



Preliminary Roost Assessment Survey

Ludwells Farm Apple Barn, Spode Lane, Cowden, Kent TN8 7HN

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Executive summary

Arbtech were commissioned by Ms Adrienne Cherrywood to undertake a Preliminary Roost Assessment (PRA) at Ludwells Farm Apple Barn, Spode Lane, Cowden, Kent TN8 7HN. The survey was completed on 7th January 2021. The aim of the assessment was to consider the value and suitability of the structures for roosting bats. The surveyor also made note of any other ecological constraints observed during the survey, notably the likelihood of presence or signs of breeding birds, and the suitability of the site for barn owls.

This report is prepared to inform a future planning application with Sevenoaks District Council. The proposed development is described as:

- The conversion of an existing barn into a dwelling.

Recommendations - This is work you will need to commission (if any) to obtain planning permission and comply with legislation

Ref	Recommendations
B1 (Barn)	<p>B1 (the stable and kitchen of the main house) is a suspected bat roost of moderate value.</p> <p>Two bat emergence/re-entry surveys are required on B1 during the active bat season (May – September) to confirm presence/likely-absence of bats roosting in or on the building.</p> <p>Two of the survey visits must be completed during the optimal survey period mid-May to August inclusive.</p> <p>Sub-optimal: early May and September.</p> <p>One of the surveys must be a dawn re-entry survey. The others can be at dusk.</p> <p>Two bat surveyors are required to provide full coverage of the building's elevations to look for emerging/re-entering bats.</p> <p>Lighting mitigation is to be designed based on the outcome of the night bat survey(s).</p>
Breeding birds/barn owls (site)	<p>No further surveys required, but habitat enhancements are recommended.</p> <p>Works should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the buildings and vegetation should be undertaken immediately prior to the commencement of work. All active nests will need to be retained until the young have fledged.</p>

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1.0 Introduction and Context

1.1 Background

Arbtech were commissioned by Ms Adrienne Cherrywood to undertake a Preliminary Roost Assessment (PRA) at Ludwells Farm Apple Barn, Spode Lane, Cowden, Kent TN8 7HN. The survey was completed on 7th January 2021. The assessment is informed by the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).

No previous bat surveys are known of the survey building, by Arbtech Consulting Ltd or others.

1.2 Site Context

The site is centred on National Grid Reference TQ45474173 and has an area of approximately 530m². There is one building within the site boundary, the barn. This was the subject of the survey works and the proposed development.

1.3 Scope of the report

This report provides a description of all features suitable for roosting bats and evaluates those features in the context of the site and wider environment. It further documents any physical evidence collected or recorded during the site survey that establishes the presence of roosting bats. It provides information on constraints to the proposals as a result of roosting bats, and summarises the requirements for any further surveys, to inform subsequent mitigation proposals, achieve Planning or other statutory consent, and to comply with wildlife legislation.

The aim of the assessment was to determine the presence or evaluate the likelihood of the presence of roosting bats, and to gain an understanding of how they could use the site. To achieve this, the following steps have been taken:

- A desk study has been carried out.
- A field survey has been undertaken, including an external survey and internal inspection where possible.
- An outline of likely impacts on any known roosts has been provided, based on current development proposals.
- Recommendations for further survey and assessment have been made, along with advice on the requirements of a European Protected Species Mitigation Licence (EPSML) application if appropriate.

A survey plan is presented in Appendix 1, proposed plans in Appendix 2 (where available), desk study results in Appendix 3 and a summary of relevant legislation is presented in Appendix 4.

1.4 Project Description

This report is prepared to inform a future planning application with Sevenoaks District Council. The proposed development is described as:

- The conversion of an existing barn into a dwelling.

2.0 Methodology

2.1 Desk Study methodology

The desk study informing the survey conclusions consists of a review of nearby statutory and non-statutory designated sites, Biodiversity Action Plan (BAP) Priority Habitats and granted EPSML records held on the Magic database. An assessment of the surrounding landscape structure was also completed using aerial images from Google Earth and OS maps.

Additionally, to conform to best practice guidelines biological data records (BRD) within a 2km radius of the site has obtained from the local biological records centre (Kent and Medway Biological Records Centre, KMBRC). These will be analysed and summarised in the conclusions and recommendations part of the report where relevant.

The data search is confidential information that is not suitable for public release and has been analysed and summarised for presentation in this report. They can be provided on request by the LPA.

2.2 Site Survey methodology

The survey was undertaken by Craig Williams (Natural England Bat Licence Number: 2018-33540-CLS-CLS) on 7th January 2020.

All features that will be impacted by the project proposals were assessed for their bat roosting and/or commuting habitat. The surveyor systematically surveyed all features suitable for-bats and signs of bat activity.

For any surveyed buildings:

A non-intrusive visual appraisal from the ground using binoculars, inspecting the external features of the building(s) for potential access/egress points, and for signs of bat use. An internal inspection of the building was also made, including the living areas of derelict or abandoned buildings and the accessible roof spaces of all buildings, using an endoscope, torch and ladders. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows, and carried out a detailed search of numerous features within the roof space.

For any surveyed trees:

A visual inspection from ground level using binoculars and where accessible and safe to do so, an internal inspection of potential roosting features using an endoscope, torch and ladders.

2.3 Breeding birds and other incidental observations

The surveyor also made note of any other ecological constraints observed during the survey, notably the likelihood of presence or signs of breeding birds, and the suitability of the site for barn owls *Tyto alba*.

2.4 Suitability Assessment

All affected survey features on site were categorised according to the likelihood of bats being present, in line with best practice guidelines (Collins, J. (ed) 2016). The features that dictate the likelihood of roosting bats are summarised in Tables 1 and 2 below. Roost suitability is classified as high, moderate, low and negligible and dictates any further surveys required before works can proceed.

Table 1: Features of a building that are correlated with use by bats

Likelihood of bats being present	Feature of building and its context
Higher	Buildings/structures with features of particular significance for roosting bats e.g. mines, caves, tunnels, icehouses and cellars. Habitat on site and surrounding landscape of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland. Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river and or stream valleys and hedgerows. Site is proximate to known or likely roosts (based on historical data).
Lower	A small number of possible roost sites/features, used sporadically by more widespread species. Habitat suitable for foraging in close proximity, but isolated in the landscape. Or an isolated site not connected by prominent linear features. Few features suitable for roosting, minor foraging or commuting.

Table 2: Features of a tree that are correlated with use by bats

Likelihood of bats being present	Feature of tree and its context
Higher	A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Lower	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.

2.5 Limitations

It should be noted that whilst every effort has been made to describe the features on site in the context of their suitability for roosting bats, this does not provide a complete characterisation of the site. This survey provides a preliminary view of the likelihood of bats being present. This is based on suitability of the habitats on site and in the local area, the ecology and biology of bats as currently understood, and the known distribution of bats as recovered during the desk study.

There were no specific limitations to the survey regarding internal access, exterior visibility, safety from biotic (e.g. wasps) or abiotic (e.g. asbestos) sources or adverse weather. Therefore, the survey was carried out to its fullest extent, and the conclusions are made based on the maximum range of evidence.

3.0 Results and Evaluation

3.1 Desk Study Results

The desk study methodology as outlined in 2.1 has been carried out, and any relevant findings regarding sites, habitats or species will be incorporated into the conclusions and recommendations section of this report (4.2) for ease of reading.

3.2 Field Survey Results

One building on site was surveyed, designated as B1. This is illustrated in the map in Appendix 1. The weather conditions recorded at the time of the survey are shown in Table 7.

Table 7: Weather conditions during the survey

Date: 07/01/2021	
Temperature	0°C
Humidity	93%
Cloud Cover	60%
Wind	2 m/s
Rain	None

3.6 Site Feature descriptions and photos

There is one building on site, designated as B1.

B1 is a timber framed barn set on a brick plinth. It has a main gabled roof of clay tiles, of an average condition with loose, missing and broken examples leaving gaps that could be used for roosting. Lead flashing is slightly peeling leaving more gaps.

Picture 1: Looking south at the north-eastern and north-western elevations of B1.



The exterior walls have timber cladding, some of which is loose or missing leaving more gaps, high on the gable end for example. The eaves are open into the ground floor. A corrugated sheet built woodstore area attaches to the side of the barn.

Picture 2: Looking south-east at the north-western elevation of B1.



Picture 3: Looking north at the south-west and south-eastern elevation of B1.



Picture 4: Loose roof tiles on B1.



The ground floor is used for storage and has a low ceiling and the single skin timber walls. Internal support beams do not have roosting crevices.

Picture 5: Inside the ground floor of B1.



The interior of the roof void around 3.5m tall and is separated from the ground floor and has plasterboard under the external tiles with warped and loose areas, although a secondary bitumen liner is seen behind this under the tiles. A large roof window of corrugated plastic is present, with gaps. A gable end window has a plastic cover, and the door at the other end is ill fitting. Rodent droppings are found on the floor

Picture 6: Inside the roof void of B1.



4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

Bats are protected under the Wildlife and Countryside Act and Conservation Regulations (see Appendix 4 for a summary of legislation protecting bats in the UK). Legislation protects all wild birds whilst they are breeding, and prohibits the killing, injuring or taking of any wild bird or their nests and eggs. Certain species of bird, including the barn owl, are subject to special provisions; it is an offence to disturb any bird or their young during the breeding season.

There are three possible outcomes of this survey, each with specific recommendations. These are outlined below:

Confirmed bat roost

Best practice survey guidelines (Collins, 2016) recommends additional surveys for confirmed roosts. Three further surveys are required to characterise the bat roost present including species, roost type and access points to inform a European Protected Species Mitigation Licence (EPSML) application with Natural England. Surveys must be completed during the active bat season (May – September). At least two of the surveys should be completed during the optimal survey period mid-May to August, and at least one of the surveys should be a dawn re-entry survey (Collins, J. 2016).

Low, moderate or high likelihood of a bat roost present

Best practice survey guidelines (Collins, 2016) recommends additional surveys for features assessed as having low to high suitability for roosting bats. One, two or three further surveys are required to confirm presence/likely-absence of a bat roost, based on a low, medium or high roost likelihood evaluation. Surveys must be completed during the active bat season (May – September). If more than one survey is recommended, at least one of them should be completed during the optimal survey period mid-May to August, and at least one of the surveys should be a dawn re-entry survey (Collins, J. 2016). If two or one further survey is recommended these surveys must be completed during the optimal survey period (mid-May to August). For low and moderate roost likelihood evaluation the survey effort recommended at this stage is iterative and if bats roosts are confirmed in the building, a further survey will be required to provide sufficient information to inform an EPSML application to Natural England.

Negligible likelihood of a bat roost present

Buildings assessed as comprising negligible suitability for roosting bats do not normally require further surveys. However, if bats are found during any stage of the development, work should stop immediately and a suitably qualified ecologist should be contacted for further advice.

4.2 Evaluation

Taking the desk based assessment and site survey results into account, the following value for roosting bats has been placed on each site survey feature.

Table 8: Evaluation of survey features on site

Ref	Survey assessment conclusions (with justification)	Foreseen impacts	Recommendations	Enhancements The Local Planning Authority has a duty to ask for enhancements under the NPPF (July 2018)
B1 (barn)	<p>The local area is of good bat habitat. A European protected species licence is known ~390m south-west of the survey site, and involved the destruction of a resting place and damage to a breeding place of brown long eared, common and soprano pipistrelles in 2017.</p> <p>Ten species of bats have been recorded more than a few times within the local area, including common and soprano pipistrelles, brown long eared, both noctules, four Myotis species and serotine. Six of these have been recorded roosting more than once.</p> <p>B1, the barn has a moderate habitat value due to suitable roosting features such as loose roof tiles, peeling lead flashing and cladding holes. It could be used as a day or transitional roost, as well as a night roost.</p>	<p>As the proposals include the renovation of the barn into a dwelling, any bat roost in B1 will be disturbed, damaged, or destroyed. This could also result in death or injury of bats.</p>	<p>B1 (the stable and kitchen of the main house) is a suspected bat roost of moderate value.</p> <p>Two bat emergence/re-entry surveys are required on B1 during the active bat season (May – September) to confirm presence/likely-absence of bats roosting in or on the building.</p> <p>Two of the survey visits must be completed during the optimal survey period mid-May to August inclusive.</p> <p>Sub-optimal: early May and September.</p> <p>One of the surveys must be a dawn re-entry survey. The others can be at dusk.</p> <p>Two bat surveyors are required to provide full coverage of the building's elevations to look for emerging/re-entering bats.</p> <p>Lighting mitigation is to be designed based on the outcome of the night bat survey(s).</p>	<p>Dependant on the outcome of the further surveys.</p>

<p>Breeding birds/barn owls (site)</p>	<p>Birds could nest in or on the building.</p> <p>The site provides negligible habitat for barn owls, and no evidence was found.</p>	<p>Active nests could be destroyed during the renovation works.</p>	<p>No further surveys required, but habitat enhancements are recommended.</p> <p>Works should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the buildings and vegetation should be undertaken immediately prior to the commencement of work. All active nests will need to be retained until the young have fledged.</p>	<p>Install Schwegler bird boxes on retained trees/ other buildings on site:</p> <p>e.g.</p> <p>2x Schwegler 1b Nest boxes</p> <p>2x Schwegler 2H Robin boxes</p> <p>1x barn owl box on a large tree, facing open fields.</p> <p>Nest boxes should be positioned approximately 4-5m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight. Small-hole boxes are best placed approximately 1-3m above ground on an area of the tree trunk where foliage will not obscure the entrance hole.</p>
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5.0 Bibliography

- British Trust for Ornithology (2016) www.bto.org/about-birds/nbw/putting-up-a-nest-box
- Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists — Good Practice Guidelines, 3rd edition, Bat Conservation Trust, London.
- Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected?
- Google Earth (2020)
- Magic database (2020) <http://www.magic.gov.uk/MagicMap.aspx>
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

Appendix 1: Survey Plan



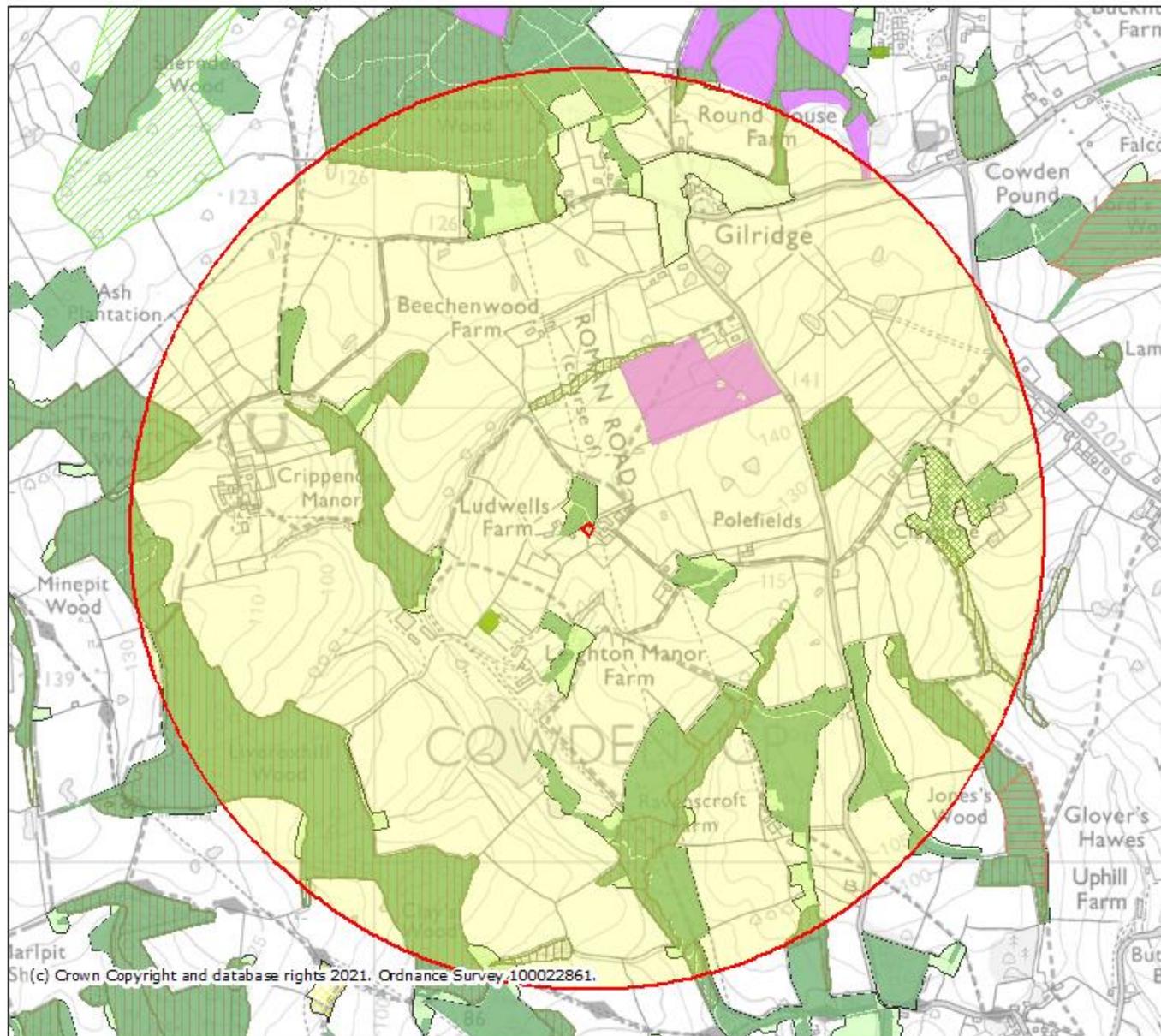
Appendix 1.2: Local landscape



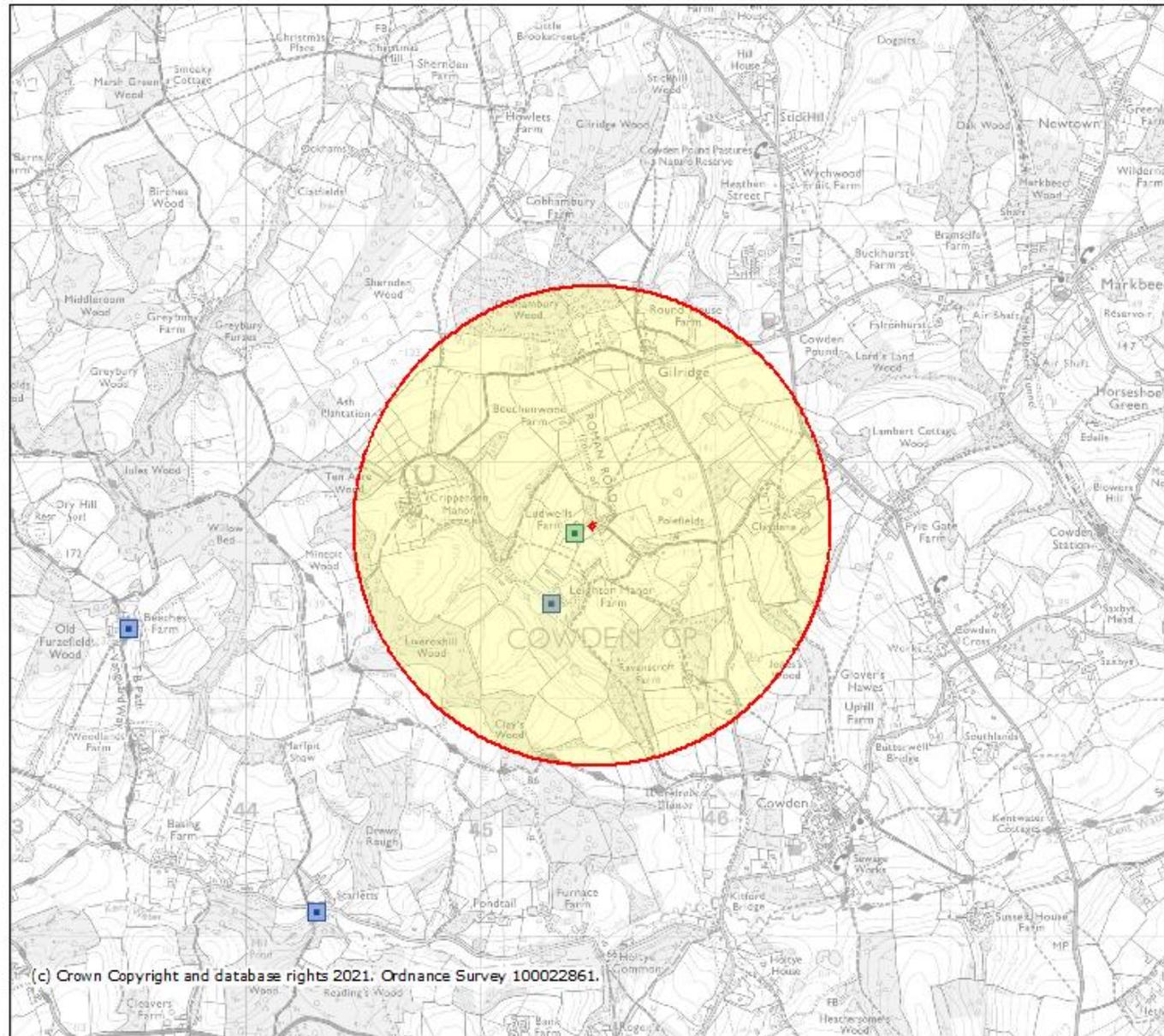
Appendix 2: Proposed Site Plan

None available at the time of writing – barn renovation only.

Habitats



EPSMIs



Legend

Granted European Protected Species Applications (England)

- Amphibian
- Bat
- Cetacean
- Invertebrate
- Other Mammal
- Plant
- Reptile

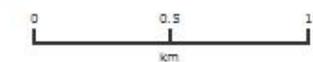
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Appendix 4: Legislation and Planning Policy related to bats

LEGAL PROTECTION

All species of bat are fully protected under *The Conservation of Habitats and Species Regulations 2017* through their inclusion on Schedule 2.

Regulation 43: Protection of certain wild animals - offences

(1) A person is guilty of an offence if they:

- (a) Deliberately captures, injures or kills any wild animal of a European protected species,
- (b) Deliberately disturbs wild animals of any such species,
- (c) Deliberately takes or destroys the eggs of such an animal, or
- (d) Damages or destroys a breeding site or resting place of such an animal,

(2) For the purposes of paragraph (1) (b), disturbance of animals includes in particular any disturbance which is likely—

- (a) To impair their ability:
 - (i) To survive, to breed or reproduce, or to rear or nurture their young; or
 - (ii) In the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- (b) To affect significantly the local distribution or abundance of the species to which they belong.

Bats are also protected under the *Wildlife and Countryside Act 1981 (as amended)* through their inclusion on *Schedule 5*. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale

NATIONAL PLANNING POLICY (ENGLAND)

National Planning Policy Framework (ENGLAND)

The following sections are relevant to the report:

Making effective use of land

118. Planning policies and decisions should: a) encourage multiple benefits from both urban and rural land, including through mixed use schemes and taking opportunities to achieve net environmental gains – such as developments that would enable new habitat creation or improve public access to the countryside;

Conserving and enhancing the natural environment

170. Planning policies and decisions should contribute to and enhance the natural and local environment by: a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate; d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

171. Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework⁵³; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

Habitats and biodiversity

174. To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity⁵⁶; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation⁵⁷; and b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

175. When determining planning applications, local planning authorities should apply the following principles: a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts) adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest; c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; **and d)** development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

176. The following should be given the same protection as habitats sites: a) potential Special Protection Areas and possible Special Areas of Conservation; b) listed or proposed Ramsar sites⁵⁹; and c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

177. The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity'. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

Effect on development works:

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works likely to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficiency/success to be monitored. The legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost (Garland & Markham, 2008).

There are 17 species of bat breeding in England and Natural England issues licences under Regulation 55 of the Habitats Regulations to allow you to work within the law.

Licences are issued for specific purposes stated in the Regulations, if the following three tests are met:

- The purpose of the work meets one of those listed in the Habitats Regulations (see below);
- That there is no satisfactory alternative;
- That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range

The Habitats Regulations permits licences to be issued for a specific set of purposes including:

1. ***include preserving public health or public safety or other imperative reasons of over-riding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;***
2. scientific and educational purposes,
3. ringing or marking
4. conserving wild animals

Development works fall under the first purpose and Natural England issues bat mitigation licences for developments.