PRELIMINARY ECOLOGICAL APPRAISAL

OUTBUILDINGS
AT
RUDLOE MANOR
BOX HILL
CORSHAM
WILTSHIRE
SN13 0GT





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Survey dates:	1 July 2021 6 October 2021
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1 SUMMARY

1.1 Report purpose

1.1.1 This is a new application to modify the previously consented works.

1.1.2 A dedicated bat roost and features for crevice roosting bats are present in this building, created as mitigation for the renovation of a nearby manor house, now in separate ownership.

1.1.3 The proposed work will result in modification of the dedicated bat roost and minimal disturbance to the roof of the building as a result of insertion of new roof lights and removal of an existing roof light.

1.1.4 A preliminary ecological appraisal has therefore been requested to assess the ecological impact of the proposed work.

1.1.5 The mitigation licence application EPSM2010-2634 relating to the creation of the dedicated bat roost and features for crevice roosting bats was granted on 8 June 2011 and expired on 30 December 2015.

1.1.6 Monitoring under the terms of the licence ended on 30 December 2015 and no evidence of bats using the dedicated bat roost was found during the monitoring period.

1.1.7 The dedicated bat roost was surveyed for evidence of the presence of bats on 1 July 2021 and 6 October 2021 and no evidence of bats was found.

1.1.8 As part of the proposed conversion work, enhancements will be made to the dedicated bat roost aimed at creating a range of temperature gradients and features within the roost suitable for Lesser and Greater Horseshoe bats.

1.1.9 Following the completion of the proposed work t**he height of the main area of bat roost will be 2.315mm and the reduced area above the Gym/Office will be 1448mm. The length of the main area is 8370 and of the raised area is 4953. There is also the additional area to the side which is 3200 x 4400.**

1.1.10 This is in keeping with the recommended dimensions of a roost suitable for Lesser and Greater Horseshoe bats and will provide sheltered roosting opportunities with higher temperature gradients and dark flying space within the roost to permit light sampling pre-emergence activity which both these bat species require.

1.2 Key issues

1.2.1 The site is located within 1 km of the Bath and Bradford on Avon SAC for bats and the Box Mine SSSI.

1.3 Work carried out for the purpose of the report

1.3.1 A preliminary ecological appraisal was carried out on 1 July 2021 and on 6 October 2021 to assess the potential risk for the presence of bats

1.4 Survey findings

1.4.1 No evidence of bats was found on survey of the dedicated bat roost or in the interior of the building as a whole.

1.4.2 Pigeons were breeding in the dedicated bat roost.

1.5 Conclusions

1.5.1 The proposed work will not have a negative impact on bats.

1.5.2 The proposed work is likely to have a positive impact on bats as a result of enhancements planned for the dedicated bat roost.

1.5.3 There is a low risk that individual bats may be disturbed during work to install roof lights in the building and to remove an existing roof light.

1.6 Recommendations

1.6.1 No further bat surveys are necessary.

1.6.2 Modifications to the dedicated bat roost should be supervised and signed off by an appropriately licensed ecologist.

1.6.3 An appropriately licensed ecologist should be present when work which disturbs the roof is carried out.

1.6.4 There will be net biodiversity gain as a result of the enhancements planned to the existing dedicated bat roost.

2 Introduction

Figure 1 **Map view of site marked with red circle**

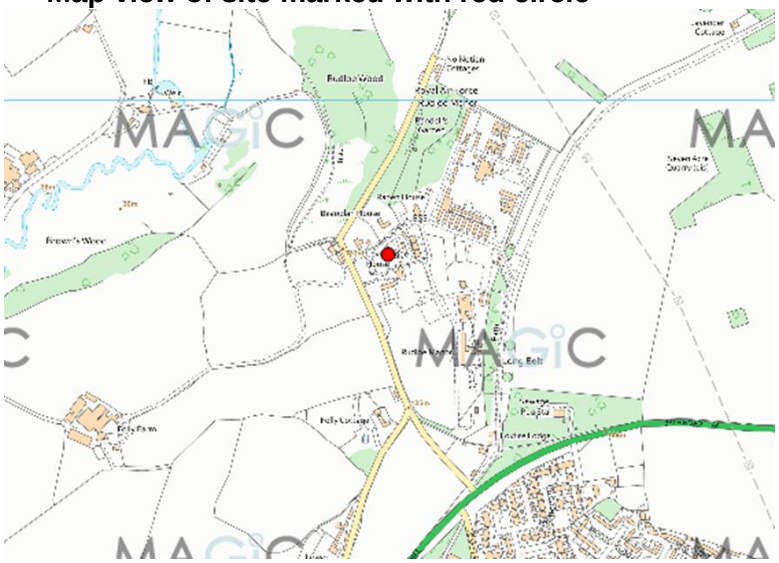


Figure 2 **Aerial view of site marked with red circle**



Scale 1:10,000 Central grid reference Grid Ref: ST 84228 70667

Figure 3

Aerial view of site in local context marked with red circle



2.1 Chalkhill was commissioned to carry out a preliminary ecological appraisal related to planning application to convert the building surveyed (known as the stables and the cart shed) to residential accommodation and insert roof lights and remove an existing roof light.

2.3 As part of mitigation for the renovation of a nearby manor house a dedicated bat roost had been created ten years ago in the section of the building known as the cart shed

2.2 It is planned to create home office accommodation at ground floor level in the southern section of the cart shed. This is the work that will modify the existing bat roost since it will be necessary to raise the floor of bat roost which occupies the roof void by to the level of the first purlin.

2.3 Work to insert roof lights and remove an existing roof light will result in disturbance of the roof of the stables.

2.2 The purpose of the survey was to assess the ecological impact of the proposed work. (Appendix 1 Photographs of site surveyed).

2.3 The building surveyed was a traditional stone former agricultural building with a pitched roof covered with red clay tiles formerly used as a stables and a cart shed.

2.4 The site surveyed was situated in a rural location outskirts of the village of Box.

2.5 The central grid reference is ST 84228 70667.

2.6 The site in local context is illustrated in Figure 3.

3 Methodology

3.1 Desk study

3.1.1 Desk study data relating to designated sites and habitats within a 1 km radius of the site surveyed was obtained from MAGIC

(https://magic.defra.gov.uk/MagicMap.aspx) refer Appendix 2 Designated sites within a 2 km radius).

3.1.2 An aerial view of the site in local context was reviewed to assess the degree of connectivity with the immediate and surrounding countryside.

3.2 Field survey

3.2.1 The preliminary ecological appraisal was carried out on 1 July 2021 and 6 October 2021 by an experienced ecologist licensed by Natural England to survey for bats (Class licence CLS 19 and CLS 20 levels 3 and 4)

3.2.2 An assessment was made of the potential risk of bats being present in the building.

3.2.3 The site was surveyed in the daytime in warm and dry weather conditions.

3.2.4 Survey was aided by a head torch, powerful hand torch, close focus binoculars and a camera.

3.2.5 Preliminary ecological appraisals of structures for evidence of and potential for the presence of bats can be carried out at any time of the year. At the time of these late summer survey, it is considered that fresh evidence of the presence of bats would be apparent to the experienced surveying ecologist. However, detailed surveys, if necessary, such as emergence surveys must be carried out during the period of time when bats are likely to be active (between and including May to September).

3.2.6 Bat survey was carried out in accordance with Bat Conservation Trust Bat Surveys for Professional Ecologists Good Practice Guidelines (3rd Edition). *http://www.bats.org.uk/news.php/312/bat_surveys_for_professional_ecologists_good_practice_guidelines_3rd_edition_*

3.2.7 Daytime exterior and interior surveys of the buildings were carried out.

3.2.9 Exteriors were surveyed for potential bat roost features such as:

- displaced or damaged roof, hip and ridge tiles
- deteriorating fascia and soffit boards
- lifted lead flashing filling the junction between chimney and roofs, different roof levels and the junction between building structures such as extensions
- gaps in walls or between bricks or stones caused by missing pointing
- gaps at eaves or at the apex of gable ends or beneath the roof verge of gable end slopes
- deteriorating or warped weather boarding
- gaps at the edge of flat roofs and beneath felt roof covering
- evidence of bat access such as accumulations of bat droppings associated with potential bat roost features or scratch marks and areas worn smooth as a result of bat access and stain marks from oil on fur deposited when bats enter or leave roost access points
- windows with broken or missing panes, door and window openings and other gaps or openings which might be used by bats species such as Greater and Lesser Horseshoe bats which require such openings in order to fly into their roosts.

3.2.10 Interiors were surveyed for potential bat roost features including:

- longitudinal gaps along double ridge beams
- complex junctions of the roof frame and gaps between timber wall plates and wall tops and timber panels fixed to walls
- double skinned weather boarding
- timber window and door frames with surrounding gaps
- wooden beams such as lintels with surrounding gaps embedded in building walls.

3.2.11 Exteriors were searched for evidence of use by bats such as:

- accumulations of droppings
- feeding remains in the form of insect wings

- urine splashes on floors and walls and on the surfaces of stored items
- droppings adhering to external and internal walls and window panes and sills
- bat droppings caught up in cobwebs
- the presence of staining, scratch marks and areas worn smooth around points of potential bat access created as a result of bat use.
- openings in walls or broken window panes which would permit flying access for bats to the building interior

3.2.12 Where present and accessible loft spaces were searched for the physical presence of bats.

3.2.13 Bats can sometimes conceal themselves within the structure of buildings and their presence may not be obvious. However it is considered that at the time of these late summer surveys when bat species likely to be associated with buildings were likely to be or to have recent been present and evidence of roosting bats would be apparent to the surveying ecologist.

4 Results of desk study

4.1 A review of an aerial view showed that the site was in an isolated location within an agricultural landscape with good connectivity to a network of hedges and areas of woodland in the immediate and wider countryside. There was good local connectivity around the site itself created by unmanaged native species hedges on the site boundaries.

4.2 Desk study data relating to designated sites and habitats within a 1 km radius of the site surveyed was obtained from MAGIC (refer Appendix 2 Designated sites within a 1 km radius).

4.3 The site is located within the Bath and Bradford on Avon SAC for bats.

4.4 Within a 1 km radius were the following sites with statutory designations:

- Box Mine SSSI
- Bath and Bradford on Avon SAC (Bats)
- Priority Habitat Inventory - Coastal and Floodplain Grazing Marsh (England)
- Lowland Calcareous Grassland (England)
- Priority Habitat Inventory - Lowland Fens (England)
- Ancient Woodland (England)
    - Folly Farm Wood Ancient & Semi-Natural Woodland
- Priority Habitat Inventory - Deciduous Woodland (England)
- Woodland listed on the National Forest Inventory (GB)
- Priority Habitat Inventory - Traditional Orchards (England)
- Woodpasture and Parkland BAP Priority Habitat (England)

4.5 Within a 1 km radius of the site were the following granted European Protected Species licence applications relating to bats:

- 2015-17598-EPS-MIT-2 relating to Lesser Horseshoe bats allowing the destruction of a resting place
- EPSM2010-2634 relating to Common pipistrelles, Lesser Horseshoe bats, Greater Horseshoe bats, Serotine bats, Brown Long-eared bats and Natterer's bats

5 Field survey (refer Appendix 1 Site photographs)

5.1 External and internal building survey

5.1.1 The building surveyed was a traditional stone former agricultural building with a roof covered with red clay tiles and formerly used as a stables and a cart shed.

5.1.2 The former stables was a single storey building with no interior structure apart from supporting interior walls and timber panels at eaves level. Internal levels were high.

5.1.3 The roof had been constructed previously as part of the mitigation for the renovation of a nearby manor house and was lined with a modern breathable membrane. The roof tiles were in good condition and closely fitting. Crawling access of lead sheet beneath the roof tiles for crevice seeking bats had been created beneath roof tiles.

5.1.4 On survey on the interior no evidence of bats was found either at ground floor or on the surface of the timber panels at eaves level. No staining was seen on the white breathable membrane lining the roof which might indicate that roosting bats were present beneath the roof tiles. The roof was supported on substantial timber beams with more recent modern replacement timbers.

5.1.5 A dedicated bat roost suitable for use by Lesser and Greater Horseshoe bats which are widespread in the area had been created in the part of the building known as the cart shed as mitigation in 2012 related to an application to renovate a nearby manor house.

5.1.6 The cart shed was a single storey building with an open eastern front and a pitched roof with a hip at the northern end. A pitched roofed gable ended extension was present on the western elevation.

5.1.7 The roof was covered with red clay tiles which were well fitting and in good condition. Lead flying access was present in the northern hip slope.

5.1.8 On survey the cart shed no evidence of bats was found on the ground floor where interior light levels were high as a result of the open front.

5.1.9 Access to the dedicated bat roost in the loft space on the cart shed was through an inspection hatch in the ceiling of the ground floor level.

5.1.10 The roof was lined with bituminous felt. No evidence of bats was found and no bats were observed flying within the dark interior as a result of disturbance of survey.

5.1.11 Flying access to the roost was patent and shielded by a timber baffle.

5.1.12 Internal ventilation levels were high created by air flow as a result of the flying access to the roost of a size sufficient to permit access by Greater Horseshoe bats and because of a vertical traditional ventilation slot present in the western pitched roof extension of sufficient size for pigeons to enter.

5.1.13 Dead leaves blown in through the flying access were present on the floor of the bat roost.

5.1.14 Pigeons were gaining access to the dedicated roost through the ventilation slot and breeding within the western pitched roof extension where an accumulation of woody material collected by breeding birds was present on the floor.

5.1.15 On inspection of the flying access to the roost, this was constructed in such a way (a metal slide was present on the floor of the flying access aimed at preventing access by perching birds).

6 Discussion and analysis of results

6.1 No evidence of bats was found on survey of the dedicated bat roost or of other parts of the building and no cleaning which might have removed such evidence appeared to have recently been carried out. Survey was carried out at a time of year when bat species associated with buildings were likely to be or to have recently been present and evidence of this presence apparent on survey.

6.2 The dedicated bat roost is large occupying a floor space of approximately 12.4 metres in length and 5 metres in width. There is free interior circulation of air created by the flying access and the vertical ventilation slot in the dormer structure which is currently occupied by breeding pigeons.

6.3 It seems likely that this large roost which has now been in situ since 2012 does not appear to have ever been occupied by bats and is unlikely to provide the high

temperature gradients which bats require in a summer roost and the free ventilation is contributing to this. It may also be that the immediately adjacent habitat does not provide the shelter or commuting routes that bats require when leaving or returning to a roost.

6.4 No evidence of bats was found on survey of the stable block where interior light levels are high but where lead access beneath the roof tiles for crevice seeking bats had been created. No other potential bat roost features were found on survey of the building roof which is in good condition and lined with a breathable membrane dating back to its construction in 2012 and it is considered unlikely that bats are roosting elsewhere beneath the roof tiles.

7 Conclusions

7.1 The dedicated bat roost which has been in existence since 2012 does not appear to be providing the conditions which roosting bats require or to have ever been used by bats. Because of this lack of occupation by bats, this cannot now be regarded as a bat roost.

7.2 Bats are a mobile species and there therefore is a negligible risk that individual bats may be occasionally and opportunistically roosting beneath the roof tiles of the stable block which will be disturbed by the proposed work.

7.3 There is an opportunity to create enhancements to the dedicated bat roost as part of the proposed work designed to make the roost more attractive to roosting bats.

7.4 In addition as the grounds surrounding the building mature this is likely to create a mosaic habitat and stronger connectivity to the immediately surrounding area where areas of Priority Habitat Inventory Deciduous Woodland and lines of mature trees are present. This increases the likelihood of the roost being discovered, investigated and used by roosting bats.

7.5 The proposed work is therefore likely to result in a positive impact on bats

8 Recommendations (refer Appendix 3 Floor plan of dedicated bat roost showing proposed enhancements)

8.1 Within the dedicated bat roost, a partition should be constructed which divides the section of the roost floor which will be raised to existing first purlin level by the construction of the office ceiling below. This partition should have a door of sufficient size to permit human access for monitoring and maintenance and flying access to permit access by Horseshoe bats. This will create an enclosed area within the roost where summer temperature gradients are likely to be higher. Such enclosed compartments within larger areas can be attractive to void roosting species such as Lesser Horseshoe bats and also Brown Long-eared bats and possibly Natterer's bats.

8.3 Ceiling and wall insulation which will be installed as part of the office conversion will insulate the roost from sound and minimise the risk of disturbance by human activity in the office. This is also likely to increase and stabilise temperature gradients within the new roost compartment which also has a north/south orientation likely to create the high temperatures which bats require in summer.

8.4 The larger compartment to which there is direct flying access from the exterior is likely to provide the option for roosting bats of cooler temperature gradients in summer during spells of hot weather.

8.5 A second enclosed compartment should be created by the construction of a partition which divides the western pitched roof extension (where pigeons are currently breeding) from the remaining area of the roost. The vertical ventilation slot should be closed to prevent access by pigeons. This will also create still internal conditions and higher temperature gradients likely to be attractive to roosting bats in summer. The existing flying access has features (a metal slide) designed to deter birds from entering the roost. The western orientation of this extension is also likely to create high internal summer temperatures.

8.6 The current floor area (12.4 metres in length and 5 metres in width) and height (other than above the proposed new office) of the roost will remain unchanged. This is in keeping with the dimensions recommended for Horseshoe bats (2.8m in height and 5m in length and width) and will provide the dark flying space which Horseshoe bats require prior to emergence from their roosts.

8.7 The modifications to the existing bat roost should be approved and signed off by an appropriately licensed ecologist.

8.8 Because of the low risk of individual bats being occasionally and opportunistically present beneath the roof tiles of the building, an appropriately licensed ecologist should be present when the roof tiles are disturbed during work to insert new roof lights and remove an existing roof light.

9 Net biodiversity gain (National Planning Policy Framework)

9.1 There will be net biodiversity gain as a result of the planned enhancements to the existing bat roost.

10 Appendices

Appendix 1 Site photographs



Front (eastern elevation) of cart shed



Northern elevation of cart shed showing flying access in roof hip



Western extension of cart shed



Western elevation of cart shed showing vertical ventilation slot in western extension



Floor of loft space showing inspection hatch in floor of dedicated bat roost and timber baffle which shields the flying access in northern hip of roof



Southern end of dedicated bat roost above proposed new office, the floor of which will be raised to first purlin level and partitioned off to form a new enclosed section within the roost



Stable block and cart shed viewed from the south west



Stable block



Stable block with adjacent eastern front elevation of cart shed to the right

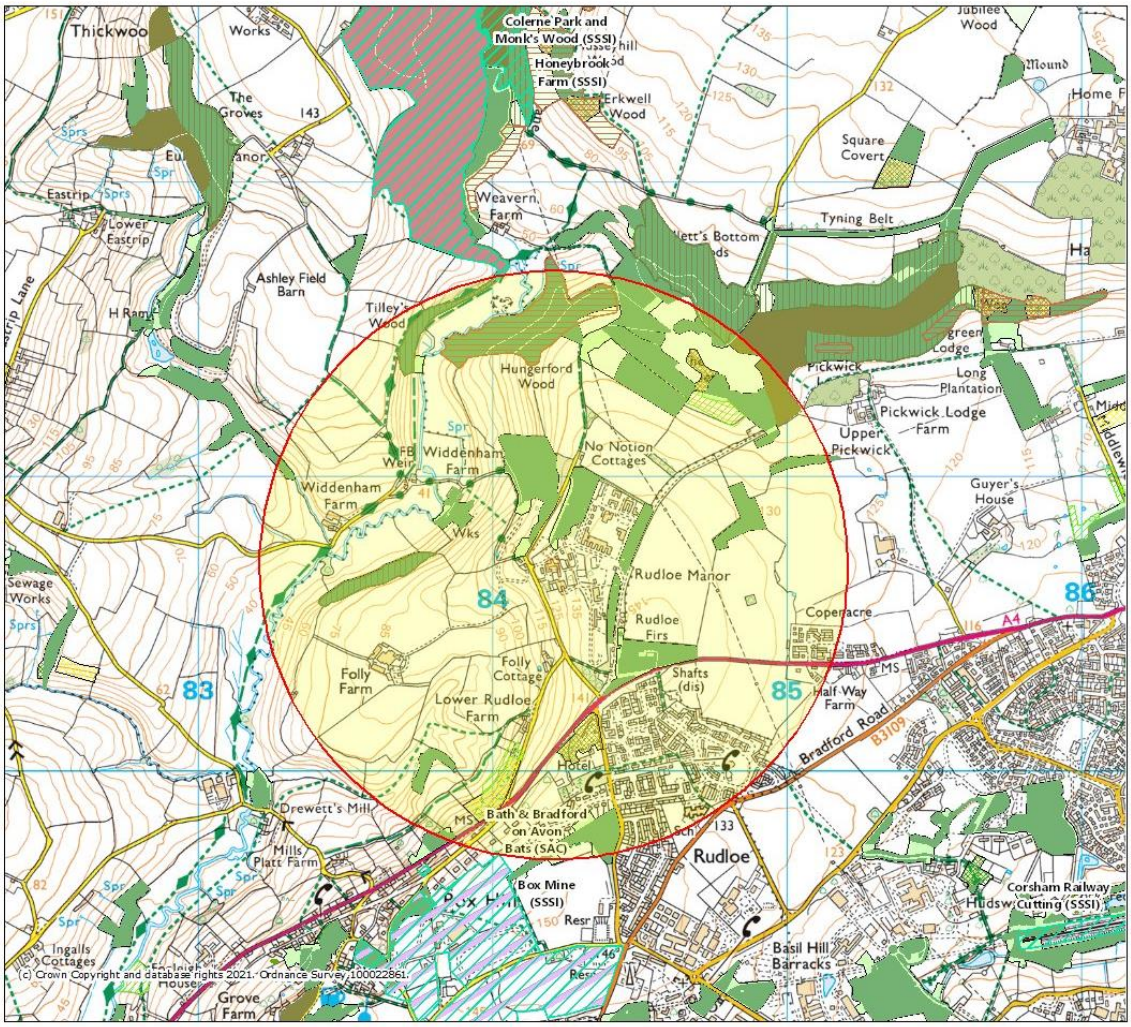


Roof void of stable block showing daylight entering interior from gaps in floor



Roof void of stable block showing old and newer replacement roof timbers

Appendix 2 Designated sites within a 1 km radius of the site surveyed



Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- National Parks (England)
- Ramsar Sites (England)
- Sites of Special Scientific Interest (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)
- Biosphere Reserves (Scotland)
- Biosphere Reserves (Wales)
- Priority Habitat Inventory - Calaminarian Grassland (England)
- Priority Habitat Inventory - Coastal and Floodplain Grazing Marsh (England)
- Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England)
- Priority Habitat Inventory - Lowland Calcareous Grassland (England)
- Priority Habitat Inventory - Lowland Dry Acid Grassland (England)
- Priority Habitat Inventory - Lowland Meadows (England)
- Priority Habitat Inventory - Purple Moor Grass and Rush Pasture (England)
- Priority Habitat Inventory - Upland Calcareous Grassland (England)
- Priority Habitat Inventory - Upland Hay Meadows (England)
- Priority Habitat Inventory - Blanket Bog (England)
- Priority Habitat Inventory - Lowland Fens (England)
- Priority Habitat Inventory - Lowland Raised Bog (England)
- Priority Habitat Inventory - Reedbeds (England)
- Priority Habitat Inventory - Upland Flushes, Fens and Swamps (England)

Ancient Woodland (England)

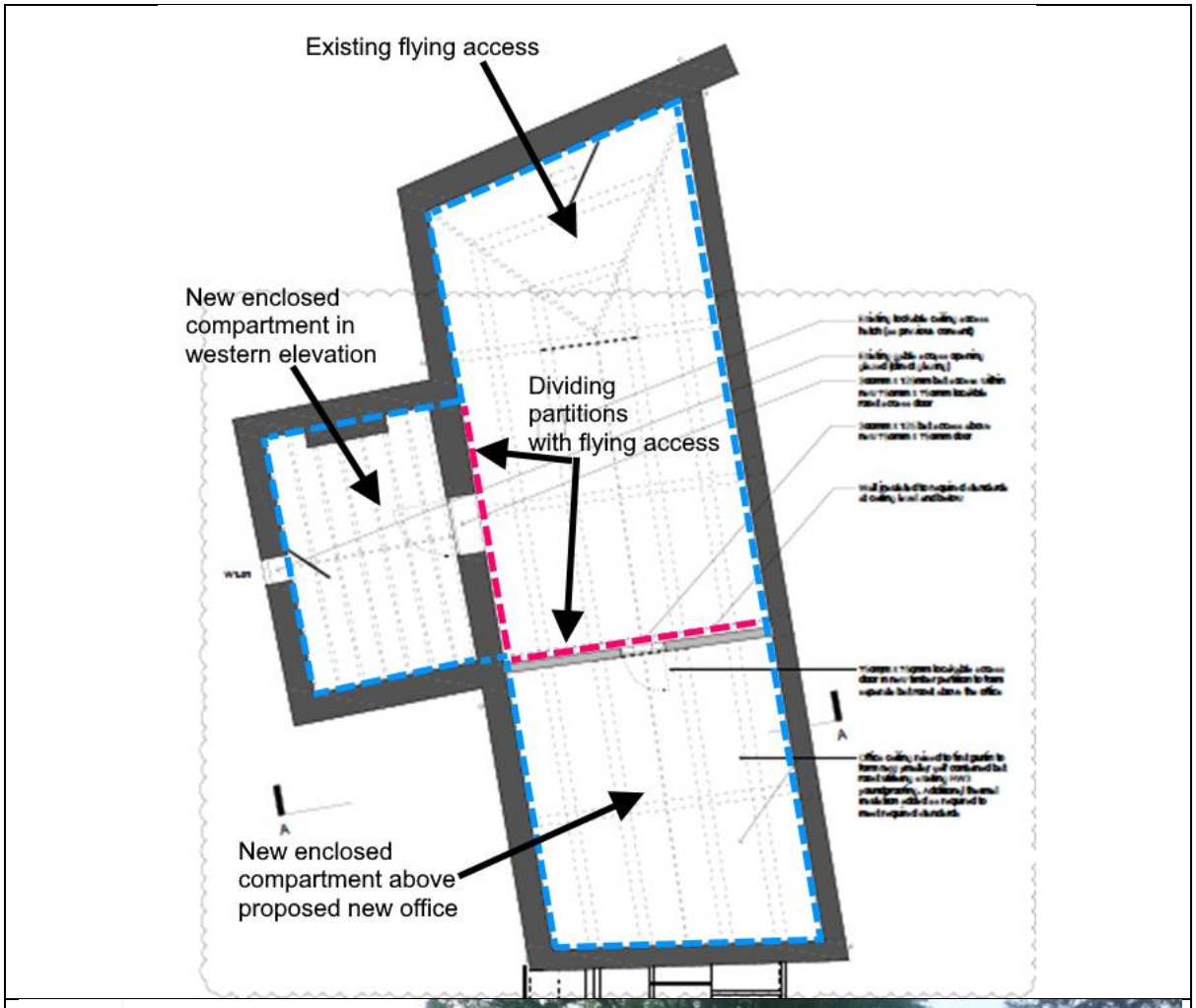
- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland
- Priority Habitat Inventory - Deciduous Woodland (England)
- Forestry Commission Legal Boundary (England)

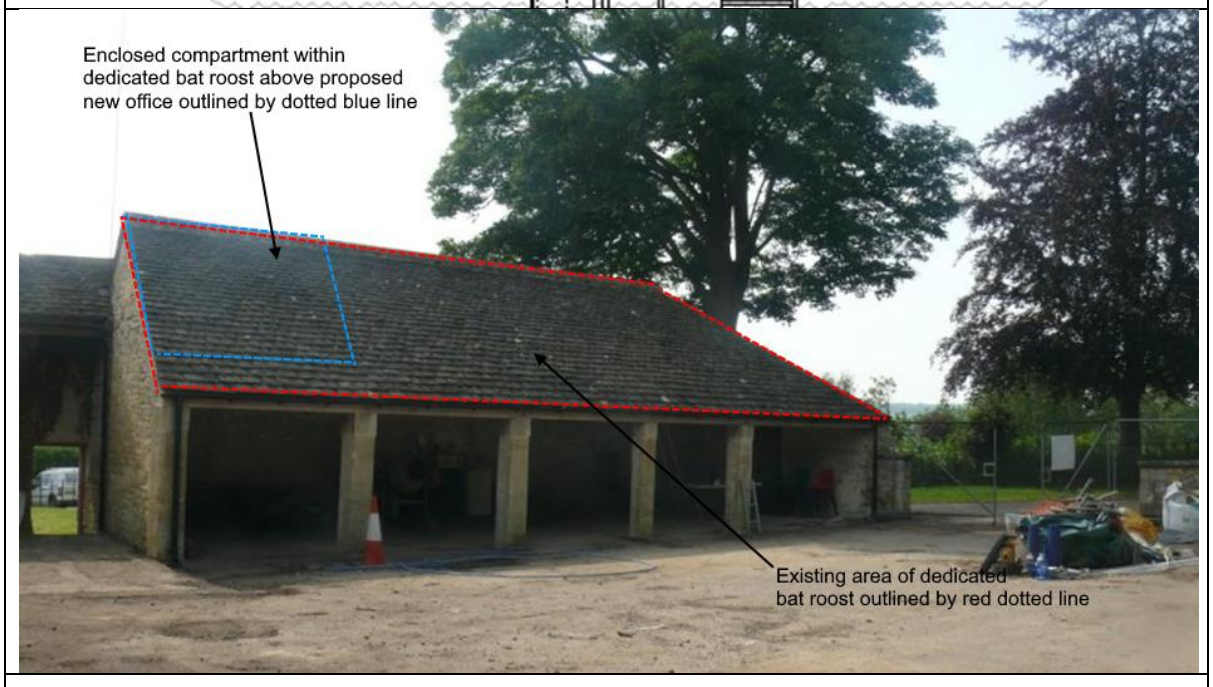
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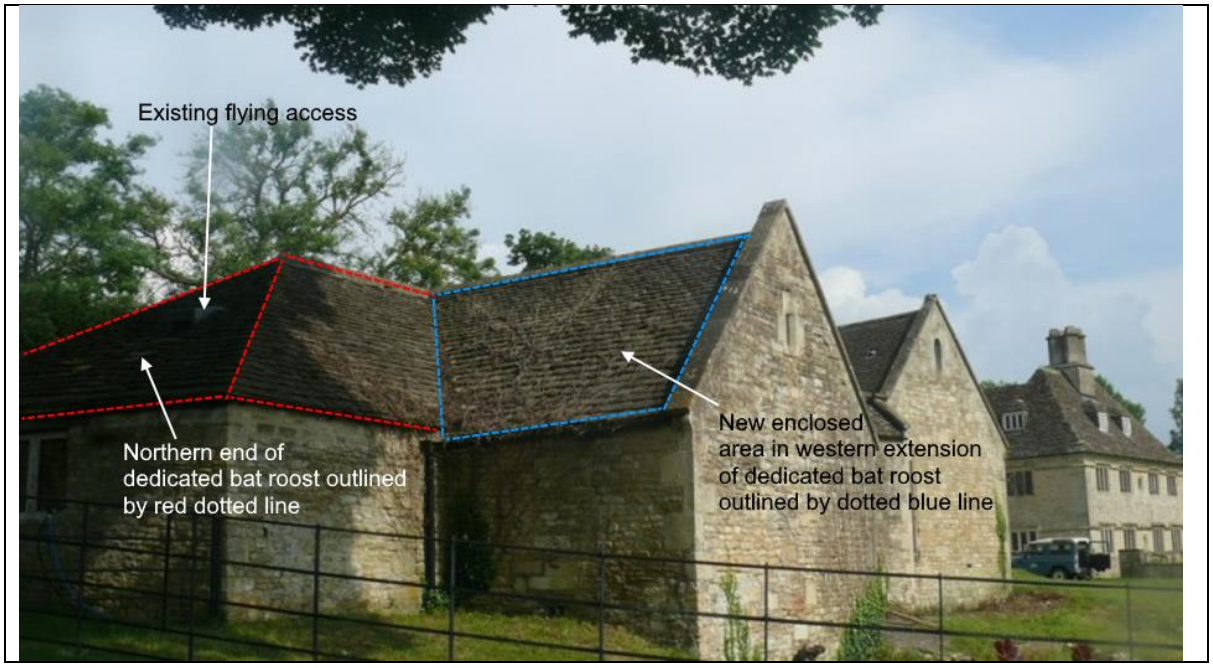
Map produced by MAGIC on 8 November 2021.
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0 0.3 0.6 km

Appendix 3 Floor plan of dedicated bat roost showing proposed enhancements and photographs indicating location of dedicated bat roost in loft space of cart shed and proposed enclosed compartments







Appendix 4 Summary of legislation relating to bats

All species of British bat are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the European Conservation (Natural Habitats etc.) Regulations 1994. As well as giving full protection from intentional and deliberate killing, injuring, disturbing and taking of bats, the cited legislation protects bat breeding and resting places (roosts) from damage, destruction and preventing access to such places. The legislation regarding roosts applies irrespective of whether the bats are present or not. The Countryside and Rights of Way Act 2000 added the word “reckless” to existing protection against “intentional and deliberate” actions. The law requires that reasonable effort be made to ensure that any actions, plans or projects do not detrimentally affect bats or their roosts. Proposed developments that affect bats or bat roosts may require a licence from Natural England. The threshold above which a person will commit the offence of deliberately disturbing bats has been raised. Now, a person will commit an offence only if he deliberately disturbs such animals in a way as to be likely significantly to affect (a) the ability of any significant groups of animals of that species to survive, breed, or rear or nurture their young, or (b) the local distribution of abundance of that species. However, the recent amendments to the Habitat Regulations have also removed many of the defences. This includes the commonly relied upon 'incidental result defence', which previously covered acts that were the incidental result of an otherwise lawful activity and which could not reasonably have been avoided. If the work cannot be done in a manner that does not affect the bats and their roosts, and a licence is needed, the licence application must include a Method Statement detailing measures to be taken to avoid, mitigate or compensate for any potential impacts upon bats. Note that Natural England requires 30 working days to process licence applications. These are usually applied for upon granting of planning permission – although, due to a recent change in licensing arrangements, licences can now be applied for in advance of planning permission but the Method Statement in the licence (which is a legally binding document) must concur with the detail of the planning permission.

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All reasonable effort was taken to ensure an accurate assessment of the situation at the time of the survey. However, the absence of recorded presence or sign should not be taken as an absolute guarantee that the site was not being used by a particular species. There is also no guarantee that any particular species will not use the site at any time in the future. Survey results may be weather or seasonally dependent. Any interpretation of legislation is based on our understanding and experience of the law. The relevant statutory authority can provide a more definitive interpretation.

This report is the responsibility of Chalkhill Environmental Consultants. It should be noted, that whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.