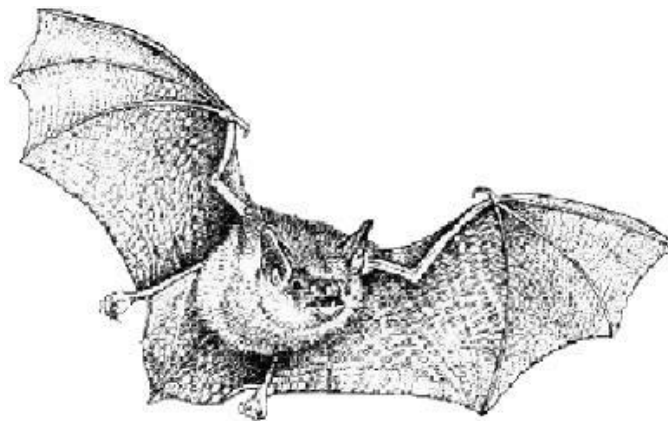


**Cunliffe House Cottage,
Longsight Road,
Langho,
Blackburn,
Lancashire.
BB6 8AD**

**Preliminary Ecological Appraisal
in respect of Protected/Notable Species Including
Bats 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

16th December 2024

1. Introduction.

1.1 Reason for Survey.

As part of the process to obtain planning permission to develop the site, a preliminary ecological appraisal, including a daylight evidence and opportunity bat survey and assessment, and also a current bird nesting survey, were undertaken. The purpose of these surveys was to provide evidence on habitats, and protected/notable species, present within the site boundaries, as part of the Local Development Framework (UDP Policy EN9), and Core Strategy Policies, CG1 and CG3.

1.2 Survey Aims.

- the Local Planning Authority, on the nature conservation value of the site, and its 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 in relation to the proposed project, and any future development in the site.
- To establish the need for any further surveys and assessments.
- To make nature conservation recommendations, and identify opportunities for ecological enhancement and biodiversity gain within the proposals.
- To identify the need for a Natural England Bat Development Licence (required if a roost is identified).

1.3 The Site.

The site consisted of a large, hipped, detached former farm building split into different dwellings, but only the eastern part of this complex was targeted in the current application, and this consisted of the cottage, with an attached extension and outhouse. The western part of the dwelling was not surveyed at this time.

It was surrounded by other buildings of various sizes and uses, all positioned upon a large area of hardstanding, used mainly for vehicle parking, all connected to the southern edge of the nearby Longsight Road, by a slip road called The Rydings, in the Langho area of Blackburn in Lancashire. The targeted cottage complex, and the surrounding land from now on, are referred to as the “site”, at OS grid reference: SD 69268 34216, (refer to **Fig 1 - The Site Location**).

1.4 The Buildings.

The cottage complex was positioned centrally within the overall site, however only the eastern part of the building was targeted within the current planning application and therefore only the cottage, its extension and outhouse, were surveyed. However, the western part of the complex, and all of the other nearby buildings were not currently surveyed, as they were not a part of the current planning application.

1.5 Surrounding Area.

The cottage complex was arranged in an approximate south-east to north-westerly orientation, and was the eastern half of a former farm building, with a small, walled-in patio area along the southern



site boundary, with areas of vehicle parking and hardstanding to both the east and north of the cottage, with the other unsurveyed part of the complex being the overall western site boundary.

The cottage was positioned in the north-western corner of what was once a working farm, with a shelterbelt of mature trees running in a north to south direction, growing close to the western site border. Large fields of open pasture lay beyond this, running in a westerly direction, most bordered by lines of hedgerow, and with a few isolated buildings lying amongst them, all alongside a hedge bordered, car parking area and the football pitches belonging to Langho Football Club, approximately 0.22 km to the south-west of the site.

Immediately to the north of the site, running through an area of woodland was the link road called The Rydings, which connected the former farm, to Longsight Road which ran in an east to west direction, about 0.17 km to the north of the site. Beyond the road to the north and alongside the mature Cunliffe House Wood, were vast expanses of open pasture, bordered by lines of fragmented hedgerow, and the odd farming complex, together with Park Brook meandering in a west to east orientation, about 0.76km to the north of the site at its nearest point. and having a few drainage ditches flowing into it from the neighbouring fields.

Immediately to the east of the targeted cottage was a large area of vehicle parking, with numerous buildings belonging to Cunliffe Hall Farm, placed on all sides around the outside of the area, which were currently being used for a number of purposes, with large areas of open pasture beyond to the east, with the grounds and buildings belonging to Langho Swimming School, lying 0.05 km to the east of the site, with more pasture beyond.

Located beyond the southern boundary were areas of fields and paddock being used for horses, all bordered by fencing, together with the odd draining ditch alongside, and with an active railway line running from the south-west to north-east about 0.41 km to the south of the site, at its nearest point, and with hedgerow and a few trees growing along its embankments. Beyond the railway to the south were open areas of pasture, bordered by fragmented hedgerows alongside drainage ditches, with the village of Langho positioned 0.75 km to the south-east of the site, at its nearest point, running in an easterly direction, containing a mixture of housing, retail shops, gardens and open area containing some trees and shrubs.

At a few locations within the surrounding area, were other drainage ditches and a couple of ephemeral ponds, together with the odd tree growing amongst the pastures, but other than all of these above mentioned features, there were no large areas of open water nearby, nor other areas of woodland in the surrounding area, (refer to **Fig 1 – The Site Location**, **Fig 2 – Google Plan**, **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 easy, and the majority of the external elevations of the building and its extensions, could be surveyed without restriction.

The cottage complex was in a reasonable condition, and there were no more hazards, other than those normally associated with surveying both the inside and outside of this type of building and the surrounding areas.

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.

Preliminary Ecological Appraisal.

The preliminary ecological appraisal (PEA) of the site, took place on 4th December 2024, and was carried out in order to assess the site, and search for evidence of any bat occupation, (including recent and historic roosting), and if possible, what species if any, of bat were present. The current survey was undertaken in accordance with the standard methods described in the 'Bat Worker's Manual' (JNCC 2004) and 'Bat Surveys – Good Practice Guidelines' (BCT 2023). in order to assess the site to determine its suitability for bats,

It comprised a Daytime Bat Walkover (DBW), including a daylight evidence and opportunity survey and assessment, on the targeted buildings, and these were searched for evidence of bat occupation, (including recent and historic use), looking for either bats themselves, bat droppings, urine stains, remains of any invertebrate prey, or any grease marks from repeated contact, or passage by bats through narrow roost accesses, or any other signs of bat occupation.

Areas of the targeted buildings searched were:-

- Outside, both the cottage, its extension and attached outhouse, the eaves, soffits, walls, and roofs, for signs of potential bat access holes, also searching the ground, doorways, and any other nearby surfaces such as garden walls, refuse bins, building materials, toys, or garden furniture, which occurred underneath the eaves, or around the perimeter of the buildings, all of which may catch bat droppings.
- Inside all parts of the complex, within any roof voids, upon roof trusses, on the floors, door lintels, window ledges, or on furniture, pieces of equipment and other stored materials, also looking in spiders' webs and other places where droppings or prey remains may collect. Also, noting any noises such as scratching and squeaking which may be made by roosting bats.

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 ecological surveys 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 or shrubs, 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 close-focus binoculars, cameras, endoscope, ladders, powerful hand-held torches, and a separate Darkbeam LED ultraviolet flashlight.

3. Results.

3.1 Daylight Survey.

3.1.1 Weather.

At the time of the survey, the weather conditions on 4th December 2024, were good. It was dry with some cloud, and a moderate breeze, (Beaufort Scale 4), and with a temperature taken during the survey of 8°C, such conditions were good for a survey of this type.

3.2 Possible Roost Sites.

3.2.1 The Cottage and Attached Extension.

The two story cottage complex was the eastern half of a large, “L” shaped, hipped, former farm house, and was attached externally to the western part of the dwelling, however, the western part itself was not surveyed as it was not part of the current planning application, and only the eastern halves of the cottage and its extension were examined.

The targeted cottage was constructed entirely from brick, however the southern elevation of the cottage, had been cladded in stone. The roof of the cottage was covered externally in slate, and the underside of the tiles had been underlined internally as the former roof void had been converted into a second floor fully heated and occupied flat.

The cottage extension was attached externally and internally to the northern elevation of the cottage, and was a single storied, rectangular building, with the lower walls being built from brick, and the upper walls consisted of UPVC frames which housed the windows and doors, and with a sloping roof covered in slates mounted upon timber beams and purlins, all underlined with plywood boarding but with no roof void.

All parts of the cottage and its extension were structurally sound, being in excellent condition, well sealed and maintained, and all of the windows, doors, gable, and the cladded wall. soffits and roofs, were also well maintained, with little sign of deterioration. A complete search of the all parts the complex found neither bat droppings, any invertebrate prey remains, nor was any fur grease or urine staining observed, and as all parts of the cottage complex were deemed to offer very few opportunities for roosting, the whole complex therefore was judged to be of low bat roost suitability, (refer to **figs 3, 4, and 5**, and **photos 1 to 20**).

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

- All along the southern elevation at ground floor ceiling level, was a pitched dormer roof of slate, mounted over two dormer windows, and also the cottage entrance door, but there was no roof void, nor any insulation. However, at a few locations where the roof attached to the cottage wall, the lead flashing had lifted, and several roof tiles had slipped, but a search around the edges of the tiles, the lifted flashing, and the roof itself using close-focus binoculars, and an endoscope, found neither bat droppings or any other visible evidence of bat roosting, and a search of the all parts of the dormer roof and nearby walls in light produced by an LED ultraviolet flashlight, no indication of bat urine stains was seen, and therefore the gaps around the lifted flashing and the slipped tiles, were all deemed to be of negligible bat roosting suitability, (refer to **figs 3, 4 and 5**, and **photos 1 to 3**).

- A small area of timber had lifted beneath the underside of the dormer roof, but a search the resulting gap and the floor beneath it, found neither bat droppings, any invertebrate prey remains, nor any fur grease or urine staining discovered, and therefore the gap was deemed to be of negligible bat roosting suitability, (refer to **figs 3, 4 and 5**, and **photo 4**).
- At the eastern end of the dormer roof at the south-eastern corner of the cottage, there were gaps beneath several roof slates but a search of these using an endoscope and UV flashlight, found no bat droppings, or any type of staining, and therefore these gaps were all judged to be of negligible bat roosting suitability, (refer to **figs 3, 4 and 5**, and **photo 5**).
- There were two vent holes found in the brickwork, one of these was located at the upper south-eastern corner of the eastern elevation, whilst the other was at the upper south-eastern corner, again in the eastern elevation, and an internal search of these found both to be meshed internally, and as there was neither staining, droppings or any other form of bat roosting evidence found, both of these were thought to offer negligible bat roosting suitability, (refer to **figs 3, 4 and 5**, and **photos 7 to 9**).
- At the upper, north-eastern corner of the eastern elevation, some of the mortar parging at the edge of the roof had become loose and fallen away, and the resulting holes were searched using close-focus binoculars, but neither bat droppings, any insect invertebrate remains or grease fur stains found, Nor was any bat urine staining signs found when the whole area was surveyed in the light produced by an ultraviolet flashlight, and therefore neither of these holes was thought to offer any bat roosting suitability, (refer to **figs 3, 4 and 5**, and **photos 14**).

The Outhouse.

The outhouse was attached externally to the eastern elevation of the cottage, and this was a rectangular single storied building, constructed from brick, with a sloping roof covered in uninsulated slates, with no roof void.

It was positioned in a west to east orientation, and other than a toilet, the outhouse was empty, but although it was in good condition, it was cold, damp, uninsulated and unheated, and was therefore concluded not to offer opportunities for either daytime roosting bats, or breeding bats. Also, as frost and inclement bad weather were both very likely to penetrate the interior of the outhouse in the colder months, it did not offer the optimum humidity, and constant low temperatures that are required for hibernating bats, and as neither bat droppings or invertebrate prey remains, nor any other evidence of bat occupation was found during the survey, the outhouse was judged to be of low bat roost suitability, (refer to **figs 3, 4 and 5**, and **photos 6, 8 to 13, 15 and 16**).

There was a potential bat access point however, and this was:

- There was a vent in the southern elevation, but a search of the fan, and its housing, both internally and externally, found the vent to be sealed internally, and therefore there was negligible bat roosting potential within the building, (refer to **figs 3, 4 and 5**, and **photo 10**).

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

During the survey, no evidence was found to suggest that any part the cottage complex, nor anywhere else within the nearby site, had been used either currently, or historically, by any nesting or roosting birds. It was also surmised that due to the time of year, most birds will have already ceased breeding, and their young will have fledged and dispersed, (Refer to **Appendix 1**).

3.2.3 Trees and Shrubs.

There were a few trees and shrubs growing beyond the site boundaries to both the east, west and north of the cottage complex, and where possible these were all inspected for signs of potential bat roosting suitability. However, none were found to have any lifted bark, canker damage, or any cracks or holes suitable for roosting bats, and as such, all were judged to be Category 3 (of negligible value for roosting bats) in accordance with **Appendix 4**.

It was thought likely that the overall complex and some of the nearby features, could be used by nesting birds during the 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 have ceased breeding some time earlier in the year, (Refer to **Appendix 1**).

3.2.4 Foraging Potential and Alternative Bat Roost Potential.

The site was in a suburban area, and consisted of the targeted cottage, its extension or outhouse, all positioned in an approximate south-east to north-westerly orientation, in the north-western corner of what was once a working farm, and these were all parts of the eastern half of a former farm building, with the other unsurveyed part of the complex was positioned along the overall western site boundary.

Along the southern boundary of the targeted site was a small walled-in patio area, with areas of vehicle parking and hardstanding and with part of Cunliffe Hall Farm lying a short distance away to the south. With areas of fields and horse paddocks, bordered by fencing together with the odd draining ditch, stretching southward until they reached a railway running from the south-west to north-east with some hedgerow and a few trees growing along its embankments. Beyond the railway further south, were open areas of pasture, bordered by fragmented hedgerow alongside drainage ditches, and with the main village of Langho positioned to the south-east of the site, running in an easterly direction.

To the west of the site was a shelterbelt of mature trees running in a north to south direction, with numerous large fields of open pasture beyond this, running in a westerly direction, whilst to the north of the site, running through an area of woodland, was the link road called The Rydings, which connected the former farm to Longsight Road to the north of the site. Beyond this further north, alongside the mature Cunliffe House Wood, were vast expanses of open pasture, bordered by lines of fragmented hedgerow, and containing the odd farming complex, together with Park Brook which meandered in a west to east orientation, positioned to the north of the site, and with a few drainage ditches flowing into it from the surrounding fields.

Immediately to the east of the targeted cottage complex was a further area of vehicle parking, with numerous buildings also belonging to Cunliffe Hall Farm, around the boundaries, with more large areas of open pasture further east

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 cottage, its extension and outhouse, all fitted these criteria, and although the land surrounding the site was assessed to provide a low value foraging and commuting habitat for bats, there were no other large areas of woodland, or sizable bodies of open water in the nearby vicinity, and therefore the local area overall, was assessed to offer only low to moderate suitability for foraging bats, primarily common pipistrelle species, but it was thought that small numbers of other species could be present.

It was thought likely that the overall area could be used by nesting birds, particularly during the next nesting season, but at the time of the survey, there were neither historical nesting evidence, or currently active nests found, and although there was some bird activity observed nearby, it was concluded that due to the time of year that the survey was undertaken in, it was thought likely that the majority of birds will already have had their broods, and their young will have fledged and dispersed.

Although the surrounding habitat of open pastures, lines of trees and hedgerow, offered good foraging potential for barn owl, however, the whole of the targeted complex, and the surrounding buildings, offered negligible breeding or roosting potential for barn owl. As no evidence of roosting barn owls was in fact observed in any part of the targeted site, it was concluded that barn owls do not use the site, either as a regular nesting roost, or as a breeding roost.

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

4. Conclusions.

4.1 In summary, during the preliminary ecological assessment, including an evidence and opportunity bat survey, carried out on 4th December 2024, neither current, nor historic evidence of roosting bats were found in any part of the cottage, its extension, out house, or elsewhere within the overall nearby site.

4.2 The cottage complex was currently fully occupied, heated and insulated, and was in a reasonable condition, being well-maintained, with well-sealed walls, windows, doors, soffits, and roofs, but with negligible roosting opportunities, and therefore it was concluded that the complex overall was of low bat roosting suitability, (Refer to **Appendix 2**).

4.3 None of the trees, shrubs or hedgerow, growing close by around parts of the site boundaries, offered any cracks, canker damage, or 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 was concluded that since there was currently no evidence of the presence of bat roosts within the cottage, its extension or outhouse, nor within any other part of the nearby site, that any proposed modifications to the site, 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 current evidence of roosting bats had been found during the preliminary assessment, including an evidence and opportunity survey, carried out on 4th December 2024, then the single site visit was considered sufficient for a preliminary appraisal of the site, (refer to the 'Bat Worker's Manual' (JNCC 2004) and 'Bat Surveys – Good Practice Guidelines' (BCT 2023)).

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 thought possible that there may be some future 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 however, that this will be kept to a minimum, and that the hedgerows and

trees growing close to the site boundaries, 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 trees and shrubs within the site, and the shrubbery and hedgerows around the sites' perimeter, to be used by birds for both roosting and nesting purposes, but neither active or historic nests had been found during the surveys. It was also surmised that due to the time of year, that the majority of birds will have already completed breeding, and the young will have fledged and dispersed, (Refer to **Appendix 1**).

5. Recommendations.

5.1 The proposed changes to the site as laid out in the planning application, are of minimal risk to either roosting bats or nesting birds, and therefore, development can commence 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 cottage complex, (not considered suitable for hibernation), especially its 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 However, as it is likely that different parts of the building and the surrounding site, may be worked on at separate times, it will be very unlikely that roosting bats will be disturbed, but it is recommended that work starts as soon as possible after this survey, and that any ridge tiles, slates or hanging tiles over roofs, walls and gables, are carefully removed by hand, (the ridge, edge and hanging tiles, are the features most likely to harbour potential for the support of roosting bats).

5.4 Although all parts of the cottage and its extensions, had low bat roosting suitability, in accordance with "Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition) Collins, J. (2023)". it is recommended that if building work is delayed until more than 12 months between these surveys and any commencement of any building work, then the surveys must be repeated, and these need to be carried out under weather conditions suitable for normal bat activity (May to September), and must include both a daytime evidence and opportunity bat survey and assessment, and potentially at least one evening nocturnal bat activity and emergence survey.

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 will be attached to the planned building after completion of the building works, and placed as close to the eaves, or a gable apex as possible. Others are to be erected upon the trees around the site, and any other nearby suitable buildings after the completion of the modernisation. These should be at least 4 metres off the ground, and away from windows or doors, and any climbing plants, to keep the inhabitants of the boxes safe from predators, and disturbance. Also, it is recommended that these measures are implemented to maximise the opportunities for wildlife at the site and obtain a nett gain in biodiversity, (refer to **Appendix 7** for details).

5.6 As there was some potential for foraging bats, and also for roosting and nesting birds to use the odd tree or shrub growing around the site, and also amongst the hedges along the western, northern and the eastern site boundaries, it is recommended that where possible, 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 3m 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 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. 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 for this.

5.9 During the development, 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 are carefully removed and placed within suitable habitat cover before site works commences for the day.

5.10 It is also recommended, that if any piles of building materials around the site are removed, or disturbed, during building works, then this ideally should be undertaken outside the hedgehog hibernating months, November to mid-March. If this is not possible however, a suitably experienced ecologist must be present to oversee all removal, to ensure that no hedgehogs are disturbed or harmed, whilst either hibernating or daytime nesting, (Hedgehogs are a UK BAP Priority species).

5.11 Once all building work has been finally completed within the site, then a full careful search needs to be carried out, amongst any remaining piles of building equipment, or materials, to ensure that neither nesting birds, hedgehogs, or other animals, are disturbed or hurt. Once this has been carried out successfully, only then, can the removal of all materials from the site be carried out.

5.12 It is also recommended that at least one Eco-plate Hedgehog Box should be positioned in the site, in an appropriate location close to the western site boundary, to maximise the opportunities for hedgehog within the site, (refer to **Appendix 9** for details).

5.13 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 or concrete fences are required, it is recommended that there is a 13 cm square gap between the wood and the ground, (greater in some locations and less in others is not a problem), or if this is not possible, then "hedgehog highways" are to be placed within the overall boundary at regular intervals so that wildlife such as hedgehog and amphibians, can pass into and out of the garden, (refer to **Appendix 10** for details).

5.14 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 in accordance with "Bats and Artificial Lighting at Night", guidance which has been produced by the Institute of Lighting Professionals in conjunction with the Bat Conservation Trust, (refer to **Appendix 11** for details).

5.15 To enhance the site's value for wildlife, it is recommended that trees be planted to replace any felled trees, and this is planned as part of the development, and that the trees used for re-planting are British native trees as far as is possible. These trees are more likely to attract insects and are therefore beneficial to foraging bats and other wildlife. Suitable species include: Hawthorn, Rowan, Wild Cherry, Guelder Rose and Crab Apple. These have been chosen for their attractive blossom and fruits. Oak, Ash and Willow species are recommended away from buildings and drains

5.16 It should be remembered that bats are occasionally found in the most unexpected places. If any bats are found during unsupervised work, work must be stopped immediately, and either the consultant (07745 268815), or the Bat Conservation Trust (0345 1300 228), or Natural England (01270 754 00), should be notified, (refer to **Appendix 5** for details). **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

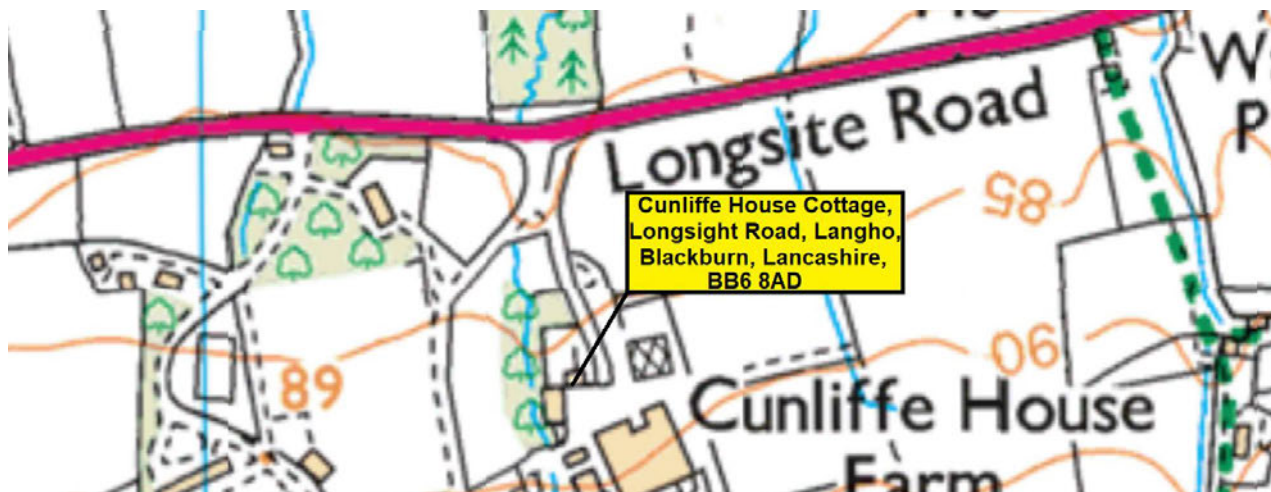


Fig 1 - The Site Location.



Fig 2 – Google Plan.

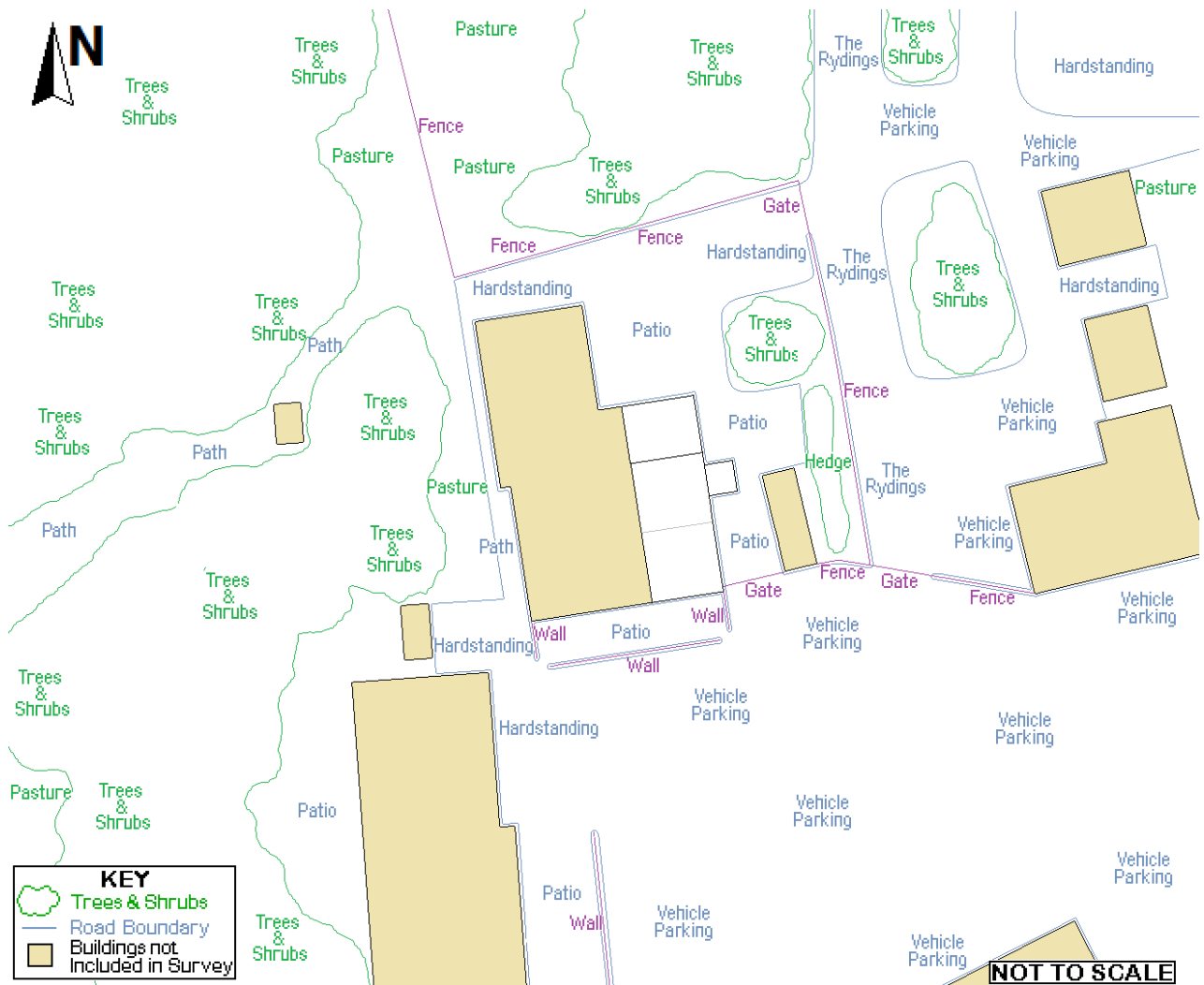


Fig 3 – Main Plan
Showing the local area and habitats.

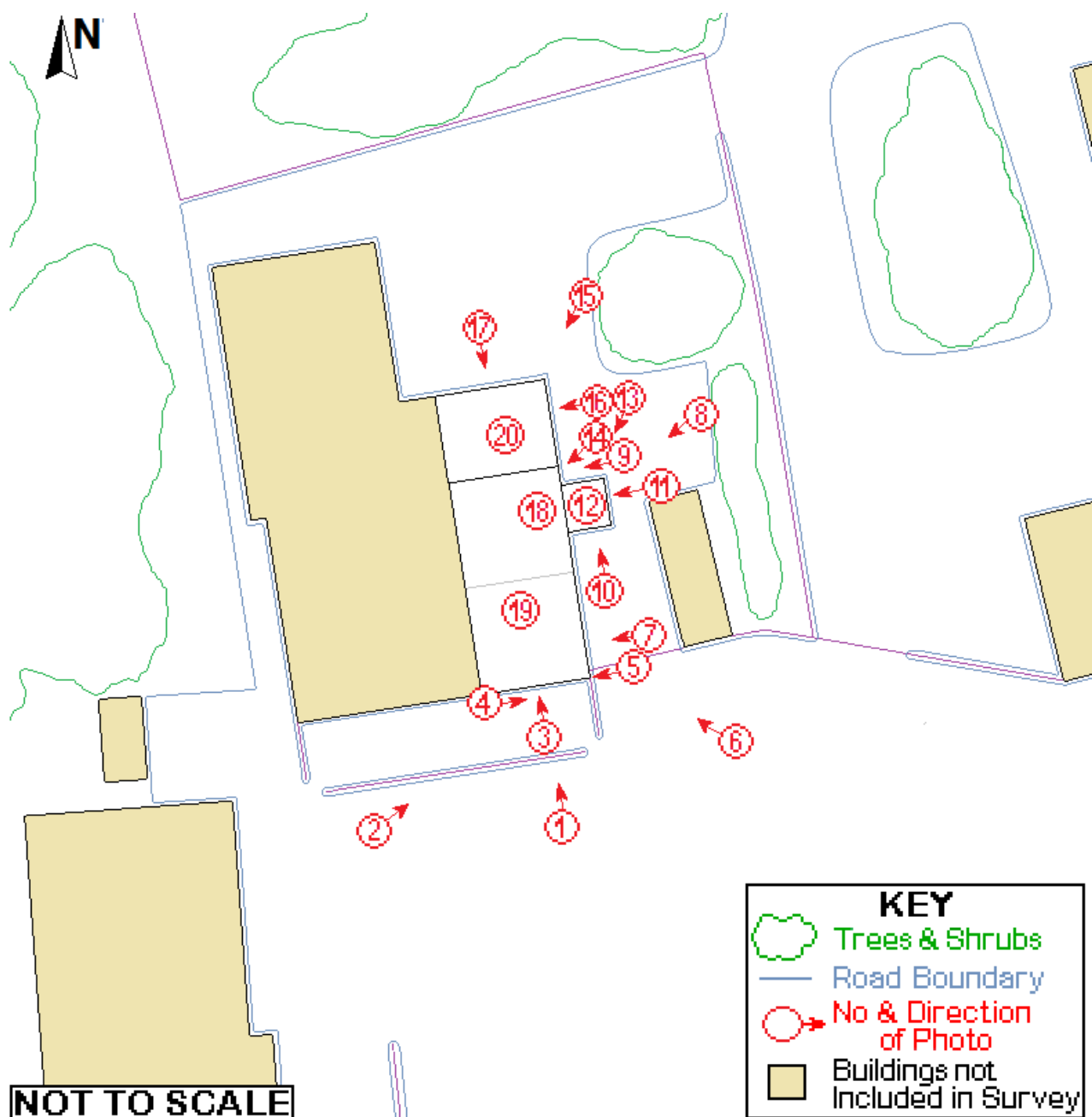


Fig 4 - Plan of Photographs.

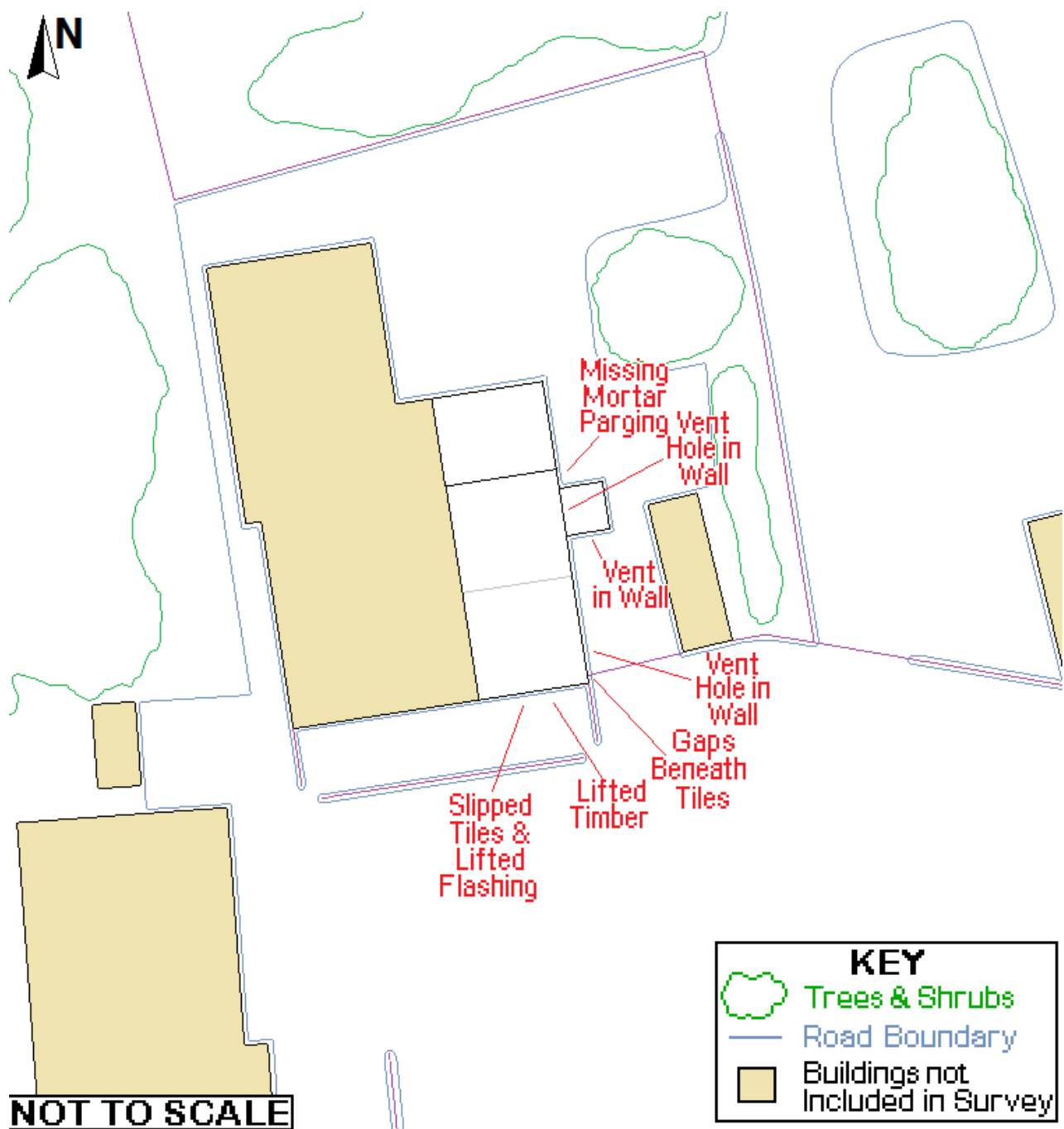


Fig 5 – Plan Showing Results of Preliminary Daylight Evidence and Opportunity Survey and Assessment.



PHOTO 1
South-eastern Corner



PHOTO 2
Southern Elevation



PHOTO 3
Part Central Southern Elevation



PHOTO 4
Underside of Southern Porch



PHOTO 5
South-eastern Corner of Porch



PHOTO 6
Western Elevation



PHOTO 7
Upper South-eastern Elevation



PHOTO 8
North-eastern Corner



PHOTO 9
Upper North-eastern Elevation



PHOTO 10
Southern Elevation of Outhouse



PHOTO 11
Eastern Elevation of Outhouse



PHOTO 12
Underside of Outhouse Roof



PHOTO 13
Northern Elevation of Outhouse



PHOTO 14
North-eastern Edge of Roof



PHOTO 15
North-eastern Corner of Complex



PHOTO 16
Eastern Elevation of Extension



PHOTO 17
Northern Elevation of Extension



PHOTO 18
Underside of Central Ceiling



PHOTO 19
Underside of Eastern Part of Ceiling



PHOTO 20
Underside of Extension Roof

16th December 2024
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.

Hedgehogs.

Hedgehogs are protected by British law under Schedule 6 of the Wildlife and Countryside Act 1981, making it illegal to kill or capture them using certain methods. Similar protection exists in Northern Ireland under Schedule 6 & 7 of the Wildlife Order 1985. They are also protected in Britain under the Wild Mammals Protection Act (1996), prohibiting cruelty and mistreatment.

They're listed as a Species of Principle Importance in England under the Natural Environment and Rural Communities (NERC) Act 2006 Section 41, in Wales under the Environment Act 2016, and in Scotland under the Nature Conservation Act 2004. Similarly, hedgehogs are on the Priority Species List for Northern Ireland.

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.
 - to 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 liaise 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.

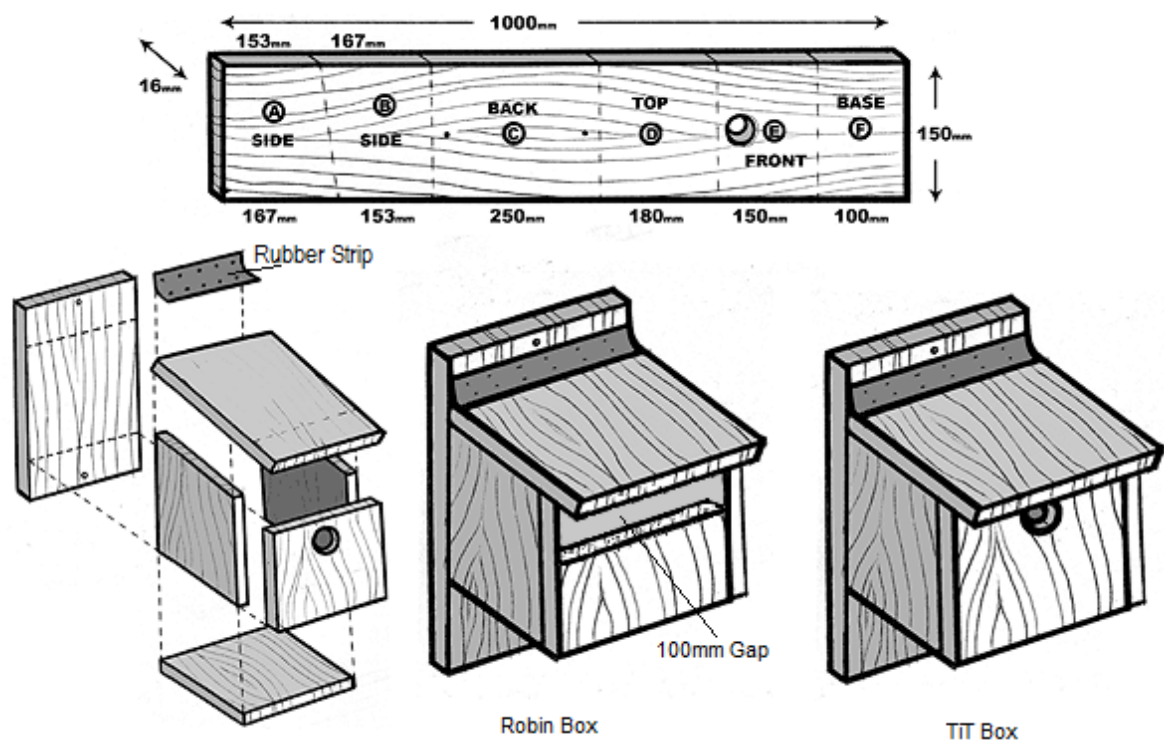
Do not nail down the lid since you will need to clean out the box in the autumn. Attach the lid with a brass or a plastic hinge that will not rust, or hinge it with a strip of leather or rubber (an old piece of bicycle inner tube will do). Fasten it down with a good catch.

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 a 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.



Eco-plate Hedgehog House



Eco-plate Hedgehog House



Specifications			
Width (cm)	Height (cm)	Length (cm)	Tunnel Length (cm)
60	35	46	36

Hedgehogs were once commonly seen in most UK gardens; now however a loss of hedgerows and agricultural intensification has resulted in a 30% reduction in populations in the last ten years. Hedgehogs are an important indicator species, and a decline in their numbers is often symptomatic of a far bigger problem with ecosystem health.

There are many ways that you can help support this species including providing them a home which is predator proof, secure home.

This hedgehog box was designed in collaboration with the Egelstichting (the Dutch Hedgehog protection society). This box is made of Eco-plate, a material similar in density to plywood, but produced from recycled car seats sourced from reputable suppliers, and grown from native stock.

This environmentally friendly material is weather resistant and very durable. The entrance tunnel is hidden inside the house to make it more difficult for predators to reach hedgehogs inside the house.

To make it habitable, part-fill the nest chamber with dried leaves. Place the box in a secluded corner and cover with soil or leaves to boost the chances of the box being used.

It would give a hedgehog daytime shelter between April and October, and will also allow them the space to hibernate during harsh winter months between November and mid-March.

The lid can be easily removed for cleaning, however, do not disturb the box while it is occupied.

APPENDIX 10: Hedgehog Highway.

Why do hedgehogs need holes in fences?

Hedgehogs travel around one mile every night through our parks and gardens in their quest to find enough food and a mate.

One of the main reasons hedgehogs are struggling in Britain is because our fences and walls are becoming more and more secure, reducing the amount of land available to them.

We can make their life a little easier by removing the barriers within our control hedgehogs can travel 2km (one mile) in a single night as they search for food and shelter, but sadly our garden fences and walls limit their movement.

Making small 13cm hedgehog highways through fences and walls, would allow hedgehogs to safely pass through into our gardens, and are a vital way to safeguard the future of the species.

Hedgehog Highways

A 13cm by 13cm square hole is sufficient for any hedgehog to pass through, no matter what the wall or fence is made from. This will be too small for pets and dogs to pass through to pursue hedgehogs.



- Remove a brick from the bottom of the wall.
- Cut a small hole in your fence if there are no gaps.
- Dig a channel underneath your wall, fence or gate, to obtain enough depth.





- A 13 cm diameter circular hole through brickwork creates a tunnel.

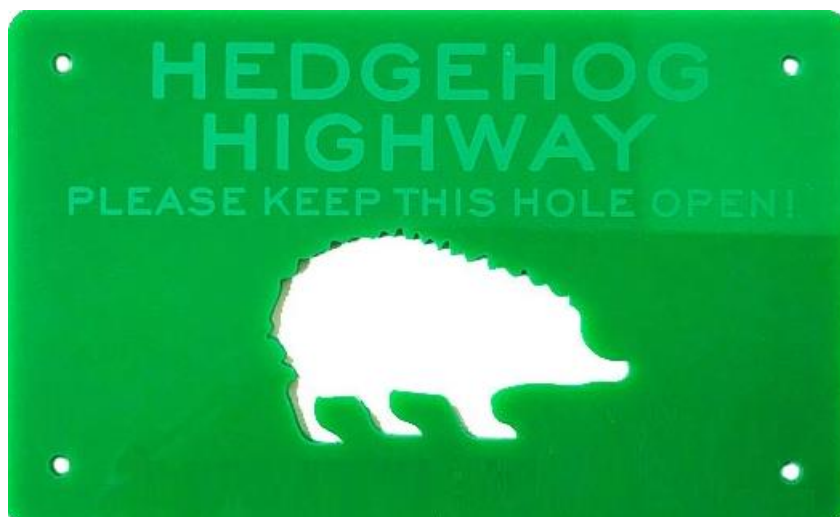


- Similarly, a 13cm diameter drain pipe would suffice through vertical fencing

If you are feeling particularly ambitious then the ideal option would be to swap your walls and fences for hedges. This would provide shelter, food and a route into an out of your garden, not to mention the benefits it would bring to other wildlife such as birds and bees.

Label your Hedgehog Highway

A “hedgehog Highway” label cut from recycled plastic, can be pinned above your hedgehog hole to ensure it is not blocked by anyone accidentally.



APPENDIX 11: Bats and Lighting.

A detailed lighting plan-on-site should be produced which is functional and directional, and in line with current guidance (Bats and Artificial Lighting at Night, August 2023). 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.