ECOLOGICAL ASSESSMENT REPORT

22nd February 2022

Manor Farm, Avebury Trusloe, Marlborough, Wiltshire, SN8 1QY

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SURVEY DATA VALIDITY

Information and data provided within this report is

considered accurate at the time of writing. Survey data is considered

valid for 18 months from the survey date, although update survey

data may be required for a planning application dependent on conditions and impacts.

Update surveys may be required for a Natural England mitigation licence application.

Contents

Executive summary 3

1. Introduction 6

2. Legislation and policy 7

3. Methodology 10

4. Results 17

5. Ecological mitigation, compensation and enhancement strategy 33

6. References 47

Appendix 1: Site location plan and existing site layout 48

Appendix 2: Proposals 50

Appendix 3: Phase 1 habitat map 52

Appendix 4: Photographs 54

Appendix 5: Bat evidence 57

Appendix 6: Bat activity surveys – raw results 58

Appendix 7: Ecological Parameters Plan (EPP) 63

Executive summary

- ABR Ecology Ltd were commissioned by Savills on behalf of their client Butler Bros (Avebury) Ltd to produce an Ecological Assessment report informed by a Preliminary Ecological Appraisal (PEA), Preliminary Roost Appraisal (PRA) and bat activity surveys at Manor Farm, Avebury Trusloe, Marlborough, Wiltshire, SN8 1QY. These surveys were conducted to advise on the presence/absence of bats within the buildings/trees and any other ecological constraints associated with the prospective development of the site. This report was requested to support a full planning application for the demolition of the existing agricultural buildings to facilitate the construction of six new 1 & 2 bed holiday units with an associated services building, landscaping and parking.

- The PEA and PRA were conducted on the 22nd September 2020 by Natural England Class 2 licensed bat ecologists Russell Hoyle ACIEEM and Becci Smith MCIEEM. Bat activity surveys were conducted in June and July 2021 upon the buildings. Reptile presence/absence surveys were conducted between 17th June and 1st August 2021.

Habitats:

- The application site predominantly consists of four large agricultural buildings and hardstanding, with small areas of poor semi-improved and improved grassland, tall ruderal vegetation, ephemeral/short perennial vegetation, scattered trees and a native species-poor hedgerow at the southern boundary of the site.

- The hedgerow on site (which also extends off-site) qualifies as a UK BAP Priority Habitat and will be fully retained as part of the development; a hedgerow protection and enhancement scheme is detailed in Section 5 of this report.

Badgers:

- No evidence of badgers was recorded on site and no further action has been recommended for this species.

Bats:

- The ‘store’ in the centre of the site is a confirmed brown long-eared bat roost due to a low number of bat droppings and butterfly wings found within this building. In addition, ‘Building 1’ & ‘2’ were deemed to hold ‘low potential’ for roosting bats. ‘Building 4’ in the north was deemed to hold ‘negligible potential’ for roosting bats.

- One dusk bat activity survey was undertaken on 'Building 1' and no bats were recorded emerging/re-entering this building. Therefore, roosting bats are not considered to be utilizing this building.

- During the initial dusk survey on 'Building 2', one common pipistrelle bat was recorded emerging from the northwest door and therefore two further bat activity surveys were undertaken. No additional bat roosts were recorded during the further surveys and therefore the building is considered to support a day roost for an individual/low number of common pipistrelle bat.

- Three bat activity surveys undertaken on 'Building 3' which revealed bat roosts for two common pipistrelle bats and one brown long-eared bat, with access points located around the open elevations of the building.

- As demolition of the buildings will result in the loss of bat roosts, **a Bat European Protected Species (EPS) licence from Natural England will be required following planning approval and prior to any works commencing**. A mitigation and compensation strategy is detailed in Section 5 of this report which must be implemented under the approved EPS licence.

- The trees on site are not considered likely to support roosting bats. As such no further recommendations have been made in relation to bats and tree works.

- A sensitive lighting strategy is detailed in Section 5 to ensure roosting, commuting and foraging bats are not adversely affected by the proposals.

Dormice:

- The site was not considered to be suitable for dormice and no further action has been recommended for this species.

Great crested newts (GCN):

- A total of four known GCN records (2019) were identified 520m and 644m northeast of the site. No waterbodies are present on site however, eDNA sampling was conducted on one off-site pond located 334m northwest of the site which returned a 'negative' result; a second pond located 243m northeast was not accessible for eDNA survey as land access permission was denied. As the site is mainly hardstanding and based on the eDNA sampling, GCN are not considered likely to be present on site and no further action is recommended for this species.

Nesting birds:

- One active pigeon's nest, considered to be from the most recent nesting season, was recorded in the west of 'Building 3'. There is also potential for nesting birds to

be present in the remaining buildings, hedgerow and scattered trees on site. A mitigation strategy for nesting birds is detailed in Section 5.

- No evidence to suggest barn owls are present within the buildings on site was noted. This species is not considered to be roosting/nesting on site and no further action is recommended for barn owls.

Reptiles:

- Suitable fringe habitats for common reptiles were identified including the hedgerow, rubble piles, ephemeral/short perennial and tall ruderal vegetation. A suite of seven reptile presence/absence surveys were undertaken, however, no reptiles were identified on site. Based on the surveys, reptiles are not considered to be impacted by the proposed development and no further action is recommended.

Ecological enhancements:

- To ensure proposals are compliant with Section 15 of the National Planning Policy Framework (NPPF) and local planning policy, ecological enhancements will include built-in bat roosting features, solitary bee bricks and bird nesting boxes within the buildings, the inclusion of native landscaping, and hedgehog-friendly fencing throughout the development. Enhancements are detailed in Section 5 of this report.

1. Introduction

ABR Ecology Ltd were commissioned by Savills on behalf of their client Butler Bros (Avebury) Ltd to produce an Ecological Assessment report informed by a Preliminary Ecological Appraisal (PEA), Preliminary Roost Appraisal (PRA) and bat activity surveys at Manor Farm, Avebury Trusloe, Marlborough, Wiltshire, SN8 1QY (central grid reference: SU 09529 69554). These surveys were conducted to advise on the presence/absence of bats within the buildings/trees and any other ecological constraints associated with the prospective development of the site.

The PEA and PRA were conducted on the 22nd September 2020 by Natural England Class 2 licensed bat ecologists Russell Hoyle ACIEEM and Becci Smith MCIEEM and bat activity surveys were completed in June and July 2021. Reptile presence/absence surveys were conducted between 17th June and 1st August 2021. An existing site layout and location plan are provided in Appendix 1 and current proposals are provided in Appendix 2.

Site context

The application site is situated in the Rural village of Avebury Trusloe, Wiltshire and lies within the North Wessex Area of Outstanding Natural Beauty (AONB). A small area of residential housing, arable land and grazing pasture with hedgerow networks are present within the immediate surrounding landscape. Within the wider landscape, the River Kennet lies approximately 200m east of the site with arable land, pasture and small blocks of woodland. The immediate and surrounding habitats are considered to provide excellent opportunities for local wildlife.

Aims and scope of this report

This report is based on the results of the PRA and data search from the Local Records Centre, which were principally aimed at determining the ecological value of the site and any constraints associated with the development. This report is also based on the results of the PRA which aimed to determine if a bat roost is present within any of the buildings/trees or whether the building(s)/trees had 'potential' to support roosting bats in line with The BCT Good Practice Survey Guidelines (Collins, 2016).

This report aims to establish whether the proposed works will impact on any protected or vulnerable species and/or habitats, which may inform the need for European Protected Species (EPS) licence(s) to allow the works to proceed lawfully.

2. Legislation and policy

Legislation and UK BAP priority habitats/species

Legislation

In England, all bats, dormice (*Muscardinus avellanarius*) and great crested newts (*Triturus cristatus*) are legally protected under Annex IV of the EC Habitats and Species Directive (1992), which is transposed into domestic law via the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

A number of species are also listed under Annex II of the EC Habitats and Species Directive (1992), including barbastelle (*Barbastella barbastellus*), Bechstein's bat (*Myotis bechsteinii*), greater horseshoe (*Rhinolophus ferrumequinum*), lesser horseshoe (*Rhinolophus hipposideros*), great crested newt, and stag beetle (*Lucanus cervus*).

The above named species and adders (*Viperaberus*), slow worms (*Anguis fragilis*), grass snakes (*Natrix natrix*), common lizards (*Zootoca vivipara*), common frog (*Rana temporaria*), palmate newt (*Lissotriton helveticus*), smooth newt (*Lissotriton vulgaris*) and several invertebrate species are also protected under Schedule 5 of The Wildlife and Countryside Act (WCA) (1981) (as amended). Schedule 9 of The WCA (1981) (as amended) also includes non-native, invasive species including (but not limited to) Himalayan balsam (*Impatiens glandulifera*) and Japanese knotweed (*Fallopia japonica*). Badgers (*Meles meles*) are legally protected under The Protection of Badgers Act (1992).

All birds, their nests and eggs are protected under Section 1 of The WCA (1981) (as amended) and it is thus an offence, to intentionally kill, injure or take any wild bird; intentionally take, and damage or destroy the nest of any wild bird while it is in use or being built.

A number of sites designated for nature conservation are afforded legal protection due to being of European importance. These include Special Areas of Conservation (SACs) (protected under the EC Habitats and Species Directive (1992), Special Protection Areas (SPAs) for birds (protected under the EC Birds Directive) and Ramsar (Ramsar Convention, 1975). Other protected sites include Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) Local Nature Reserves (LNRs) and Protected Road Verges which are designated under the WCA (1981) and strengthened by The Natural Environment and Rural Communities Act (NERC) (2006).

SPAs and SACs were previously included in the Natura 2000 sites and following amendments to the legislation, are now included under the 'National Site

Network'. Ramsar sites do not form part of the 'National Site Network' however, are afforded the same protection. These changes allow the Government to continue commitment to the protection of the environment along with fulfilling the international commitments under the Bern Convention, the Oslo and Paris Conventions (OSPAR), Bonn and Ramsar Conventions.

UK BAP

Several species and habitats are listed under the UK Biodiversity Action Plan (UK BAP) (JNCC, 2016) as priority habitats/species due to their vulnerability or rarity as listed under Section 41 of The NERC Act (2006) and Section 40 places a duty to conserve biodiversity on all Public Authorities.

These include several terrestrial and freshwater habitats, including streams, rivers, reedbeds and several species such as hedgehogs (*Erinaceus europaeus*), barbastelle, Bechstein's bat, both species of horseshoe bat, brown long-eared bat (*Plecotus auritus*), soprano pipistrelle (*Pipistrellus pygmaeus*), and noctule (*Nyctalus noctula*).

National and local policy

NPPF – The National Planning Policy Framework

The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities & Local Government, 2021) sets out the Government's planning policies for England and how these should be applied. In the context of this report, Section 15 of NPPF is relevant and applicable, Section 15 states:

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

New developments and projects are supported where plans promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue measurable net gains for biodiversity.

To ensure this application is compliant with Section 15 of NPPF, wildlife/habitat enhancements will be required to demonstrate a biodiversity net gain as an outcome of the project/development.

Section 15 of NPPF also gives consideration to sites with potential to impact on irreplaceable habitats, and states:

'Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists'

To ensure this application is compliant with Policy 15, this application should be accompanied by a suitable arboricultural report to assess the presence of potential ancient or veteran trees, where appropriate.

The Wiltshire Core Strategy

The Wiltshire Core Strategy (2015) (Wiltshire Council, 2015) Core Policy 50 'Biodiversity and geodiversity' states that all proposals for development, including those which will affect sites of regional and local biodiversity, nationally and internationally protected sites will:

'*Development proposals must demonstrate how they protect features of nature conservation and geological value as part of the design rationale. There is an expectation that such features shall be retained, buffered, and managed favourably in order to maintain their ecological value, connectivity and functionality in the long-term. Where it has been demonstrated that such features cannot be retained, removal or damage shall only be acceptable in circumstances where the anticipated ecological impacts have been mitigated as far as possible and appropriate compensatory measures can be secured to ensure no net loss of the local biodiversity resource'*.

Core Policy 50 also states that all development should seek opportunities to enhance biodiversity. Major development in particular must include measures to deliver biodiversity gains through opportunities to restore, enhance and create valuable habitats, ecological networks and ecosystem services. Such enhancement measures will contribute to the objectives and targets of the Biodiversity Action Plan (BAP) or River Basin/ Catchment Management Plan, particularly through landscape scale projects, and be relevant to the local landscape character.

It is the applicant's/landowner's responsibility to ensure that the proposed development proceeds in full compliance with this report and/or any update version report thereafter, that works are undertaken lawfully, in compliance with national and local policy, and in accordance with all conditions of the obtained planning consent.

3. Methodology

Desktop data search

Internationally, nationally and locally protected sites including Ramsar, SPAs, SACs, SSSIs, NNRs and LNRs were identified within a 5 kilometre (km) radius of the application site using the Multi-Agency Geographical Information for the Countryside (MAGIC, 2022) website. Wiltshire & Swindon Biological Records Centre (WSBRC, 2020) were contacted to provide records of any protected, vulnerable and notable species and any locally designated sites such as Local Wildlife Sites (LWSs) within a 1km radius of the application site.

This information was used to inform the assessment of the site and its potential to support protected/vulnerable species and habitats and to assess whether the proposed works hold potential to impact on protected sites designated for nature conservation.

Phase 1 Habitat survey

The Phase 1 Habitat survey was conducted on the 22nd September 2020 by experienced ecologists Russell Hoyle ACIEEM and Becci Smith MCIEEM.

The survey was conducted in accordance with the 'Handbook for Phase 1 habitat survey – a technique for environmental audit' (JNCC, 2010) methodology. The survey involved the mapping of broad habitat types within the application site boundary using colour codes alongside a comprehensive species list, categorising flora species in order of abundance under the DAFOR scale. 'Target notes' were made where ecological features of interest were identified.

Badgers

A direct search was conducted looking for signs of badgers and their setts. Any setts encountered were classed as main, annexe, subsidiary or outlier, dependent upon the number of holes and apparent extent of their use. A search was also conducted for any other evidence of badger including faeces or latrines, pathways, scratching posts at the base of trees, snuffle holes, day nests, hair or footprints.

Barn owls

A thorough search for evidence of barn owl was conducted on the 22nd September 2020 by Natural England barn owl licensed ecologist Becci Smith MCIEEM and ecologist Russell Hoyle ACIEEM. The ecologists conducted a thorough search inside the buildings for feeding remains, feathers, splashing/droppings, pellets, nesting material and the presence of barn owls.

Bats

Preliminary Roost Appraisal (PRA)

Natural England Class 2 licensed bat ecologists Russell Hoyle ACIEEM and Becci Smith MCIEEM undertook the PRA of the buildings on site; the trees were also assessed for their ability to support roosting bats. Timing and weather conditions are provided in the table below:

Survey date	Time of survey	Surveyor(s)	Equipment used	Weather conditions		
22/09/2020	12:00pm	Russell Hoyle ACIEEM & Becci Smith MCIEEM	High-powered torch and binoculars	Temp:	Oktas cloud cover:	Beaufort wind force:
				16°c	5/8	1/12

The assessment was undertaken in accordance with the Bat Conservation Trust (BCT) Good Practice Survey Guidelines (Collins, 2016). A thorough search for evidence of bats was undertaken in any internal loft spaces or voids and on any external features of the buildings, notably any sills, walls, floors and flat surfaces. A ground based assessed was undertaken of the trees using close focusing binoculars to identify any access points within the trees to be removed. Evidence of roosting bats include:

- Presence of live/dead bats;
- Bat droppings - distinguished from rat/mouse droppings by their crumbly texture;
- Staining from fur around access points; and
- The presence of feeding remains, such as insect wings and casings.

The buildings were identified as 'confirmed' bat roosts if evidence of roosting bats were recorded. To confirm the species of bat present, a sample of any bat droppings recorded were made and sent to Swift Ecology Ltd for DNA analysis.

Most native bats in the UK are crevice-dwelling species, with bats roosting in remote areas such as between tiles and membrane, behind cladding, at wall tops, in cavities, soffits and behind lead flashing, to name a few examples. Areas known to support bats in trees are tearouts, split or broken limbs, cracks, flaking bark, woodpecker holes, within dead trees and within cavities within the trunk. Evidence of these species is often concealed and/or inaccessible due to the remote nature of the roost. Therefore, where no evidence of roosting bats was recorded, an assessment on the availability of potential roosting areas and bat access points around the buildings or trees, as well as the quality/availability of surrounding bat habitat, was conducted. The buildings or trees were then assigned a category

based on a sliding scale of negligible to high, in accordance with the BCT Guidelines (Collins, 2016):

Bat roosting potential	Description
'High potential'	A building or tree with one or more potential roosting sites that are highly suitable for use by many bats on a regular basis and for a longer period of time.
'Moderate potential'	A building or tree with one or more potential roosting features that could be used by bats due to appropriate conditions but are unlikely to support a bat roost of important conservation status (roost type only, not species).
'Low potential'	The building or tree features one or more potential roosting features that could be used by bats opportunistically. These features do not provide the appropriate conditions to be used on a regular basis by large numbers of roosting bats. A tree of sufficient age or size to contain roosting features but none of which can be observed from the ground.
'Negligible potential'	The features of the building or tree are negligible and are highly unlikely to be used by roosting bats.

Bat activity surveys

One dusk bat activity survey was undertaken on 'Building 1' and timings and weather conditions for the survey are provided below:

Survey date	Timings	Surveyor(s)	Equipment used	Weather conditions		
02/06/2021 – dusk emergence survey	Start: 20:58 Sunset: 21:15 End: 22:50	Phil Smith & Anne Smith	EchoMeter Touch 2 with tablets x 2	Temp:	Okta cloud cover:	Beaufort wind force:
				Start: 19°c End: 17°c	8/8	1/12

Two dusk and one dawn bat activity survey were undertaken on 'Building 2' and '3'. The timings and weather conditions for these three surveys are provided below:

Survey date	Timings	Surveyor(s)	Equipment used	Weather conditions		
02/06/2021 – dusk emergence survey	Start: 20:58 Sunset: 21:15 End: 22:50	Becci Smith, Kim Pitcher & Russell Hoyle	EchoMeter Touch 2 with tablets x 3	Temp:	Okta cloud cover:	Beaufort wind force:
				Start: 19°c End: 17°c	8/8	1/12

28/06/2021 – dusk emergence survey	Start: 21:13 Sunset: 21:28 End: 23:07	Russell Hoyle, Laurence Wills & Chris Payne	EchoMeter Touch 2 with tablets x 3	Temp:	Okta cloud cover:	Beaufort wind force:
				Start: 17°c End: 15°c	7/8	2/12
14/07/2021 – dawn re-entry survey	Start: 03:20 Sunset: 05:06 End: 05:21	Amy Parsons, Kris Pedrosa & James Gooding	EchoMeter Touch 2 with tablets x 3	Temp:	Okta cloud cover:	Beaufort wind force:
				Start: 14°c End: 13°c	0/8	1/12

The activity surveys were conducted in accordance with The BCT Good Survey Practice Guidelines (Collins, 2016), and was conducted in suitable weather conditions (i.e. low wind speed, minimum temperature of 10°c at dusk and no precipitation). The surveys involved two surveyors positioned around 'Building 1' on the west and southern elevations, and three surveyors positioned around 'Building 2' and '3' on the northwest, north and southern elevations. The surveyors were specifically watching for any bats emerging and/or re-entering the buildings, whilst a note was also made on general bat behaviour and activity within the site vicinity, such as foraging, socialising and commuting bats across the site.

The surveyors used specialised bat recording equipment to detect any echolocating bats, and any sonograms (images) of bat calls on tablets were used to help identify the species of bat present. The surveyors also listened to the audible bat calls to aid the determination of the bat species.

Dormice

Dormice are small, nocturnal mammals which occupy habitats such as hedgerows, woodland and scrub. The dormouse requires good arboreal connectivity with a good range of food sources such as fruit, nuts, flowers or insects. Plant species such as hazel, oak, bramble and honeysuckle are favoured, as well as hornbeam, blackthorn, sweet chestnut and sycamore supporting dormice within woody connective habitat. The habitats on site and immediately adjacent to the site was assessed for the potential to support dormice.

Great crested newts

Habitat Suitability Index (HSI) assessments

Great crested newts (GCN) occupy both aquatic and terrestrial habitats throughout their life cycle, spending a short period of the year breeding and egg-laying in waterbodies such as ponds, standing water and ditches. Throughout the remainder of the year, newts will spend their time foraging and commuting within terrestrial habitats such as longer grassland, woodland, hedgerow bases and

scrub. GCN will hibernate within features such as log piles, tree roots and rubble piles. GCN are known to forage up to 500 metres (m) from their breeding sites.

An aerial assessment was made prior to the site visit to determine if any waterbodies were present within 250m of the site. Any accessible waterbodies were assessed under the Habitat Suitability Index (HSI) (Oldham et al, 2000, 2008) to determine the suitability of the waterbody to support GCN. Where a waterbody was identified within the site, the search radius was extended to 500m.

eDNA sampling

eDNA sampling was conducted on any accessible waterbodies within 250m of the site that received a HSI score of 0.5 or above to determine if GCN DNA was present/absent in the waterbodies. The technique involved taking 20 water samples from around the pond margins and these were then transferred into sterilised sample tubes. The samples were collected on 11th May 2021 and sent to SureScreen Scientifics Ltd to determine if GCN DNA was present in the waterbodies.

Nesting birds

A search for evidence of nesting birds was conducted during the initial site visit. Birds will nest in buildings, hedgerows, scattered trees, scrub and planting and forage among these habitats.

Reptiles

Habitat suitability assessment

An assessment was undertaken on the suitability of the habitats on site for supporting reptiles. Reptiles are found in habitats with a varied vegetative structure, offering opportunities for foraging and basking, such as areas of unmanaged grassland with shorter vegetation margins, heathland and woodland. An assessment was also made of potential sites suitable for hibernation such as log and brash piles, rubble, rockery or tree roots.

Reptile presence/absence surveys and population size class assessment

A suite of seven reptile presence/absence surveys were conducted to determine whether reptiles are present on-site, and if so, their distribution and population size class in line with current national guidance (Froglife, 1999).

The seven reptile surveys involved setting out approximately 30 0.5m x 0.5m square cuts of bituminous felt mats on the 11th May 2021, which were strategically placed around the site in areas of suitable habitat connectivity and

vegetative cover. Thirty mats were placed adjacent to features such as brash piles where reptiles are likely to take refuge, if present. The seven surveys were conducted between 17th June and 1st August 2021 when the air temperature was between 10°c to 18°c, with no heavy wind or precipitation in line with current national guidance.

The species, number of reptiles and locations were noted during each of the seven surveys, including the sex and age, and the 'peak count' of adult reptiles was then noted to determine the population size class, as below:

Species	Low population	Good population	Exceptional population
Adder	<5	5-10	>10
Grass snake	<5	5-10	>10
Common lizard	<5	5-20	>20
Slow worm	<5	5-20	>20

Survey limitations

PEA and PRA

The surveys provides a 'snapshot' of the site and does not take into account seasonal variation. Species and habitats may have been overlooked due to the constraints of the season and time in which the survey was undertaken. A lack of evidence of a species does not confirm its absence from site, rather there was no indication of its presence at the time of survey, with botanical species likely to be restricted to the time of year.

Potential evidence of crevice-dwelling bats may have been missed due to the nature and remote location of potential roosting areas. Binoculars were used to identify any potential bat droppings on the exterior features of the building, where possible.

A ground-based tree survey looking for evidence of bats may be constrained by canopy cover and by the angle of the viewer. Where a tree meets a certain age and size, this is considered to increase the probability of bat roosts in trees due to declining tree health and the likelihood of disease/rot offering cavities for bats.

eDNA sampling

No land access was possible for eDNA sampling to the pond located approximately 243m northeast of the site as land access was denied. This does constrain the assessment of the site; however, access was possible to the pond located approximately 334m northwest of the site which returned a 'negative' result for great crested newt DNA and it is considered to reduce the likelihood of great

crested newts being present in the inaccessible pond, being as the two ponds are connected by suitable habitat cover.

Bat activity surveys

Long-eared (*Plecotus sp*.) bats echolocate very quietly and are a later-emerging bat species, emerging from their roost when the light is dim. This makes it difficult to identify/observe bat activity and emergences/re-entries into the buildings. Dawn bat activity surveys were undertaken to increase the likelihood of recording long-eared bat species due to the swarming behaviour on re-entry to a roost.

Bats of the myotis (*Myotis spp.*) genus are difficult to distinguish due to their variable, and often similar, echolocation calls. The identification of myotis bats down to species level was therefore subject to the analyst's interpretation.

Reporting and data validity

The data within this report should not be seen as comprehensive. Data obtained from the WSBRC (WSBRC, 2020) data search is unlikely to provide a complete record of habitats and species within the search area. It is therefore possible that a protected species may occur within the vicinity that has not previously been identified within the data search.

Survey data within this report is considered valid for 18 months for planning purposes. However, if 18 months pass and no works have been undertaken and/or if conditions on-site change such as the condition of the buildings and vegetation, an update site visit with appropriate surveys must be conducted to re-evaluate the potential of the site to support protected/vulnerable species and habitats.

Update bat survey(s) will be required for a Natural England bat licence application. An update building inspection survey will be required within 3 months of applying for the bat licence application; if the licence is applied for after 30th April 2022, a minimum of one update dusk emergence survey will be required to inform the application.

4. Results

Desktop data search

Statutory (internationally, nationally and regionally protected) sites

MAGIC (MAGIC, 2022) was used to identify any statutory sites located within 5km of the application site and the results of which are provided in the table below:

Site name	Distance from site	Designation	Size (ha)	Site description
North Wessex	Within the Area of Outstanding Beauty (AONB)	AONB	1731.05	Large area of chalk downland habitat.
Silbury Hill	1km southeast	SSSI	2.15	An area of rich chalk grassland on steep slopes. The site is dominated by upright brome (*Bromus erectus*) and false oat-grass (*Arrhenatherum elatius*). The site supports a variety of butterflies such as small heath (*Coenonympha pamphilus*) and wall brown (*Lasiommata megera).* Ground nesting birds such as skylark and meadow pipit can also be found.
Fyfield Down	3km east	SSSI	327.36	Chalk downland dissected by a system of dry valleys which contain one of the highest concentrations of sarsen stones in Britain. There are also small woods and ponds including one which supports great-crested newts.
Fyfield Down	3km east	NNR	228.58	One of the country's oldest national nature reserves. The main habitat is chalk and acid grassland.
Calstone and Cherhill Downs	4.2km west	SSSI	128.22	An area of herb-rich chalk grassland. The flora supports a diverse population of invertebrates including small blue *(Cupido minimus),* Chalkhill blue (*Lysandra coridon*), and the rare and vulnerable wart-biter bush cricket *(Decticus verrucivorus).*
Piggledene	4.4km east	SSSI	4.6	A shallow dry valley of middle chalk with deposits of valley gravel and an abundance of sarsen stones.

Pewsey Downs	4.8km south	SAC	154.49	This site hosts the Annex I habitat, Semi-natural dry grasslands and scrubland facies on calcareous substrates (orchid rich site). This site is situated on the southern edge of the Marlborough Downs on the Wiltshire chalk and consists largely of chalk grassland. Pewsey Downs is one of three sites selected in the central part of the range for Annex II species early gentian (*Gentianella anglica)*. It holds a very significant population of hundreds of thousands of plants growing in high-quality chalk grassland.
Pewsey Downs	4.8km south	SSSI	301.28	Rich chalk downland with a small ancient oak, ash, maple woodland. The site supports 28 breeding butterfly species including Chalkhill blue.
Pewsey Downs	4.8km south	NNR	167.15	Site consists of three hills with a chalk downland habitat.

Non-statutory (locally) designated sites

WSBRC (WSBRC, 2020) was consulted to identify any non-statutory sites within 1km of the application site as presented in the table below:

Site name	Distance from site	Designation	Size (Ha/m)	Site description
Rivers Kennet & Og	200m east	LWS	47.14	Two rivers draining the Marlborough downs.
Avebury Henge	610m east	LWS	13.35	Unimproved calcareous grassland on the banks and ditches of an ancient henge.
Beckhampton Chalk	705m southwest	LWS	15.34	Two small areas of flattish calcareous grassland on either side of the A4 used by a racehorse stables and including a tumulus in the north.

The site is sufficiently remote from the nearby statutory and non-statutory sites and no impacts are anticipated due to the localised nature of the proposed works.

Protected and vulnerable species of interest

WSBRC (WSBRC, 202) was consulted to provide any records of protected/vulnerable species of interest and the results of which are presented in the table overleaf:

Species	Number of records	Most recent record	Closest record to site
Amphibians & reptiles			
Common frog	16	1981	215m west
Common toad	11	2019	635m northeast
Grass snake	7	2018	350m north
Great crested newt	4	2019	520m northeast
Slow-worm	1	1978	Within 1km of site
Birds			
Barn owl	12	2016	350m east
Corn bunting	4	2018	Within 1km of site
Cuckoo	1	1999	645m northwest
Curlew	1	2015	Within 1km of site
Fieldfare	1	2017	Within 1km of site
Golden plover	2	2017	Within 1km of site
Hobby	1	2017	Within 1km of site
House sparrow	7	2018	505m east
Lapwing	8	2017	820m southwest
Linnet	5	2018	Within 1km of site
Little egret	1	2019	30m east
Merlin	1	2018	Within 1km of site
Mistle thrush	1	2005	Within 1km of site
Red kite	13	2019	95m south
Redwing	2	2017	Within 1km of site
Short-eared owl	1	2017	Within 1km of site
Skylark	5	2018	Within 1km of site
Song thrush	2	2018	Within 1km of site
Spotted flycatcher	6	2017	Within 1km of site
Starling	4	2018	505m east
Tree sparrow	3	2018	770m northwest
Yellow wagtail	7	2017	Within 1km of site
Yellowhammer	4	2018	840m northwest
Flora			
Dwarf spurge	4	2017	820m north
Lady's-mantle	1	2009	865m southwest
Round-headed rampion	14	2013	785m east
Tuberous thistle	5	2018	780m east
Invertebrates			
August thorn	442	2015	Within 1km of site
Beaded crescent	117	2017	Within 1km of site
Blood-vein	128	2017	Within 1km of site
Brindled beauty	26	2014	Within 1km of site
Buff ermine	491	2017	475m northeast
Cinnabar	42	2017	625m northeast
Dark spinach	22	2014	Within 1km of site
Dusky brocade	11	2017	Within 1km of site
Dusky thorn	160	2017	Within 1km of site
Garden tiger	162	2017	475m northeast
Ghost moth	45	2017	Within 1km of site
Green-brindled crescent	29	2017	Within 1km of site
Grey dagger	38	2017	Within 1km of site
Knot grass moth	7	2014	Within 1km of site
Large wainscot	4	2017	Within 1km of site

Marsh fritillary	1	2005	Within 1km of site
Mottled rustic	94	2017	Within 1km of site
Oak hook-tip	3	2003	Within 1km of site
Rosy minor	4	2015	Within 1km of site
Rosy rustic	39	2017	Within 1km of site
Rustic	130	2015	475m northeast
Sallow	8	2015	Within 1km of site
September thorn	2	2015	Within 1km of site
Shaded broad-bar	19	2014	Within 1km of site
Shoulder-striped wainscot	80	2017	475m northeast
Small emerald	6	2012	Within 1km of site
Small heath	3	2006	Within 1km of site
Small phoenix	12	2017	Within 1km of site
Small square-spot	192	2017	475m northeast
Wall	4	2011	665m east
White ermine	309	2017	625m northeast
White-letter hairstreak	2	2014	880m southwest
Mammals (including bats)			
Brown long-eared bat	8	2016	725m east
Common pipistrelle bat	15	2017	150m east
Eurasian badger	21	2016	55m southeast
European water vole	44	2015	370m southeast
Long-eared sp. bat	9	2013	Within 1km of site
Myotis sp. bat	4	2015	670m northeast
Natterer's bat	24	2012	560m northeast
Pipistrelle sp. bat	9	2013	Within 1km of site
Serotine bat	7	2015	560m northeast
Soprano pipistrelle bat	2	2015	Within 1km of site
West European hedgehog	37	2017	20m west

The above records will be used to inform the assessment of the site in its likelihood to support protected and vulnerable species.

Phase 1 Habitat survey

Habitats within the application site boundary predominately consist of hardstanding with small areas of poor semi-improved and improved grassland, tall ruderal vegetation, ephemeral/short perennial vegetation, scattered trees, a native species-poor hedgerow and several rubble piles. A Phase 1 Habitat map is provided in Appendix 3 and photographs of the site in Appendix 4. Habitat descriptions are provided below:

Hardstanding

Hardstanding is the main habitat within the site, this is present around the buildings comprising an old farmyard. A list of the species recorded within the hardstanding are provided in the table below:

Species	Abundance
American willowherb	Frequent
Annual meadow-grass	Locally abundant to rare
Bedstraw sp.	Rare
Chervil	Locally frequent
Cleavers	Locally occasional
Common knapweed	Rare
Common nettle	Locally occasional
Daisy	Locally occasional
Dandelion	Occasional
Dock sp.	Rare
Dove's-foot crane's-bill	Locally frequent to occasional
False brome	Occasional
Greater plantain	Occasional
Groundsel	Rare to locally occasional
Herb-Robert	Occasional
Knotgrass	Locally frequent
Lesser trefoil	Locally occasional
Perennial rye-grass	Locally frequent
Petty spurge	Occasional
Shasta daisy	Rare
Smooth sow-thistle	Occasional
Swine-cress	Locally occasional
Yorkshire fog	Rare to locally frequent

Poor semi-improved grassland

Small areas of poor semi-improved grassland are present by the northern entrance to the site and along the northeast and southeast boundary. A list of the species encountered within these areas is provided in the table below:

Species	Abundance
American willowherb	Locally abundant to locally occasional
Barren brome	Frequent
Broad-leaved dock	Locally occasional
Chickweed	Locally frequent
Cleavers	Locally frequent
Common nettle	Locally frequent
Corn poppy	Rare
Creeping bent	Dominant
Dandelion	Frequent
Dove's-foot crane's-bill	Occasional
False oat-grass	Locally frequent
Greater plantain	Locally occasional
Hedge crane's-bill	Locally frequent to occasional
Ivy	Locally abundant
Perennial rye-grass	Locally abundant

Petty spurge	Occasional
Ribwort plantain	Rare
Scarlett pimpernel	Rare
Shasta daisy	Locally frequent
Smooth sow-thistle	Occasional
Soft brome	Locally frequent
Sycamore sapling	Rare
White dead-nettle	Locally occasional
Yorkshire fog	Locally occasional to locally abundant

Improved grassland

Improved grassland in the form of a garden lawn is present in the south of the site, set within the garden to a neighbouring property. The lawn is mown regularly and is heavily shaded by the hedgerows and nearby trees. A list of the species encountered within this area is provided in the table below:

Species	Abundance
Annual meadow-grass	Locally abundant
Cock's foot	Frequent
Creeping bent	Locally dominant
Dandelion	Locally occasional
Herb-Robert	Locally occasional
Red fescue	Dominant
Self-heal	Frequent
Smooth meadow-grass	Abundant
White clover	Locally occasional

Ephemeral/short perennial vegetation

Ephemeral/short perennial vegetation is present between the central store ('Building 3') and the eastern site boundary. A small area is also present at the southeast boundary and the ephemeral/short perennial species appears to be on disturbed ground. A list of the species encountered within these areas is provided in the table below:

Species	Abundance
American willowherb	Locally abundant
Barren brome	Locally frequent
Chervil	Locally frequent
Cleavers	Locally occasional
Cock's-foot	Locally abundant
Common nettle	Locally abundant
Creeping bent	Locally abundant
Creeping buttercup	Locally occasional
Creeping thistle	Occasional to locally frequent
Dandelion	Frequent
Dog-rose	Rare
Dove's-foot crane's-bill	Locally frequent
False brome	Locally frequent
False oat-grass	Locally abundant
Forget-me-not sp.	Locally occasional

Herb-Robert	Locally occasional
Ivy	Locally abundant
Oxeye daisy	Locally occasional
Petty spurge	Locally frequent to occasional
Pineapple weed	Locally occasional
Red fescue	Locally abundant
Smooth sow-thistle	Occasional
White dead-nettle	Locally occasional

Tall ruderal vegetation

Tall ruderal vegetation surrounds the store ('Building 4') in the north of the site and is present at the eastern boundary. A list of the species encountered within this area is provided in the table below:

Species	Abundance
American willowherb	Locally abundant
Ash sapling	Locally occasional
Broad-leaved dock	Locally occasional
Chervil	Locally frequent
Cleavers	Locally frequent
Cock's-foot	Locally abundant
Common nettle	Locally dominant
Corn poppy	Rare
Creeping thistle	Locally occasional
Curled dock	Locally occasional
Dandelion	Frequent
False brome	Locally frequent
False oat-grass	Locally frequent to locally occasional
Groundsel	Locally occasional
Herb-Robert	Locally occasional
Hoary willowherb	Locally occasional
Hogweed	Locally occasional
Honeysuckle	Locally occasional
Ivy	Locally abundant
Prickly sow-thistle	Locally occasional
Smooth sow-thistle	Locally occasional
Teasel	Occasional
White dead-nettle	Locally frequent

Scattered trees

Scattered trees are present along the northern and eastern site boundaries. A list of the tree species encountered is provided in the table below:

Species	Abundance
Ash	Occasional
Elder	Locally frequent
Field maple	Occasional
Hawthorn	Locally frequent to locally occasional
Sycamore	Occasional
Viburnum sp.	Rare
Walnut	Rare

Intact native species-poor hedgerow

An intact native species-poor hedgerow is present along the southeast boundary and is part of the neighbouring property. Approximately 17m falls within the application site boundary and the hedgerow then extends to the northeast (off-site) for an additional 55m. A list of the hedgerow species encountered is provided in the table below:

Species	Abundance
American willowherb	Occasional
Ash sapling	Rare
Beech	Dominant
Common nettle	Occasional
Daisy	Locally occasional
False oat-grass	Locally frequent
Hedge woundwort	Rare
Herb-Robert	Occasional
Ivy	Abundant
Red fescue	Locally occasional
Rose sp.	Rare
Sycamore sapling	Rare

The hedgerow is dominated by beech and qualifies as a UK BAP Priority Habitat: Hedgerows due to comprising 80% native woody species (beech). The hedgerow will be fully retained as part of the scheme, however, as the hedge is a Priority Habitat, a hedgerow protection, management and enhancement scheme is detailed in Section 5 of this report.

Rubble piles

Several rubble piles (Target Note 1 – Appendix 3) varying in size are present in the east of the site adjacent to the eastern boundary.

Badgers

No evidence to suggest badgers are present on site was noted during the survey such as setts, digging, hairs or entrance holes. Badgers are not considered to be present on site due to a lack of evidence and no further action has been recommended.

Bats

Preliminary Roost Appraisal (PRA) - buildings

Building descriptions

An assessment of the buildings to support roosting bats was conducted, including a direct search for evidence of bats. Photographs of the buildings are provided in Appendix 4, whilst building descriptions are provided in the table below:

Building name	Description
Workshop 1 (B1)	▪ The workshop is located in the south of the site along the western boundary. ▪ The single-storey workshop is of brick and stone construction. ▪ The roof is slanted with a textile/asbestos corrugated roof. ▪ Wooden fascia's, window and door frames are present. ▪ No enclosed voids are present.
Workshop 2 (B2)	▪ The two-storey workshop is located along the western boundary of the site. ▪ The workshop is constructed of a brick base with corrugated textile/asbestos upper walls. ▪ The roof is domed with corrugated textile/asbestos material. ▪ A smaller workshop adjoins the eastern elevation at the northeast corner. ▪ No enclosed voids are present.
Store 1 (B3)	▪ The two-storey store is located in the centre of the site. ▪ The store is constructed of a brick base with metal walls. ▪ The four roofs are constructed of corrugated textile material, the roofs in the northeast and southwest of the building are pitched, the roof in the centre is domed and the roof in the south is mono-pitched. ▪ Textile/asbestos material fascia sheeting is present. ▪ The eastern elevation of the northeast area is open-fronted. ▪ No enclosed voids are present.
Store 2 (B4)	▪ The store is located in the north of the site. ▪ The store is constructed of a cinderblock base with corrugated metal walls. ▪ The roof is double-pitched with corrugated textile/asbestos material and a textile material ridge. ▪ Metal door frames are present. ▪ No enclosed voids are present.

PRA results – evidence of bats

The results of the PRA have been provided in a map in Appendix 5 while a summary has been provided below:

Building name	PRA results
Workshop 1 (B1)	• No evidence of roosting bats such as droppings, staining or feeding remains were identified during the survey.
Workshop 2 (B2)	• No evidence of roosting bats such as droppings, staining or feeding remains were identified during the survey.
Store 1 (B3)	• Approximately three brown long-eared bat droppings were noted on the furniture within the northwest area of the building. • One butterfly wing was noted on the floor within the northwest area of the building.
Store 2 (B4)	• No evidence of roosting bats such as droppings, staining or feeding remains were identified during the survey.

DNA analysis of bat droppings

Droppings were sent to Swift Ecology Ltd for DNA analysis and confirmed the droppings within 'Store 1' (B3) belong to brown long-eared bat.

Assessment of bat roosting potential and potential bat access points

An inspection of the external features of the buildings was undertaken to identify any potential bat access points and roosting provisions; these are summarised below:

Building name	Potential bat access points	Potential roosting provisions	Potential of the building
Workshop 1 (B1)	• Gaps at the eaves.	• At the wall tops.	'Low potential' for roosting bats
Workshop 2 (B2)	• Gaps at the eaves. • Gaps where wall meets corrugated sheeting.	• Behind the corrugated sheeting and between the brick walls.	'Low potential' for roosting bats
Store 1 (B3)	• Gaps where the corrugated upper walls meet the brick base. • Open fronted east elevation.	• Frame of the building, between sheeting and wall.	Confirmed roost for brown long-eared bats
Store 2 (B4)	• The roof was tight and provided no access points or roosting provisions.	• Negligible – No roosting provisions due to the lack of bat access points.	'Negligible potential' for roosting bats

'Building 3' is a confirmed roost for brown long-eared bats as bat droppings were present within the building, 'Building 1' and '2' hold 'low potential' for roosting bats in line with national survey guidelines (Collins, 2016), as some suitable potential access points are present. The immediate surrounding landscape includes mature trees, hedgerow networks, arable and grazing pasture; these habitats were noted to provide highly suitable foraging and commuting habitat for bats.

Following current national survey guidance (Collins, 2016), one initial bat activity survey was conducted upon 'Building 1' and '2', and three bat activity surveys were conducted on 'Building 3' to determine if bats are present/likely absent within the buildings and to determine access and roosting provisions. During the initial survey on 'Building 2', one bat was recorded emerging and therefore two further surveys were conducted in accordance with national guidelines. The results of the surveys are provided under 'bat activity surveys' below.

'Building 4' in the north held 'negligible potential' for roosting bats; no gaps or potential bat access points were identified across the roofs/elevations and/or the building did not offer any roosting provisions for bats. Therefore, no further surveys were conducted on this building.

Bat activity surveys

'Building 1'

One bat activity survey was conducted on 'Building 1' and no bats were observed emerging from or re-entering the building. A summary of the survey is provided in the table below, whilst full survey results are provided in Appendix 6.

Survey date	Bat emergences/re-entries	General activity on site
02/06/2021 – dusk emergence survey	• No bats were observed emerging/re-entering the building during the survey.	• Common pipistrelle (*Pipistrellus pipistrellus*) bats were frequently recorded between 21:27 until the end foraging and commuting along the road and treeline in the west. • Leisler's (*Nyctalus leisleri*) bats were heard but not seen in the west between 21:57 and 22:36. • A noctule was heard but not seen in the south at 22:02 and 22:39. • Serotine (*Eptesicus serotinus*) bats were noted foraging across the site between 22:05 and 22:34. • A long-eared bat was heard but not seen at 22:35 in the south. • An unidentified myotis sp. was heard but not seen in the west at 22:31.

Although no bats were recorded emerging/re-entering 'Building 1', a high level of bat activity was recorded on site including common pipistrelles, long-eared sp., Leisler's bat, noctules, serotines and a myotis bat.

'Building 2' and '3'

Two dusk emergence and one dawn re-entry bat activity surveys were conducted on 'Building 2' and '3'. A summary of the surveys is provided in the table below, whilst full survey results are provided in Appendix 6.

Survey date	Bat emergences/re-entries	General activity on site
02/06/2021 – dusk emergence survey	• Two common pipistrelles emerged from the open side of 'Building 3' on the	• Approximately six common pipistrelles were recorded commuting and foraging within the barn ('Building 3') and around the site from 21:14 until the end of the survey.

	southern elevation at 21:17. • One common pipistrelle emerged from the large northwest door on 'Building 2' at 21:32.	• A noctule was heard but not seen in the northwest and southeast at 21:36 and 22:36. • A long-eared sp. bat was recorded commuting northeast to northwest at 21:54 and heard but not seen in the northwest at 22:32. • A Leisler's bat was heard but not seen in the northwest at 22:36.
28/06/2021 – dusk emergence survey	• One brown long-eared bat was recorded pre-flying within 'Building 3' before emerging out the open eastern elevation at 22:10.	• Common pipistrelle bats were frequently recorded foraging and commuting around the site from 21:47 until 22:22.
14/07/2021 – dawn re-entry survey	• Two brown long-eared bats were recorded re-entering 'Building 3' through the eastern open elevation at 03:53 and were swarming inside the building, both bats fly into the northern section at 04:27 and did not re-emerge. • One suspected whiskered bat (*Myotis mystacinus*) was recorded re-entering 'Building 3' at 03:51 through the open elevation and flew through to the northern section and did not re-emerge.	• Common pipistrelle bats were recorded commuting and foraging across the site from 03:49 until 05:01.

'Building 2' has been identified to support one common pipistrelle day roost at one roosting location at the top of the large door on the northwest corner of the building. 'Building 3' has been identified to support day roosts for two common pipistrelle bats, two brown long-eared bats and one whiskered bat (no droppings for this species were recorded however, this is based on sound analysis of calls). All bat roosting locations within 'Building 3' were located within the northern section of the building, with a hole in the brick wall (see Appendix 4 – Photo 5: 'Building 3 internal') being utilised as an access point from the open barn from the section in the east. The eastern barn area was also being utilised as a foraging area and pre-flying area, with the southern and eastern open sides providing access points.

In addition to the bat roosts, moderate levels of general bat activity (including socialising, commuting and foraging bats) were recorded on site including noctule, serotine, long-eared, myotis, common pipistrelle and Leisler's species and the site is set within a optimal rural location for bats.

There is potential for lighting disturbance as a result of the proposed development, therefore a bats and lighting strategy is detailed in Section 5 to minimize artificial lighting impacts on roosting, foraging and commuting bats.

Conclusions

'Building 2' and '3' have been identified to support day roosts for common pipistrelle, brown long-eared and whiskered bat species with multiple access points and roosting locations set across the buildings. The proposed demolition of all buildings will result in the loss of three day roosts for common pipistrelle bat, one day roost supporting two brown long-eared bats and one day roost supporting an individual whiskered bat. No roosting bats were recorded in 'Building 1' and 'Building 4' was considered to hold 'negligible potential' for roosting bats, therefore it is highly unlikely that bats are roosting within these buildings.

As the works will result in the loss of common pipistrelle, brown long-eared and whiskered bat day roosts, a Bat European Protected Species (EPS) licence from Natural England will be required following planning approval and prior to any works commencing. A bat mitigation, compensation and enhancement strategy is detailed in Section 5 which must be implemented under the approved licence. **An EPS licence must be obtained following planning approval and prior to any works commencing on site to ensure works are lawful.**

Preliminary Roost Appraisal (PRA) - trees

All trees on site were assessed for their potential to support roosting bats and no trees on site were deemed suitable to support roosting bats, due to young age and/or lack of Potential Roosting Features (PRFs). Therefore, no further action is recommended in relation to roosting bats and trees.

Dormice

The scattered trees and hedgerow were assessed for their potential to support dormice. There are no known records for dormice within the local area (WSBRC, 2020); and a search on MAGIC (MAGIC, 2022) revealed the closest European Protected Species (EPS) licence for dormice is located approximately 10km east of the site.

The hedge and trees on site lacked a variety of suitable food plants for dormice and the habitat connectivity to the site from the wider landscape appears to be fragmented, mainly due to the presence of roads surrounding the site. Due to the slow dispersal rates of dormice, lack of known records in the nearby area and limited amount of habitats within the site, it is considered unlikely that this species is present on site. Therefore, no further action is recommended for dormice.

Great crested newts

Terrestrial habitats

The majority of the site comprised hardstanding, alongside ephemeral/short perennial and tall ruderal vegetation with rubble piles on the eastern boundary. Although the hardstanding is considered negligible for great crested newts (GCN), the fringe habitats on site are considered to hold some potential for GCN. The hedgerow base and stone piles do provide suitable sheltering opportunities for terrestrial GCN and the grassland, ruderal and ephemeral/short perennial vegetation provide suitable basking and foraging habitat.

Aquatic habitats

There are no waterbodies within the site, however, two ponds were identified within 250m of the site by aerial maps, located approximately 243m northeast and 334m northwest; the closer pond is in private ownership and was not accessible at the time of survey due to no land access permission. Two further ponds are located approximately 520m and 644m northeast of the site, which are known GCN breeding ponds (records dated 2019) (WSBRC, 2020).

As GCN are known 520m northeast of the site, connectivity between the application site and the known breeding ponds was assessed. Between the known GCN ponds in the northeast and the development site lie two pasture fields, two gardens and a small stream, part of the River Kennet, although the river is flowing and unlikely to be used for breeding, and the river may act as a barrier to terrestrial GCN dispersal due to water flow.

As no access was possible to the pond situated 243m northeast, a Habitat Suitability Index (HSI) assessment was conducted on the pond located approximately 334m northwest of the site. The results of which are provided below.

Pond assessment (334m northwest of site)

The pond is set within the local town 334m northwest of the site and is of moderate size. The pond measures approximately 217m^2 with some areas of vegetation located in the centre of the pond and around the perimeter. The pond has been known to dry out and no fish are present. A HSI assessment was conducted on the pond and the results of which are provided below.

Variable	Pond
SI1 – Location	1
SI2 - Pond area	0.45
SI3 - Pond drying	0.5
SI4 - Water quality	1
SI4 – Shade	1
SI6 – Fowl	0.67
SI7 – Fish	1
SI8 - Ponds	0.95
SI9 – Terrestrial habitat	1
SI10 - Macrophytes	0.55
HSI SCORE =	0.7756

The pond scored 0.7756 ('good' suitability for GCN). As the HSI score was >0.5, further eDNA sampling was undertaken to determine if GCN are present/likely absent in the pond and the results of which are provided below.

eDNA sampling results

eDNA sampling was conducted on the accessible pond 334m to the northwest, and the pond returned a 'negative' result for GCN DNA. As this pond returned a 'negative' result, it is considered to reduce the likelihood of GCN being present in the inaccessible pond, being as the two ponds are connected by suitable habitat cover. Based on the likely absence of GCN from this waterbody, this species is not considered likely to be present on site due to a lack of records within 500m of the site and therefore no further action is recommended for this species.

Nesting birds

One pigeon's (*Columba sp.*) nest was present within 'Building 3', with the nest considered to be as recent as the 2020 nesting season. There is also potential for nesting birds to be present in the hedgerow, scattered trees and remaining buildings on site. A mitigation strategy for nesting birds is detailed in Section 5 to ensure protection of nesting birds.

No evidence to suggest barn owls are present on site was noted during the survey. Therefore, this species is not considered to be present on site and no further action is recommended for barn owls.

Reptiles

The majority of the site comprised hardstanding, which is considered to provide negligible habitat for common reptiles. However, due to the presence of rubble piles, grassland, tall ruderal and ephemeral/short perennial vegetation, and hedgerow bases, the site was considered to hold potential for low numbers of reptiles.

A suite of seven reptile presence/absence surveys were conducted in June and July 2021. The table below presents the results of the surveys and the timing and weather conditions during the survey visists:

Date:	Time:	Weather (Beaufort and OKTA):	Temperatures:	Results:
17/06/2021	09:55	8/8 cloud 1/12 wind	16°C	Nil
22/06/2021	10:51	4/8 cloud 1/12 wind	16°C	Nil
25/06/2021	09:45	6/8 cloud 1/12 wind	15°C	Nil
01/07/2021	10:00	6/8 cloud 0/12 wind	18°C	Nil
07/07/2021	10:25	8/8 cloud 1-2/12 wind	16°C	Nil
18/07/2021	07:45	8/8 cloud 1/12 wind	17°C	Nil
01/08/2021	08:00	8/8 cloud 1/12 wind	14°C	Nil

No reptiles were recorded during the surveys and based on the results of the surveys; it is considered unlikely that reptiles are residing within the site. Therefore, no further action is recommended in relation to the proposed works and reptiles.

5. Ecological mitigation, compensation and enhancement strategy

UK BAP hedgerow mitigation and management plan

The existing hedgerow along the south of the site will be fully retained as part of the proposals. As the hedgerow is a UK BAP Priority Habitat, the hedgerow will be subject to the following hedgerow protection and management measures.

Hedgerow protection and management plan (see Appendix 7 for plan):

- The hedgerow will remain within the development site with as little disturbance as possible. This will be achieved by erecting 'Heras' fencing along the hedgerow edges which will remain in place throughout the duration of the works, to prevent accidental damage/machinery tracking into hedgerow. The 'Heras' fencing will allow for a minimum 2m construction buffer zone and the fencing may be removed upon completion of the construction phase. Where trees are present within the site appropriate Root Protection Zones (RPZs) must be implemented in accordance with the arboricultural report (where required).

- Approximately 230m of new, native species-rich hedgerow which will connect to the existing hedgerow in the south will be planted which will enhance habitat connectivity across the site post-development. The new hedge planting will also provide flightlines for roosting bats and the replacement bat roosts. The following planting method and specifications will be followed to ensure the new hedgerow is successful and ecologically resilient:

    - The new hedgerows will comprise a mixture of at least five native, woody species to provide nesting and foraging habitat for wildlife. The hedgerows will comprise a diverse mixture of approximately 20% of five different native species from the following list:

        . Blackthorn

        . Hawthorn

        . Spindle

        . Field maple

        . Dogwood

        . Elm

        . Oak

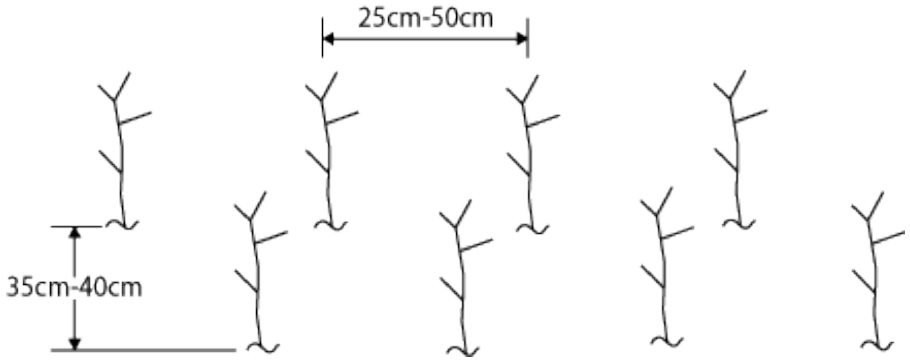
        . Hazel

. Elder

. Crab apple

. Guelder-rose

- The new hedgerow whips will be sourced from British-grown stock and should be planted between November and March. The whips will be planted in two rows at a density of six plants per 1m feature approximately 35cm apart. The roots must be kept damp throughout the planting process.



- Standard trees will be planted every 5-10m within the new hedgerows. These standard trees will be 16-18cm in girth to ensure immediate effect from planting with no delayed ecological function for providing habitat for foraging bats.

- Once the construction phase is completed, 1m hedge margins will be created and will be enhanced through a tussocky grassland mixture to enhance the site for foraging bats and other wildlife. The following strategy will be followed:

    - The 1m buffer zone will firstly be prepared through use of cultivation or herbicide and then ploughed/dug to bury the surface vegetation. The ground will then be raked to produce a medium tilth and then sown with 'EM2 Standard General Purpose Meadow Mixture' at a rate of 4g/m^2 or similar specification native seed mixture. The seed mix can be broadcast by hand or machine sown, the seeds must not be incorporated but treaded or firmed to provide good contact between soil and seed.

    - The grassland strip between the development and the hedges will be topped/mown in the first year once the mix has been allowed to flower (avoiding cutting in the early spring and early summer) as necessary to prevent establishment of perennial

weeds by the appointed management company/the applicant. A traditional 'hay cut' is considered best practice. Once established after the first year, the grassland may require cutting between 1-2 years after establishment by the applicant/a management company appointed by the applicant. Following this the grassland will be left to become tussocky to provide maximum value for wildlife.

- Spiral guards will be required to protect the whips and canes will be used to support the whips and will be removed after 3 years. Any new whips will be replaced where they become diseased/die and replaced with plants of the same species and size.

- New whips will require watering where necessary, particularly during drought periods.

- Once the new hedgerows have become established, hedgerow laying and cutting will be required to result in tall, busy hedgerows providing maximum value for local wildlife.

- Hedgerow management will be prescribed and follow good practice hedge management principles which can be found on websites such as 'Hedgelink' (https://hedgelink.org.uk/hedgerows/hedgerow-management-advice/) or RSPB (https://www.wildlifetrusts.org/wildlife/managing-land-wildlife/how-manage-hedgerow-wildlife).

- Hedge trimming/cutting will be undertaken on a 3-year rotational basis outside of the nesting bird season (January to February) and to allow any berry crop to be used by birds. Trimming will keep the hedgerows in good condition and will result in an 'A-frame' hedge. Occasional restoration work will be required to prevent gaps developing. Hedgerow restoration can be undertaken in winter by one of the following methods:

    - Laying (cutting stems part way through and laying them along the hedgeline) has a less drastic effect on wildlife and maintains the character of the landscape.
    - Coppicing (cutting the stems at ground level) is the best method of restoration where the hedge is too overgrown to be laid because the stems are too thick.
    - Planting up of gappy areas may be required using a mixture of native, British-grown bare root stock. Planting may be undertaken in winter provided the ground is not frozen.

Roosting bats

Impacts on bat roosts from proposed works

'Building 2' supports one day roost for an individual common pipistrelle bat and 'Building 3' support day roosts for low numbers of common pipistrelle, brown long-eared bat and whiskered bats. The proposed demolition works to the buildings will result in the loss of all identified day roosts for these species and therefore a mitigation, compensation and enhancement strategy must be implemented for the works to proceed lawfully and to maintain Favourable Conservation Status (FCS) of the onsite bat population.

As the proposed works will result in the destruction of bat roosts, **a European Protected Species (EPS) licence for roosting bats will be required following planning approval and prior to any works commencing to ensure works are lawful.**

Bat mitigation, compensation, and enhancement strategy

In accordance with the Bat Mitigation Guidelines (Mitchell-Jones, A. J., 2004), day roosts for low numbers of rarer (whiskered) and 'common' (common pipistrelle and brown long-eared bat) species (Wray *et al.,* 2010) are of 'low to moderate conservation significance'. The mitigation requirements for these roosts are the provision of new roosting facilities which need not exactly be 'like-for-like', although must be suitable, based on the species' roosting requirements.

The following strategy has been proposed to ensure the FCS of the species' will be maintained, which must be implemented under a bat EPS licence from Natural England following planning approval:

Pre-works stage:

Temporary bat roosting provisions and timing/weather restrictions:

- There are no suitable trees or structures within the site ownership suitable for the erection of bat boxes. Therefore, as no temporary roosting provisions can be provided on site, any bats encountered during the works will need to be released at night following a health check; bats will only be released when night-time temperatures are consecutively above 8°C for four nights/days. Demolition works will only be allowed during warmer months (March to November) when the above temperature restrictions are in place to ensure no bats are disturbed and released when food sources are not available to bats.

- Destructive roofing works and other features of removal will not take place during adverse weather conditions (during rain or strong winds), this is due to

an increased likelihood of harm to bats in the event bats become disturbed and fly away.

Demolition phase:

Ecological Clerk of Works (ECoW) for bats:

- Prior to any demolition works commencing, the licensed bat worker will provide a toolbox talk to all contractors on the site regarding the legal protection afforded to bats, bat biology, the contractor's responsibilities, measures of best practice and any conditions set out within the EPS bat licence and this report/any update report thereafter. The contractors will be continually aware of bats including the presence of the bat roosts on site and the potential for bats to be present during the works.

- A licensed bat worker will attend the site on the day of all roofing works and works to remove exterior elevations and roof etc. A cherry picker or MEWP will be required to access roof panels etc. An internal survey will take place to look for any bats roosting prior to any destructive works commencing. Should a bat be present within any area the bat worker will capture the bat by hand wearing gloves or with a hand net and keep the bat in a bat tub until it can be released at dusk following a health check. Once the area is clear of bats/if no bats are present, then works will continue.

- The bat licensed ecologist will supervise the 'soft' dismantling of any suitable roosting features in 'Building 2' and 'Building 3'. Soft dismantling will be undertaken by hand and hand tools wherever possible, the roof features will be removed gently and lifted away from the roof/wall to avoid crushing bats and eaves removal will be undertaken by hand. Other features will be removed carefully and inspected for the presence of bats and/or bat evidence. Should any bats be present the licensed bat worker will remove the bat to the temporary bat tub for night-time release following a health examination of the bat.

- Once all features suitable for supporting roosting bats have been carefully dismantled, then works may continue unsupervised once the licensed bat worker is satisfied that all potential bat roosting areas have been dismantled. Should a bat be discovered at any other time then works will cease immediately and the licensed bat ecologist contacted for advice. **All contractors are strictly forbidden from handling bats.**

- Any injured or underweight bats will be taken immediately into care (as directed by the Batworker's Manual, s. 7. 3, pp 64 – 66; 3rd ed. 2004 and in

accordance with the Bat Conservation Trust's (BCT) Bat Care Guidelines: A Guide to bat care for rehabilitators 2nd ed 2016).

Construction phase – replacement roosting features:

The proposed demolition of all buildings will result in the loss of three day roosts for common pipistrelle bat, one day roost supporting two brown long-eared bats and one day roost supporting an individual whiskered bat.

The following replacement bat roosting features will be provided to compensate for the loss of the above roosts, no external lighting will be permitted within 5m of the new bat loft access points/features:

1. **Bat lofts for brown long-eared / whiskered bat species:**

- Two enclosed loft spaces measuring a minimum of 4m x 5m x 2m in height will be created in the services buildings (see Appendix 7) to offset the loss of the day roosts for brown long-eared and whiskered bats.

- **The roof/bat lofts must be lined exclusively with bituminous 1F type roofing felt**; Breathable Roofing Membranes (BRMs) are non-woven and are NOT suitable for roosting bats, this is due to loose fibres 'fluffing up' over time and resulting in entrapment/injury and eventual death of roosting bats (Waring *et al.*, 2011). Any other type of membrane is not permitted under the bat licence.

- The truss within the bat lofts must be uncluttered to allow bats adequate pre-flying space. A central wooden ridge beam must be provided in each of these lofts, and crevices will be created through the installation of two 'rough-sawn' timbers installed at a 45° angle on either side of the ridge with a 2cm gap so bats can roost in the space between the ridge and timbers.

- Bats will be permitted access into the new bat lofts through the installation of two bat gable access points at the top of the inner walls into each new loft. These will be created by leaving out a 20mm gap between the inner wall and roof as shown in Appendix 7. The inner loft walls must be constructed of a rough-surfaced materials such as timber.

- The new bat lofts must be enclosed to ensure bats are not subject to disturbance from site users accessing the carport/services building below; a loft hatch must be provided to each loft for the post-works compliance check (see below) and essential maintenance works.

- Each new bat loft will feature a prominently displayed sign indicating that the space is a dedicated bat roost and contact details for The Bat Conservation Trust will be displayed.

2. Bat tubes:

- A total of three 'Vivara Pro Build-In Woodstone Bat Tube' or similar agreed tubes will be installed in the new northern gable of the services building. The bat boxes are integrated and provide an inconspicuous finish, once installed the bat tubes are completely self-contained and maintenance free. These must be installed as close to the eaves / gable apex as possible.

Post-works compliance and maintenance:

- A post-works compliance check will be required due to the presence of whiskered bat (a 'rarer' species). One visit will be undertaken following completion of the works. This is required to ensure the mitigation has been implemented correctly in line with the specifications in this report. The compliance check will involve a summer visit including an internal inspection of the new bat lofts and tubes.

Lighting strategy for roosting and foraging bats:

Temporary site lighting and night-time working:

- No night-time working will be permitted; working hours will only be permitted between **08:00am and 18:00pm** and this will negate the requirements for any temporary site lighting to ensure lighting does not disturb foraging bats and other species that may be using the site.

Permanent site lighting restrictions – external lighting:

- Preferably, no external lighting will be erected along the eastern elevation of the services building to ensure the new roost entrances for the replacement bat lofts are not illuminated. If any external lighting is required, fixtures must be no higher than head-height and will be set on motion-sensors only with short (1 minute or less) timers whilst facing downwards to prevent bats being deterred from accessing the bat lofts and pre-flight area in the car parking section of the building. A warm white spectrum (ideally 2700Kelvin but up to 3000Kelvin however, lower is preferred) will be adopted to reduce the blue light component. Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light

most disturbing to bats. Any LED luminaires sourced for the scheme must not feature UV elements.

- No external lighting will be permitted inside the car parking section of the building as this will form a pre-flight area for bats (see Appendix 7) and must remain dark.

- No external light fixtures will be erected within 5m of the bat tubes (see 'compensation – replacement bat roosts' above).

- If any pedestrian lighting is required around the new holiday units, this will be kept to an absolute minimum; the following specifications for lighting will be followed:

  - Preferably, ground lighting fixtures only will be used; these ground fixtures will reduce height. Bat-friendly lighting such as 'Solareye 80' will be used where required for health and safety purposes; the 'Solareye 80' must be fitted with a 'bat hat' to reduce upward light spill and is specifically designed to provide some lighting for visitors whilst delineating boundaries (preventing upward light spill). The light fixtures are solar-powered and the 'bat hat' reduces upward light spill by 98%, whilst still ensuring wayfinding light for visitors.

  - If low-level bollard lighting is required, this will be kept to a minimum. The luminaire angle must not exceed 90°, a bollard design must be selected which will ensure the angle of the light beam will not exceed 90° as this will result in sky glow and upward light spill which is detrimental to bats. Ideally, the bollard design will result in a 70° or less above the horizontal light spill plane.

  - Each bollard installed must be no higher than 1m in height and comprise LED luminaires only. A warm white spectrum (ideally 2700Kelvin but up to 3000Kelvin however, lower is preferred) will be adopted to reduce the blue light component. Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats. Any LED luminaires sourced for the scheme must not feature UV elements, as this can attract invertebrates and lead to a 'vacuum effect', whereby any invertebrates in the nearby area are attracted to lighting and result in less foraging opportunities for bats.

- The bollard design must ensure that light spill is directed to where it is needed, the use of hoods and louvres may be necessary to reduce light spill however, these must be used as a last resort and the brand/design of the bollard must be chosen to meet the above requirements.

- No bollards will be permitted within 3m of the new hedgerows around the site as these will provide linear features for roosting bats upon emergence from the replacement roosts.

- Security lighting will be required on site for the safety of visitors. Bats will actively avoid lit areas, in particular long-eared and myotis species which are highly light-adverse (BCT, 2018). Where lighting is absolutely necessary for health and safety purposes only, the following specifications for lights/light fixtures will be adhered to:

  1. **In line with the above specifications, only LED type luminaries with a warm white spectrum will be used on site**.

  2. Any external security lighting will be kept to an absolute minimum across the remainder of the site; one security light will be permitted per unit at the front entrance and these must be no higher than head-height and will be set on motion-sensors only with short (1 minute or less) timers whilst facing downwards. 'Up and down' projector style lighting must not be used due to upwards light spill (see Figure 1 below).

Figure 1 – 'Up and down projector' style security lights must not be used due to uncontrolled upwards light spill





Permanent site lighting restrictions – internal light sources and windows:

- Internal light spill from new windows and doorways will be mitigated against through careful design and placement of internal light sources and through window placement and design. The following scheme will be adhered to:

1. Any new lighting within each new unit will comprise LED halogen lighting only; all new lighting will be recessed down lights installed into the ceilings, of a low wattage and installed at the furthest point away from the windows internally, where practically possible.

European Protected Species (EPS) licence application

The above bat mitigation and compensation strategy will be fully implemented under a bat EPS licence. The bat EPS licence can only be sought from Natural England after Planning Permission has been granted and the appropriate surveys have been undertaken. The licence must be approved by Natural England prior to any works commencing on-site to allow the works to proceed lawfully; if demolition proceeds without EPS licensing in place the works would constitute an offence. Natural England requires a minimum of 6 weeks to process and issue a bat licence application following planning approval.

Update survey(s) will be required within 3 months of the licence application submission; if the licence is applied for prior to 30th April 2022, this may comprise an update building inspection however, if the licence is applied for after 30th April 2022, a minimum of one update dusk emergence survey would be required to determine the 'status' of the bat roosts have not changed.

Bat EPS licences will only be issued where the application has considered the three following tests and met the following requirements:

- The development is in the interests of public health and safety or is required for other imperative reasons of overriding public interest.
- There is no satisfactory alternative to the development.
- The development will not be detrimental to the maintenance of the bat populations concerned at a Favourable Conservation Status (FCS) in their natural range.

The three tests above must be explored at the planning stage (as noted in the R (Vivienne Morge) v Hampshire County Council 2011 case). The tests have been considered below:

Imperative reasons of overriding public interest

The applicant is proposing to demolish the existing buildings on site which have come to the end of their useful life. The current applicant wishes to bring the site into better use through demolition of the buildings to facilitate the construction of six 1 & 2 bed holiday units which would bring in income for the applicant in the long-term. The existing agricultural buildings are surplus to the farming needs of the business and would bring the available land into better economical use.

The new holiday units will provide tourist accommodation visiting the nearby Avebury World Heritage Site, supporting the local economy in line with Core Policy 39 of The Wiltshire Core Strategy (Wiltshire Council, 2015) which states '*Within Principal Settlements and Market Towns, proposals for tourist development of an appropriate scale (including attractions and tourist accommodation) will be supported subject to a sequential assessment'*. The location of the proposed holiday accommodation is considered appropriate Avebury Rings, which is approximately a five minute drive from the application site.

The redevelopment of the site will contribute towards the local need for tourist accommodation and will make better use of the available land whilst ensuring the on-site bat population is preserved.

No satisfactory alternative

The existing buildings on site are surplus to the needs of the farming business and have become redundant in their current state. The applicant no longer has any viable use for the buildings; conversion of the buildings into tourist accommodation was not considered practically or economically viable as the buildings are not fit for the purposes of tourist accommodation, due to being agricultural/industrial in nature. The only viable alternative is considered to be full demolition of the buildings to facilitate the construction of new modern buildings which are fit for purpose and will last for the foreseeable future.

The 'do nothing' approach has been discounted as the applicant needs to generate income from the application site, which has become redundant, whilst also contributing tourist accommodation stock to the local area, supporting the local economy.

Should the applicant not develop the site then it is considered likely the buildings would continue to deteriorate and would lead to the long-term loss of the roosts through damage, aging and weathering. The development of the site ensures the long-term retention of the bat roosts. This option was considered to be the most

viable option, both practically and economically, whilst also preserving the on-site bat population.

Favourable Conservation Status (FCS) of the bat population

The above mitigation and compensation strategy has been presented with a view to ensure the bat population is retained and enhanced within the site.

Nesting birds

The scattered trees, buildings and hedgerow within the site were considered suitable for nesting birds and a recent pigeon's nest was identified in Building 3 on site. Vegetation clearance and demolition of the buildings will be required to facilitate the works and the following strategy will be applied to mitigate for potential disturbance or harm to nesting birds:

- The buildings will be demolished under supervision of a licensed ecologist (see above for 'bats'). Due to restrictions for roosting bats, demolition of the buildings supporting bat roosts will inevitably likely take place within the nesting season. Demolition of the remaining buildings that do not support bat roosts will preferably take place from 28th February when birds are less likely to be considered nesting. Pre-works checks for signs of nesting birds (and bats – see above), will be undertaken by the ecologist. If an active nest is encountered, all works will cease immediately, and the nest will be left undisturbed. The ecologist will instate a minimum 5m works exclusion buffer zone marked out with red/white hazard tape and a second site visit by the ecologist to check the status of the nest will be required before works can continue in this area. Works may only continue when the nest is deemed to be unoccupied/no longer active by the ecologist.

- Any vegetation clearance on-site should preferably avoid the nesting season (1st March – 30th August). The ecologist will undertake a pre-works check for nesting birds and will be continually looking for signs of nesting birds during the works, if an active nest is encountered then the above strategy will be adhered to, ensuring nesting may continue until chicks have fledged the nest. With areas of denser vegetation this will involve phased clearance in small sections, allowing the ecologist to check the area before strimming continues.

- **If a bird's nest is encountered at any other unsupervised time, all works in the area must cease immediately the ecologist must be contacted immediately to provide further advice.**

In addition to the above, the following replacement nesting features are required to ensure there is no net loss in nesting opportunities (see Appendix 7 for replacement nest box):

- To compensate for the loss of nesting opportunities, one 'Large Bird Nest Box' will be erected within the carport area of the services building on the upper gable area in the south. The nest box will be erected as close to the roof apex as possible and will provide a replacement nesting area within the building. The nest box may be purchased from www.nhbs.com.

Ecological enhancements

To ensure proposals are compliant with Section 15 of the NPPF and Core Policy 50 'Biodiversity and Geodiversity' of The Wiltshire Core Strategy (Wiltshire Council, 2015), the following ecological enhancements will be included as part of the development:

- An additional three 'Vivara Pro Build-in Woodstone Bat Tube' or similar agreed tubes will be installed at the southern gable of the services/car parking building as close to eaves level/gable apex as possible – the tubes must be built into the wall and can be rendered or faced with brick for an inconspicuous finish.

- A total of six 'WoodStone Build-in Swift Nest Box A' or similar agreed nest boxes will be installed on the northern gable of the services building as close to eaves level/gable apex as possible – nest boxes must be built into the wall and can be rendered or faced with brick for an inconspicuous finish provided the entrance holes are left accessible. Each box will be installed between 60cm and 1m apart per brick and will be installed in clusters as swifts (*Apus apus*) are colony nesters; the swift bricks have also been shown to be utilized by other species for nesting such as house sparrows (*Passer domesticus*).

- Four 'Solitary Bee Bricks' will be installed in the western elevation of the services building between 0.25-0.5m from ground level. The bee bricks are designed to accommodate non-stinging/swarming bee species.

- New tree planting and landscaping within the site will comprise native species only from British-grown stock. Any new tree planting within the site to comprise 75% native species and 25% non-native trees (including a mixture of fruit trees) to ensure ecological resilience and diversity. The trees will comprise a mixture of 25% of crab apple (*Malus sylvestris*), apple (*Malus sp.*), plum (*Prunus domestica*) and pear (*Pyrus communis*) and 75% native species such as oak (*Quercus sp.*), beech (*Fagus sylvatica*),

hornbeam (*Carpinus betulus*), whitebeam (*Sorbus aria*) and lime (*Tilia sp*.). The trees must be sourced from British-grown bare root stock and will be between 16-18cm in girth.

- Any new fencing within the site will be made hedgehog-friendly and feature 13cm x 13cm gaps at the base of each fence boundary/gravel boards to allow for the free movement of hedgehogs and other small mammals.

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MAGIC (2022). *EPS licences search for dormice and newts around Manor farm, Avebury Trusloe.*

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Oldham, R.S., Brady, L.D., Sewell, D.L. & Baker J.M.R. (2008). *ARG UK Advice Note 4: Great Crested Newt Habitat Suitability Index.* Amphibian and Reptile Groups of the United Kingdom.

Oldham, R.S., Keeble, J., Swan, M.J.S. & Jeffcote, M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus). Herpetological Journal 10 (4), 143-155.*

Wiltshire and Swindon Biological Record Centre (2020). *1km species and sites data search for Manor Farm, Avebury Trusloe.*

Wiltshire Council (2015). *The Wiltshire Core Strategy.*

Appendix 1: Site location plan and existing site layout

MANOR FARM - AVEBURY TRUSLOE



LOCATION PLAN 1:5000

0 50 100 150 200 250
1:5000 Scale in Metres

PROJECT TITLE MANOR FARM AVEBURY TRUSLOE MARLBOROUGH SN8 1QY	CLIENT BUTLER BROS LTD	WORK STAGE 1-PREPARATION & BRIEF ISSUE STATUS INFORMATION	NOTES This document and its design content is copyright © and is the property of Savills. It may not be reproduced without the expressed permission. It shall be read in conjunction with all other associated project information including models, specifications, schedules and related consultants drawings and documentation. Do not scale from this drawing unless for Planning purposes. Figured dimensions only are to be used. All dimensions must be checked on site by the Contractor prior to the commencement of any fabrication or building works. Immediately report any discrepancies, errors or omissions to Savills prior to the commencement of any fabrication or building work. If in doubt please Ask.	REVISIONS REV DESCRIPTION BY CHECK DATE	RIBA Chartered Practice 1 Jewry Street, Winchester, Hampshire, SO23 8RZ t: 01962 857413 f: 01962 857401 e: abswinchest@savills.com w: www.savills.co.uk	INSTRUCTION_DWG_REV 445994_101 SCALES @ A3 1:5000 BIM ISSUE REFERENCE BUT -SAV- - - -A-445994_101	savills
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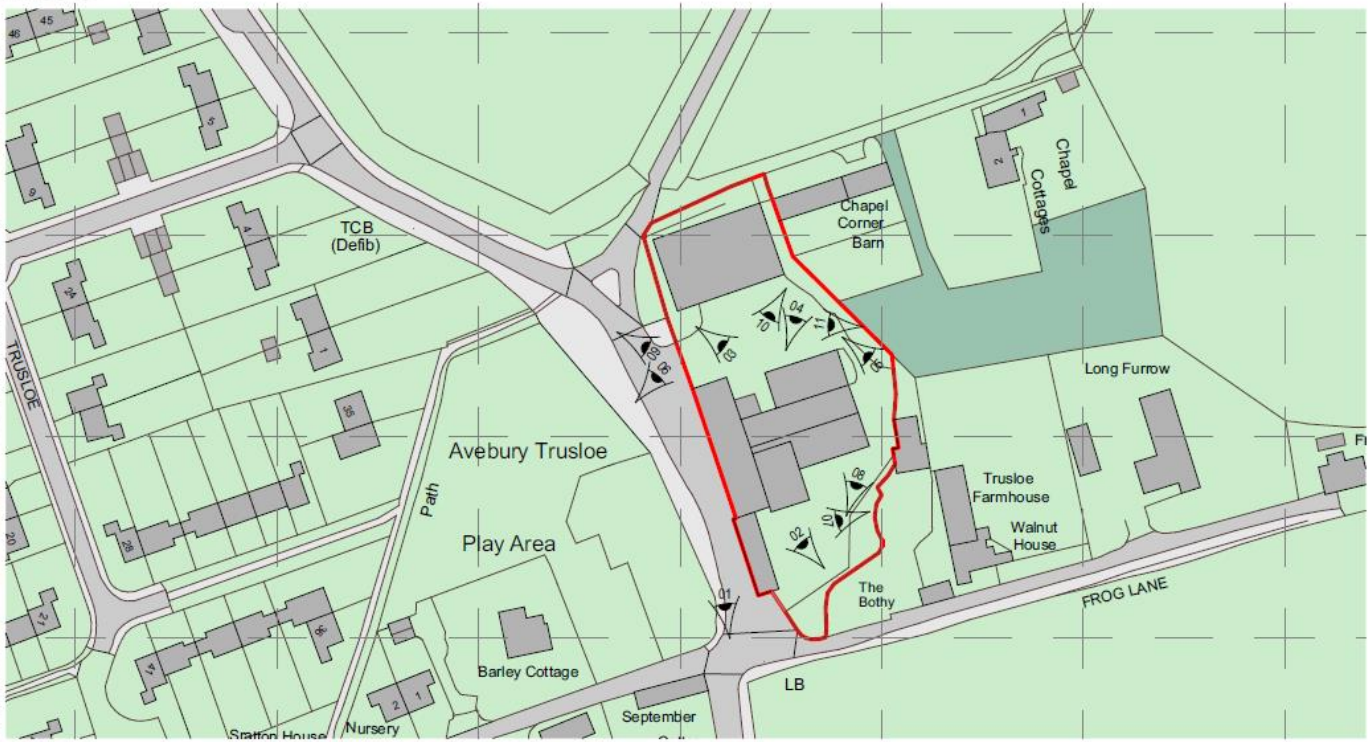
MANOR FARM - AVEBURY TRUSLOE

























0 10 20 30 40 50
1:1000 Scale in Metres

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		ISSUE STATUS INFORMATION							SCALES @ A3 1:20, 1:1000
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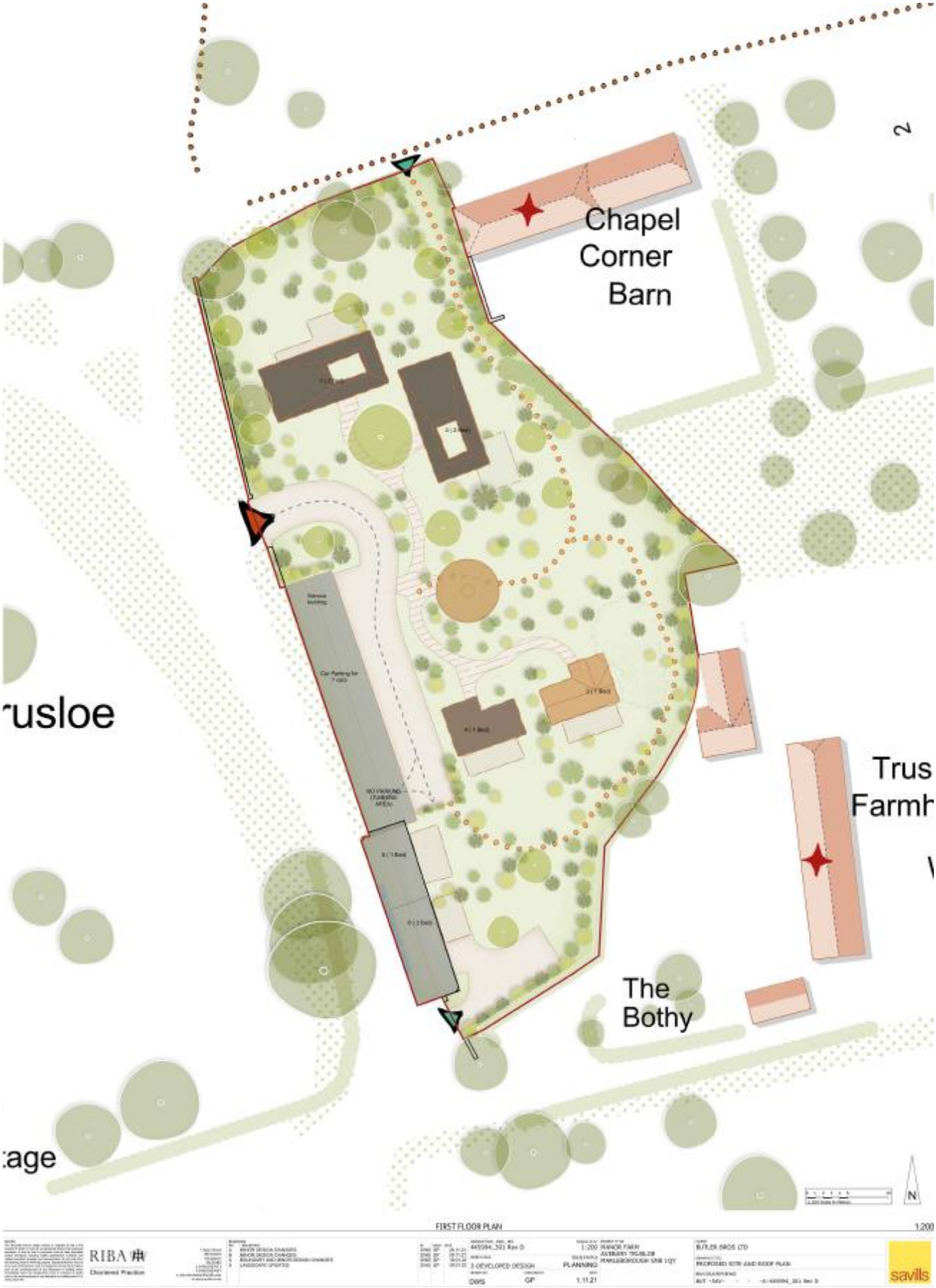
Appendix 2: Proposals





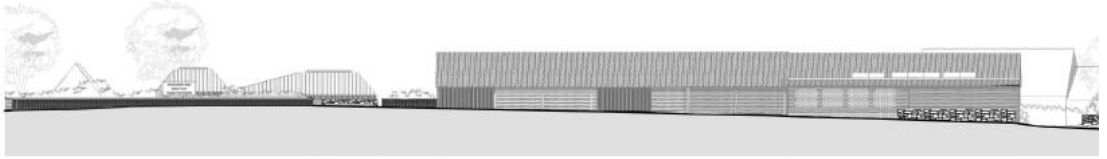
1 N NORTH ELEVATION - SITE 1:200



2 E EAST ELEVATION - SITE 1:200



3 S SOUTH ELEVATION - SITE 1:200



4 W WEST ELEVATION - SITE 1:20



5 A SECTION 1:200



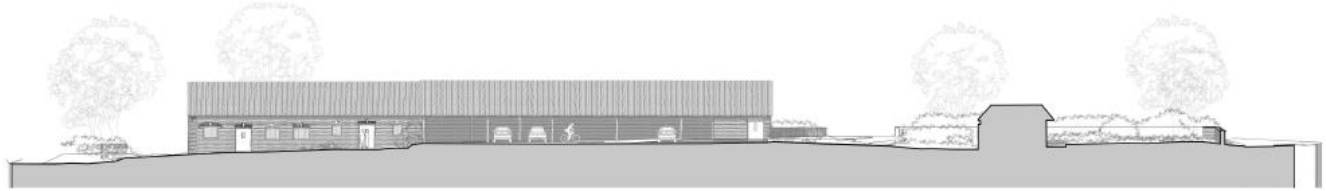
6 B SECTION 1:200



7 C SECTION 1:200



9 U3, 4N UNIT 3 AND 4 NORTH ELEVATION 1:200



8 D SECTION 1:200



RIBA Chartered Practice

3-DEVELOPED DESIGN

USE

DWS GP 1.11.21

A MINOR DESIGN CHANGES
B MINOR DESIGN CHANGES
C DRAWING STATUS CHANGED

DWS GP 28.11.21
DWS GP 13.01.22
DWS GP

MANOR FARM
AVEBURY TRUSLOE MARLEBOROUGH SN8 1QY

BUTLER BROS LTD

PROPOSED SITE ELEVATIONS

449594_303 Rev C

1:200

BUT -SAV- - - -A-449594_303 Rev C

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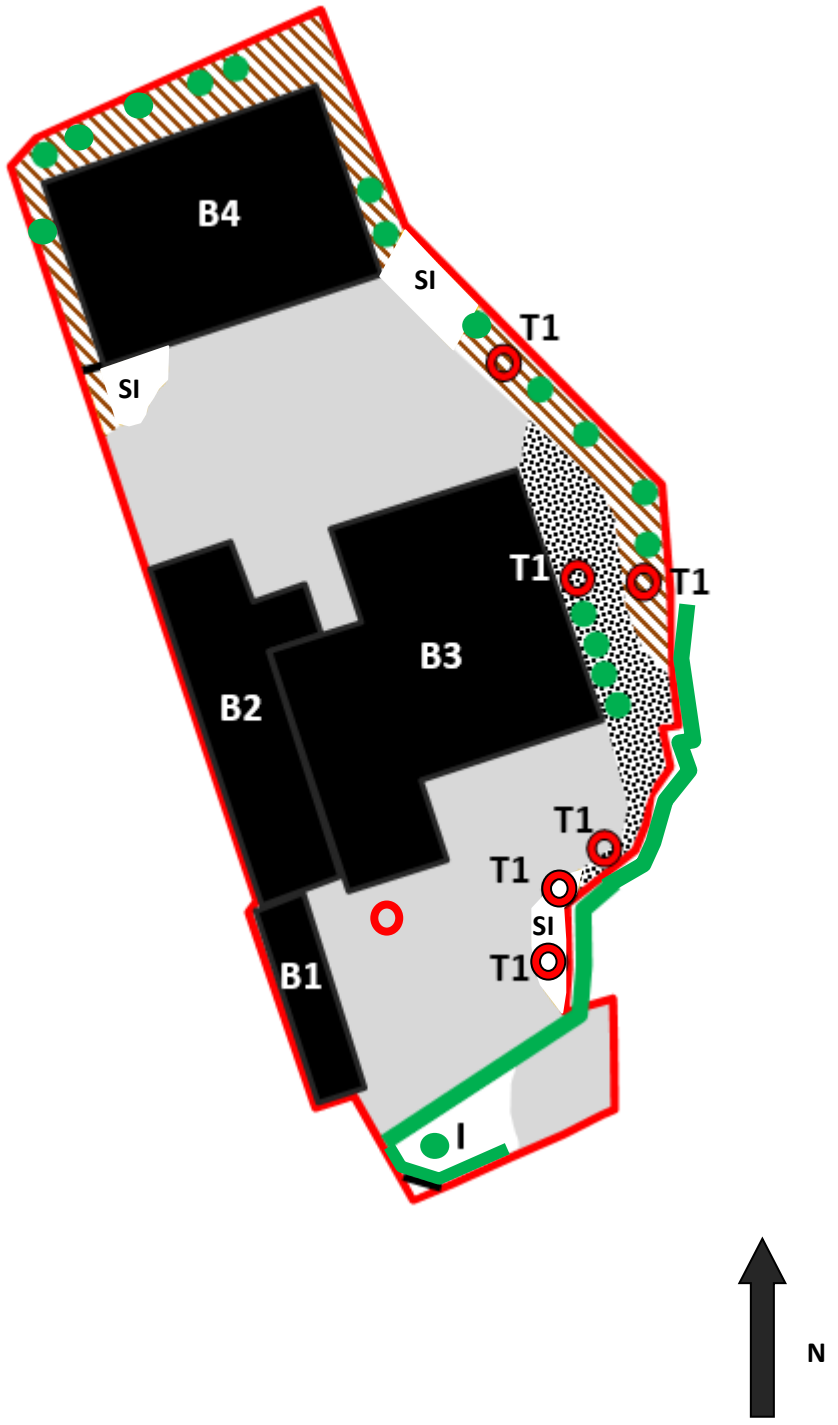
Appendix 3: Phase 1 habitat map



Phase 1 Habitat map key

Habitat code	Description
	Hardstanding
SI	Poor semi-improved grassland
I	Improved grassland
	Tall ruderal vegetation
	Ephemeral/short perennial vegetation
	Buildings
	Scattered trees
	Intact native species-poor hedgerow
	Wall
	Survey site boundary
T1	Target Note 1 – Rubble pile

Building locations (PRA)

Reference	Building description
B1	Workshop 1
B2	Workshop 2
B3	Store 1
B4	Store 2

Appendix 4: Photographs



Photo 1: 'Building 1' internal



Photo 2: 'Building 1' west elevation



Photo 3: 'Building 1' east elevation



Photo 4: 'Building 3' south elevation



Photo 5: 'Building 3' internal



Photo 6: 'Building 3' northern elevation



Photo 7: 'Building 2' northern elevation



Photo 8: 'Building 4' southern elevation



Photo 9: 'Building 4' internal



Photo 10: 'Building 2' west elevation by the road



Photo 11: Improved grassland in the south

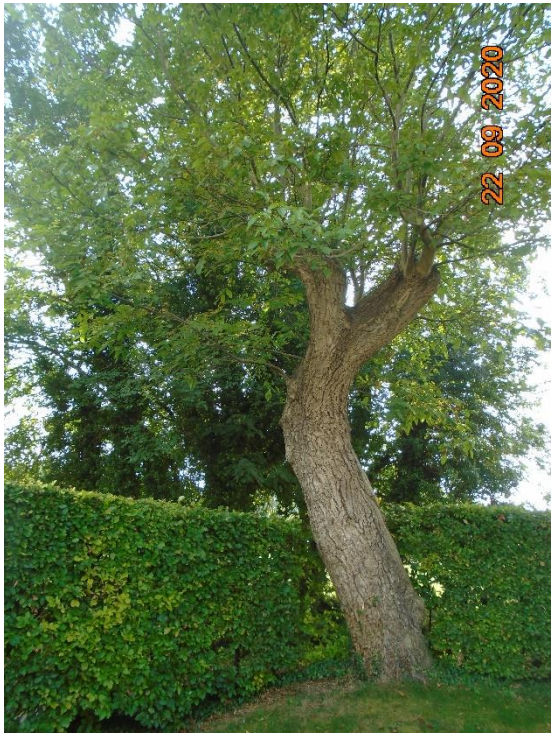


Photo 12: Scattered trees in south



Photo 13: Eastern boundary & ephemeral vegetation



Photo 14: Rubble & intact native species-poor hedgerow



Photo 15: 'Building 2' internal in north



Photo 16: Northwest boundary



Photo 17: Tall ruderal with scattered trees in the north



Photo 18: Stored materials in the north of the site

Appendix 5: Bat evidence locations – ‘Building 3’







Appendix 6: Bat activity surveys – raw results

'Building 1' – dusk survey 02/06/2021

Bat activity survey						
Date: 02/06/2021	**Sunset:** 21:15	**Weather conditions:** Mild and dry	**Location:** 'Building 1' - Manor Farm, Avebury Trusloe			
Temp: Start: 19°C End: 17°C	**Wind Force (Bft):** 1/12	**Equipment:** EchoMeter Touch 2 + tablets x 2, and Anabat SD1 x 1	**Cloud cover (Oktas):** 8/8	**Start Time:** 20:58	**End Time:** 22:50	**Surveyors and locations:** Phil Smith in the west and Anne Smith in the south.
Time	**Sp. if ID'd**	**Number**	**Comments**			
21:27 to 22:24	Common pipistrelle	Infrequent passes	Foraging and commuting along road treeline in west, also flying east over buildings.			
21:38-END	Common pipistrelle	1	Foraging in west along road.			
21:57	Leisler's bat	1	Heard not seen in west.			
22:02	Noctule	1	Heard not seen in the south.			
22:05 to 22:06	Serotine	1	Heard not seen in west.			
22:07	Serotine	1	Foraging in west.			
22:31	Myotis sp.	1	Heard not seen in west.			
22:31	Leisler's bat	1	Heard not seen in west.			
22:34	Serotine	1	Heard not seen in the south.			
22:35	Long-eared sp.	1	Faint call heard but not seen in the south.			
22:36	Leisler's bat	1	Heard not seen in west.			
22:39	Noctule	1	Heard not seen in the south.			

Buildings 2 and 3 – dusk survey 02/06/2021

Bat activity survey						
Date: 02/06/2021	**Sunset:** 21:15	**Weather conditions:** Breezy and overcast	**Location:** 'Building 2' and '3' - Manor Farm, Avebury Trusloe			
Temp: Start: 18°C End: 16°C	**Wind Force (Bft):** 0/12	**Equipment:** EchoMeter Touch 2 + tablets x 2	**Cloud cover (Oktas):** 8/8	**Start Time:** 21:00	**End Time:** 23:00	**Surveyors and locations:** Becci Smith in the north, Kim Pitcher in the southeast and Russell Hoyle in the northwest.
Time	**Sp. if ID'd**	**Number**	**Comments**			
21:14	Common pipistrelle	1	Commuted west to east along north of barns.			
21:17	**Common pipistrelle**	**2**	**Emerged from within the barn (Building 3) and a second barn joined and foraged within the barn (see photo below, blue circled area).**			
21:20	Common pipistrelle	1	Commuted northwest to east over the north.			
21:21	Common pipistrelle	1	Commuted west to east along north of barns.			

21:24	Common pipistrelle	1	Commuted east to west over the northern section of the roof.
21:24	Common pipistrelle	1	Commuted west to east along north of barns.
21:28	Common pipistrelle	1	Entered into the barn from the south and foraged.
21:28	Common pipistrelle	1	Flew north into barn ('Building 3') – (see photo, blue circled area).
21:30 – 34	Common pipistrelle	6	Foraging within the open barn.
21:32	Common pipistrelle	1	Commuted west to east over the northern farmyard and back again.
21:32	**Common pipistrelle**	**1**	**Emerged from northwest door on 'Building 2', commuted east. (Red circled area in photo below – Point 1).**
21:34	Common pipistrelle	2	Commuted west to east along north of the barns.
21:36	Noctule	1	Heard not seen in the northwest.
21:37	Common pipistrelle	2	Chasing each other east to west over the north.
21:39	Common pipistrelle	1	Heard not seen in the southeast.
21:45	Common pipistrelle	1	Foraging in the open barn.
21:46	Common pipistrelle	1	Heard not seen in the north.
21:54	Long-eared sp.	1	Commuted northwest to east in the northwest.
21:58	Common pipistrelle	1	Left the open barn and headed south.
21:59	Common pipistrelle	1	Flew south and west out of barn (Building 3) – (see photo, blue circle).
22:18	Common pipistrelle	1	Foraging in the open barn.
22:22	Common pipistrelle	1	Heard not seen in the southeast.
22:30 – 35	Common pipistrelle	1	Foraging in the open barn.
22:32	Long-eared sp.	1	Heard not seen in the northwest.
22:36	Noctule	1	Heard not seen in the southeast.
22:36	Leisler's bat	1	Heard not seen in northwest.
22:40 - 45	Common pipistrelle	1	Heard not seen foraging inside the barn.





Buildings 2 and 3 – dusk survey 28/06/2021

Bat activity survey						
Date: 28/06/2021	**Sunset:** 21:28	**Weather conditions:** Mild and dry	**Location:** 'Building 3' - Manor Farm, Avebury Trusloe			
Temp: Start: 17°C End: 15°C	**Wind Force (Bft):** 2/12	**Equipment:** EchoMeter Touch 2 + tablets x 3	**Cloud cover (Oktas):** 7/8	**Start Time:** 21:13	**End Time:** 23:07	**Surveyors and locations:** Russell Hoyle in the northwest, Chris Payne in the south and Laurence Wills in the north.
Time	**Sp. if ID'd**	**Number**	**Comments**			
21:47	Common pipistrelle	1	Heard not seen in the south.			
21:48	Common pipistrelle	2	Flying inside open barn, then emerged from the eastern open barn elevation. Point 1 in the image below.			
21:53	Common pipistrelle	1	Commuted west to east in the south.			
22:00-22:10	**Brown long-eared bat**	**1**	**Appeared in west of barn ('Building 3'), pre-flying inside and then emerged from east opening of barn. Point 1**			

22:00-END	Common pipistrelle	3	Foraging in the northwest grassland.
22:10	Common pipistrelle	1	Commuting north to west, in the north.
22:14	Common pipistrelle	1	Heard not seen in the north.
22:19	Common pipistrelle	1	Heard not seen in the north.
22:22	Common pipistrelle	1	Commuting west to north over the building.



Buildings 2 and 3 – dawn survey 14/07/2021

Bat activity survey						
Date: 14/07/2021	**Sunrise:** 05:06	**Weather conditions:** Mild and dry	**Location: '**Building 2' and '3' - Manor Farm, Avebury Trusloe			
Temp: Start: 14°C End: 13°C	**Wind Force (Bft):** 1/12	**Equipment:** EchoMeter Touch 2 + tablets x 3	**Cloud cover (Oktas):** 0/8	**Start Time:** 03:20	**End Time**: 05:21	**Surveyors and locations**: Amy Parsons in the east, Kris Pedrosa in the west and James Gooding in the north
Time	**Sp. if ID'd**	**Number**	**Comments**			
03:49-04:19	Common pipistrelle	1	Foraging in the west of the site.			
03:51	**Whiskered myotis bat**	**1**	**Flying inside barn ('Building 3'), then went into northern section of building (no access). Was not seen to re-emerge (see red circled area below).**			
03:53-04:27	**Long-eared sp.**	**2**	**Flying inside barn, near internal partition wall dividing north and south sections of the barn. Both bats disappeared into the northern section and were not seen to re-emerge (see red circled area below)..**			
4:26	Common pipistrelle	1	Heard not seen in the north.			

4:31	Common pipistrelle	1	Commuted west to east across the north elevation.
4:33- 5:01	Common pipistrelle	3	Circling in front of the eastern entrance to the barn.
04:38	Common pipistrelle	1	Heard not seen in the west.



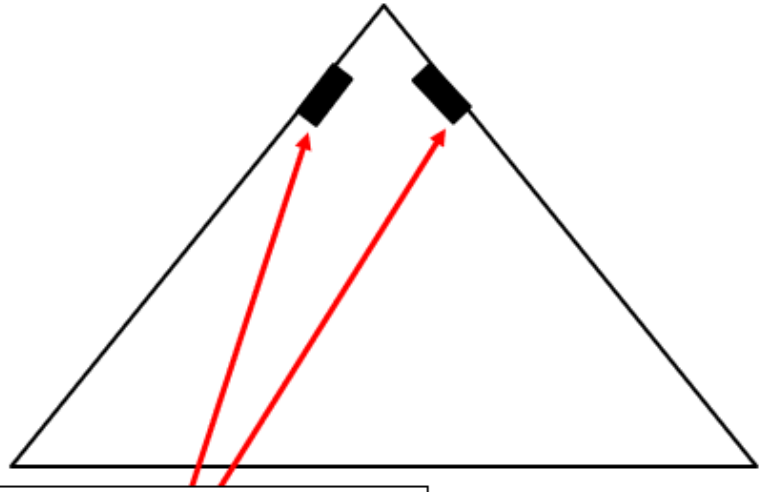
Appendix 7: Ecological Parameters Plan (EPP)



EPP KEY

- Two replacement bat lofts within services building to compensate for long-eared and whiskered bat day roosts (each loft minimum 5m x 4m x 2m in height to the apex and roof will be lined exclusively with 1F bituminous felt).
- Bat access points for new bat lofts (x 2 to be installed per loft on inner wall (see Figure 1 overleaf).
- Light sampling area for bats in car parking section of the building – no lighting to be erected inside building and must remain dark.
- Bat flight paths upon emergence from the building.
- Dark bat foraging/commuting zones – all lighting to be kept to a minimum and in line with specifications outlined in Section 5 of report.
- Approx. 230m of native species-rich hedge planting around the site boundaries to enhance habitat connectivity post-development.
- 1m tussocky grassland margins around hedge bases to enhance foraging habitats for bats and other wildlife.
- 'Vivara Pro Build-In Woodstone Bat Tube' x 6 (x 3 as compensation for loss of pipistrelle roosts and x 3 as enhancements) to be installed on gable walls (see Figure 2 overleaf).
- 'WoodStone Build-in Swift Nest Box A' x 6 to be installed in northern gable wall of building (see Figure 3 overleaf).
- 'Solitary Bee Brick' x 4 to be installed on western elevation of building (see Figure 4 overleaf).
- 'Large Bird Nest Box' x 1 to be installed on inner southern wall inside car parking area as compensation for loss of nest within Building 3 (see Figure 5 overleaf).

Figure 1 – Bat access points to bat lofts



Two 20cm x 30cm access points to be created in inner partition walls to lofts to allow access into lofts for bats and upon emergence bats can 'light sample' in car parking section of building which must be completely unlit.

Figure 2 – 'Vivara Pro Build-In Woodstone Bat Tube'

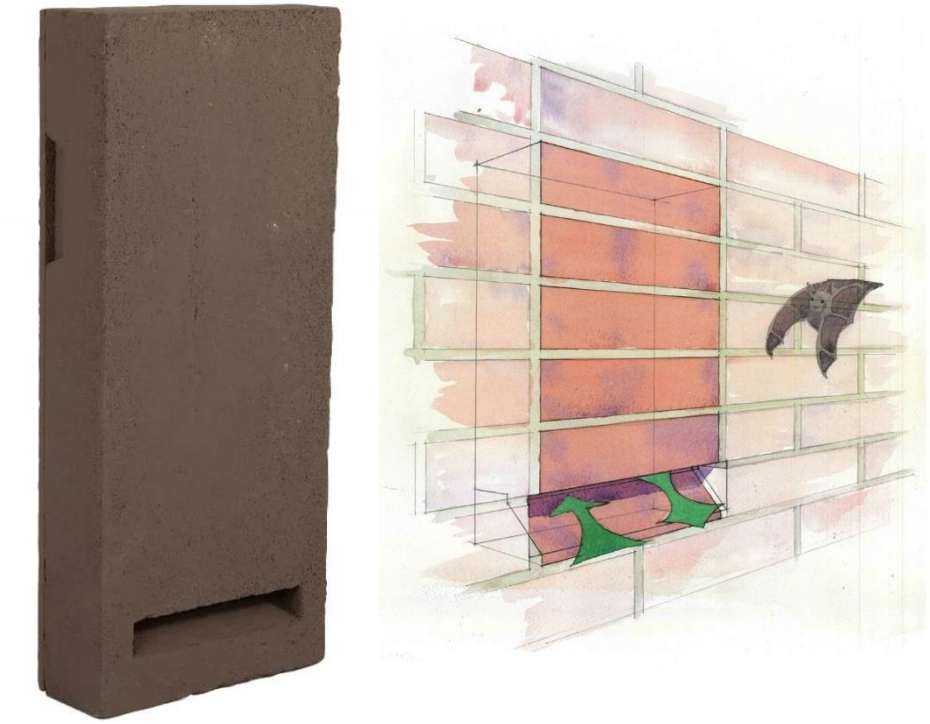


Figure 3 – 'Woodstone Build-in Swift Nest Box A'



Figure 4– 'Solitary Bee Brick'



Figure 5 – 'Large Bird Nest Box'

