BAT SURVEY & REPORT

at

Mystery Wood Farm
Cooper Lane
Hoylandswaine
South Yorkshire
S36 7JE

Client:
Mr Richard Logan

Client Address:
5 Marrow House
Vernon Road
Worsborough
Barnsley
S70 5BE

JCA Ref:
15760a/AmB

Date of Report: 4/3/2020



JCA Limited
Arboricultural & Ecological Consultants

Quality Assurance

JCA ref.	**Desktop Survey Completed:**		**Site Surveyed:**		**Report Completed:**		**Checked:**	
	Date	Name	Date	Name	Date	Name	Date	Name
15760a/AmB	2/3/2020	Amanda Beck	28/2/2020	Amanda Beck	3/3/2020	Amanda Beck	4/3/2020	Amy Reddick

This report has been prepared and provided in accordance with the *British Standard 42020: Biodiversity – Code of practice for planning and development 2018* and the *CIEEM's Code of Professional Conduct.*

Risk Assessment Completed	
Bio-security Procedure Completed	
Lone Worker Procedure Completed	

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Summary

A report is required at **Mystery Wood Farm, Cooper Lane** to assess the site's potential for supporting bat species, in the form of roosting sites, foraging habitat and/or commuting routes. The aim of this report is to investigate the potential impact that the proposed development may have on the local/national bat population.

The development proposed on this site is to convert a single-story agricultural building into a single large detached dwelling.

All bat species and their roosts in the UK are protected under European and UK law. The main item of legislation protecting UK bats is the Conservation of Habitats and Species 2017. In addition to this, bats and their roosts are also protected in England and Wales under the Wildlife and Countryside Act 1981 and The Countryside and Rights of Way Act 2000.

A desktop study was undertaken on the 2nd March 2020 in order to obtain any bat records that may be present within a 2km radius of the site and any nature conservation designations within the 2km radius of the site boundary.

The site was surveyed on the 28th February 2020 by Amanda Beck *Cert/HE in Field Ecology, Diploma in Field and Conservation Ecology and Qualifying CIEEM* member. A thorough site assessment was undertaken in accordance with the Bat Conservation Trust's (BCT) '*Bat Surveys - Good Practice Guidelines*', the Joint Nature Conservation Committee's (JNCC) '*Bat Workers Manual*' (3rd Edition) and Natural England's '*Bat Mitigation Guidelines*'.

Recommendations:

- After conducting a thorough bat roosting potential survey and detailed desktop study, we considered **Mystery Wood Farm, Cooper Lane barn** to have negligible potential for supporting roosting bats.

- As the barn has been considered to have a negligible potential for supporting roosting bat species. As such no further bat surveys are recommended and no bat mitigation licence is required.

- Lighting Design: Inappropriate lighting in the vicinity of bat roosts can cause disturbance to bat populations and individuals and could be constituted as an offence under the Wildlife and Countryside Act 1981. As such, the Bat Conservation Trust have prepared guidance in line with the information provided by the Institute of lighting Professionals (ILP, 2018) to aid in planning lighting schemes with the aim of limiting the impact that lighting may have on local bat populations.

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- Bat Box Installation: Two 1WI Schwegler Summer and Winter bat boxes are to be installed on the new property. Boxes must be a minimum of 3m from the ground and should be placed as high up as possible on the walls of the building in south, south-west or south-east direction **See Appendix 1** for bat box design.

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1. Introduction and Terms of Reference

1.1 Purpose of the Report

1.1.1 A report is required at **Mystery Wood Farm, Cooper Lane** to assess the site's potential for supporting bat species, in the form of roosting sites, foraging habitat and/or commuting routes.

1.1.2 The aim of this report is to investigate the potential impact that the proposed development may have on the local/national bat population.

1.2 Terms of Reference

1.2.1 JCA Ltd were instructed by **Mr Richard Logan** to visit the site and prepare the findings in a report.

1.2.2 For this purpose, JCA Ltd have been supplied with a site map and brief details of the proposal.

1.3 Scope of the Report

1.3.1 This report is compiled in accordance with the Bat Conservation Trust's (BCT) '*Bat Surveys - Good Practice Guidelines*'(Collins, 2016), the Joint Nature Conservation Committee's (JNCC) '*Bat Workers Manual*' (3rd Edition) (Mitchell-Jones & McLeish, 2004) and Natural England's '*Bat Mitigation Guidelines*' (Mitchell-Jones, 2004).

1.3.2 The results and recommendations contained within this report are considered to be valid for a period of between 18 and 24 months. After this period, an update to the report and re-assessment of the site may be required in order to inform ecological constraints to any developments proposed, and/or to accompany a planning submission. If the proposed development changes significantly or land use alter substantially, updates may be required in advance of the expiry period of the report.

1.4 Details of Proposed Development

1.4.1 The development proposed on this site is convert a single-story agricultural building into a single large detached dwelling.

1.5 Site Description

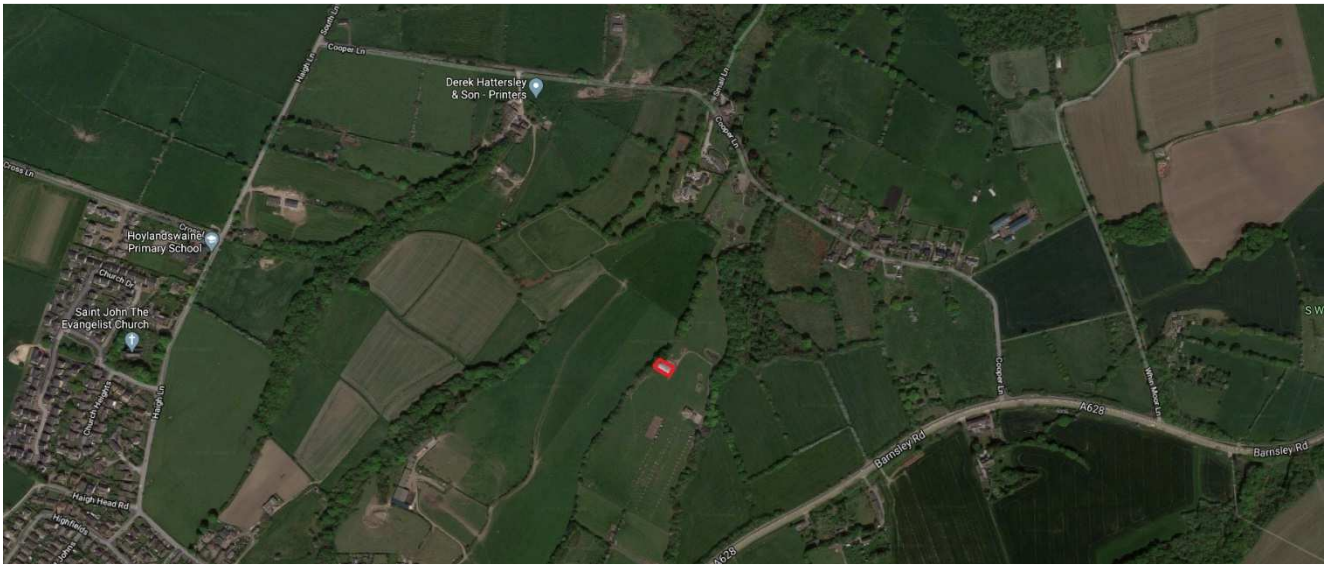
1.5.1 **Mystery Wood Farm, Cooper Lane** is situated approximately 14km east of Barnsley, at grid reference: SE267052.

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1.5.2 The building is a large single-story agricultural building sitting on hard standing. Land around the barn is raised to the rear and has open grassland with lambs and sheep grazing. Fencing and trees surround the site boundaries. The track leading to the barn splits into two, to the east is a newly built residential dwelling where the track joins together it goes north to Cooper Lane into Hill Top village. Down the track to the east is a small woodland area.

1.5.3 The land surrounding the site is open agricultural grassland with Banks, Bullhaw Carrs, Ellhirst woodlands and Whin Moor plantation to the north-east.

Figure 1: Google Maps image of **Mystery Wood Farm, Cooper Lane** showing the survey site in relation to the surrounding landscape and habitats. Red line indicates site boundary.



Google map image © 2020.

1.6 Bats in the UK

1.6.1 In the UK there are thought to be 18 native species of bat (17 known to be breeding), and may account for more than a quarter of mammal species present in the UK. Nearly all UK bat species have experienced serious declines over the last century and all species are protected under UK and European Law.

1.7 Bat Ecology

1.7.1 All species of bat in the UK are insectivorous and have evolved to hunt a different set of insects, present in different habitat types. Preferred bat habitats include woodland, grassland, agricultural land, wetland and rivers.

1.7.2 Bats typically roost close to foraging sites, and use linear features such as

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hedgerows, tree lines and rivers to navigate. Removal of these linear features is thought to have a significant negative impact on their movement, which could be contributing to their decline.

1.7.3 Bats will roost in a wide range of different sites including built structures, underground sites and mature trees. Due to bats ecology different roost sites will be used at different times of the year. Known roost types include:

- Night Roosts: A place where individual bats, or sometimes the colony, rest or shelter in the night, but are rarely found in the day. Can be used throughout the year.
- Day Roosts: A place where individual bats, or small groups of males, rest or shelter during the day but are rarely found by night in the summer months.
- Feeding Roosts: A place where individual or a few individuals rest or feed during the night, but are rarely found in the day during the summer months.
- Transitional/Occasional Roosts: Used by a few individuals or occasionally by small groups for short periods of time on waking from hibernation, or in the period prior to hibernation. Usually found during February-April or during September to November.
- Swarming Sites: Where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites. September – November.
- Mating Sites: Where mating takes place from late summer and can continue through the winter. August – March.
- Maternity Roosts: Where female bats give birth and raise their young to independence. May-September.
- Hibernation Roosts: Where bats may be found individually or together during the winter. They have a constant cool temperature and high humidity. December- February.
- Satellite Roosts: An alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season. May-September.

1.7.4 The three main roosts to be considered, with respect to buildings and development, are maternity roosts, satellite and hibernation roosts. Disturbance of these roosts can have significant negative impacts on local bat populations.

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1.8 Bats and the Law

1.8.1 All bat species and their roosts in the UK are protected under European and UK law. The main piece of legislation protecting UK bats is the Conservation of Habitats and Species (Amendment) (EU exit) Regulations 2019.

1.8.2 In addition to this, bats and their roosts are also protected in England and Wales under the Wildlife and Countryside Act 1981 and The Countryside and Rights of Way Act 2000.

1.8.3 Under these legislations, it is an offense to:

- Deliberately capture, injure or kill a bat.
- Deliberately disturb a bat in a way that would affect its ability to survive, breed or rear young (or hibernate or migrate in England, Wales and Northern Ireland) or (significantly in England, Wales and Scotland) affect the local distribution or abundance of the species.
- Damage or destroy a roost (this is an 'absolute' offence).
- Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat.
- Intentionally or recklessly disturb a bat at a roost.
- Intentionally or recklessly obstruct access to a roost.

If it is discovered that development may impact upon bat roosts (thus leading to an offence being committed) a **Mitigation Plan** should be devised and a **Bat Mitigation Licence** applied for from the relevant government department (i.e. Natural England). Gaining a licence will depend on many variables, such as the bat species present, roost type, roost size and its local/regional/national importance.

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2. Methodology

2.1 Desktop Study Methodology

2.1.1 A desktop study has been undertaken in order to obtain any relevant records of bats from local bat groups and ecology units within a 2km radius of the site.

2.1.2 The Multi-Agency Geographic Information for the Countryside (MAGIC) website was used to locate any designated sites, both statutory and non-statutory, such as; Local Nature Reserves (LNRs), Ramsar Sites, Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Sites of Special Scientific Interest (SSSIs) that may be present within 2km of the survey site.

2.2 Scoping Survey Methodology

2.2.1 The site was surveyed for foraging, commuting and roosting potential. A detailed search of habitats and buildings was conducted during daylight hours in order to identify potential bat roosting sites and look for evidence of bat activity. Photographic evidence was taken (please refer to **Appendix 3**).

2.2.2 Buildings were categorised on their potential value to roosting bats in accordance with Bat Conservation Trust Guidelines (Collins, 2016). Descriptions of these categories can be viewed below in **Table 1.**

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Table 1: Descriptions of bat roosting suitability categories *(taken from the BCT: Bat Surveys for Professional Ecologists, Good Practice Guidelines; 3rd Edition) (Collins, 2016).*

Roosting Suitability	Roosting Features Present
Negligible	No visible features on the site likely to be used by roosting bats. No signs of bats found during the initial assessment.
Low	A structure with one or more potential roosting opportunities that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough shelter, protection, or the appropriate conditions to be used on a regular basis by larger numbers of bats e.g. unlikely to support hibernation or maternity roosts.
Moderate	A structure with one or more potential roost sites that could be used by bats due to the size of the potential roosting feature which is sufficient to provide: shelter, protection and optimal conditions. The feature(s) are unlikely to support a roost of high conservation status. Signs (potential signs) of bat use found during the initial assessment.
High	A structure with one or more potential roost sites that could be used by bats due to the size of the potential roosting feature which is sufficient to provide: shelter, protection and optimal conditions. The features have the potential to support large colonies of bats (e.g. maternity or hibernation) for long periods of time. Signs of bat use present.

2.2.3 All surveys are conducted by experienced surveyors using the following equipment to ensure an accurate assessment; a printed site map, camera, 1 million candlelight torch and ladders.

2.2.4 Signs that bats have previously or are currently using a potential roost site include:

- Scratch marks, urine and oil stains around holes in buildings or trees.
- Droppings, carcasses and/or food remains found around the site.
- Bats observed flying in/out of a hole in a building or tree.
- Bats heard 'chattering' within a potential roost site, especially on warm summer days.

2.2.5 Limitations: It must be highlighted that the absence of any of these signs is not proof that the site is not being used by bats. Weathering and other factors will often remove any signs of bat activity, especially when present on the exterior of a building or a tree. As previously explained, many bat species will have several roost sites which they regularly move between and therefore an absence during a survey visit does not exclude their presence at a later date.

2.2.6 There were no perceived limitations that would significantly impact on the conclusions and recommendations given within this report.

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3. Results

3.1 Desktop Study Results

3.1.1 Local Data Centre Records: Barnsley Metropolitan Borough Council has been commissioned to provide the records held for bat species within a 2km radius of the survey site. The results have been summarised below. It should be noted that the absence of records should not be taken as confirmation bat species are absent from the search area. Please see **Table 2** below for a summary of the bat records

3.1.2 The records obtained for **Mystery Wood Farm** are as follows:

Table 2: Summary of bat records held by the Barnsley Metropolitan Borough Council within 2km of the site.

Taxonomic Group	Common Name	Scientific Name	On site	Within 500m	Within 1km	Within 2km	Notes
Bats	Whiskered Bat	*Myotis mystacinus*	×	×	✓	✓	Three records dating from 2000 to 2012.
	Daubenton's Bat	*Myotis daubentoni*	×	×	✓	✓	Three records dating from 1991 to 2000
	Noctule	*Nyctalus noctula*	×	×	✓	✓	Three records from 1982 to 2012.
	Common Pipistrelle	*Pipistrellus pipistrellus*	×	×	✓	✓	Eight records dating from 1982 to 2012. One record is of bat droppings.
	Unidentified Pipistrelle bat	*Pipistrellus Sp.*	×	✓	✓	✓	Three records dating from 2011 to 2013. One record within 500m is of a bat commuting.
	Brown Long-Eared Bat	*Plecotus auritus*	×	×	✓	✓	Two records dating from 1997 to 2012.
	Unidentified Bat	*Chiroptera*	×	×	✓	✓	One record from 1990.

3.1.3 Nature Conservation Designations: Nature designations are split into two types; those that confer some form of statutory protection, and other designations. These designated sites are summarised in the tables below:

Statutory Nature Conservation Sites

3.1.4 There are no statutory nature conservation sites within the boundary of the site.

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3.1.5 There is one statutorily nature conservation site within 2km of the site. This site can be seen in **Table 3**.

Table 3: Statutorily designated site with 2km of the site.

Site Name	Designation	Distance from Site	Description
Pye Flats Meadow	Special Site of Scientific Interest (SSSI)	499m east	Pye Flats Meadow is three lowland neutral grassland meadows on loamy earth on top of sandstone, coal seams and ironstone. They are mature uniform neutral hay meadows grasslands and are the best examples in the locality. Grass is dominated by Sweet Vernal grass (*Anthoxanthum odoratum*), Common Bent (*Agrostis capillaris*) Creasted dog's-tail (*Cynosurus cristatus*), Red Fescue (*Festuca rubra*), Yorkshire Fog (*Holcus lanatus*) with areas of Quaking grass (*Briza media*) and Yellow Oat-Grass (*Trisetum flavescens*). Plants among the grasslands include: Ox-eye Daisy (*Leucanthemum vulgare*), Common Knapweed (*Centaura nigra*), Yellow Rattle (*Rhinanthus minor*), Adders-tongue fern (*Ophioglossum vailgatum*) and Common Eyebright (*Euphrasia nemorosa*). The diversity of plants on site suggests the plant cover has been established over a long period through traditional agricultural management.

Non-Statutory Nature Conservation Sites

3.1.6 There are no non-statutorily nature conservation sites within the boundary of the site.

3.1.7 The search revealed four non-statutorily nature conservation sites within 2km of the site which can be seen in **Table 3** below:

Table 3: Non-statutorily designated sites with 2km of the site.

Site Name	Designation	Distance from Site	Description
North Wood	Local Wildlife Site (LWS)	629m south-east	A narrow-wooded piece of land in agricultural land, has arable and pastureland with hedgerows with trees. The woodland is semi-natural and ancient woodlands being dense to the centre of the woodland. The main tree species is Beech (*Fagus sylvatica*). Ground flora is sparse with woodland plants to the edges and along the stream course, paths and tracks through the woodland. Woodland habitats are oak, bracken (*Pteridium*) and bramble (*Rubus fruitcosus*). To the south-west the canopy is open and Silver Birch (*Betula pendula*) is more abundant.,

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			there is frequent Wavy Hair Grass (*Deschampsia flexuosa*). There are a several Ancient woodland indicator species present on site: Dog's Mercury *(Mercurialis perennis*), Sessile Oak (*Quercus petraea*), Bluebell (*Hyacinthoides non-scripta*), Opposite Golden-saxifrage (*Chrysosplenium oppostifolium*), Remote Sedge (*Carex remota*), Ransoms (*Allium ursinum*), Sweet Woodruff (*Galium odoratum*), Broadleaved helleborine (*Epipactis helleborine*), Yellow Archangel (*Lamiastrum galeobdolon*), Wood Millet (*Milium effusum*), Wood Melick (*Melica uniflora*), Greater Stitchwort (*Stellaria holostea*) and Wood Speedwell (*Veronica montana*).
Royd, Vicar, Lindley & Coates Great Wood	Local Wildlife Site (LWS)	1.3km south-east	The site is a mixture of different woodlands with some edges bordered by Hawthorn (*Crataegus monogyna*) hedges merging into the woodland, other parts are enclosed by dry stone walling. In the west Royd Wood is a replanted over an ancient woodland. Vicars Wood to the east is on ancient and semi-natural woodlands, both woodlands have dense canopy cover of even-aged trees that include Conifers (*Pinophyta*) and Rhododendron. The west and south parts of Vicars Wood follow the Storrs Dike watercourse. To the east tree cover is a narrow strip along the watercourse with a broad woodland strip from north to south. The topography is diverse with steep slope and exposed bedrock. Lindley Wood is at the north end and is an ancient replanted woodland. It has a non-native tress: Sycamore (*Acer pseudoplatanus*) and Beech (*Fagus sylvatica*) with native ground flora. To the south is an area of Larch (*Larix*) plantation with exotic species in the canopy and understory *Rhododendron ponticum.* Great Wood is to the south which has English Oak, Sessile Oak with Sycamore and Beech. The watercourse flows north and east. Ground flora species include: Bluebells, Wood Medick, Dog's Mercury, Wood Millet, Greater Stitchwort, Yellow Archangel, Wood Speedwell, Wood Sorrel (*Oxalis acetosella*), Remote Sedge (*Cartex remota*) all being indicators of ancient woodlands.
Daking Brook	Local Wildlife Site (LWS)	2km south	The brook flows west to east and is found between upper Denby and Ingbirchworth to the west of Barnsley borough. The brook is lined with a thin belt of semi-natural broadleaved woodland. It is an unpolluted and a good example of an upland stream. The water is shallow and has a substrate of small stones and cobbles with a thin layer of silt. Surrounded by Sycamore and Beech with woodland ground flora of: Opposite-leaved saxifrage, Wood Meadow-grass (*Poa nemoralis*) and Wood Sorrel. Limited vegetation was on the banks due to plantaion shading. On banks are moss species, Remote Sedge and Hard Fern (*Splechnum spicant*). East of Gunthwaite Dam the brook is wider and slightly deeper, there are some larger slabs on the bed. There is grazed pasture and broadleaved woodlands, including Holly (*Ilex aquifolium*) in the form of tree species. The brook has some aquatic vegetation: Brooklime (*Veronica beccabunga*) and Wavy Bitter cress (*Cardamine flexuosa*). White-clawed Crayfish (*Austropotamobius pallipes*)

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			were found here. The third part flows through Rons Cliff Wood a mature broadleaved plantation. It has ground flora of Opposite-leaved Golden Saxifrage, Dog's Mercury and Herb Robert (*Geranium robertainum*). There was no marginal vegetation and fast flowing water. White Clawed-crayfish and juvenile Brown Trout *(Salmo trutta*) has been found here. There were some small mammal holes of Water Voles. The next section is a series of man-made lakes and Cascades at Cannon Hall Country Park which are fed by Daking Brook. The lakes are surrounded by scattered broadleaved trees, tall ruderals and marginal vegetation. Canada Geese (*Branta canadensis*) in the water and grazing on the adjacent amenity grassland. Rhododendron was also present. The fifth area is adjacent to Cinder Farm with the brook meandering through cow grazing pasture and is lined with trees. Signal Crayfish, Bullhead *(Cottus gobio*) and two adult Stone Loach (*Barbatula barbatula*) which is an indicator species. A Kingfisher (*Alcedo atthis*) is a Schedule 1 species was also observed on site. have been found here. The sixth part of the site is channelised and flows under the road. The water is higher than 50cm and banks are well vegetated with tall ruderals herbs. Himalayan Balsam (*Impatiens glandulifera*) is dominant here.
Wool Greaves Meadow	Local Wildlife Site (LWS)	506m south	This site is five former fields of mainly semi-improved grassland. The eastern three exhibit neutral habitats with the westmost area being acidic. A small area of semi-natural broadleaved woodland is to the south-west corner of the site. It has a native rich hedgerow with trees forms the boundaries with ancient woodland indicator species such as Dog's Mercury. Western hedges are intact but are species poor with trees, to the east they are more fragmented and comprise of a line of trees and shrubs than dense hedgerows. Species on site included: Sessile Oak, Greater Stitchwort, Bush Vetch (*Vica sepium*) and Dog's Mercury.

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3.2 Scoping Survey Results

3.2.1 The site was surveyed on the 28th February 2020 by lead surveyor Amanda Beck *Cert/HE in Field Ecology, Diploma in Field and Conservation Ecology and Qualifying CIEEM member*. Natural England Bat Class 1 Licence 2018-38295-CLS-CLS. Survey conditions are summarised in **Table 4**.

Table 4: Survey times and weather conditions.

Survey date	Lead surveyor	Temp	Humidity	Wind speed/Direction		Cloud Cover	Precipitation
28/2/20202	Amanda Beck	1.0℃	91%	15mph	SSE	100%	Sleet

3.2.2 Habitats and Features Present

The barn is single story structure and has previously been used to incubate chickens and store livestock food and machinery. It is now being used for lambing and a storage area with parts of the barn unused. Surrounding the barn is sloping grassland to the rear and to the left is a recently built farmhouse. With a track linking both buildings to a single track down to Cooper Lane.

3.2.3 Building Assessment/ Built Structure Assessment

External Inspection: The building has a pitched metal corrugated roof with metal ridge tiles. There are no gaps or crevices that could be observed in the roof structure. The walls are constructed of stone and are well mortared with no gaps or crevices. The windows and doors are wooden, the sliding barn door to the rear of the barn has gaps where it does not close tight against the doorway. The barn has sensory security lighting on its walls. The barn sits on hard standing.

Internal Inspection: The roof is metal framework with metal corrugated sheeting. There are no linings, membranes or insulation present in the barn. There are false ceilings to the rear of the barn that do not meet at the centre of the roof, metal roof sheeting can be viewed in this gap. In two of the rooms are loft hatches. On entering the loft hatches voids are empty, except a large quantity of cobwebs. The barn is separated off into two parts, the rear of the barn having four rooms with wooden doors leading from one room to another. The last of the rooms has a large wooden sliding door, light could be observed from the sides and top of the door. The front of the barn is divided up into four separate areas and has no enclosed loft spaces or false ceilings. All the internal walls are constructed of breeze block, in some of the rooms the walls have been whitewashed. The floor is concrete throughout the barn.

Signs of Bat Use: There were no droppings, feeding signs, urine stains, live or

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dead bats, oil stains or a smell of bats.

3.2.4 Tree Assessment

No trees are to be removed or impacted upon by the proposed development at Mystery Wood Farm. The trees on site have not been surveyed for bat roosting potential as they will not be affected by the proposed development. Should the current development plans change and the revised plans require the removal (or maintenance) of any trees on site then a scoping survey will be required on these trees prior to removal or maintenance in order to determine the bat roosting potential of these trees prior to removal or maintenance.

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4. Discussion and Analysis of Results

4.1 Bat Records and Nature Conservation Designations

4.1.1 There are twenty-three bat records of seven bat species within 2km of the site, one record is of a commuting unidentified Pipistrelle bat species recorded within 500m of the site. No bat roosts were recorded within 2km radius and there is only one record of a Common Pipistrelle bat droppings.

4.1.2 There is one designated conservation site within 500m of the proposed development. The proposed plans will not have an impact on Pye Flatts Meadow grassland as many of the plants on the SSSI site do not have the ability to translocate distances of their own accord. Grasslands on site are continually grazed by sheep and have not been traditionally managed to allow these plant species to thrive.

4.1.3 There are four non-designated conservation sites within 2km. All the sites are Local Wildlife Site (LWS): North wood 629m, Daking Brook 2km, Wool Greaves Meadow 506m and Royd, Vicar, Lindley & Coates Great Woodlands 1.3km. Due to habitat fragmentation from roads and buildings it is unlikely that the proposed development will have an impact on the sites that are 1km to 2km away. North Wood and Wool Greaves Meadow plant species are unlikely to translocate by themselves and could only be carried to the development site by humans or birds.

4.2 Scoping Survey

4.2.1 The habitats on site are an agricultural barn, residential dwelling, hard standing, grazing grassland, track, scattered trees and fencing. Please refer to **Section 3.2** for further details.

4.2.2 The bat scoping survey found that the barn offered very little in the way of ecological value to bats, the roof trusses were metal, the roof was constructed of metal corrugated sheeting. The enclosed loft spaces were not lined, had no loft insultation and were full of cobwebs. There was no external or internal gaps or crevices within walls.

4.2.3 This barn has **negligible potential to support roosting bat species.**

4.3 Impacts of the Proposed Development

4.3.1 The proposed development should not cause a net loss on biodiversity for roosting bats, however in accordance with National Planning Policy Framework the ecological value of the site should be improved by installing bat boxes.

4.3.2 As external wall lighting will be required the installation of the new lighting must follow the guidance given by the BCT/ILP 2018 to limit the impact the lighting

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may have on bats foraging in the surrounding landscape and to ensure dark corridors are maintain for shy light bats The development of **Mystery Wood Farm barn** will not be removing any Barnsley BAP habitats.

NB: The overall impact of the proposed development is based upon plans provided by Mr Richard Logan, see drawing as included in **Appendix 2.** *This report has been compiled and produced by JCA Ltd, and accounts for and assesses the likely impacts on local wildlife populations and biodiversity that is to occur as a result of the development given in **Appendix 2.** Should these plans change then this report will need revising and the potential impacts re-evaluating.*

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5. Recommendations

5.1 After conducting a thorough Bat Roost Potential survey and a detailed Desktop Study, we consider **Mystery Wood Farm barn** to have a negligible potential for supporting roosting bats.

5.2 As the barn has been considered to have a negligible potential of supporting bat roosting sites, we recommend that the proposed development at **Mystery Wood Farm** should go ahead, and that no **Bat Mitigation Licence** is required. However, the work should be carried out with care and vigilance.

Should any bats be found during any stage of the development, all work must stop immediately and Natural England must be contacted. Natural England will provide advice on the best course of action. It must be stated that this is a legal requirement, and that bats may only be handled and their roost disturbed by an experienced ecologist holding an appropriate licence.

Lighting Design: Inappropriate lighting in the vicinity of bat roosts can cause disturbance to bat populations and individuals and could be constituted as an offence under the Wildlife and Countryside Act 1981. As such, we have prepared guidance in line with the information provided by the Institute of lighting Professionals (ILP, 2018) to aid in planning lighting schemes with the aim of limiting the impact that lighting may have on local bat populations.

It is important to avoid:

- Uniform levels of luminance across the site.
- Metal halide and florescent lighting.
- Upward tilting lighting that increases skyline luminance.

Instead the following should be installed:

- Dark buffer zones.
- Screening in the form of vegetation, fences and structures.
- Appropriately designated darkened areas.
- Luminaries absent of UV elements.
- LED luminaries with a sharp cut-off, low intensity and good rendition.
- Peak luminaire wavelength at a minimum of 550nm.
- Downward directional luminaires with upward light ratios of 0%.

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- Lower light columns to limit light spill.
- Recessed internal light fixtures.
- Window glazing treatments or automated blind systems.

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6. Conclusions

6.1.1 The site has been considered to have a negligible potential for supporting roosting bat species. As such no further bat surveys are recommended and no bat mitigation licence is required.

6.1.2 Lighting Design: Inappropriate lighting in the vicinity of bat foraging and commuting habitats can cause disturbance to bat populations and individuals and could be constituted as an offence under the Wildlife and Countryside Act 1981. As such, we have prepared guidance in line with the information provided by the Institute of lighting Professionals (ILP, 2018) to aid in planning lighting schemes with the aim of limiting the impact that lighting may have on local bat populations. Lighting placed on the exterior of the development should be in line with the ILP 2018 guidance in order to limit the impact of the development on local bat populations and behaviour.

6.1.3 Bat Box Installation: The development is likely to reduce potential roosting opportunities for bat species locally. As such two bat boxes must be installed within the new development to ensure that roosting opportunities have been provided for and to ensure no net loss of potential bat roosting areas locally. Recommended bat box design: Two 1WI Schwegler Summer and Winter bat boxes. Bat Boxes should be positioned in south, south-west or south-east direction at 5 to 7 meters above ground, under eaves or gable apex of the property.

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7. References

Bat Conservation Trust and The Institute of Lighting Professionals (2018) Guidance Note 08/18 – Bats and Artificial Lighting in the UK. Bats and the Built Environment Series

Collins, J. *(eds.)* (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). Bat Conservation Trust, London.Bat Mitigation Guidelines* (Jan. 2004).

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

Mitchell-Jones, A.J. & McLeish, A.P. (2012) *The Bat Workers' Manual*. Pelagic Publishing, Exeter.

Websites:

Bat Conservation Trust (BCT). <http://www.bats.org.uk/>

Google Maps. **<**http://maps.google.co.uk/**>**

Multiple-Agency Geographic Information for the Countryside (MAGIC). <http://www.magic.gov.uk/>

Natural England. < http://www.naturalengland.org.uk/>

Relevant Legislation:

Countryside and Rights of Way Act 2000
<http://www.legislation.gov.uk/ukpga/2000/37/pdfs/ukpga_20000037_en.pdf?view=interweave>

National Planning Policy Framework (2012). Communities and Local Government.

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019
http://www.legislation.gov.uk/ukdsi/2019/9780111176573

Wildlife and Countryside Act 1981 <http://jncc.defra.gov.uk/page-3614>

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Appendices

Appendix 1: Bat Box Design



1WI Schwegler Summer and Winter Bat Box

The Schwegler 1WI Summer and Winter Bat Box is designed for year-round occupation. The box is suitable for hibernation bats in winter and roosting bats, forming colonies and raising of young in the summer.

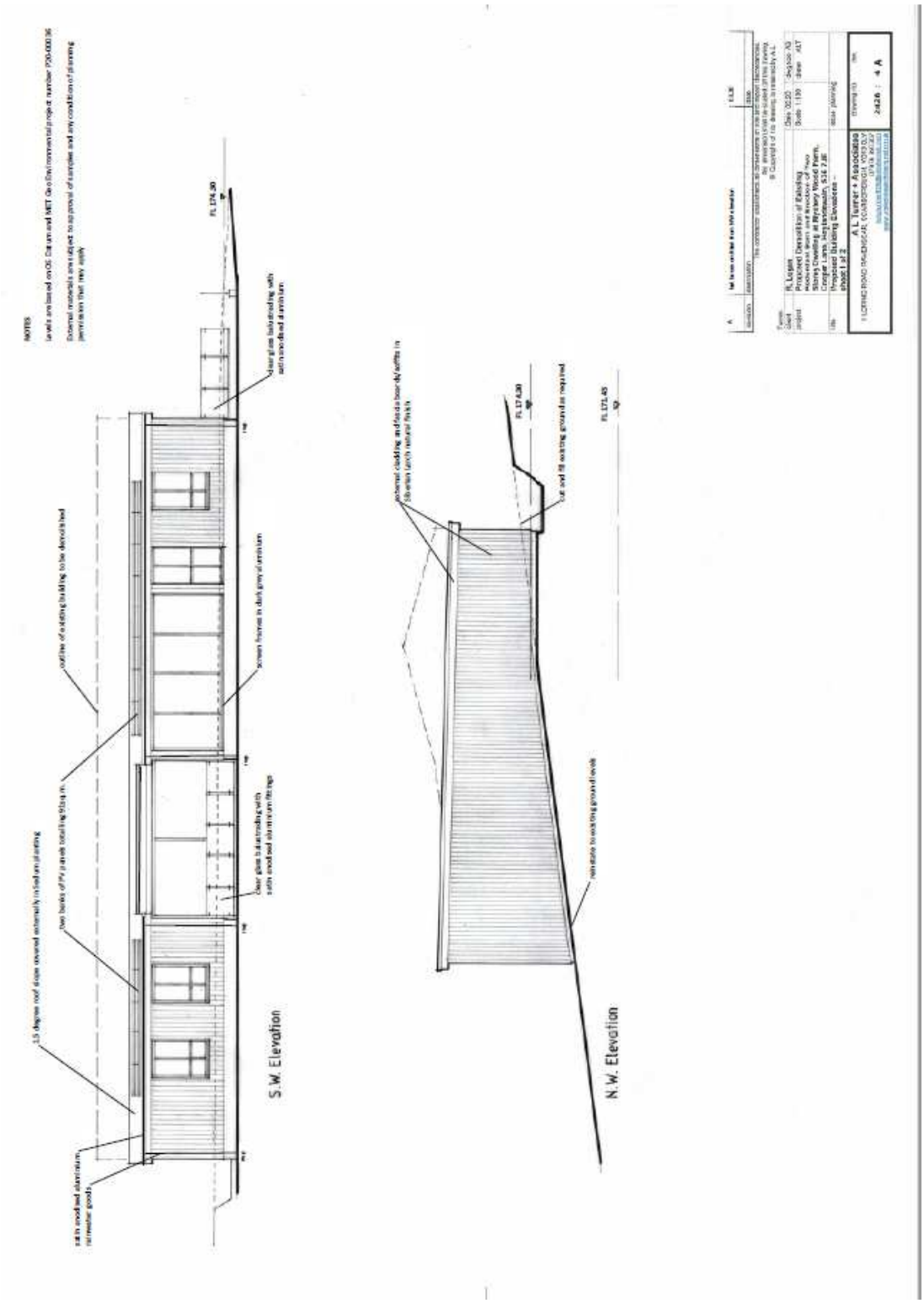
The bat box is suitable for bat species which inhabit buildings, such as common pipistrelles, serotine bats and occasionally noctule bats.

The 1WI is designed to be set into an external wall or incorporated into the masonry and then rendered flush with the surface so that only the entrance is visible. This box does not require any maintenance as the droppings fall out of the entrance. Orientation of the bat box should be in the south, south-west or south-east direction.

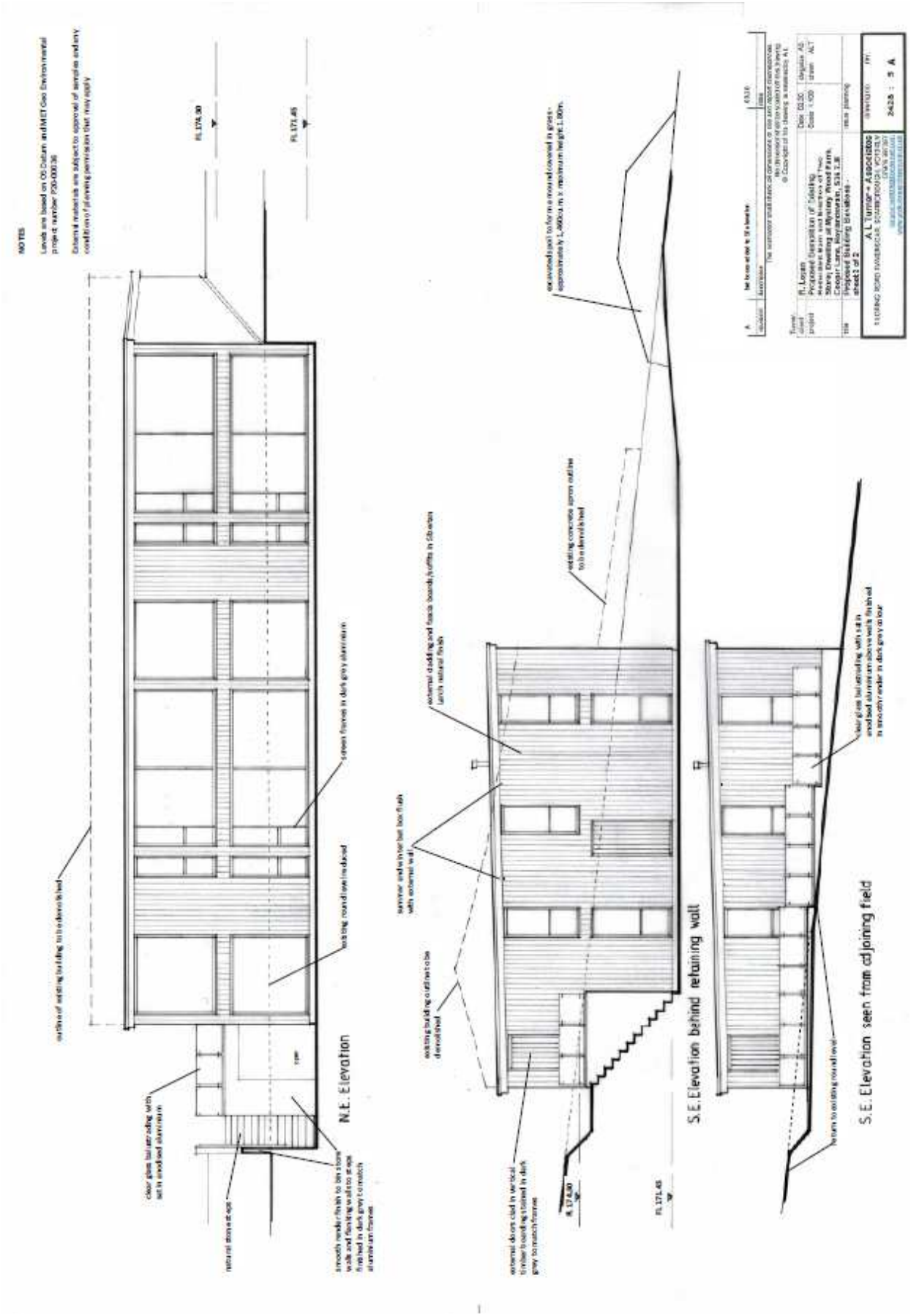
Height: 54.5cm
Width: 34.5cm
Depth: 9.5cm
Weight: 15kg

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Appendix 2: Proposed Development Plan



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NOTES
Levels are based on OS Datum and MET Geo Environmental project number P20-00036
External materials are subject to approval of samples and any condition of planning permission that may apply
FL 174.90
FL 171.45
N.E. Elevation
S.E. Elevation behind retaining wall
S.E. Elevation seen from adjoining field
R. Lorain
Proposed Demolition of Existing Stone Barn and Erection of Two Storey Dwelling at Mystery Wood Farm, Cooper Lane, Hoylandswaine, S36 7JE
Proposed Building Elevations - sheet 2 of 2
A.L.Turner + Associates
2425 : 5 A

Appendix 3: Photographic Evidence



Photo 1: Front view of barn.



Photo 2: Side view to the east of the barn.



Photo 3: Rear view of the barn.



Photo 4: Side view of barn to the west.



Photo 5: Rood was constructed of metal framework with hardboard.



Photo 6: Hard board on internal roof not meeting, gap in centre of internal roof.

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Photo 7: Parts of false ceiling missing of internal roof.	Photo 8: Internal loft space.
	
Photo 9: Internal loft space.	Photo 10: To the rear of the barn sliding wooden door with gaps.
	
Photo 11: Interior to front of barn.	Photo 12: Internal view of front of the barn.

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Photo 13: Kitchen area to rear of barn	Photo 14: Storage room to rear of barn.
	
Photo 15: Inside egg incubation room to rear of barn.	Photo 16: Land to rear of the barn.

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Appendix 4: Glossary

Activity surveys - are used to assess the level of bat activity at a site. This can be done either by using equipment such as an AnaBat device, or manually walking around a site with a heterodyne detector, documenting the number of bat passes and interceptions.

Dawn surveys - begin around 2 hours before and up to sunrise when bats are returning to their roosts from foraging, and swarming behaviour can be seen close to roost entrances.

Dusk surveys - begin around 30 minutes before sunset and up to 2 hours afterwards. These are done in order to see bats emerging from their roost sites at night.

Echolocation – is a system similar to sonar that allows bats to travel and forage even in total darkness. Bats make a call and then listen to the returning echoes in order to build up a map of their surrounding area. This allows bats to gauge the identity and distance of an object by how long the echo takes to return to them.

Habitat - the ecological or environmental area that is inhabited by a particular species of animal, plant or other type of organism.

Hibernation - is a state of inactivity and metabolic depression characterized by lower body temperature, slower breathing, and lower metabolic rate. Hibernating animals conserve energy, especially during winter when food is short, tapping energy reserves, i.e. body fat, at a slow rate.

Hibernacula - typically consist of underground sites, such as caves and cellars, which remain relatively cold and humid. Bats will hibernate to conserve energy over the winter months when falling temperatures cause a drop in the abundance of insects. These will typically be colonised around November to around March.

Insectivorous – is when an organism feeds exclusively on insects.

Nocturnal - a behaviour characterized by being active during the night and sleeping during the day.

Maternity roosts – colonised around late May early June and consist of mature females and their young. These roosts need to be warm and quiet, and are used up until around August, with females typically leaving first and then the young.

Mating roosts – mating begins around late October to November. Males of most species use special mating calls to attract females. These can include purrs, clicks and buzzing.

Roost – a site where bats live during the day, rear young and hibernate. These can be in manmade structures, such as buildings, bridges, tunnels, cellars and mines, or natural features such as mature trees and caves.

Roosts in buildings – many types of buildings will be used by bats. The most likely sites are agricultural buildings (e.g. farmhouses and barns), buildings with exposed wooden beams (greater than 20cm thick), buildings with weather boarding and/or hanging tiles, and buildings close to woodland and/or water.

Roosts in trees – these are typically in mature trees with deep sheltered cracks, under loose sections of bark, or in woodpecker holes.

Species – a group of organisms in which all members can interbreed and produce viable offspring.

Summer roosts (non-breeding) - these are generally occupied by groups of males and immature females during the summer, and are usually only occupied for a short period before the group moves to another location.

Swarming – a behaviour exhibited by bats returning to their roost sites at dawn. Bats can be seen repeatedly flying to and from the roost entrance, making it much easier for consultants to identify where roosts are on a building or structure.

Temporary/Transitory roosts – These are used after hibernation (March – April) before mature females disperse to maternity roosts and male/immature females colonise summer (non-breeding) roosts. Similarly, temporary roosts form before hibernation (August -October).

Underground Roosts – these are typically used during the winter and can be mines, caves, tunnels or cellars.

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Appendix 5: Author Qualifications

Principal Consultant and Managing Director

Jonathan Cocking
F.R.E.S., Tech. Cert. (Arbor.A), PDipArb (RFS) FArborA CBiol MSB. MICFor.
Jonathan is a Registered Consultant and Fellow of the Arboricultural Association and sits on its Professional Committee. He has 31 years' experience in the Arboricultural profession and served for eight years as Senior Arboriculturist with a large local authority before establishing JCA in 1997. Jonathan has since developed JCA's portfolio of services and its extensive client base. He is a Chartered Biologist, a Chartered Arboriculturalist and an Expert Witness with much experience of litigation work.

Technical Director

Toby Thwaites
BSc (Hons), HND (Arboriculture).
Toby joined JCA in 1998 after graduating in Ecology at the University of Huddersfield and has since graduated in Arboriculture at the University of Central Lancashire. A former JCA team leader and Consulting Arboriculturist, Toby is now Technical Director and oversees all office and on-site activities at JCA and is on hand to offer technical support and advice.

Consulting Staff: Ecology

Amanda Beck, Ecological Officer
Cert/He in Field Ecology, Diploma Field and Conservation Ecology, Qualifying CIEEM member.
Amanda joined JCA's ecology department in 2018, previously working as a freelance Ecological Consultant in North Wales and as a trainee Ecologist in South Wales. She has a background surveying botanical, amphibians, birds, terrestrial and marine mammals along with small mammal trapping and invertebrate research work on SSSI sites. She has practical experience in habitat management and creation when volunteering for North Wales Wildlife Trust. Amanda is currently studying for a MSc in Biological Recording and Ecological Monitoring with Manchester Metropolitan University. She is a member of the Butterfly Conservation Trust, Bat Conservation Trust, Botanical Society of Britain & Ireland and the British Hedgehog Preservation Society. Amanda is DBS checked and holds a Natural England level 1 bat licence and Natural England Level 2 Great Crested Newt licence and Great Crested Newt Licences for Natural Resources Wales and Natural Scottish Heritage.

Joe Earnshaw, Trainee Ecologist
BSc (Hons), MSc Biodiversity and Conservation, Qualifying CIEEM member.
Joe joined the ecology department of JCA in 2018 after taking part in JCA's student training programme. He initially obtained a bachelor's degree in animal management from Askham Bryan College, York. He has since furthered his education and brings to the company an MSc in Biodiversity and Conservation from the University of Leeds. Joe has expertise in aquatic invasive species identification and control.

Amy Reddick, Ecological Consultant
MSc Conservation Biology & Associate CIEEM member.
Amy joined JCA's ecology department in 2020 after working for an ecological consultancy in Yorkshire for the past 4 years. She possesses a Natural England Class II Bat Licence to handle bats and has experience undertaking surveys for various protected species including badgers, great crested newts, barn owls and otters. She is confident in identifying a range of botanical species and habitats in order to produce robust Preliminary Ecological Assessments. During her time as a consultant Amy has developed in depth knowledge of UK wildlife and habitat legislation and their relevance when assessing the impacts of development proposals. Amy has a CSCS card a Wilderness first aid certificate.

Charis Russell-Smith, Ecological Consultant
BSc Wildlife Conservation (Hons) & GradCIEEM.
Charis joined JCA in 2019, bringing with her 5 years' experience in ecological consultancy and two Natural England protected species class licences (Great Crested Newt Class I and Bat Class II). Her professional specialism is in bats and their ecology, having extensive experience of bat surveys, mitigation and call analysis. She is also competent at conducting preliminary ecological appraisals and phase II protected species surveys. Charis is an experienced ecologist who is able to collate accurate fieldwork data and deliver robust ecological evaluations, assessments and reports.

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The information which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and bona fide opinions.

Signed



.....

Amanda Beck *Cert/He in Field Ecology, Diploma Field and Conservation Ecology, Qualifying CIEEM member*

3rd March 2020

Proofread by



.....

Amy Reddick MSc Conservation Biology, *Associate CIEEM member*

4th March 2020

For and on behalf of ***JCA Ltd***

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ECOLOGICAL SERVICES

Ecological Pre-Planning Services

- Phase 1 Habitat Surveys
- Great Crested Newt eDNA Sampling
- Protected species: Bat, Wintering and Nesting Bird, Badger, Amphibian, Otter, Water Vole, White-Clawed Crayfish, Dormice and Reptile Surveys.
- Preparation for Environmental Impact Assessment (EIA)
- Invasive Species Surveys
- Code for Sustainable Homes
- Butterfly & Insect Surveys

Ecological Post-Planning Services

- Biodiversity Enhancement Plans
- Protected Species Mitigation
- Ecological Management (Bat and Bird box installation and inspection)
- Planting Schemes
- Monitoring of bird or bat boxes.

ARBORICULTURAL SERVICES

Guidance for Architects & Developers

- British Standard 5837 Surveys
- Arboricultural Implications Assessments (AIA)
- Arboricultural Method Statements (AMS)

Advice for Engineers, Loss Adjusters and Insurers

- Tree Surveys for Subsidence
- Heave Assessment
- Tree Root Identification

Advice for Local Authorities and Social Housing

- Tree Safety Surveys
- Specialist Decay Detection
- Landscape and Orchard Design

Tree Advice for the Legal Profession

- Subsidence Litigation
- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

Tree Health and Pest and Disease Management

- Pest and Disease Surveys
- Tree Health Checks
- Disease Mitigation and Control

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