from the information gathered during the desk study that any other protected or notable species may be using the site or may be impacted by the development.

4.11.2 No invasive species were noted to be present on site.

5 Assessment of Impacts

5.1 Statutory and Non-Statutory Sites for Nature Conservation

- 5.1.1 The desk study identified one statutory and 15 non-statutory designated sites within 2km of the site. These sites comprised one Site of Special Scientific Interest (SSSI) and 15 Site of Nature Conservation Interest (SNCI). The closest of these sites to the proposed development area is Chewstoke Brook SNCI, which is located 0.6km to the south of the site.
- 5.1.2 It is considered that the proposed development will have **no impact** on any of these sites, due to the distance between them and the site, and the scale and type of the development, with impacts considered to be constrained to the site itself.

5.2 Habitats

- 5.2.1 The proposed new house will sit closely on the footprint of the existing house, a terrace is proposed on the south of the house. The garage will be demolished, and new garage/workshop is to be relocated further to the west to allow for a slightly enlarged driveway. These plans will result in the removal of small area of amenity grassland and maybe some shrub planting in order to facilitate the proposals.
- 5.2.2 Apart from a small area of well-managed amenity grassland and some shrub/garden planting, no other habitats within the site will be lost or damaged as a result of the proposed development. All existing hedgerows will be retained, and no trees within the wider area will be impacted. Furthermore, no changes to the management regime of the remaining grassland within the site are anticipated.
- 5.2.3 In summary, due to the nature and very small scale of the proposed development, as well as the relatively poor ecological value of the habitats which will be lost, the proposed development is considered unlikely to result in a significant impact on the value of the site for biodiversity post-construction, and therefore no mitigation or compensation measures in relation to habitat loss are considered necessary. Furthermore, an assessment to quantify the habitat gains and losses within the site using the DEFRA Biodiversity Metric was considered disproportionate to the scale and likely impacts of the proposed development, and therefore the completion of a biodiversity metric assessment was not deemed to be required.

5.3 Badger and Hedgehogs

- 5.3.1 Badgers and hedgehogs are protected by national legislation.
- 5.3.2 The proposed development comprises the loss of a very small area of grassland to facilitate the construction of the proposed dwelling and garage/workshop however the remainder of the habitats within the site will be retained and will continue to be managed in a similar way post-development which provides foraging opportunities for badgers and hedgehogs. Is unlikely to result in a significant impact on the overall availability of suitable foraging habitat for badgers within the site.
- 5.3.3 Given that badgers and hedgehogs likely utilise the site for foraging and/or commuting through, there is the potential for impacts on badgers and hedgehogs to arise during the construction phase of the scheme. In the absence of mitigation, these species (and a range of other wildlife) have the potential to become trapped in trenches or other excavations whilst traversing the site during the construction phase.

5.4 Bats

- 5.4.1 All bat species within the UK are protected by national and international legislation.

Habitat Losses

- 5.4.2 The loss of a small area of amenity grassland within the site and the construction of the proposed buildings is unlikely to significantly reduce the invertebrate carrying capacity of

the site, and therefore the proposed development is unlikely to significantly reduce the availability of foraging opportunities for bats within the site.

Fragmentation and Increases in Artificial Lighting

- 5.4.3 The proposed development will not result in any direct loss of linear habitats such as hedgerows which may contribute to commuting corridors through the wider landscape. However, the proposed development may result in increase in artificial lighting within the site, arising from the internal and potentially external lighting associated with the new dwelling and garage/workshop. Increases in artificial lighting have the potential to degrade the value of habitats for bats, and potentially even lead to a loss in a habitat's functionality as a commuting corridor and/or an accessible foraging resource.
- 5.4.4 The northern and eastern hedgerow was found to support foraging/commuting activity during the bat activity surveys, light-averse species such as long-eared and horseshoe bats were detected on-site and in proximity to these boundaries. Given the new dwellings and the garage/workshop proximity to the boundary features, mainly northern and eastern boundary, there is the potential for this to cause significant light spill onto the commuting feature/s, leading to fragmentation of a commuting route/s and potentially causing bats to cease use of the feature. This would constitute a **long-term adverse** impact on bats and potentially the associated North Somerset and Mendip Bats Special Area of Conservation (SAC) (Burrows, 2017).
- 5.4.5 Final locations and design of the external lighting or the amount and locations of the glazed areas of the new dwelling or garage/workshop after development were not confirmed at the time of writing this report, but it is likely that the house will have some external lighting for safety and security purposes. The initial proposed plans indicate larger glazed windows/doors mainly on southern and western elevations which are likely to cause increased light levels.
- 5.4.6 It is believed that potential impacts of the proposed development on commuting and foraging bats can be mitigated for to ensure their protection into the future. Therefore, with mitigation, including the implementation of a sensitive external and internal lighting design, it can be ensured that the proposed development will have **no/minimal impact(s)** on bats.

Roosting Bats

Buildings

- 5.4.7 It is considered with the absence of mitigation, that the planned demolition and re-build of the house will result in the loss of day roosts of two species of bat, and potentially the disturbance and accidental killing and/or injury of bats during the conversion works. This would be considered a **significant adverse** impact at county level. It is considered, with appropriate mitigation and sensitive timing of the work, that any potential impacts on roosting bats (if present) can be avoided.

Trees

- 5.4.8 Given the fact that all trees are being retained within the proposed development area and no obvious roosting features noted on any of the trees on site, no impacts are anticipated.

5.5 Birds

- 5.5.1 All birds within the UK are protected whilst nesting.
- 5.5.2 Nesting birds were noted to be present on the external walls of the house. In the absence of mitigation, the proposed demolition works of the house will result in the destruction of nests and possible killing, injury, and disturbance of birds and/or dependent young. This would therefore constitute a certain **long-term adverse impact**.
- 5.5.3 With mitigation, it can be ensured that the development can have a negligible-low impact on nesting birds, and the value of the site for birds can be enhanced.
- 5.5.4 In addition, the majority of the habitats within the site will be retained, including the hedgerows, trees and shrubs. Therefore, no significant impacts to foraging birds are anticipated to occur as a result of the proposed development.

5.6 Dormouse

- 5.6.1 The proposed development will not result in the removal of any hedgerows, or any other habitats that are suitable to support this species. As a result, no significant impacts upon dormice are anticipated as a result of the proposed development, no further surveys or mitigation measures are considered to be required, and this species is not considered further within this assessment.

5.7 Great Crested Newt

- 5.7.1 Great crested newt and their habitats are protected by national and international legislation.
- 5.7.2 The onsite ponds will be retained. However, some terrestrial habitat in close proximity to this pond will be impacted by the proposed development (removal/damage of >0.1 ha amenity grassland for the proposed garage, and in the vicinity of the dwelling and damage during construction).
- 5.7.3 No GCN records were found during the data search.
- 5.7.4 The on-site pond is approximately 3m west from the dwelling and approximately 8m south from the garage.
- 5.7.5 When applying Natural England's Rapid Risk Assessment (RRA) tool for assessing the likelihood of an offence being caused by the proposed development (should the pond on-site be considered a breeding pond for the species, all land has to be considered, not just newt habitat), it is considered an amber result of 'offence likely' for the works.
- 5.7.6 As such, without mitigation, there is a potential for the development activities to result in the possible killing, injury, and disturbance of great crested newts. This would constitute a certain long-term adverse impact and be considered an offence under relevant wildlife legislation (see Appendix A).
- 5.7.7 With the appropriate works (including an eDNA survey of the pond to determine if great crested newts are present, or site's registration under DLL) it can be ensured that works do not have a negative impact on great crested newts, nor cause an offence.

5.8 Reptiles

- 5.8.1 Reptiles within the UK are protected by national and international legislation, which varies with species.
- 5.8.2 Due to the very small area of grassland which will be removed as a result of the proposed development, as well as the abundance of suitable habitat for reptiles elsewhere within the site and in the local landscape, no further surveys for reptiles are considered to be required. Nevertheless, in the absence of mitigation, vegetation clearance works would have the potential (albeit, very low) to result in the accidental killing/injury of individual common reptiles (such as slow worms and grass snakes), should they be present within the development area. However, with mitigation, it is considered likely that this risk can be minimised, and any potential impacts upon reptiles can be avoided.

6 Recommendations

6.1 Further Actions

6.1.1 The results of this ecological impact assessment have highlighted the requirement for further actions. 8 below provides a summary of the works required, whilst details are provided in the following paragraphs.

Table 7 – Table of Further Actions

Species/Groups	Phase	Action(s) Required
Habitats, Badgers, Dormice, Hedgehogs, Reptiles, Amphibians	Site Clearance/Construction	Protection of habitats and measures to minimise risk to protected species through the implementation of a CEMP.
Birds	Demolition/Site Clearance	Demolition works and any clearance of vegetation following timings and methods outlined in 6.3.
	Construction	Provision of two artificial House Martin nests as a compensation for the loss of nests present on the house.
Bats	Design	Artificial lighting designed sensitively to minimise impacts of artificial lighting on boundary hedgerows/features and other adjacent habitats of value to foraging/commuting bats.
	After planning permission has been granted, prior to works starting on site	A Bat Mitigation Licence (BML) will be required from Natural England, in order to allow works which would otherwise be illegal.
Great Crested Newt	Prior to Planning Determination	An eDNA survey of the pond on-site and off-site pond is recommended. Further great crested newt surveys (and a population assessment) are likely required following traditional methodology if presence is determined. A mitigation licence from Natural England may then be required following these surveys.
Ecological Enhancements	Design and Construction	Ecological enhancements should be included within new developments to deliver a net gain for biodiversity. Recommendations made in Section 6.6.

6.2 Habitats, Badgers, Dormice, Hedgehogs, Reptiles

6.2.1 In order to protect the pond, spring and hedgerows and the protected species within it, a Construction Environmental Management Plan (CEMP) must be compiled and submitted to the local planning authority prior to the start of works and complied with throughout works. This plan will include measures to prevent encroachment and details for the control of dust, soil, aggregate, and liquid incursions into the spring and the pond.

6.2.2 The CEMP will also include a method statement for sensitive vegetation clearance and protection measures during construction in order to minimise the residual risk to badgers, hedgehogs, reptiles, amphibians (including great crested newts) and other small animals during vegetation clearance, should these species be present within the site.

6.3 Birds

6.3.1 Demolition of existing buildings and any shrub removal should be undertaken outside of nesting bird season (typically March – August inclusive).

- 6.3.2 If vegetation clearance/demolition works within nesting bird season cannot be avoided, then nesting bird inspections by a suitably experienced ecologist will be required prior to work commencing. Any active nests found would need to be protected until eggs have hatched and young fledged.
- 6.3.3 It is recommended that two House Martin Nest boxes are placed on the new dwelling or garage/workshop. These nests should be sited underneath the eaves on exterior walls of the building or outbuildings, at a minimum height of 2m above the ground on northerly elevations.

6.4 Bats

Lighting

- 6.4.1 The lighting plan for the site wasn't drafted at the time of writing, however, the lighting mitigation measures could be secured by way of an appropriately worded planning condition. These general principles will apply:
- 6.4.2 All boundary hedgerows will be kept as dark zones where light levels cannot exceed 0.5lux/existing light levels due to the presence of light-sensitive species like horseshoe bats recorded on site during activity surveys.

External Lighting

- 6.4.3 No external lighting can be installed on the site with the exception of security/safety lighting above pedestrian entranceways to the dwelling and the garage/workshop. This will utilise a number of key design points to limit any impact;
- Low level lighting pointed towards the ground or bollards;
 - Warm white spectrum lighting <2700 Kelvin;
 - Use of light shields and hoods to direct the light downwards and prevent vertical and horizontal light spill;
 - Use of passive infrared (PIR) motion sensors to ensure lights only come on when necessary.

Glazing

- 6.4.4 The proposed larger glazed windows/doors mainly on southern and western elevations are likely to cause increased light levels and potentially affect the hedgerows.
- 6.4.5 Although the amount of glazing on the eastern elevation is not considered significant, however as it features several skylights and is only approximately 1m away, it is possible that it could cause increased light levels along the eastern boundary hedgerow.
- 6.4.6 Tall close-board fencing could be a good option in blocking any light spill from the ground level glazing.
- 6.4.7 Low-transmission glazing treatments may be a suitable option for achieving reduced illuminance targets from the upper-level glazing or skylights.
- 6.4.8 Products available include retrofit window films and factory-tinted glazing. "Smart glass", which can be set to automatically obscure on a timer during the hours of darkness, and automatic blinds can also be used but their longevity depends on regular maintenance and successful routine operation by the occupant and should not be solely relied upon.
- 6.4.9 Such glazing treatments might not be necessary for glazing on northern elevation of the new dwelling as the amount of glazing present is considered marginal.
- 6.4.10 The garage/workshop doesn't contain any glazing on northern elevation and the glazing on all the other elevations would only affect amenity grassland or hardstanding areas.

Roosting Bats

- 6.4.11 The emergence and re-entry surveys identified that the house used as a day roost by low numbers of common pipistrelle and brown long-eared bats. A Bat Mitigation Licence (BML) or Low Impact Class Licence will be required from Natural England, in order to allow works

which would otherwise be illegal. The licence must be in place prior to any works being undertaken which could impact on bat roosts.

- 6.4.12 Mitigation will be required and an outline mitigation strategy for bats is included in Appendix D of this report. Natural England take a minimum of 30 working days (10 working days for low impact licenses) to assess an application.

6.5 Great Crested Newts

- 6.5.1 The pond onsite has the potential to support a population of great crested newts and the proposed works have the potential to impact on individual great crested newts (if present) the due to proximity of the pond to the works and the size of the area affected. It is recommended that an eDNA survey should be undertaken on the pond on and off-site. Results of the great crested newt eDNA surveys are only accepted by Natural England (NE) if the samples are collected between mid-April and late June.
- 6.5.2 If great crested newt DNA is found to be present following the completion of eDNA surveys, a survey population assessment using traditional survey techniques might be required to make a population size class assessment and to inform a Great Crested Mitigation License (CGNML).
- 6.5.3 If great crested newts are identified on site, then a mitigation strategy will need to be produced, and following planning being approved, it may be necessary to apply for a GCNML from NE, in order to comply with the relevant legislation. A full mitigation (if required) plan will be created upon completion of these surveys.
- 6.5.4 Alternatively, it is recommended that a District Level Licence (DLL) is applied for through NE, in conjunction with submitting the planning application to the local planning authorities (LPA) for the development.

6.6 Enhancements and Planning Policy

- 6.6.1 Enhancement features for wildlife should be included in new developments to meet the recommendations contained within the National Planning Policy Framework 2021.
- 6.6.2 Bee bricks will be installed on walls of the new dwelling and garage/workshop (one of each) at a minimum height of 1m, with no vegetation obstructing the holes. It is highly recommended that bee-friendly plants should be located nearby so that the bees using the bricks have food, otherwise it is unlikely that the bricks will be used. Lavender, honeysuckle and buddleia are all pollinator-friendly plants.

7 Conclusion

- 7.1.1 With the above mitigation and enhancement measures, it is considered that the proposed development can avoid/minimise the potential impacts on the species considered within this assessment and result in no net loss for biodiversity within the site. Following the successful implementation of the above ecological enhancement measures, it is considered that the proposed development will likely result in a minor net gain in the site's value for biodiversity.

References

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Joint Nature Conservation Committee (JNCC) (2010). *Handbook for Phase 1 habitat survey*

Natural England (2016) *Great Crested Newts: Surveys and Mitigation for Development Projects – Standing Advice*. Online at: <https://www.gov.uk/government/publications/great-crested-newts-apply-for-a-mitigation-licence> (Accessed December 2021).

UK Governments Countryside Geographic Information website: www.magic.gov.uk

Appendix A – Wildlife Legislation & Policy

The Conservation of Habitats and Species Regulations 2017

Certain species are known as European Protected Species (EPS) and these are fully protected under The Conservation of Habitats and Species Regulations (2017). The Conservation of Habitats and Species Regulations (2017) is the transposition of the European Habitats Directive (1992) to UK legislation. Species protected under this legislation include (but is not limited to) bats, dormice *Muscardinus avellanarius*, great crested newts *Triturus cristatus*, otter *Lutra lutra*, sand lizard *Lacerta agilis*, and smooth snake *Coronella austriaca*.

For European Protected Species, it is a criminal offence to:

- Deliberately capture, injure or kill any such species;
- Deliberately disturb wild animals of any such animal;
- Deliberately take or destroy their eggs;
- Damage, destroy, or obstruct access to a breeding site or resting place, whether the animal is present or not;
- Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal of a European Protected Species, or any part of, or anything derived from, such an animal.

Operations which will affect European Protected Species may require a development licence from the relevant national statutory body for nature conservation, which provides a derogation for an otherwise unlawful activity.

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) makes it a criminal offence to:

- Kill, injure, or take any wild bird (with exceptions to species listed in Schedule 2);
- Take, damage or destroy the nest of any wild bird while in use or being built;
- Take or destroy an egg of any wild bird;
- Intentionally kill, injure or take any wild animal listed on Schedule 5;
- Interfere with places used for shelter or protection, or intentionally disturbing animals occupying such places.

Water voles *Arvicola amphibious* are protected under Section 5 of the Wildlife and Countryside Act, 1981 (as amended) against killing, injuring, taking, or selling a water vole; damaging or destroying a place of shelter (burrow), obstructing access to a place used for shelter, or disturbing a water vole whilst it is occupying a place of shelter or protection.

Operations which may affect water voles may require a licence from the relevant national statutory body for nature conservation, which provides derogation for an otherwise unlawful activity.

Certain non-native, invasive plant species have become established in Great Britain and pose a threat to native flora. Some species of cotoneaster are listed under Schedule 9, which makes it an offence to plant or allow this species to spread in the wild.

Protected Sites

Within the UK, certain sites are afforded protection measures based on their level of importance to wildlife. They fall into two categories; statutorily designated sites and non-statutorily designated sites.

Statutorily designated sites are typically of national or international importance and as such are afforded the greatest levels of protection under various pieces of legislation. Statutory sites include Special Areas of Conservation (SAC), Special Protection Areas (SPA), National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and RAMSAR sites.

Non-statutorily designated sites are normally designated by local authorities or nature organisations and are typically of local or county wide importance for their conservation interest. Non-statutory sites include Listed Wildlife Sites (LWS), Local Nature Conservation Sites (LNCS), Sites of Importance for Nature Conservation (SINC), Sites of Nature Conservation Importance (SNCI).

Properties of non-governmental organisations such as Wildlife Trusts may also be managed for their importance to biodiversity. These areas often have no statutory basis, but often comprise part of a designated site.

National Planning Policy Framework (2021)

National Planning Policy Framework (NPPF) (2021) sets out Government Policy on Biodiversity and Nature Conservation and places a duty on planners to make material consideration to the effect of a development on legally protected species when considering planning applications. NPPF also promotes sustainable development by ensuring that developments take account of the role and value of biodiversity and that it is conserved and enhanced within the development.

The Natural Environment and Rural Communities Act (2006)

Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006) sets out a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The list (including 56 habitats and 943 species) drawn up in consultation with Natural England, provides a guide to local and regional authorities when implementing their duty as defined in Section 40 of the NERC Act 2006;

- “Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.” - Section 40(1).
- “Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat”. - Section 40(3).

Appendix B – Site Photographs



Photograph 1: View of the northern elevation of the house (location of bat droppings found stuck on the walls is circled in red).



Photograph 2: Alternative view of the northern elevation of the building.



Photograph 3: View of the lean-to section attached to the main house on the northern elevation.



Photograph 4: View of house martin nests on the northern elevation.



Photograph 5: View of the southern elevation EN3 and house martin nests.



Photograph 6: Alternative view of the southern elevation.



Photograph 7: View of the turret on the eastern elevation.



Photograph 8: View of the northern pitch of the house.



Photograph 9: View of the gable end on the eastern elevation.



Photograph 10: View of the western elevation.



Photograph 11: Alternative view of the western elevation.



Photograph 12: Bat droppings in cobweb on the eastern facing elevation of the house.



Photograph 12: View of bat dropping on external walls on north facing elevation.



Photograph 13: View of bat dropping on windowsill on eastern elevation.



Photograph 14: View of roof void in house.



Photograph 15: Bat droppings in roof void.



Photograph 16: Alternative view of roof void.



Photograph 17: View of gable end on the western elevation of the garage.



Photograph 18: View of north facing elevation on the garage.



Photograph 19: View of east facing elevation of garage, hard-standing area and greenhouse.



Photograph 20: Internal view of garage.



Photograph 21: Alternative view of garage.



Photograph 22: View of the stream.



Photograph 23: Stream and surrounding vegetation.



Photograph 24: Ornamental planting surrounding pond.



Photograph 25: View of pond on-site.



Photograph 26: View of stream and vegetation.



Photograph 27: View of western boundary.

Appendix C – Proposed Site Plans



Appendix D – Outline Mitigation Plan

Introduction

Below is an outline mitigation plan that will form the basis for the method statement which will be put forward to Natural England in the BML/BMCL application.

Please note that this Method Statement is subject to approval by the Local Planning Authority and Natural England.

Proposed works

It is understood that the proposed plans for the site comprise a replacement dwelling and garage/workshop outbuilding.

The demolition of the current building will need to be carried out under BML.

Order of mitigation works

Installation of mitigation on the site prior to start of works;

- BML/BMCL and bat boxes must be in place before demolition of the current dwelling;
- Works can begin under supervision (i.e. check of crevices followed by removal of any bargeboard and fascia boards, lifted lead flashing and roof tiles);
- Unsupervised works can continue once signed off by supervising ecologist;
- Compliance check.

Timings of works

Temporary mitigation (to be used if bats are found during demolition (if required) but will be retained after development as enhancement) and BML must be in place prior to start of demolition.

The house at Springfield is being used as a day roost by low numbers of common pipistrelles and brown long-eared bats and therefore no timing constraints are considered necessary to the proposed works.

Mitigation

See Appendix E below for locations of the features described below.

Temporary Mitigation

Two General Purpose Bat Boxes (or similar woodcrete bat box) will be placed as high as possible on suitable mature tree/s on site. These boxes will be used as temporary mitigation should bats be found during the roof works, however they will remain in place even after development works have been completed as a permanent enhancement feature.

Permanent mitigation

As permanent mitigation for the loss of the pipistrelle and brown long-eared roosts (and access points), replacement bat loft and bat access tiles will be provided within the new garage/workshop. The bat loft will be constructed within the garage/workshop. The dimensions of the “bat loft” are approximately W10m x L8.5m and H2.5m. A letterbox style opening (L20cm x H10cm) will be created on the western gable end of the garage/workshop, allowing free fly-in access for bats. Additionally, two purpose built bat access tiles (Bat Access Tile Set constructed of Lead or Habibat Access Tile or similar to match the roof tiles type chosen) will be placed near the ridge line – one on each side of the ridge line, allowing access to the roof void but also to the space between the tiles and the lining for crevice dwelling bats.

Other considerations include: **only tradition hessian weave 1F bitumen lining will be used in the garage/workshop roof, only untreated timber used in areas bats can access.**

Supervised works

Certain aspects of the works will be supervised by a suitably licensed and experienced ecologist, to ensure that no harm comes to any bats that may be present.

A tool-box talk will be given to contractors at the start of the works on how to recognise a bat, where they might be found and what to do in the event of finding one.

Removal of the roof tiles, lead flashing, bargeboards and soffit fascia boards will be supervised by a licensed bat ecologist. These features will be removed individually by hand and will be checked underneath before discarding.

If bats are found under the tiles, they will be captured by the licensed bat ecologist supervising the works and assessed for their potential for release. It is possible (although unlikely) that torpid bats may be encountered during the works. If found bats are in torpor, they will be assessed by the supervising ecologist and if considered suitable for release, they will be placed immediately (great care will be taken not to arouse bats by minimal handling) in woodstone bat box (considered suitable for hibernating bats as woodcrete is known to maintain stable temperatures) on site.

If during roof works, the weather is mild and the found bats are active (not in torpor) and suitable for release, they will also be placed in general purpose bat box on the silver birch tree (western boundary).

If bats (torpid or active) are considered unsuitable for release (i.e. injured), they will receive veterinary care as required and be kept in care until they are suitable for release at an appropriate time of year.

If any crevices are discovered in the walls during the works, they will be inspected by a licensed ecologist with the use of an endoscope prior to removal of the feature to establish whether bat(s) are roosting in any of the crevices. The crevice check will take place the same day as the removal works.

If bats are discovered to be roosting in any of the walls or timber cracks or crevices, a decision on how to deal with them will be made on site by the supervising ecologist in light of the conditions on site at the time and the state of the animals themselves. There are a number of options for dealing with them:

- One-way gates will be installed on the opening/s by the ecologist, left in place for a minimum of two weeks and then rechecked to see if bats have left;
- The bat/s will be removed and placed in a bat box on site or in care;
- The gap/crevice will be left undisturbed until a later date and removal re-scheduled.

Monitoring

A compliance check will be completed by a licensed bat ecologist following completion of all the mitigation works. As the site is used by low number of common species of bat, no monitoring is considered necessary.

Appendix E – Mitigation and Enhancement Plan

