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Report prepared for: The Wadenhoe Trust

For the Site of: Barn & Cart Lodge, Part of Mill Farm Yard, Chruch Street, Wadenhoe Peterborough, PE8 5SU

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Cherryfield Ecology has prepared this report for the named clients use only.
Ecological reports are limited in shelf life, Natural England usually expect reports for licences to be no more than 12 months old and therefore should the project not proceed within 12 months of this report an updated survey should be undertaken in order to check for changes that may have occurred on site. Information is believed to be accurate at the time of survey; recommendations are made without bias based on good practice guidelines within the industry. However, species presence and ecological parameters can change over time.

[redacted] BSc (Hons), CBiol, MRSB
Bat license level 3 and 4. GCN level 1, Dormouse level 1 and Barn Owl
[redacted]

Contents

Preliminary Roost Assessment (PRA)

0.0 Non-Technical Summary

0.1 Background

The survey undertaken follows national guidelines Collins (2016) allowing for a day-time inspection and recommends for further surveys if considered necessary. If a deviation from the guidelines has been made this will be detailed in the Method Section.

The following report details the findings and recommendations for the site of Barn & Cart Lodge, Part of Mill Farm Yard, Chruch Street, Wadenhoe Peterborough, PE8 5SU.

The client commissioned Cherryfield Ecology to undertake a PRA as the proposals include for the conversion of the existing barn buildings into dwellings. Plans have been provided see Appendix I and II.

0.2 Results and Findings

- The site consists of a former cart lodge (B1) and large barn (B2).
- No bats were found in B1, but evidence of bats in the form of approx. 5 droppings and 2 butterfly wings were found during the survey.
- No evidence of bats were found in B2 during the survey.
- B1 is a confirmed roost and B2 provides high potential for roosting bats due to a large number of access points and ample roosting opportunity amongst holes/cracks in stonework and along the internal beams.

0.3 Impact Assessment and Recommendations

B1 - A bat roost will be lost in the development

Full roost characterisation surveys will be required to determine species, population and the entry/exit points used (three surveys, a minimum of two weeks apart). ***Please see Section 4.3 for further details.***

B2 - A bat roost may be lost in the development

Presence/Likely Absence surveys will be required (three surveys, a minimum of two weeks apart). ***Please see Section 4.3 for further details.***

The findings outlined in this report are valid for one year, after which updated surveys will be required.

Enhancements and mitigation are recommended (please see Section 4 for further details).

1.0 Introduction

1.1 Aim of the Survey

This survey aims to inform the client of any bat issues that may be present on site and that could affect the development. It recommends for further survey when considered necessary and provides possible mitigation and enhancement should this become required.

1.2 Background Information

The client, Wadenhoe Trust, has commissioned Cherryfield Ecology to undertake a PRA for the site of Barn & Cart Lodge, Part of Mill Farm yard, Chruch Street, Wadenhoe Peterborough, PE8 5SU. Planning permission is being sought to convert the existing barn buildings into dwellings.

This survey has checked all buildings, trees (from ground level only) or structures due to be affected by the proposals for bats, signs of bats or features known to be used by bats e.g. crevices, gaps or holes that cannot be checked for a variety of reasons.

The inspection was conducted on the 12/04/2021.

The survey can only ever provide a 'snapshot' of the site at the time of the survey and circumstances may change following this report. Health and Safety restrictions or obstructions may limit the ability to find evidence.

Biological records have been requested to give the report context and allow a study of the surrounds. The information is often sensitive and, therefore, a synopsis is provided.

The survey can be conducted year-round, however it can be limited due to bad weather and in the winter, when bats are not active, thus evidence and bats are often not found. During these periods, habitat value (likely presence) becomes more important to the assessment of the site.

All 18 species of bat common in the UK (17 known to be breeding) are fully protected under the Wildlife and Countryside Act (as amended) 1981 through inclusion in Schedule V of the Act. All bat species in the UK are also included in Schedule II of The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, which transpose Annex II of the Directive 92/43/EEC 1992 on the Conservation of Natural

Habitats and of Wild Fauna and Flora ("Habitats Directive") which defines United Kingdom protected species of animals.

Bats species are afforded further protection by the Countryside and Rights of Way Act 2000; and the Natural Environment and Rural Communities Act 2006.

This combined legislation makes it an offence to:

- Intentionally or deliberately kill, injure or capture bats.
- Deliberately disturb bats, whether at roost or not.
- Damage, destroy or obstruct access to bat roosts.
- Possess or transport bats, unless acquired legally.
- Sell, barter or exchange bats.

A bat roost is well-defined by the legislation as the 'resting place' of a bat. However, the word roost is used to describe this resting place and is generally accepted as the word describing where a bat or bats rest, feed or sleep.

2.0 Methods

The survey follows the national guidelines Collins (2016) and the following equipment is available for the inspection (it may or may not all be used):

- Torches (e.g. LED Lensar type).
- Ladders (Standard 4m telescopic surveying ladder).
- Endoscope where holes, cracks and crevices are accessible.
- Mirrors as above (extendable and movable mirror face).
- Binoculars (Pentax close focus).
- Thermometer/hygrometer.
- Camera.
- Sample bags for collecting dropping and feeding evidence (should this be found).

The assessment allows for a detailed inspection of the site looking for bats, evidence of use by bats e.g. droppings/feeding remains, and features known to be used by bats for roosting e.g. gaps, crevices and holes. Trees and buildings are assessed from ground level only and may require climbed surveys of holes, cracks and crevices.

Biological records data is ordered from the local records centre to provide context and background information. As the data is often sensitive, a synopsis is provided.

If a deviation from the guidelines has been made, the reason and justification will be explained below:

No deviation from the standard guidelines has been made for this survey.

2.1 Limitations

This survey provides a snapshot of the site at the time of the survey only. Bats are highly mobile and can turn up from time to time, unexpectedly. All care has been taken to ensure the results and recommendations are suitable to the context of the development and the information gathered on surveys.

Table 1: Roosting features (likelihood) of bat presence assessed against Collins (2016) guidelines *Source: Adapted from Collins (2016) pp 35, Table 4.1.*

Likelihood of bat presence (Habitat Value)	Features that bats can use, regardless of evidence being present.
Confirmed Bat Presence	Bats are found to be present during the survey. Evidence of bats is found to be present during the survey.
Higher likelihood of bat presence.	Pre-20th century or early 20th century construction. Agricultural buildings of traditional brick, stone or timber construction. Large and complicated roof void with unobstructed flying spaces. Large (>20 cm) roof timbers with mortice joints, cracks and holes. Entrances for bats to fly through. Poorly maintained fabric providing ready access points for bats into roofs, walls, bridges, but at the same time not too draughty and cool. Roof warmed by the sun, in particular south facing roofs. Weatherboarding and/or hanging tiles with gaps. Low level of disturbance by humans. Bridge structures, follies, aqueducts and viaducts over water and/or wet ground.
Moderate and Lower likelihood of bat presence.	Modern, well-maintained buildings or built structures that provide few opportunities for access by bats. Small, cluttered roof space. Buildings and built structures comprised primarily of prefabricated steel and sheet materials. Cool, shaded, light or draughty roof voids. Roof voids with a dense cover of cobwebs and no sections of clean ridge board. High level of regular disturbance. Highly urbanised location with few or no mature trees, parkland, woodland or wetland. High levels of external lighting.
Negligible likelihood of bat presence.	No features suitable for roosting, minor foraging or commuting.

Notes on using this table

1 The features listed here may not be indicative of use of the site by bats during winter or spring.

2 Pre-1914 buildings may present the greatest likelihood of providing roost space for bats due to their design, materials used and age. Pre-1990 buildings, especially when close to good foraging habitat, and with favoured features such as cavity walls and soffits, also have a high likelihood of providing roost sites for some bat species.

3 Post-1990 buildings are generally less likely than older buildings to house roosts; however, some modern designs provide access to suitable roosting spaces for bats. Pipistrelles, in particular, occupy modern buildings and built structures providing that there are suitable access gaps (>8mm) and provided the structure has appropriate characteristics for roosting.

3.0 Results

The following section details the results of the desk study, inspection and survey; it includes MAGIC information, biological records data and map/aerial photo information. The results detail the building, structure or tree (numbered for reference) description of any evidence found and habitat value if no evidence has been located.

3.1 Desk Study

The desk study is centred on Grid Reference - TL012834 and Postcode - PE8 5SU.

Table 2: Weather Records

Temperature	4ºC
Cloud cover	10%
Precipitation	None
Wind	1/12

3.2 MAGIC

The following statutory sites and Natural England Protected Species (NEPS) have been located within the 2km search area (Figure 1):

- There are two statutory sites located within the search area:
  - Upper Nene Valley Gravel Pits Ramsar Site and Special Protection Area (SPA) approx. 1.95km south of the site.
  - Wadenhoe Marsh and Achurch Meadow Site of Special Scientific Interest (SSSI) approx. 200m south west of the site.
- There are three NEPS licences granted for bats within the search area:
  - Brown Long-Eared *Plecotus auritus* and Soprano Pipistrelle *Pipistrellus pygmaeus*, approx. 1.2 km south east of the site (Licence 2013-6532).
  - Soprano Pipistrelle, approx. 1.8km south south west of the site (Licence 2015-16777).
  - Brown Long-Eared 1.8km south south west of the site (Licence 2015-19091).

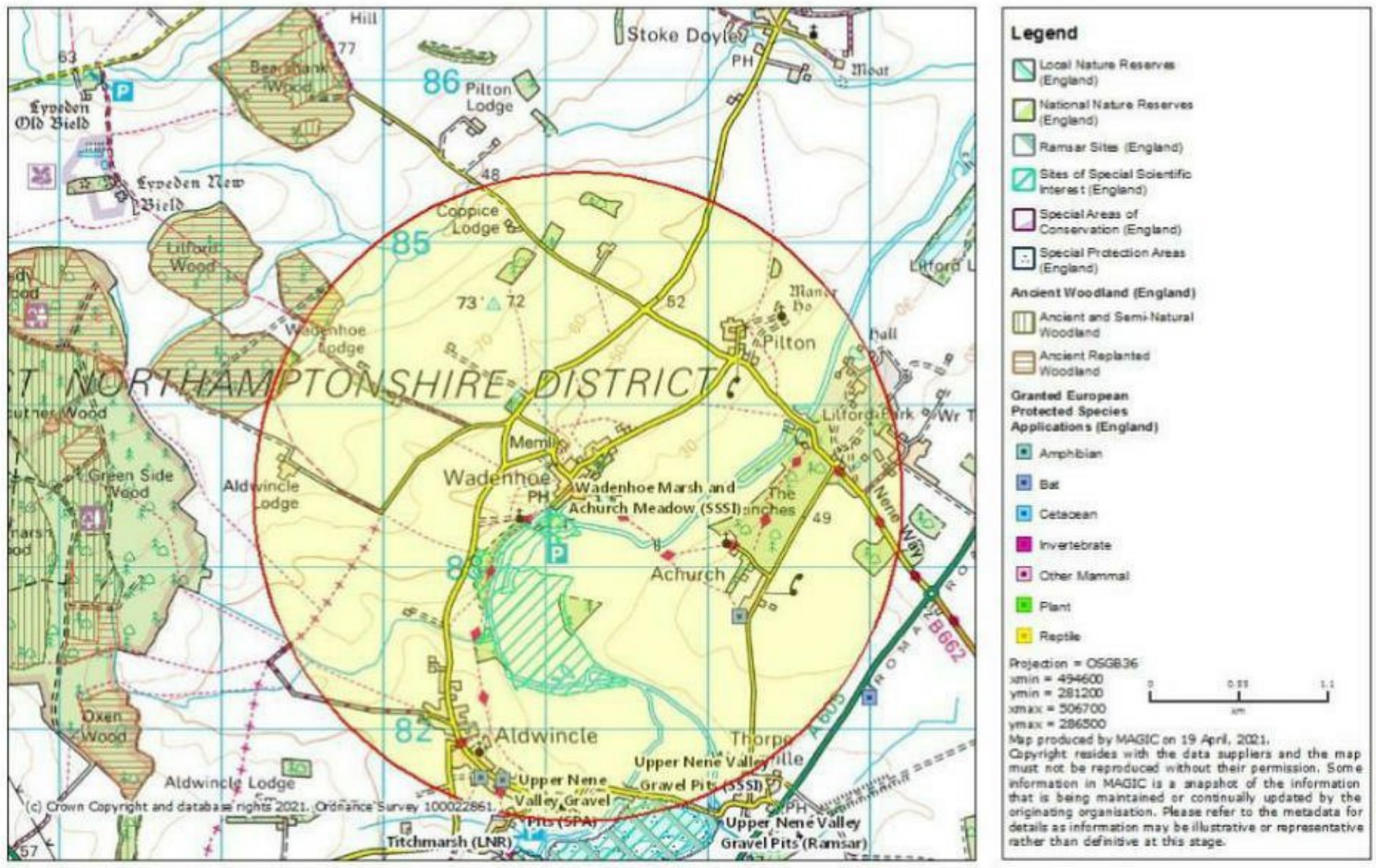


Figure 1: Magic Map Search

3.3 Biological Records Data

A 1km data search of existing records for protected species and nature reserves has been commissioned, below details the results and site context.

Biological records were obtained from Northants Bat Group (NBG, 2021). A total of 30 records were provided from a total of five confirmed bat species.

Table 3: Biological Records

Species	Number of Records	Closest record (accuracy)	Most recent record (year)
Brown Long-Eared *Plecotus auritus*	9	370m (1km)	2013
Common Pipistrelle *Pipistrellus pipistrellus*	2	>1km (1km)	2017
Natterer's *Myotis nattererii*	2	(1km)	2017
Noctule *Nyctalus noctula*	3	>1km (1km)	2017

Soprano Pipistrelle *Pipistrellus pygmaeus*	3	>1km (1km)	2017
Unidentified Pipistrelle *Pipistrellus sp.*	11	40m (1km)	2012

3.4 Site Location and Surrounds

The site is located in Wadenhoe, Northamptonshire and is surrounded by low density housing and countryside in the immediate local. Table 4 details the commuting, feeding and habitat features in a 1km radius of the site.

Table 4: Habitat features suitable for bat use in the general area

Feature	Description
Water course	The River Nene runs approx. 50m south of the site.
Water bodies	There are several small ponds found approx. 550m north and 650m north west of the site.
Woodland	There is a small area of woodland approx. 170m south west, and several small copses scattered around with the closest approx. 50m north east of the site.
Linear e.g. hedgerows	There is a small amount of agricultural hedging found in the immediate area.
Pasture/arable/grassland	Beyond the immediate housing, the surrounding area is comprised of arable land, pasture and other grassland.
Other	N/A

3.5 Building, Tree or Other Structure

This section details the structures reference and description (see Figure 22 for Site Plan).

Building/tree/structure reference - B1 (Cart Lodge) and B2 (Barn).

3.5.1 Description

3.5.2 General

The site consists of a of two barn buildings (B1) and (B2).

3.5.3 External

B1 is a former cart lodge, with an open gable roof structure. The building is brick built with timber cladding on the front elevation. There are clay, pan roof tiles and the building has timber, stable style doors.

B2 is a large barn with an open gable roof structure. The barn is made from stone with interlocking, clay roof tiles and timber doors.

Figure 2: Front elevation B1

Figure 3: Rear elevation of B1

Figure 4: Front elevation of B2

Figure 5: Side elevation of B2

Figure 6: Rear elevation of B2

3.5.4 Internal

B1 has no internal loft void, with a vaulted ceiling and a queen post, roof beam structure, there is no internal roof lining. The building is currently used for storage.

B2 has no internal void, with a vaulted ceiling and queen post, roof beam structure and no internal roof lining. The building is currently used for storage.

Figure 7: Internal space within B1 (southern end)

Figure 8: Internal loft space in B1

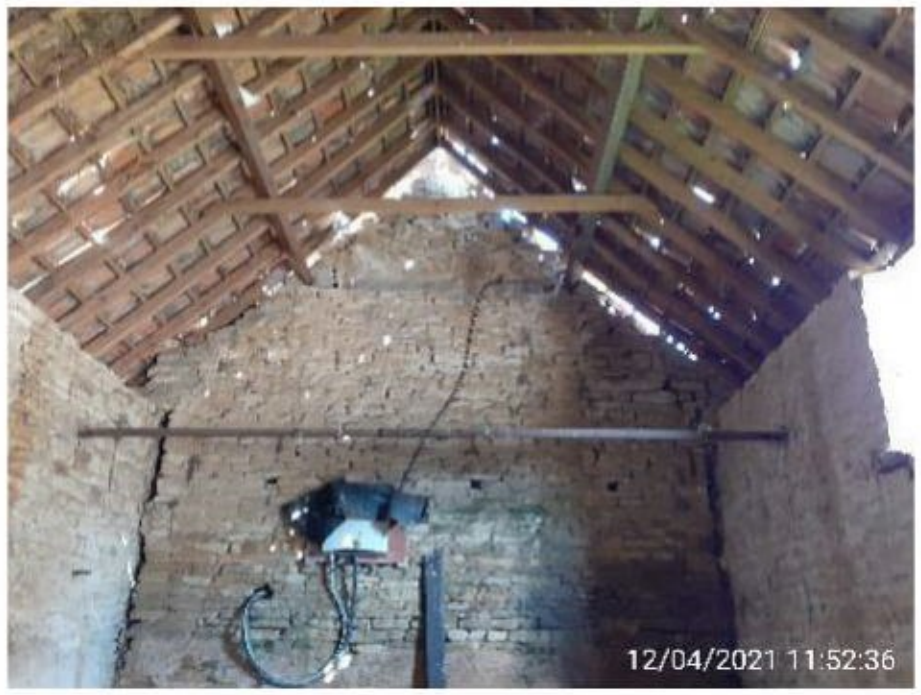


Figure 9: Internal space in B2 (northern end)

Figure 10: Internal space in B2 (southern end)

3.6 Bats, Evidence or Likelihood of Bat Presence

The following table details the results of the surveys:

Table 5: Bats, evidence or likelihood of bats being present.

Bats found	No bats were found at the time of the survey.
Evidence of bat use	B1 – Evidence in the form of approx. 5 droppings and 2 butterfly wings were found at the time of the survey (see figures 11-15). B2 - No evidence of bats was found at the time of the survey.

Figure 11: Example of dropping found in B1

Figure 12: Example of dropping in Fig 11 crushed

Figure 13: Further example of dropping found in B1

Figure 14: Further example of dropping found in B1

Figure 15: Example of butterfly wing found in B1

Potential for bat use	Level of likelihood of presence - B1 - Confirmed. B2 - High. B1 - The presence of a roost was confirmed through approx. 5 droppings scattered across the floor and on objects within B1. The building has ample opportunity for access through the stable style doors and missing roof tiles. The beam structure also provides internal roosting opportunity (see figures 16-17).

B2 - B2 provides high potential for roosting bats due to the numerous access points across the building such as loose and missing roof tiles, and open windows. There were also numerous holes within the stonework on the external of the building which could provide roosting opportunity for crevice dwelling species. Internally there is also roosting features present including along the beam structure and in internal holes in walls (see figures 18-2).

Figure 16: Example of missing roof tiles

Figure 17: Example of numerous gaps in roof and bird nest in B1

Figure 18: Example of large cracks/ crevices in stonework in B2

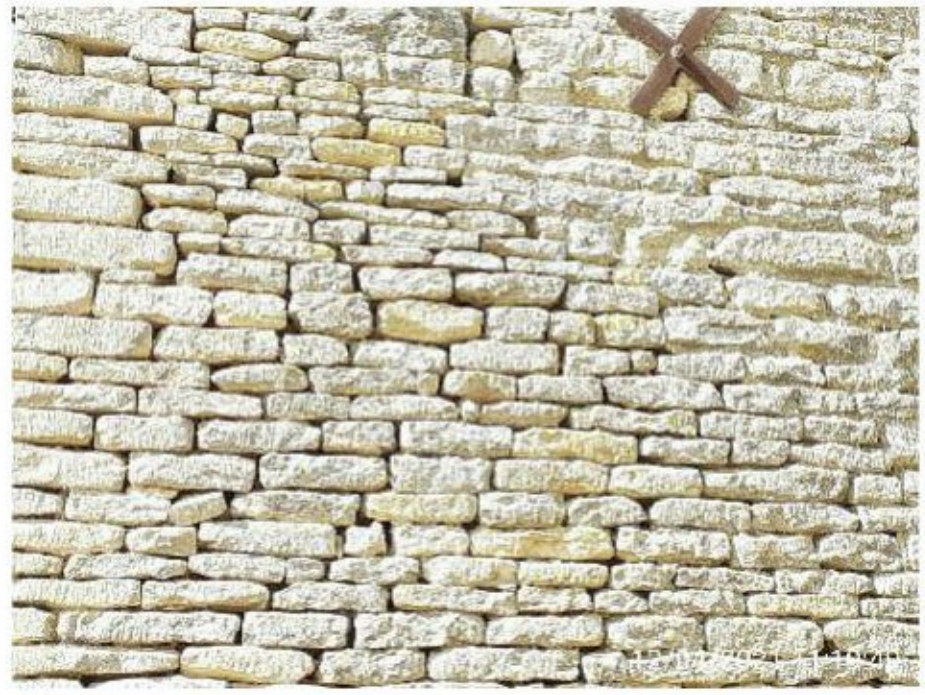


Figure 19: Further example of holes in wall of B2

Figure 20: Example of loose/missing roof tiles on B2

Figure 21: Example of numerous access points into B2

3.7 Supplementary Observations

There was a single birds nest found in B1 and pigeons nesting in B2. The building was also inspected for the presence of/ evidence of use from Barn owl *Tyto* alba, to which no evidence was found within the buildings.

Figure 22: Site Plan

4.0 Conclusions, Discussion and Recommendations

The following section details the conclusions, discussion, potential impacts and recommendations in the context of the proposed works.
Building/tree/structure reference - B1 (Cart Lodge) and B2 (Barn).

4.1 Conclusion and Discussion

The proposals include for the conversion of both barns into dwellings. The site consists of a former cart lodge (B1) and a large barn (B2). No bats, but evidence of bats in the form of 6 droppings were found in B1 during the survey. No bats or evidence of bats were found at the time of the survey in B2. B1 is a confirmed roost and B2 provides high potential for roosting bats due to a high number of access points into the building, roosting features such as holes in brickwork in the external of the building and roosting opportunities internally.

4.2 Potential Impact

Impact assessments must be proportionate to the scale of the development (CIEEM, 2018) and the following details a proportionate impact assessment based on current information.

Table 6: Impact Assessment

Impact	B1 - A bat roost will be lost/disturbed in the development. B2 - A bat roost may be lost/disturbed in the development.
Characterisation of unmitigated impact on the feature	B1- A bat roost will be destroyed when the buildings are developed resulting in a low-level loss/impact at a local level. B2- A bat roost may be destroyed when the buildings are developed resulting in a low-level loss/impact at a local level.
Effect without mitigation	Without mitigation individual bats could be killed, injured or trapped during the works.
Mitigation	See Table 7
Significance of effects of residual impacts (after mitigation)	If lost roosts are replaced by bat boxes, the effects would be negligible.

4.3 Recommendations

B1 - **Full roost characterisation surveys** will be required to determine species, population and the entry/exit points used (three surveys, a minimum of two weeks apart).

B2 - **Presence/Likely Absence surveys** will be required (three surveys, a minimum of two weeks apart).

A total of three surveyors to cover B1 and B2 will be required. These surveys must be undertaken within the May to September window (with September considered sub-optimal). Two of these surveys will need to be undertaken during the optimal timeframe of mid-May to August.

The findings outlined in this report are valid for one year, after which updated surveys will be required.

Enhancements and mitigation are recommended (please see Section 4 for further details).

4.4 Recommended Mitigation and Enhancements

Table 7: Proposed mitigation and compensation if bats are found following further surveys.

Work	Specification
General Information	No development will occur until bat surveys consistent with the Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition) (Collins et al. 2016) have been undertaken in the appropriate survey season, May to September (Mid-May to August optimal). The Three Tests to be answered before planning can be granted (NE, 2017): *Test 1:* Regulation 53(2)(e) states: a licence can be granted for the purposes of "preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment".

	Test 1 can be achieved via the 'imperative reasons of overriding public interest'. Although not for the ecologist to determine the planning officer will on grant of consent. *Test 2*: Regulation 53(9)(a) states: the appropriate authority shall not grant a licence unless they are satisfied "that there is no satisfactory alternative" Test 2 would be achieved on the grant of consent as no other sites have been considered for the development. *Test 3:* Regulation 53(9) (b) states: the appropriate authority shall not grant a licence unless they are satisfied "that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range." Test 3 will be achieved once full emergence/re-entry surveys are conducted and full mitigation appropriate to species and population has been designed and implemented via an NEPS licence issued from the statutory authority (Natural England), if this becomes necessary following a dusk and pre-dawn survey.
Mitigation	Based on Mitchell - Jones, (2004), ***subject to change following surveys.*** Under licence, demolition of suitable bat roosting features e.g. internal beams, stonework etc. will require the supervision of a bat licensed ecologist. The suitable bat roosting features e.g. stone work, internal beams. will be stripped by hand only. All areas across the roof/wall tops/weather boarding etc. will be checked for bats i.e. endoscope (where possible) and via destructive search. If bats are found, these will be removed by hand (Ecologist only) and placed in bat boxes that will be in place before works begin. Bat boxes will be installed. These will be no less than 3m above ground level and away from any neighbouring ledge to prevent local cats predating on bats using the boxes. A minimum of two Schweglar 1FF or similar boxes (Figure 23) will be hung on the trees at a minimum of 3m from ground level and face south/southwesterly. These boxes are known to be used by crevice and void dwelling species.  Figure 23: Schweglar 1FF bat box

	A traditional bitumen felt (hessian backed only) is to be used it must be of the type 1F only. Bat tubes can also be built into the building (Figure 24). These require no maintenance, can be installed on a gable end, no less than 3m above ground level, face south or north and can be faced in any material to provide an aesthetic matching the reminding building.  Figure 24: Example of bat tube Commuting bats maybe using the grounds and surrounds – therefore, any tree, hedges or linear feature should be retained were possible.
Lighting	Any lighting near or shining onto any trees, especially those with bat boxes in or commuting routes shown to be present at further survey stage, should be designed to minimise the impact it has on potential bat roosting and commuting. Lighting should be in line with the BCT lighting guidelines (Bats and Lighting in the UK (Bat Conservation Trust, 2018) *https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/* This lighting should be of low level, be on downward deflectors and, ideally, be on PIR sensors. Using LED directional lighting can also be a way of minimizing the light spill affecting the habitat. No up-lighting should be used. This will ensure that the roosting and commuting resources that the bats are likely to be using is maintained.
Timing	Once the NEPS licence is obtained, works can occur during the designated timeframe; it is best to avoid the maternity (mid-May to August) and hibernation (December to March) seasons. It is not always necessary if the roost can be shown to be a day roost of common species.

	Works will be timed in order to take advantage of mild weather conditions. Several consecutive nights with temperatures no lower than 7°C to avoid disturbing potentially hibernating bats. Ideally, the demolition will occur when bats are active and can be moved to alternative roosts in the area e.g. Autumn when bats are moving away from summer roosts to mating roosts.

5.0 References

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, September 2018. Chartered Institute of Ecology and Environmental Management, Winchester, online at https://www.cieem.net/data/files/ECIA%20Guidelines.pdf

Collins, J. (ed), (2016), Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd Edition, BCT, London

Google Earth, (2017), Located on site postcode, online

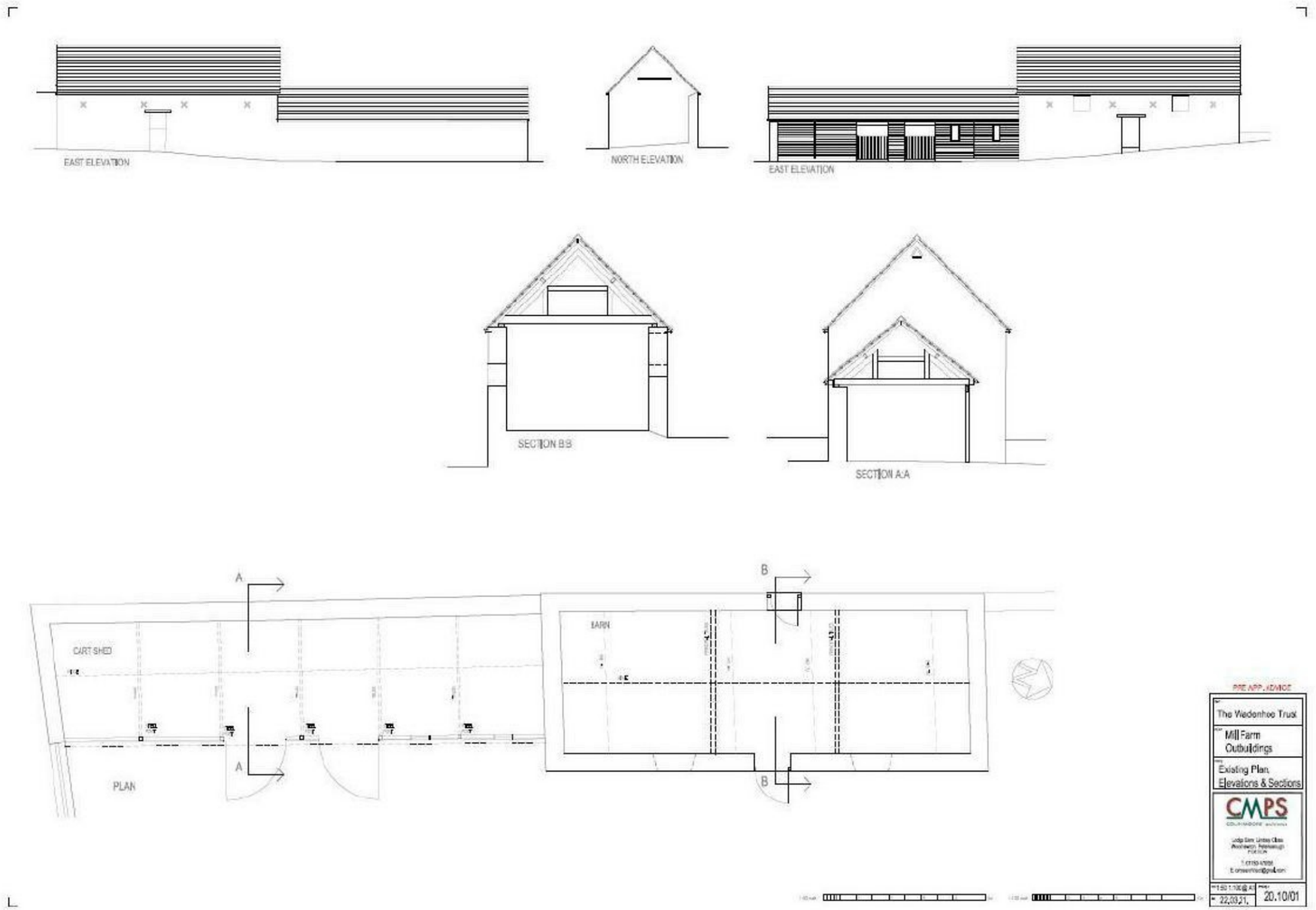
MAGIC, (2017): Magic maps, NEPS licences and designated sites, online http://www.magic.gov.uk/Login.aspx?ReturnUrl=%2fMagicMap.aspx, accessed as report date.

Mitchell-Jones, A.J. (2004), Bat Mitigation Guidelines, English Nature, Peterborough

Records: Northants Bats Groups (2021)

Appendices

Appendix I - Existing Plans and Elevations (CMPS 2021)



Appendix II - Proposed Plans and Elevations (CMPS 2021)