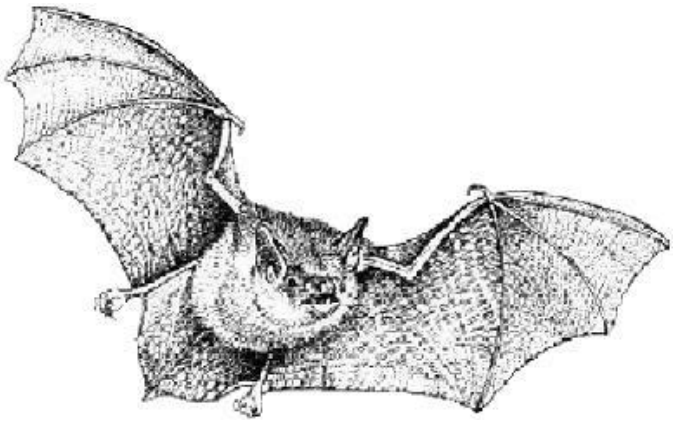
The Barn,
off Malt Kiln Brow,
Chipping, Preston, Lancashire.
PR3 2GP

Preliminary Survey & Assessment
in Respect of Bat Species and Nesting Birds.

Surveyor- Mike Fisher
(Bat Survey Licence Level 2 Class Survey Licence WML CL18)
(Bat Roost Visitor Level 1 Class Survey Licence WML CL15)



Echo Calls Bat Surveys

19th February 2023

1. Introduction.

1.1 Reason for Survey.

As part of the process to obtain planning permission to develop the site, a preliminary daytime evidence and opportunity bat survey and assessment, and a current nesting bird survey were requested, on the targeted barn and its extensions, and also on any trees, shrubs, and hedgerows within the site boundaries. The purpose of these surveys was to provide evidence on habitats, and protected species, within the site boundaries, as part of the Local Development Framework (UDP Policy EN9).

1.2 Survey Aims.

The aims of this preliminary ecological assessment were to:

- To provide clear advice to the client, and the Local Planning Authority, on the nature conservation value of the site, and surrounding area.
- To assess the site for the presence, or potential, for protected species within the proposed development site, by doing a detailed inspection of both the exterior and interior of any structures, to look for features that bats could use for entry/exit, and for roosting, and also to search for bats themselves.
- To enable the client to comply with legislation afforded to protected sites and species.
- To highlight the presence of any habitats or species of ecological importance, including Habitats and Species of Principal Importance (NERC Act, 2006).
- To identify any ecological constraints, on future development.
- To establish the need for any further surveys and assessments.
- To make nature conservation recommendations.

1.3 The Site.

The site consisted of a detached barn and its extension, both located along the northern boundary at the north-eastern corner of a large plot of land, which was formally part of a large factory. It was positioned along the eastern boundary of Malt Kiln Lane, in the Chipping area of Preston in Lancashire. The barn complex and its surrounding nearby land, from now on are referred to as the “site”, at OS grid reference: SD 62043 43589, (refer to **Fig 1** - **The Site Location**).

1.4 The Buildings.

The targeted detached barn and its attached extension were positioned within a sizable area of land, in a south-east to north-west orientation, and both of these buildings were surveyed.

1.5 Surrounding Area.

The targeted buildings were both located in the north-eastern corner of a large area of hardstanding, which had once been the foundations of a former furniture factory, bordered mostly by lines of either fencing or walls.

Stretching away to the north and north-east, beyond the northern and eastern boundaries of the site, were large areas of open pasture, the borders of the individual fields consisted of shelterbelts of mature trees and shrubs. Whilst to the north-west of the site were a few dwellings and their gardens containing a few trees and shrubs along the northern edge of Malt Kiln Brow, with a large mill pond positioned close to the southern edge of the Brow approximately 0.11 km to the north-west of the site, and with areas of woodland and dwellings further to the north-west.

Chipping Brook meanders in a roughly east to west pattern, just to the south of the above features, and which also formed the southern and eastern boundaries of the area of hardstanding, which constituted the former factory grounds.

There were small area areas of pasture and coppices of trees close by to the south of the brook, and with the dwellings and other buildings forming the village of Chipping, which lay approximately 0.16 km to the south of the site at its nearest point, but the village stretched away even further in a southerly direction.

To the east of the barn, beyond the area of hardstanding, flowed another part of Chipping Brook, with further areas of open pasture and a few coppices of mature trees and shrubs to the east. There were also a few dwellings and a farm approximately 0.31 km to the south-east with further fields positioned further east and south-east.

There was another mill pond amongst a dense coppice of trees approximately 0.86 km to the north-west of the barn, and a few brooks flowing throughout the surrounding area, but other than all of the above-mentioned habitats, there were no other large bodies of water, in the nearby vacinity, (refer to **Fig 1 -The Site Location, Fig 2** – **Google Map of Area, Fig 3 – Main Plan Showing the Local Area and Habitats, Fig 4 - Plan of Photographs,** and **Fig 5 - Plan Showing Results of Preliminary Daylight Evidence and Opportunity Survey and Assessment**).

2. Methods

2.1 Risk Assessment, Possible Hazards.

The required access to the site was relatively easy, however only some of the elevations of the complex could be closely surveyed. The northern elevation bordered a neighbouring property, and although survey access was granted by the neighbour, there were two other buildings attached to the northern elevation of the barn, which as they were not included in the current survey they were not surveyed. This meant that only a part of the barn's northern elevation could be surveyed. Also, the eastern elevation of the barn ran parallel to a closed field, and again this could only be searched using close-focus binoculars.

Despite the age of the buildings, both parts were in a reasonable condition, with fairly sound walls, roofs and gables, and as such there were no more hazards, other than those normally associated with surveying both the inside and outside of these types of buildings.

2.2 Methodology of Bat Surveys.

A number of factors are used for the survey methodology, which include:

- Knowledge of bat species relevant to the site location, and geographical range.
- Nature of the immediate, and surrounding habitat, in relation to foraging opportunity.
- Presence/absence of roost potential.
- Value of roost potential – if present.
- Condition of nearby trees, shrubs, and any water bodies.

2.3 Preliminary Daylight Evidence and Opportunity Survey and Assessment.

The preliminary daylight evidence and opportunity survey and assessment, took place on 7th February 2023, and was carried out in order to assess the site to search for evidence of bat occupation, (including recent and historic use). It comprised a search for bats themselves, bat droppings, urine stains, remains of invertebrate prey, or grease marks from repeated contact, or passage by bats through narrow roost accesses, or against surfaces, and any other signs of bat occupation, and at the same time looking for evidence of either current or historical nesting birds, active nests and feathers**.**

Areas within the targeted building searched were:

- Inside all parts of the barn and its extension, where bats could roost, also on the floors, roof trusses, or upon the items or equipment, stored within any roof voids where possible, and in spider's webs and other places where droppings or prey remains may collect. Likewise noting any noises such as scratching and squeaking which may be made by roosting bats.

- Outside all the targeted buildings within the complex, the eaves, gables, soffits, and walls for signs of potential bat access holes, also, the ground, and any other surfaces such as low roofs, or any piles of rubble or plants, which may occur underneath the eaves, and around the perimeter of the building, any of which may catch bat droppings.

The optimum time to investigate buildings for evidence of a bat roost, is between May and September, however, this can sometimes be earlier or later in the year, and is weather and temperature dependant.

However, preliminary evidence and opportunity inspections and assessments, may be conducted outside of this time, and can often provide conclusive results, which can save expense and time for Planning Applicants.

The habitats and any trees surrounding the site, were assessed for their suitability for use by foraging and commuting bats.

All evidence of current or previous nesting bird species observed during the survey, was recorded.

2.4 Equipment.

Equipment used consisted of ladders, an endoscope, camera, close-focus binoculars, and a powerful hand-held torch.

3. Results

3.1 Daylight Survey.

3.1.1 Weather.

The weather conditions at the start of the survey on 7th February 2023 were reasonable. It was damp with heavy cloud cover, and a light breeze, (Beaufort Scale 2), and as the temperature taken during the survey was 6°C, such conditions were optimal for a survey of this type.

3.2 Possible Roost Sites.

3.2.1 The Buildings.

There was a barn with its attached extension surveyed, and these were positioned in the north-eastern corner of the site.

3.2.2 The Barn.

The barn was a rectangular, two storied building, in a south-east to north-western orientation, and It was constructed entirely from brick, but with no windows. The pitched roof was mounted on wooden trusses and purlins, with a slate covered roof, which although it was mostly underlined in timber planks, there were a few small rooflights, but there was no roof void. The barn was split into three separate rooms which were not interconnected, and were all currently using for the storage of furniture and other assorted items.

Although the barn was in a reasonable overall condition, the structure was beginning to deteriorate however, the walls were still fairly well sealed, and in a reasonable condition. All parts of the barn interior were carefully searched but neither bat droppings, invertebrate prey remains, or any other signs of bat activity found within the barn.

All parts of the barn had been unheated and uninsulated for a number of years, and was damp, draughty and cold throughout most of the year, and therefore was deemed unsuitable for either daytime roosting bats, or breeding bats. Also, as frost and inclement bad weather was likely to penetrate the interior of the building in the colder months, the barn did not offer the optimum humidity, and constant low temperatures that are required for hibernating bats, and therefore the whole building was judged to be of low bat roost suitability, (refer to **figs 3, 4** and **5, photos 1** to **9,** and **11** to **19).**

There were some potential bat access points however, and these were:

- There were gaps and holes at a number of locations within the northern, western and southern elevations, and where possible the holes themselves, the walls around them, and the floor beneath them were all surveyed, using either an endoscope, or close-focus binoculars, and neither bat droppings, invertebrate prey remains, any urine staining, nor were any fur stains were found around the gaps, that would show the repeated passage of bats through them, and therefore all of the gaps were deemed to offer very low bat suitability, (refer to **figs 3, 4** and **5,** and **photos 2** to **7, 12** and **13).**

- A dense mat of ivy *(Hedera helix)* covered some of the northern elevation, the north-western corner of the barn and a small part of the western elevation and its roof. Dense ivy is considered to have a low, but significant bat roost potential, and where possible, a careful search between the various parts of the ivy plant, initially by hand, torch, or with the use of the endoscope, found neither droppings, prey remains, urine staining, fur staining from continual passage between the leaves and plant stems, or bats themselves, nor was any evidence of past bird nesting found within the ivy, (refer to **figs 4** and **5,** and **photos 1** and **11** to **15**).

3.2.3 The Extension

Attached to the eastern elevation of the barn, was a tall, single storied extension, which was built from a mixture of brick and concrete block, with a sloping roof covered in slates, which sloped downwards in an easterly direction, and was underlined in fibreboard, mounted on a mixture of steel and wooden beams, and with four large rooflights contained within it, with no roof void. The extension was empty, and had neither insulation nor heating, and was very damp with some standing water on the floor, It was also thought that the extension would be seriously affected by frost and other bad weather conditions during the colder months, and as there were very few internal potential roosting opportunities, it was deemed that the extension had very low suitability for any kind of bat roosting, (refer to **figs 3, 4** and **5,** and **photos 8** to **12, 20** and **21).**

There were limited potential bat access points however, and these were:

- The southern elevation of the extension was completely open, which would allow bats and birds access into the interior, however the internal survey had found neither bat droppings, any urine or fur staining, nor any invertebrate prey remains, it was therefore deemed that bats had not used the extension for any type of roosting, (refer to **figs 3, 4** and **5,** and **photos 8,** and **9).**

- There was a large hole in the roof where a part of the structure had collapsed, and it was thought that this was where the majority of standing water had entered the extension. it was also thought that copious amounts of daylight would enter into the building from the hole, the rooflights, and the open elevation, further reducing internal bat roosting potential, (refer to **figs 3, 4** and **5,** and **photos 8, 9, 20** and **21).**

No evidence of either current or historical roosting bats was detected in, on, or around, any part of the barn or extension, either internally or externally. Nor was there any evidence of previous use by roosting bats detected anywhere within the site.

The search also found no evidence to suggest that any part the barn complex, or anywhere in the overall site, had been used historically by neither nesting or roosting birds. It was also surmised that due to the time of year, although some birds maybe setting up territories prior to the 2023 bird nesting season, no currently active nesting behaviour was observed, (Refer to **Appendix 1**).

3.3.2 Trees and Shrubs.

There were no trees growing anywhere within the targeted site, nor in the nearby area of hardstanding, however there was a line of shrubs and the odd semi-mature tree growing just outside the eastern site boundary, and where possible these were all inspected. However, none were found to have any lifted bark, canker damage, cracks, or holes suitable for roosting bats, and as such, were judged to be Category 3 (of negligible value for roosting bats) in accordance with **Appendix 2.**

However, during the survey, (7th February 2023) it was noted that some Schwegler Bat Boxes have been erected within the above mentioned line of trees and shrubs, however, although these boxes were not internally inspected, there were no obvious outward signs that these boxes had been used in the past, (refer to **figs 3, 4** and **5,** and **photo 22).**

It was thought likely that the barn complex and some of the nearby features, could be used by nesting birds during the upcoming nesting season, but at the time of the survey, although there was some bird activity in and around the site, no active nests were found amongst the vegetation, and it was also surmised that due to the time of year, most birds will not yet have started breeding, (Refer to **Appendix 1**).

3.2.3 Foraging Potential and Alternative Bat Roost Potential.

The site is in a semirural area, and contained the targeted barn and its extension, positioned at the north-eastern corner of a large area of hardstanding, which was the former foundations of a large factory complex.

The northern site boundary consisted of a wall between the barn and its neighbouring property, beyond which were a few dwellings and their gardens, containing a few trees and shrubs. There was a large mill pond further to the north-west of the site, with areas of woodland and dwellings beyond this.

Stretching away to the north beyond the north-eastern corner of the barn, were large areas of open pasture, the borders of the individual fields consisted of shelterbelts of mature trees and shrubs.

Chipping Brook constituted both the western and southern boundaries of the overall site, and the brook in fact meandered in a roughly north to south pattern, and there were small area areas of pasture and coppices of trees to the south of the brook, with the dwellings and other buildings forming the village of Chipping, lying to the south.

To the east of the barn, beyond the area of hardstanding, were further areas of open pasture and a few coppices of mature trees and shrubs, with a few dwellings and a farm to the south-east, with further fields positioned further east and south-east.

There were also a few small stretches of hedgerow and drainage ditches in the surrounding area, and these features together with nearby buildings, all offered some linear features suitable for foraging bats such as Common Pipistrelle, *(Pipistrellus pipistrellus)*, and possibly other bat species, to help them navigate and commute, and to hunt along for their insect prey, (**paragraph 1.6**).

However, in accordance with the "Bat Survey, Good Practice Guidelines" (Bat Conservation Trust 2016), it says, "A structure with one or more potential roost sites that could be used opportunistically by individual bats could be classed as roosting habitat. However, if these potential roost sites do not provide enough space, shelter, protection, appropriate conditions, and/or suitable surrounding habitat to be used on a regular basis, or by large numbers of bats (i.e., unlikely to be suitable for maternity or hibernation), then they are of low bat roost suitability", (Refer to **Appendix 2**).

The barn and its extension would fit these criteria, and as there were no really large areas of woodland, or other large bodies of open water in the nearby vicinity, the local area overall, was assessed therefore to offer only low to moderate suitability for foraging bats, primarily pipistrelle species, but it was thought that small numbers of other species could be present.

During the survey (7th February 2023), several bat boxes were found amongst the trees to the east of the site, but these appeared not to have been used by bats.

It was considered that other buildings, especially dwellings, in the surrounding area could offer greater potential as bat roosts. Bats favour heated building whilst breeding.

4. Conclusions.

4.1 In summary, during the preliminary surveys (7th February 2023), neither current, nor historic evidence of roosting bats were found in any part of the barn complex, or elsewhere within the targeted site.

4.2 The barn and its extension were in a deteriorating condition, and all parts had been empty and unheated for some time, were uninsulated, and had only been used for storage, and as such, were cold, draughty, and damp throughout most of the year, and therefore were deemed unsuitable for either daytime roosting, or breeding bats. Also, as frost and inclement bad weather was likely to penetrate the interior of the buildings in the colder months, they did not offer the optimum humidity, and constant low temperatures that are required for hibernating bats. Also, it was thought that copious mounts of daylight would enter the interior of the extension, thus reducing the daytime roosting potential in the extension further. The resulting conclusion was that the whole complex was deemed to have low roost suitability for bats, (Refer to **Appendix 2**).

4.3 None of the trees, shrubs or hedgerow, growing close to the east of the site boundary, offered any cracks, lifted bark or holes, that could be used by roosting bats of any species, and therefore, they were all concluded to offer low bat roost suitability, (refer to **Appendix 4**).

4.4 The adjacent habitats had the potential to support low to moderate numbers of foraging common pipistrelles, but large numbers of other species of bats was unlikely. It is concluded that since there is currently no evidence of the presence of bat roosts within the barn complex or any other part of the site, that any proposed modifications to the barn complex, will not have significant implications on the population status of local bat species. There will not be requirement for an EPS mitigation licence (as issued by Natural England) but as a measure of best-practice, precautionary measures should be applied as described in section 5 below.

4.5 It was also concluded that since no evidence of roosting bats, or evidence of either recent or historic bat occupation had been found during the surveys carried out on 7th February 2023, then a single visit to the site to carry out a single daylight evidence and opportunity bat survey and assessment was considered sufficient for a preliminary assessment of the site, (refer to the 'Bat Worker's Manual' (JNCC 2004) and 'Bat Surveys – Good Practice Guidelines' (BCT 2016), paragraph 8.3.4).

4.6 Since bats, particularly Pipistrelles, are opportunistic, an absence of roost evidence within the site, does not preclude the low possibility of small numbers of bats, using the site occasionally in the future and/or at other times of year. It is considered that the likelihood of a significant roost

(such as a maternity roost) being established is very unlikely, with lone and/or transient roosting likelihood being negligible.

4.7 It was understood that there may be some site clearance work carried out during the planned development, but details of what this would entail were not known at the time of the survey. It was hoped that this will be kept to a minimum, and that the trees, shrubs and hedgerows growing just beyond the eastern site boundary, will be mostly unaffected by the work, and as bats use linear features such as lines of trees or walls, as foraging, navigating and commuting routes, it was concluded that any small loss of the habitats, and any future development works on the site, would not affect the overall foraging or commuting potential for bats in the area.

4.8 All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended) while they are breeding. There was potential for the shrubbery beyond the sites' eastern boundary perimeter, to be used by birds for both roosting and nesting purposes, but neither active nor historic nests were found during the survey. It was also surmised that due to the time of year, most birds will have ceased to be breeding, (Refer to **Appendix 1**).

5. Recommendations.

5.1 The proposed changes to the barn and its extension, as laid out in the planning application, can commence with minimal risk to roosting bats or nesting birds, if the following mitigation measures are adhered to.

5.2 The aim of any mitigation is to ensure that any work is carried out in a manner that avoids harm, or significant disturbance to bats, also, to create new enhanced roosting opportunities for bats, both during and after the development. However, a key issue in successful mitigation measures, is the scheduled timing of the works. Ideally, the barn and its extension, (not considered suitable for hibernation), especially the roofs, should be worked on in winter to avoid the possibility of bats moving in and using the building as a spring, summer, or autumn roost after the survey. The safest period will be from the first hard frosts, normally mid-December, until mid-March, although this could be earlier in a warm spring or later in a cold spring.

5.3 As is likely that the bungalow and the outbuildings will be worked on at other times, it will be very unlikely that roosting bats will be disturbed. It is recommended though that work starts as soon as possible after this survey, and that any ridge tiles, slates or sheeting over walls and gables affected by the development, be carefully removed by hand, (the ridge and edge tiles, and copingstones, are the features most likely to harbour potential for the support of roosting bats).

5.4 Although the whole complex has low bat roosting suitability, it is recommended that if the building work is delayed until the middle of 2023 or beyond, then further surveys may be required, including a suitable number of evening bat emergence surveys and a possible dawn re-entry survey. Also, if more than 12 months' elapses between this survey, and any commencement of building work, then the surveys must be repeated, and these need to be carried out under weather conditions suitable for normal bat activity, and when bats are fully active (May to September but is weather dependent).

5.5 As a measure of best practice and in accord with a key principle of National Planning Policy Framework (2012), it is recommended that the re-development scheme for this site, incorporates biodiversity enhancement measures, and an appropriate measure will be the installation of some Schwegler 1FD bat boxes. These can be attached to any new dwelling after completion of the planned works. It is also recommended that further boxes are also attached to suitable trees around the overall site, at a minimum height of 4m off the ground, and that these measures are implemented as soon as possible after this survey, to maximise the opportunities for wildlife at the site, and thus achieving a biodiversity net gain, (refer to **Appendix 7** for details).

5.6 As there was some potential for both foraging bats, and also roosting and nesting birds to use the trees, shrubs, and hedges along the eastern site boundary, it is recommended that where possible, most of these should be left untouched, to encourage future bird nesting, and to maintain navigation, foraging and commuting routes for bats.

5.7 However, it must be remembered, that it is an offence to disturb active birds' nests. It is recommended therefore, that before any commencement of any tree or shrub clearance, and any new building work, that a careful survey looking for any evidence of nesting birds, is carried out. If evidence of an active bird's nest is detected, then the nest must be left undisturbed, until it is appropriately confirmed, that the young birds have fledged. It is recommended therefore, to reduce any nest disturbance, that no activity involving people or their equipment is carried out within a 4m radius of active nests. If there is any doubt, please refer to the consultant. This guidance is applicable during the bird breeding season which typically extends from March to August inclusive.

5.8 It is also recommended that some wooden nest boxes are erected around the site, amongst the shrubbery, and these will be a mixture of open fronted and hole fronted boxes, and are to be erected to mitigate for potential loss of nesting opportunities, during, and after the development, to encourage and enhance future colonisation and nesting by bird species, (refer to **Appendix 8** for details).

5.9 Close boarded fences with concrete bases are barriers to animal movement, and It is recommended, that any new perimeter fences along the boundaries are not to be sealed at their bases. Where possible, hedgerows are to be used instead, with timber post and wire fencing also serving to enforce boundary lines, without prohibiting wildlife movements. If any boarded fences are required, it is recommended that there is a 3 – 5cm gap between the wood and the ground, (greater in some locations and less in others is not a problem) so that wildlife such as hedgehog and amphibians can pass into and out of the gardens.

5.10 It is recommended that, if any tree, shrub, or hedgerow around the site perimeter is removed, pruned or disturbed during building works, all clearance and disturbance should be undertaken outside the hedgehog hibernating months, November to mid-March. If this is not possible, a suitably experienced ecologist must be present, to oversee all vegetation removal, to ensure that no hedgehogs are disturbed whilst hibernating (Hedgehogs are a UK BAP Priority species).

5.11 During the development, no hole or pit should be left uncovered over-night, to ensure that wildlife such as amphibians or hedgehogs are not trapped, and unable to escape. As such, all excavations should be checked first thing each morning, prior to the start of works that day. Any animals found within excavations should be allowed to escape and move off, or carefully removed and placed within suitable habitat cover before site works commences for the day. Alternatively, a broad wooden plank or similar can be placed in the excavation to allow animals to escape. A scaffolding board pitched at a maximum 45° angle would be ideal.

5.12 Outdoor lighting is typically a deterrent to wildlife, especially bats and nesting birds, it is therefore recommended, that any future outdoor lighting, installed during the proposed development, be screened, hooded, or positioned low at bollard level, so that it does not illuminate the roof or eaves, or nearby trees and shrubs, (refer to **Appendix 9** for details).

5.13 It should be remembered that bats are occasionally found in the most unexpected places. If any bats are found during unsupervised work, the consultant (07745 268815) or the Bat Conservation Trust (0345 1300 228), should be notified and work stopped immediately.
Failure to do so would be a criminal offence.

6. References

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7. Surveyors Qualifications

The surveyor Mike Fisher is a holder of:

- Natural England Class Licence Registration Number: 2015-10595-CLS-CLS, this is the Bat Survey Level 2 Class Survey Licence WML CL18.

- Natural England Class Licence Registration Number: 2015-10592-CLS-CLS which is the Volunteer Bat Roost Visitor Level 1 Class Survey Licence WML CL15.
- The surveyor also has a licence to disturb and take bats for scientific, educational, or conservational purposes by Countryside Council for Wales (Licence Number S085859/1)

8. Plans & Photographs

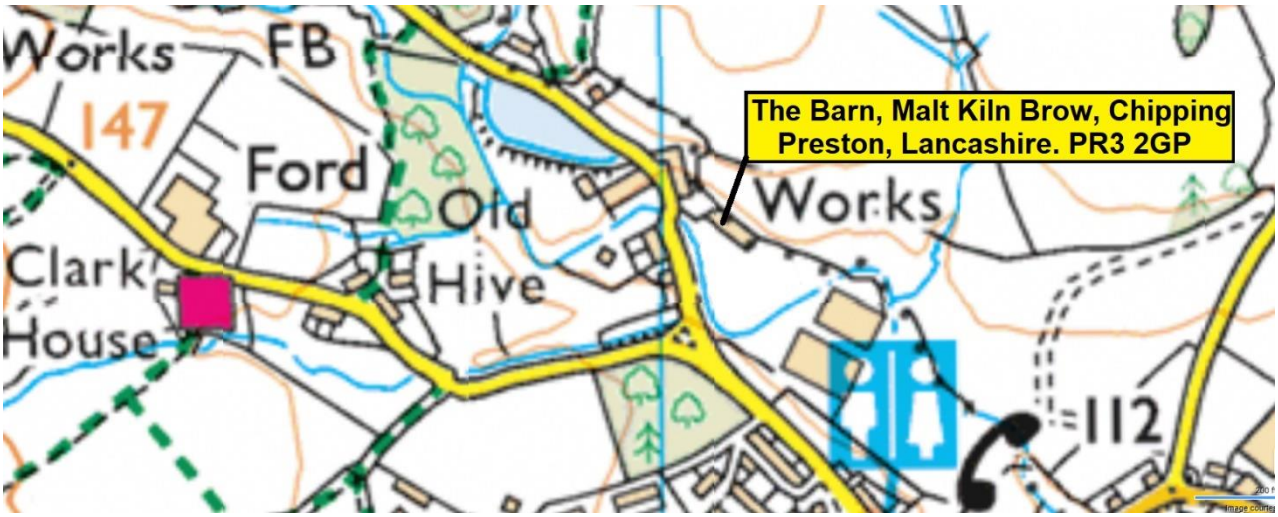

Fig 1 - The Site Location.

Fig 2 – Google Plan.

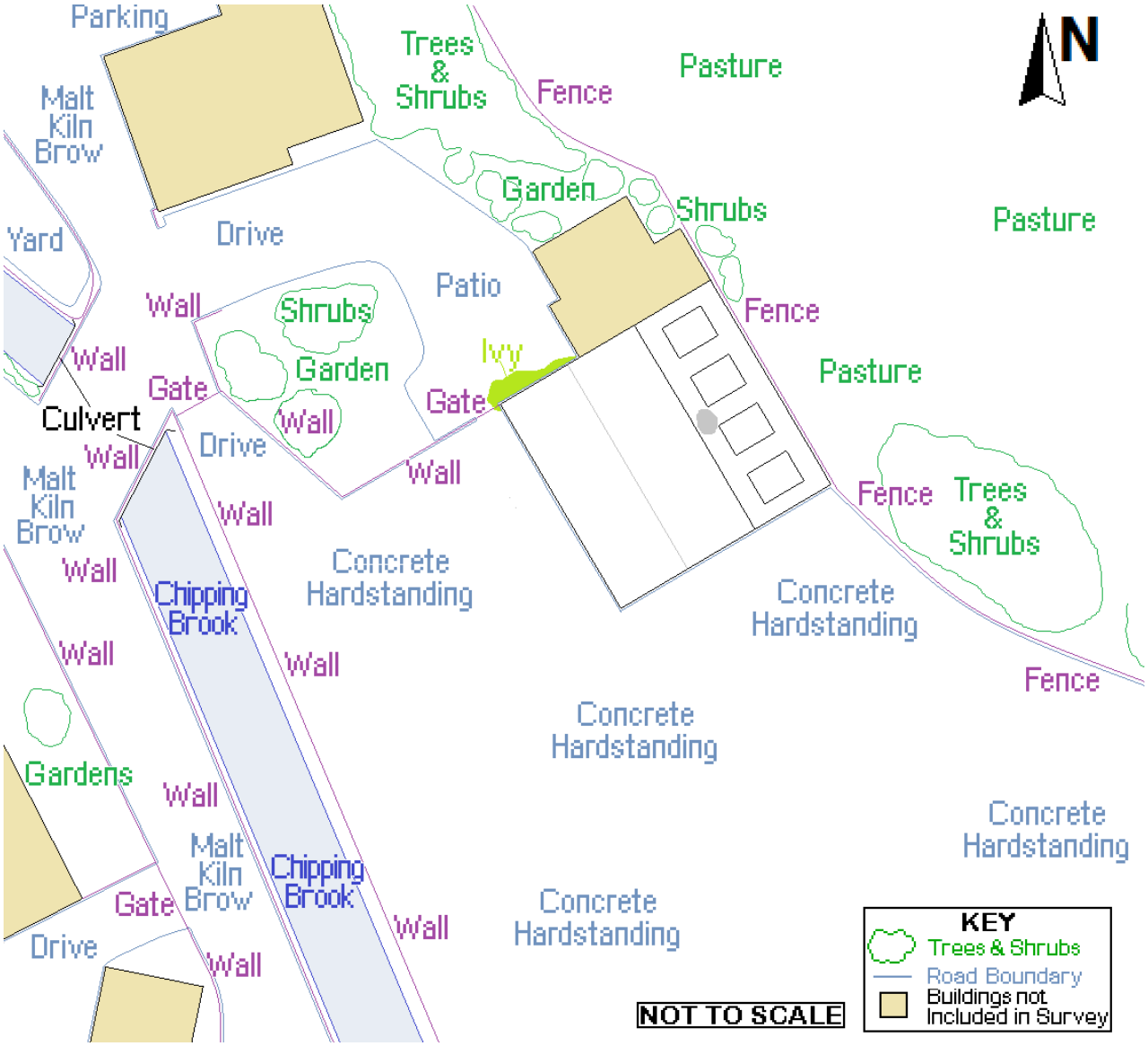

Fig 3 – Main Plan
Showing the local area and habitats.

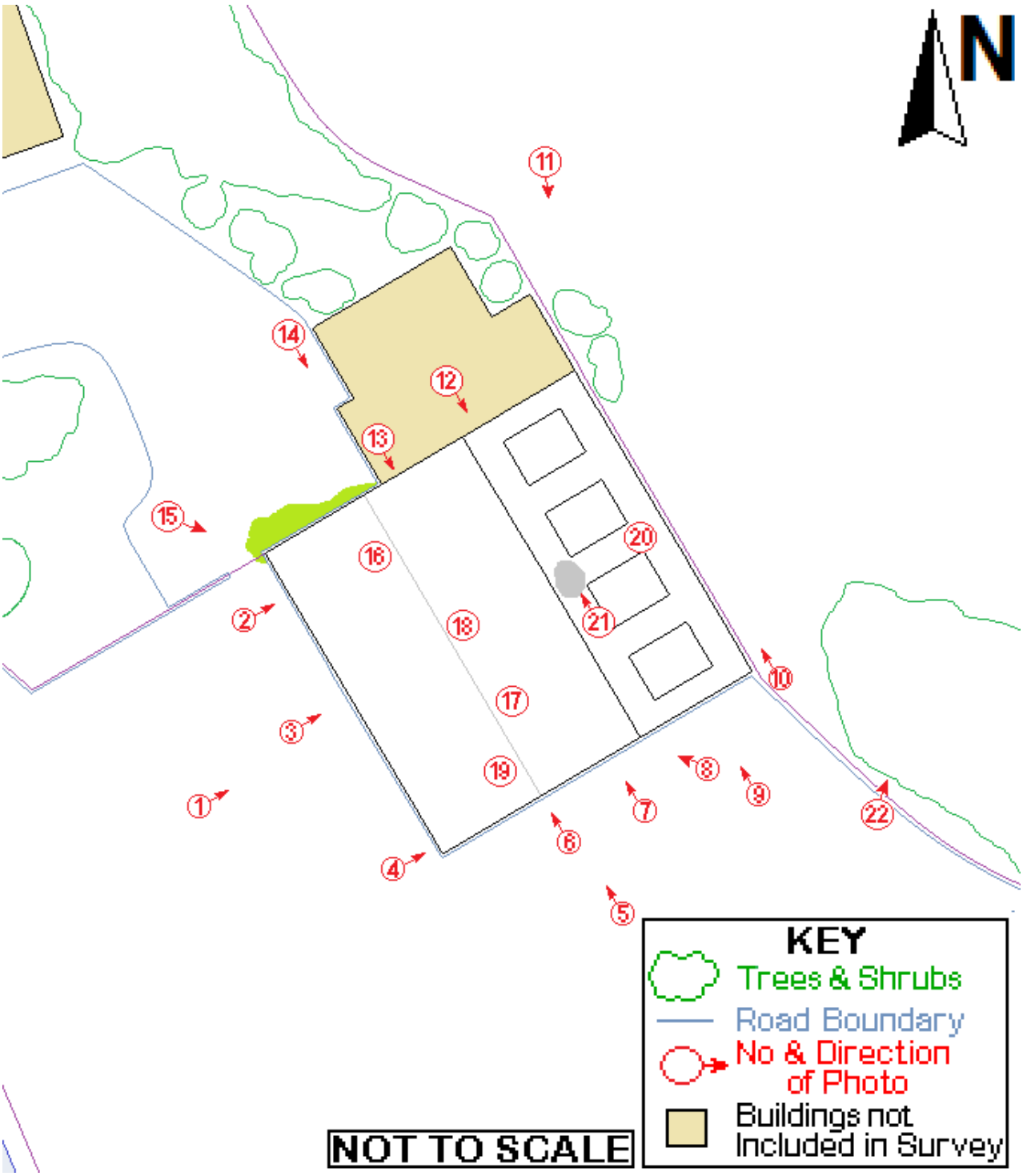

Fig 4 - Plan of Photographs.

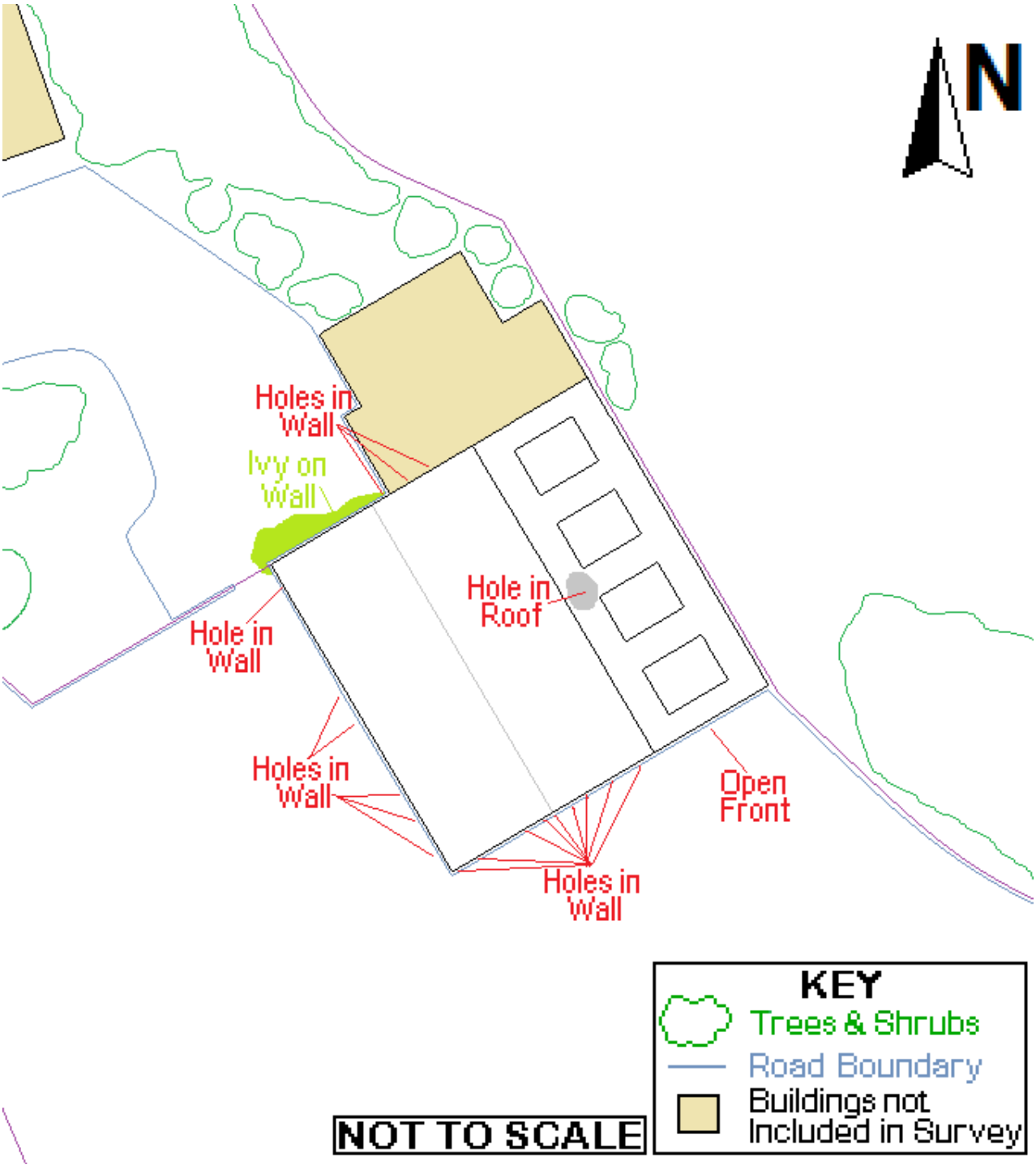

Fig 5 – Plan Showing Results of
Preliminary Daylight Evidence and Opportunity Survey and Assessment

PHOTO 1
Western Elevation

PHOTO 2
Part Western Elevation

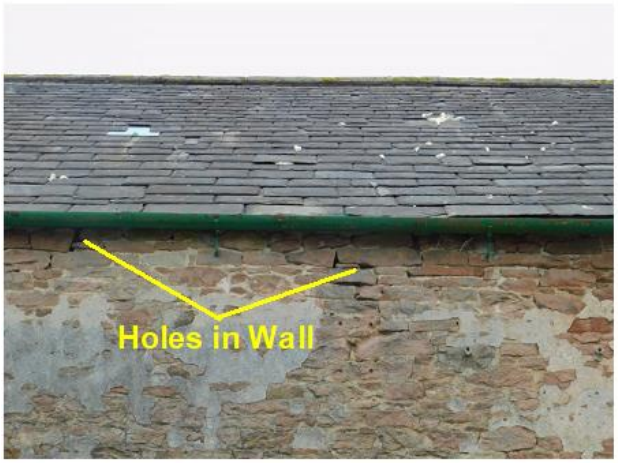

PHOTO 3
Central Upper Western Elevation

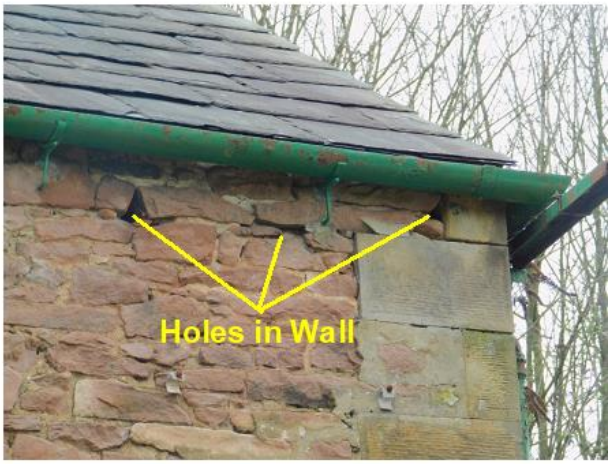

PHOTO 4
Upper Eastern Corner

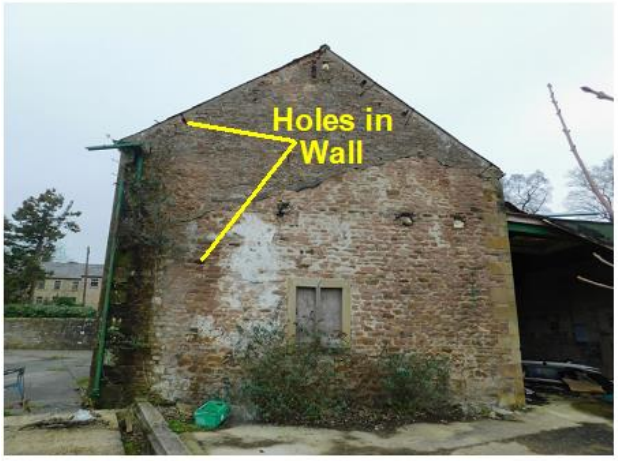

PHOTO 5
Eastern Elevation

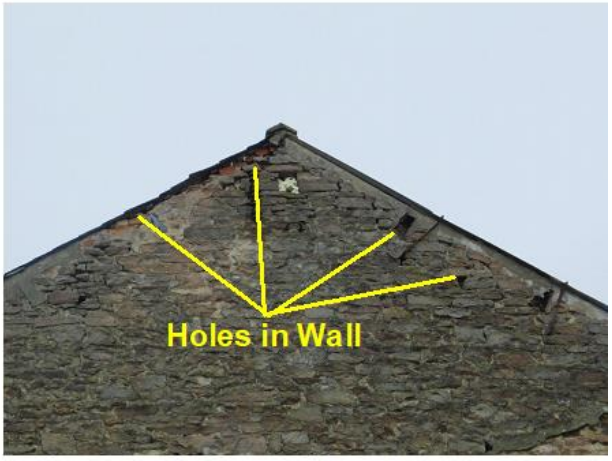

PHOTO 6
Eastern Gable

PHOTO 7
Central Eastern Elevation

PHOTO 8
North-eastern Corner

PHOTO 9
Eastern Elevation of Extension

PHOTO 10
North-eastern Corner of Extension

PHOTO 11
North-western View

PHOTO 12
Upper North-western Corner

PHOTO 13
Part Northern Elevation

PHOTO 14
Northern Elevation

PHOTO 15
South-western Corner

PHOTO 16
Underside of Northern Roof

PHOTO 17
Underside of Central Roof

PHOTO 18
Underside of Central First Floor

PHOTO 19
Underside of Southern First Floor

PHOTO 20
Underside of Extension Roof

PHOTO 21
Underside of Central Extension Roof

PHOTO 22
Bat Boxes in Trees Adjacent to Building

19th February 2023
Mike Fisher, Bat Worker
Holder of Natural England Bat Roost Licence

Disclaimer.

All reasonable effort has been taken to ensure an accurate assessment of the birds and bats at this site. The absence of recorded presence or sign should not be taken as an absolute guarantee that a site is 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 for both bird and bat activity 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 has been prepared by Echo Calls Bat Surveys with all reasonable skill, care and diligence, within the terms of the Contract with the Client.

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APPENDIX 1: Synopsis of Relevant Legislation

Bats and the Law

In Britain, all bat species and their roosts are legally protected, by both domestic and international legislation.

This means you will be committing a criminal offence if you:
Deliberately capture, injure, or kill a bat.
Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats.
Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time).
Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat.
Intentionally or recklessly obstruct access to a bat roost.

Licensing

Licenses to permit illegal activities relating to bats and their roost sites can be issued for specific purposes and by specific licensing authorities in each country. These are sometimes called 'derogation licenses' or 'European Protected Species' licenses, and are issued under the Habitats Regulations. It is an offence not to comply with the terms and conditions of a derogation Licence. If you carry out work affecting bats or roosts without a Licence, you will be breaking the law.

Who needs to take particular note of the legislation?

Property owners/householders who have a bat roost in their property.
Woodland owners, arboriculturalists and foresters.
Pest controllers.
Planning officers & building surveyors
Architects, property developers, demolition companies, builders and roofers.

Which legislation is relevant for bats and roosts?

In England and Wales, the relevant legislation is the Wildlife and Countryside Act (1981) (as amended); the Countryside and Rights of Way Act, 2000; the Natural Environment and Rural Communities Act (NERC, 2006); and by the Conservation of Habitats and Species Regulations (2010).

In Scotland, the key legislation that applies is the Conservation (Natural Habitats &c.) Regulations 1994 (as amended).

In Northern Ireland bats are listed under Schedule 2 of the Conservation (Natural Habitats etc) Regulations (Northern Ireland) 1995 and in the Republic of Ireland, under Schedule 5 of the Wildlife Act 1976 and Schedule 1 of the European Communities (Natural Habitats) Regulations 1997.

Defences include:

Tending/caring for a bat solely for the purpose of restoring it to health and subsequent release
Mercy killing where there is no reasonable hope of recovery, (provided that person did not cause the injury in the first place - in which case the illegal act has already taken place).

Penalties on conviction –

People committing bat crimes can face six months' imprisonment and/or unlimited fines. Additionally, any profits made as a consequence of not following lawful process can be confiscated and items used to commit the offences such as vehicles, plant or machinery can be forfeited.

Under the National Planning Policy Framework (2012), it is recommended that the re-development scheme for any site, protected species, such as bats should be a material consideration in planning applications. This has implications for bat foraging areas as well as their roosts.

The National Planning Policy Framework (NPPF) places a clear responsibility on Local Planning Authorities to conserve and enhance biodiversity and to encourage on the consideration that should be given to Protected Species where development may affect them.

The Office of the Deputy Prime Minister (ODPM) Circular 06/2005 provides administrative guidance on the application of the law in relation to planning and nature conservation. This is supported by a guide to good practice entitled 'Planning for Biodiversity and Geological Conservation: Building in Biodiversity' in which paragraphs 5.34 and 5.35 identify that species such as bats are highly dependent upon built structures for survival and that roosts can be easily incorporated into existing and new developments/conversions to benefit these species.

Breeding Birds

All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended), whilst they are actively nesting or roosting. Section 1 of this Act, makes it an offence to kill, injure or take any wild bird, and to intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built. It is also an offence to take or destroy any wild bird eggs.

APPENDIX 2: Bat Roost Suitability

Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.[c]	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions[a] and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

In accordance with Table 4.1 of
Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition) (Collins. J. (ed) 2016)

APPENDIX 3: Bat Survey Timings and Frequency.

Table 7.1 Recommended timings for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).

Low roost suitability	Moderate roost suitability	High roost suitability
May to August (structures) No further surveys required (trees)	May to September[a] with at least one of surveys between May and August[b]	May to September[a] with at least two of surveys between May and August[b]

[a] September surveys are both weather- and location-dependent. Conditions may become more unsuitable in these months, particularly in more northerly latitudes, which may reduce the length of the survey season.
[b] Multiple survey visits should be spread out to sample as much of the recommended survey period as possible; it is recommended that surveys are spaced at least two weeks apart, preferably more, unless there are specific ecological reasons for the surveys to be closer together (for example, a more accurate count of a maternity colony is required but it is likely that the colony will soon disperse). If there is potential for a maternity colony then consideration should be given to detectability. A survey on 31 August followed by a mid-September survey is unlikely to pick up a maternity colony. An ecologist should use their professional judgement to design the most appropriate survey regime.

Table 7.2 Recommended timings for presence/absence surveys.

Survey type	Start time	End time
Dusk emergence	15 minutes before sunset[a]	1.5–2 hours after sunset[b]
Dawn re-entry	1.5–2 hours before sunrise[b]	15 minutes after sunrise[c]

[a] Survey start time should be adjusted on subsequent surveys if bats are recorded already in flight at 15 minutes before sunset on the first survey (or, if only one survey had been planned, this survey may then need to be repeated).
[b] The possibility of late-emerging and early-returning species should be considered in setting times for surveys (see Section 3.5).
[c] If bats are still in flight 15 minutes after sunrise then ecologists should remain in position until all the bats have entered their roosts.

Table 7.3 Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).

Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey[a] (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey.[b]	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn.[b]

[a] Structures that have been categorised as low potential can be problematic and the number of surveys required should be judged on a case-by-case basis (see Section 5.2.9). If there is a possibility that quiet calling, late-emerging species are present then a dawn survey may be more appropriate, providing weather conditions are suitable. In some cases, more than one survey may be needed, particularly where there are several buildings in this category.
[b] Multiple survey visits should be spread out to sample as much of the recommended survey period (see Table 7.1) as possible; it is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk one is considered only one visit.

In accordance with Tables 7.1, 7.2 and 7.3 of
Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition) (Collins. J. (ed) 2016)

APPENDIX 4: Bat Tree Assessment Criteria

Criteria for Assessment of Trees in accordance with Category 1 to 3 as defined in Table 8.4 of *Bat Surveys: Good Practice Guidelines 2nd Edition* (Hundt, L. 2012).

CATEGORY	DESCRIPTION	CRITERIA
Known or Confirmed	Confirmed roost	Confirmed roost Evidence found that indicates tree/tree features are being used by bats. Droppings found at the base of the tree, below a cavity. Bats heard 'chattering' inside a feature on a warm day or at dusk Bat(s) observed flying from or to a feature.
1*	Very high value	Trees with multiple, highly suitable features capable of supporting larger roosts. Features of particular significance, suitable for high priority roosts such as maternity roosts, used by large numbers of bats, offering conditions that are uncommon or rare in the local area. Features such as large cavities, extensive branch or trunk splits, also including multiple features in the same tree that offer a diversity of opportunities. Features may also include dense ivy.
1	High value	Trees with definite bat potential supporting fewer suitable features than category 1* trees or with potential for use by single bats. Features which provide a more secure form of roost for small groups of bats and individuals, but may still be quite common types of feature, such as small cavities, minor splits or sparse ivy cover.
2	Moderate value	Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats. A tree which on close inspection the potential roost positions are in some way not ideal. They could be upward facing or holes very low down or cluttered by adjacent branches.
3	Low/Negligible value	Trees that have no features which could be used by bats for roosting (Usually young trees).

APPENDIX 5: Planning Considerations

When considering each planning application, the presence of protected species, such as those listed above, is a material consideration which must be fully considered by the Local Authority when granting planning permission. If a licence from Natural England is required, then prior to issuing any planning consent, the local planning authority will need to be satisfied that there is no reason why such a licence would not be issued. Therefore, in reaching the planning decision the local planning authority will need to have regard to the requirements of the Conservation of habitats and Species Regulations 2010.

The three licensing tests given in the Regulations must be considered. In summary, these are that:

1. The development is required for the purpose of:

- preserving public health or public safety,
- for other imperative reasons of over-riding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.
- for preventing serious damage to property.

2. There is no satisfactory alternative.

3. The proposal will not be detrimental to the maintenance of the population of the species at a favourable conservation status.

All necessary information would need to be provided to the planning authority as part of the planning application in order to address the above tests.

The Natural Environment and Communities Act (NERC Act) 2006 extended the biodiversity duty set out in the Countryside and Rights of Way (CROW) Act to public bodies and statutory undertakers to ensure due regard to the conservation of biodiversity. The Duty is set out in Section 40 of the Act, and states that:

"Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity".

The Duty applies to all local authorities, community, parish and town councils, police, fire and health authorities and utility companies. Section 41 (S41) of this Act (the 'England Biodiversity List') also requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. This list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40(1) of the Act.

Also, Local Authorities must follow the National Planning Policy Framework (NPPF) which provides guidance on the interpretation of the law in relation to wildlife issues and development. For each development proposal considered by the Local Planning Authority the NPPF states that the authority must aim to conserve and enhance biodiversity. If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.

APPENDIX 6: Bats: What to do should bats be found during building work

All of the UK's bats and their roosts, are protected by law, (see Appendix 1), so it is important to understand these laws**,** if you are planning any building or remedial work that may affect or disturb a bat roost. The relevant statutory authority should be initially contacted for advice**.**

Having bats roosting within a building, does not necessarily mean that work cannot be carried out. What it does mean is that the work will need careful consideration, especially in terms of time and materials, so that the area can continue to be used by both bats and people. Therefore, the earlier in the process the bats are taken into account, the less disruption to building plans there will be.

If at any point during either new building work, renovation work, or demolition, one or more bats are found, then all work being undertaken by contractors should stop immediately. All working machinery and contractors should be removed from the area where the bats have been found, and advice sought immediately from one of the following, on how to proceed while causing minimal disturbance to bats.

Advice can either be provided by a professional licensed ecological consultant - Echo Calls Bat Surveys on 07745 268815, the Bat Conservation Trust on 0345 1300 228, or from your Statutory Nature Conservation Organisation (SNCO) , or from Natural England on 01270 754 000.

Depending on the advice given, a licensed bat worker, or suitably qualified Natural England approved representative, will then be sent to site to liase with the site manager, and Natural England itself. Depending on the advice given, actions will be recommended that may include the safe removal of the bat by the nominated person, only where written or verbal permission has been gained by Natural England.

Works will recommence when Natural England are satisfied that the risk to bats has been removed. If, however, it is determined that the proposed work on site contains more risk to bats than was originally thought, then it is probable that further work will only proceed under a Natural England Development Licence.

If a bat is found under a tile, slate, flashing or any other covering material, work must stop immediately. If the bat does not fly out immediately, then the area around the roost must be carefully covered over, to protect the bat from the elements and further disturbance, leaving a small gap for bats to escape voluntarily. At this point, advice must be sought as mentioned above. The materials used to cover the occupied bat roost, must be free from liquid, oil, grease, and other contaminants.

It is recommended that the handling of bats be avoided wherever possible, but if it absolutely necessary, then to avoid a bat being harmed, gloves must be worn whilst handling the bat. It should be carefully caught, placed in a cardboard box with air holes in the lid, and a small container containing water. The box should then be kept in a very quiet, dark area, away from further disturbance, whilst awaiting the arrival of the licensed bat worker, or Natural England approved representative.

Failure to do any part of this could result in a criminal offence.

APPENDIX 7: Bats: Types of Bat Box.

The aim of any mitigation is to ensure that any work is carried out in a manner that avoids harm or significant disturbance to bats, and also to create new roosting opportunities for bats both during and after the development.

Schwegler 1FD boxes are to be erected to larger trees located along the edges of the site. This type of bat box is a “general all-rounder” and is suitable for all types of bats.

These boxes are to be erected as recommended by the Bat Conservation Trust guidelines which state that

- Ideally, erect the boxes facing so they face in different directions, to provide a range of temperature conditions. For example, boxes facing from south-east to south-west allow the sun to fall on each box for part of the day. During very hot days a south-facing box may overheat, but the other boxes should have some shade during the day.
- Bat boxes should be located close to a linear vegetation feature such as a tree line or hedgerow or to lines of buildings. Some bat species use these features for navigation between their roosting site and feeding ground and to avoid flying in open and exposed areas.
- Ensure that tree branches or other items will not impede the bats’ approach to the box – clear away underneath the box so the bats can land easily before crawling into the box.
- Boxes should be erected at a height of approximately 4m above ground level

Schwegler 1FD Bat Box

This Schwegler 1FD bat box has been developed specifically for smaller bats. The interior and the type and size of the entrance hole match the requirements of smaller species. It features a special layout inside the domed roof, an increased interior height, and two grooved internal wooden front panels with precise spacing between them.

This model has proved highly effective as a nursing area.

Occupants: Small bats such as the Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Daubenton`s Bat (Myotis daubentonii) and Common Long-eared bat (Plecotus auritus).

APPENDIX 8: Nesting Birds: Mitigation and Compensation Measures.

Birds are declining throughout the country due to loss of roost and nesting places, and as the development may disturb nesting potential on the site, artificial nests are to be erected to compensate for this possible loss. The erection of artificial nests around the complex, will provide alternative sites for all three species of bird, and make a positive contribution to their conservation.

Making a nestbox suitable for robins and other box builders

What you need

Natural nest holes do not come in standard sizes, so use these dimensions only as a guide. Any plank or sheet of about 15 mm thick weatherproof timber is suitable. However, do not use CCA pressure-treated timber, since the leachates may harm birds. Cut each section as per our plan, which you can download by clicking on the link to the right.

Dimensions

The plan gives measurements for a small and a large box. Use only the first or the second figure throughout. For starlings and great spotted woodpeckers, use the dimensions for the large box; all the others need the small one.

The bottom of the entrance hole must be at least 125 mm from the floor of the nestbox. If it's less, young birds might fall out or be scooped out by a cat. The inside wall below the entrance hole should be rough to help the young birds to clamber up when it's time for them to leave.

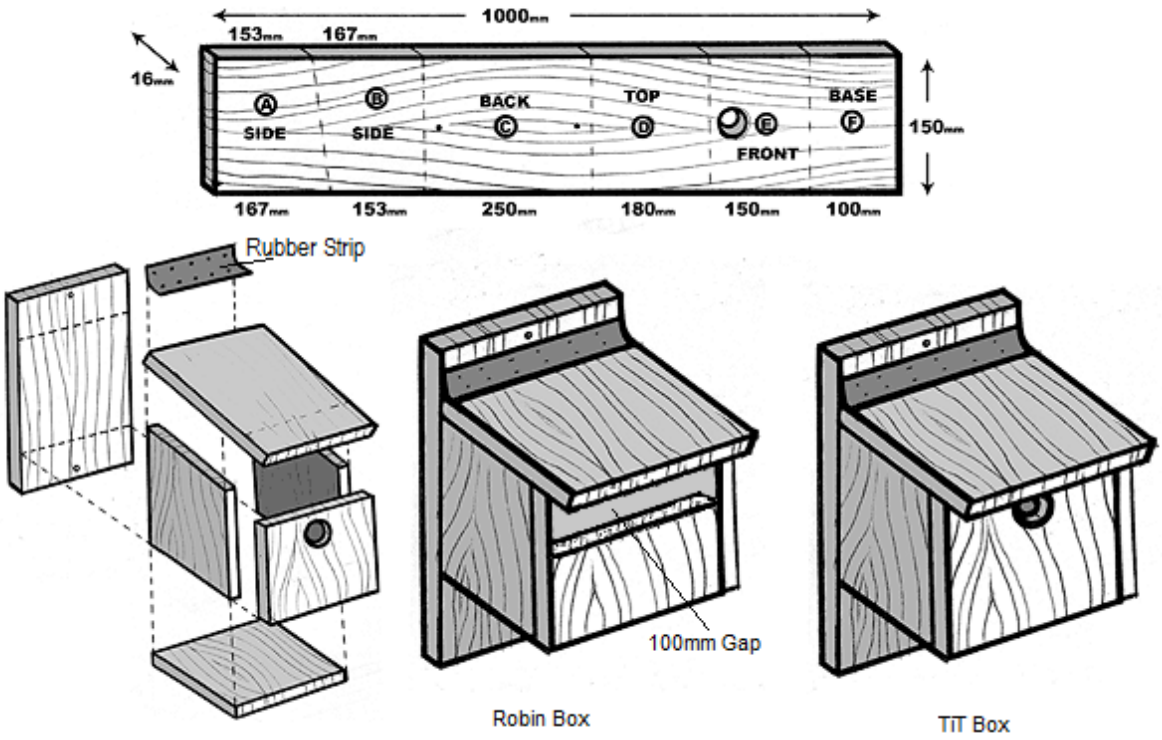
Putting it together

Drill drainage holes to the base of the box, and use galvanised nails or screws to assemble. It's always best to leave the box untreated. As it weathers, it will blend into its surroundings. Softwood boxes can be treated with selected water-based preservatives, which are known to be safe for animals, such as Sadolin. Apply it only to the outside of the box, and not around the entrance hole. Make sure the box dries and airs thoroughly before you put it up.
A woodpecker box should be filled with a block of balsa wood, rotting log or wood chips – woodpeckers like to excavate their own nesting cavities.
Do not nail down the lid since you will need to clean out the box in the autumn. Attach the lid with a brass or a plastic hinge that will not rust, or hinge it with a strip of leather or rubber (an old piece of bicycle inner tube will do). Fasten it down with a good catch.

How big does the hole need to be?

The entrance hole size depends on the species you hope to attract:
25 mm for blue, coal and marsh tits
28 mm for great tits, tree sparrows and pied flycatchers
32 mm for house sparrows and nuthatches
45 mm for starlings

The small box with 100 mm high open front may attract robins, or pied wagtails. A wren would need a 140 mm high front panel, while spotted flycatchers and blackbirds prefer a low 60 mm front to the box.


1000mm
153mm
167mm
16mm
A
SIDE
B
SIDE
BACK
C
TOP
D
E
FRONT
BASE
F
150mm
167mm
153mm
250mm
180mm
150mm
100mm
Rubber Strip
100mm Gap
Robin Box
TIT Box

APPENDIX 9: Bats and Lighting.

The detailed lighting plan on-Site should be functional and directional and in line with current guidance (BCT and ILP, 2018). Habitat retained, enhanced or planted for roosting, foraging and/or commuting bats will need to be considered within a suitable lighting plan in order to be used by bats. Where designing with bats in mind:

- Light emitting diodes (LED) should be used, as these typically feature no UV component and as a result are less attractive to invertebrates and less disturbing to bats;
- Only luminaires with 0 % upward light ratio should be used and fitted on the horizontal to avoid excessive up-lighting, back lighting and light spill onto boundary hedgerows and trees;
- A warm white spectrum (ideally under 2700 Kelvin) should be used in order to reduce blue light component, therefore reducing the number of invertebrates attracted to the lights;
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill;
- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered, although this has certain drawbacks and should only be used as directed by a lighting professional;
- Column heights should be carefully considered to minimise light spill;
- Any external security lighting should be set on motion-sensors and short (e.g., 1 minute) timers;
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats;
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed;
- Where habitat needs to be unlit (e.g., important foraging and commuting corridors/roost sites), illuminance should be below 0.2 lux on the horizontal plane and below 0.4 lux on the vertical plane.