

Little Mill of Clinterty



Bat Survey

Survey Dates: 22nd June & 11th July 2016

Ref: LMC-1607-BS



Bat Survey

Little Mill of Clinterty

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Bat Survey

Little Mill of Clinterty

Location of Site

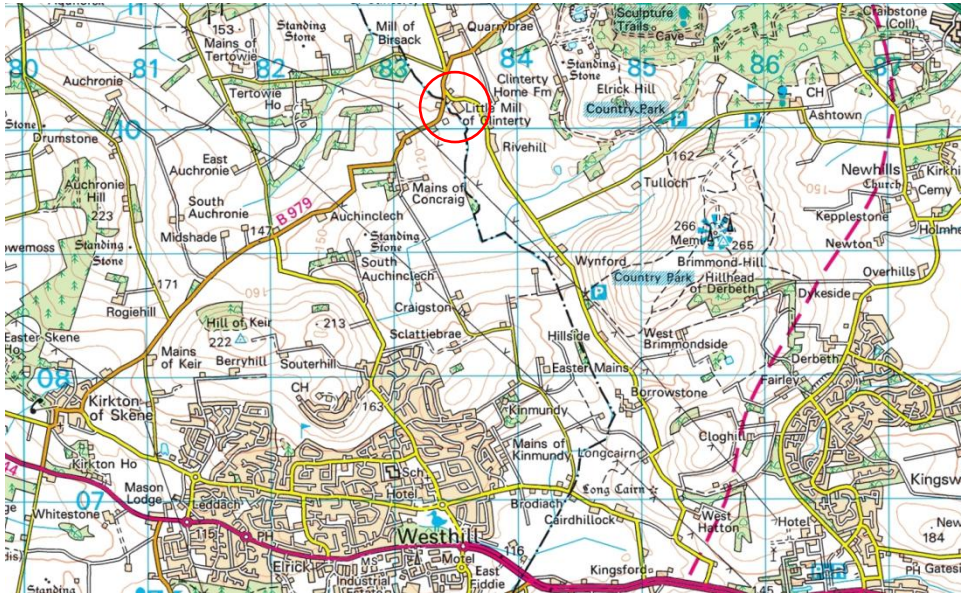


Photo 1: Map showing location of Little Mill of Clinterty circled in red.

Development Proposals

The old mill building is to be demolished and a new house is to be built on the site.

Purpose of Report

As part of the planning requirements, a bat survey has been requested.

This report, and the accompanying information, is supplied in order to:

- Determine the suitability of the building for the habitation of bats.
- Identify the presence or absence of bats in the area, either roosting or foraging, which may have an impact on the development proposals.
- Recommend mitigation measures, if required, both prior to commencement of the project and after its completion.

Survey Summary

The old mill is situated in an area of good bat foraging habitat and there was a large amount of bat activity over the survey period, with much foraging taking place.

No bats were seen exiting the building during the two surveys and no evidence of bats was found during the internal and external inspection of the building.

The demolition of this building will have no impact on the conservation status of bats in this area.

Data Collection & Survey Methodology

The site was surveyed by Nigel Astell with the assistance of surveyors as detailed in Appendix F, during daylight and at dusk on the 22nd June 2016 and 11th July 2016.

A desktop study was carried out on the NBN gateway website and of previous surveys carried out in the area. Pipistrelle and brown long eared bats are recorded in the Clinterty area.

The outside and inside of Little Mill of Clinterty was surveyed, following the guidelines set out in the Bat Conservation Trust – Bat Surveyors Good Practice Guidelines, and English Nature, Bat Mitigation Guidelines.

A dawn survey was not carried out, because no evidence of bats was seen externally or internally and no bats were seen exiting the various parts of building during the dusk survey.

Equipment Used:

The dusk survey was carried out with the use of 3 Echometer Touch's and an Echometer EM3+. Equipment used during internal and external inspections: Ladder, binoculars, high power torches, head torches, with an endoscope available for use in any areas unable to be inspected otherwise.

Survey Constraints

Conclusions relate to conditions found at time of inspection. Recommendations contained within this report are valid for a period of one year only.

Survey Area

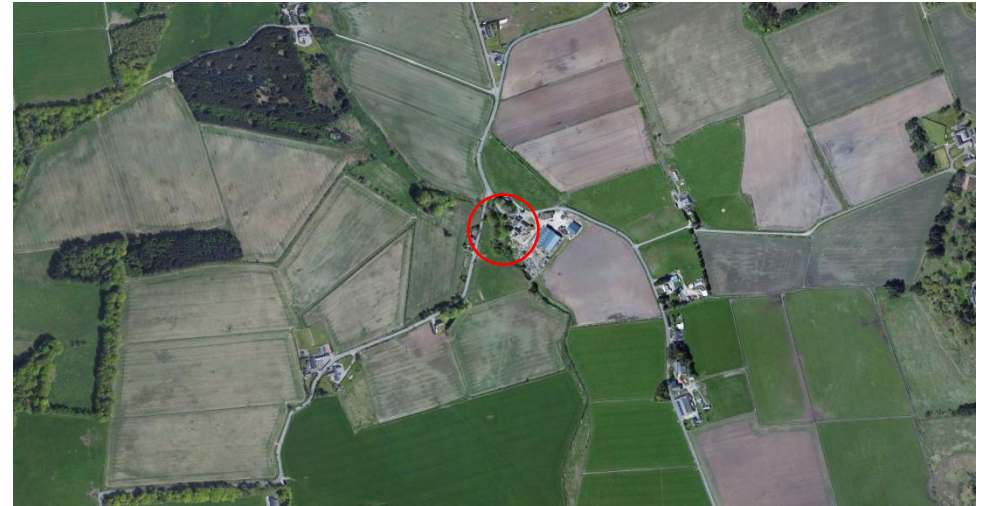
All internal and external parts of the building were surveyed. The survey looked for evidence of bat use such as faecal pellets, urine staining, scratch marks on slates or rub marks on potential exit/entry points.

The external search inspected holes in walls, gaps behind window frames, lintels and doorways, cracks and crevices in stonework / brickwork.
Gaps between ridge slates and roof slates, broken or lifted roof slates, dormer

windows, ridges etc were also inspected, along with any other gaps or crevices which could be utilized by bats.

The internal search checked for hanging bats on roof beams, bat corpses, droppings beneath the ridge and beams of the roof and junctions, droppings and urine staining on and at base of walls, gaps between the lintels above windows and doors, cool areas suitable for hibernation.

Assessment of Environment



The habitat in the area provides ideal foraging for bats. The Littlemill burn runs through the site southeast - northwest and is lined with deciduous trees providing foraging and commuting routes to and from larger areas of woodland to the west and northwest. Tyrebagger wood is approximately 1.4km northeast from the site which has some connectivity to Littlemill.

The many traditionally built buildings in the area give good bat roosting habitat.



Survey Results

Assessment of Building

The building is typical of mills throughout Northeast Scotland. It has two floors, the walls are made from granite and the roofing is slate over sarking board. It would make ideal habitat for bat roosting if the building was in good condition. However, the north half of the original building has almost completely collapsed leaving only the walls, and no opportunity for bat roosting. The other half is still intact but has several large holes in the walls on the north and south gables. There are also holes forming in areas of the roof where slates have come loose and fallen, allowing rain in under the slates and causing the sarking and joists to be damp, wet in places and beginning to rot throughout the building. In places the floor joists have come away from the wall. These areas are dangerous and unsafe to walk on.

External Inspection

The external inspection of the building was carried out from the ground using a torch and camera with a powerful zoom lens, and binoculars, where necessary. Generally the walls of the building were well pointed. In some areas there were shallow cracks and gaps in the pointing which could provide limited bat roosting potential. There are several large holes in the walls on both the north and south gable of the part of the mill still intact. These holes were inspected from a ladder and were found to be too large to be used by bats for roosting. No evidence of bats was found in the smaller cracks around the holes.

The roof had many loose, broken or missing slates which has allowed water to percolate throughout the roof and cause widespread dampness and rot to the sarking and trusses underneath. The windows on both sides are broken and contribute to the general dampness inside the building. The ridge was generally in good condition other than on the north gable where part of the wall had collapsed below it. The guttering on both sides of the building had fallen away and exposed gaps between the wall head and roof. These were very damp due to the water running into the roof from broken and missing slates.

There was no evidence of bats in any external part of the building.

Internal Inspection

The internal areas of the building were in very poor condition. The ceiling is rotten in many places due to holes in the roof and broken or loose slates allowing water to begin to rot the sarking and support joists. Around the broken skylights the trusses have also started to rot. In areas below the broken skylights the floor was completely rotten and had fallen through to the lower floor. The walls were damp and there were algal growths throughout the interior of the building. The walls are still well pointed with no cracks or gaps. The staircase to the lower ground floor was in very poor condition and the joists had come away from the wall. Many of the joists for the ceiling of the lower floor are also rotting and no longer connect to the walls.

There was some standing water on the lower floor where the grain drying kiln has collapsed. The tunnel formed by the fire chamber for the old kiln had potential to be used by hibernating bats. This area was inspected and no faecal pellets or evidence of bats was found. (See photo 14).

There is some bat roosting potential at the wallheads in the drier areas of the building but most areas are too damp as shown in the photographs in Appendix A.

No evidence of bats was found internally.

See Appendix A for photos detailing external and internal survey.

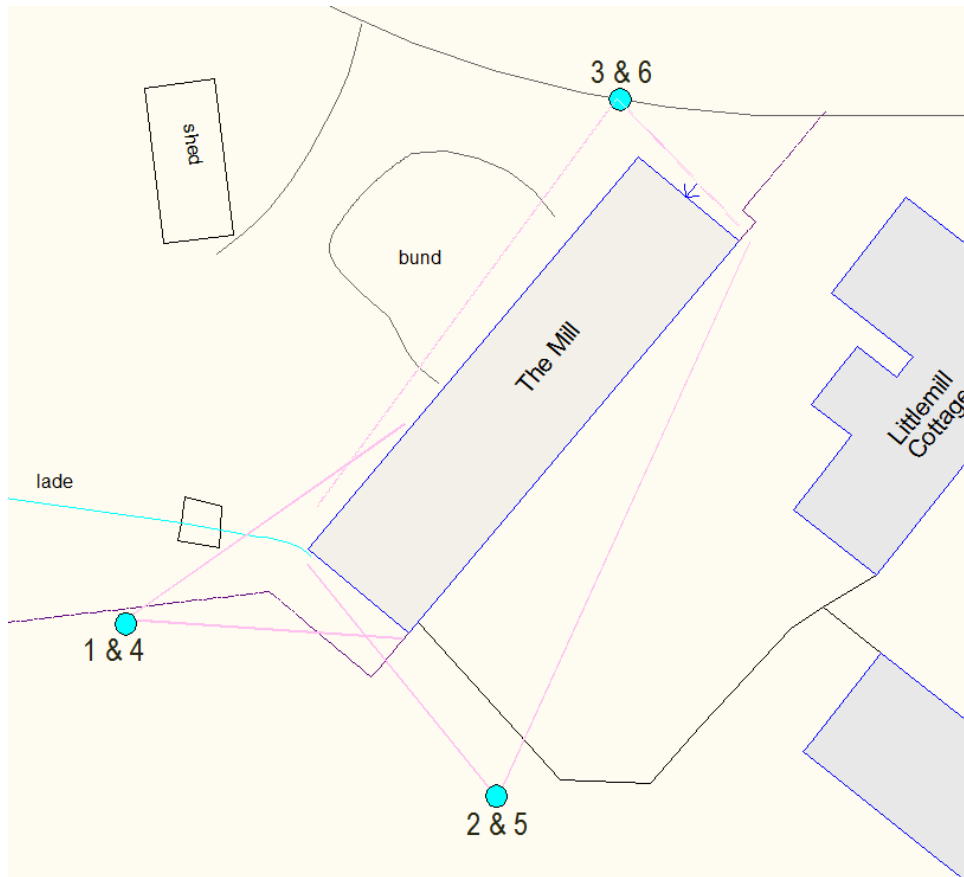


Observer Positions

Observers 1 and 4 were positioned to the southwest of the mill to survey the south and west elevations.

Observers 2 and 5 were positioned to the south of the mill in order to survey the south and southeast elevations.

Observers 3 and 6 were positioned to the north of the site in order to survey the ruin and the northeast and northwest elevations of the mill.



Dusk Emergence Survey 22nd June

Weather Conditions

The weather conditions during the emergence survey were ideal for bat activity, being mild and still with much midge and other insect activity.

Temperature	Wind	Cloud	Rain
15.2°C – 12.6°C	0 km/hr	Broken	none
Survey Start	Sunset	Dusk	Survey End
21:40	22:08	23:18	23:35

Observer 1

22:30-22:44	Total of 65 bat passes, 45 soprano pipistrelles and 17 common pipistrelles were recorded. Bats entered the area from both the west and south of the site. Mainly foraging to south and west of building with some going north towards other houses.
22:45-22:59	Total of 81 bat passes, 69 soprano pipistrelles and 11 common pipistrelles were recorded. Up to 7 bats were seen in the air at one time. Activity begins to decrease slightly with 4 bats foraging to south, southwest and southeast of building.
23:00-23:14	Total of 48 bat passes, 39 soprano pipistrelles and eight common pipistrelles were recorded. Activity slowed as bats moved to other areas. 1 bat repeatedly passed the south side of the building while foraging.
23:15-23:30	Total of 17 bat passes, 9 soprano pipistrelles and 6 common pipistrelles were recorded. Bats were still being recorded but it was getting too dark to see in which direction they were flying.



Observer 2

22:30-22:44	First bat at 22:30. Total of 65 bat passes, 45 of them soprano pipistrelles and 17 common pipistrelles were recorded. Mainly foraging to the southwest of mill, at least 4 bats seen in air at same time. Difficult to tell in which direction bats were entering and leaving the area because of surrounding trees.
22:45-22:59	Total of 81 bat passes, 69 soprano pipistrelles and 11 common pipistrelles were recorded. Foraging mainly to the southwest of mill, at least 3 bats in air at same time.
23:00-23:14	Total of 48 bat passes, 39 soprano pipistrelles and 8 common pipistrelles were recorded. Bat passes less frequent. Occasional bat flying around the East side of building in anticlockwise direction.
23:15-23:30	Total of 17 bat passes, 9 soprano pipistrelles and six common pipistrelles were recorded. Bat passes became even less frequent. Still foraging to south and southwest. Bats flying from

Observer 3

22:30-22:44	Total of 11 bat passes, five soprano pipistrelles and five common pipistrelles were recorded. Bats flew from the north over the surveyor and towards the surveyed building before returning north. One bat continued south.
22:45-22:59	Total of 35 bat passes, 28 soprano pipistrelles and four common pipistrelles recorded. Several bats flew from east to west over the survey building. Others came into the area from the northwest before heading south. Up to three bats were seen foraging to the north of the building and near the house to the north, behind the surveyor.
23:00-23:14	Total of 46 bat passes, 27 soprano pipistrelles and 19 common pipistrelles were recorded. Bats foraging between nearby buildings and trees, some using the road to also forage. Bats mainly coming from northwest and southeast.
23:15-23:30	Total of 26 bat passes, 17 soprano pipistrelles and nine common pipistrelles were recorded. Bats were mainly coming to and from the southeast. Some still foraging nearby but most have moved on.

Dusk Emergence Survey 11th July

Weather Conditions

The weather conditions during the emergence survey were ideal for bat activity, being mild and still with much midge and other insect activity.

Temperature	Wind	Cloud	Rain
16 – 13.6 °C	3 km/hr	Overcast	none
Survey Start	Sunset	Dusk	Survey End
21:40	21:57	22:59	23:15

Observer 4

22:00-22:14	30 bat passes were recorded, all of them soprano pipistrelles. Bats coming from east and foraging above the surveyor. Other bats foraging in area.
22:15-22:29	Total of 49 bat passes, 48 soprano pipistrelles and one common pipistrelle was recorded. Bats foraging to the south of the building, above the surveyor. Up to four were seen in the air at any one time.
22:30-22:44	Total of 48 bat passes, 13 soprano pipistrelles and 35 common pipistrelles were recorded. Up to five bats were seen in the air at any one time foraging to the south and southwest of the building. A bat was seen flying in a window on the west elevation then flying back out of the building through a window on the south elevation.
22:45-22:59	A total of 46 bat passes, seven soprano pipistrelles and 38 common pipistrelles bat were recorded. Continuous foraging throughout this time to south and southwest of building.
23:00-23:15	A total of 39 bat passes, six soprano pipistrelles and 30 common pipistrelles were recorded. Foraging becoming less frequent as bats move on to other areas.



Observer 5

22:00-22:14	A total of 48 bat passes recorded, all of which were soprano pipistrelles. Bats were foraging in the area south of the building.
22:15-22:29	A total of 91 bat passes, 88 soprano pipistrelles and one common pipistrelle were recorded. Bats still mainly foraging to south of building.
22:30-22:44	A total of 73 bat passes, 34 soprano pipistrelles and 38 common pipistrelles were recorded. Bats mainly foraging in area to the south of the building. Many of the passes have over 130 pulses recorded indicating bats foraging for large periods of time in the area.
22:45-22:59	A total of 83 bat passes, 20 soprano pipistrelles and 63 common pipistrelles were recorded. Occasional bat would come from the south and fly round the building to the north in an anticlockwise direction.
23:00-23:15	A total of 63 bat passes, 15 soprano pipistrelles and 46 common pipistrelles were recorded. Very few passes were seen because of dark background and poor light but the bats were foraging adjacent to the trees rather than near the building. An occasional bat was seen flying round the east side of the house and heading either north or east towards nearby cottages.

Observer 6

22:15-22:29	A total of four bat passes, three soprano pipistrelles and one common pipistrelle were recorded. One bat flew from south to north along west side of building while the other three went south towards the tree from the north and northeast.
22:30-22:44	A total of 28 bat passes, 17 soprano pipistrelles and eight common pipistrelles were recorded. Bats mainly foraging along trees to south and west of building. Occasional bat foraging along road and near cottage next to the surveyed building.
22:45-22:59	A total of 59 bat passes, two soprano pipistrelles and 57 common pipistrelles were recorded. Foraging in trees to the north, northeast and west of the building. Up to two bats seen in the air at any one time.
23:00-23:15	A total of 30 bat passes, one soprano pipistrelle and 26 common pipistrelles were recorded. Poor visibility making it difficult to see where bats are foraging. Activity reduced considerably.

Interpretation & Evaluation

The external survey found the building to be in poor condition. The northern half had collapsed with only the walls still standing. These were still well pointed and any cracks were found to be too shallow with no bat roost potential. The south half of the building was still intact but holes in the roof and walls were found on every elevation. These were too large and damp for bats, and had no roosting potential. The roof had many missing, loose and broken slates. Much of the roof was very damp due to water running underneath the slates. There was limited bat roost potential in the few dry areas of the roof.

The internal survey found the building to be very damp. Many areas of the roof had holes in it and the sarking and joists are beginning to rot. The floor had also begun to rot and it was beginning to be too dangerous to walk on. The walls were damp throughout the building, only the wallheads provided any bat roosting potential. No evidence of bats was found.

The building was shaded from sunlight by tall deciduous trees, further reducing its appeal to bats as a roosting place.

During the dusk surveys two bat species were observed. Numerous soprano and common pipistrelles were found to be foraging around all sides of the building but predominantly on the south and west sides. Bats were constantly foraging during the survey period with two or three bats commonly seen and up to seven bats seen at any one time.

Soprano pipistrelle arrived first in the area, indicating that they are likely to be roosting nearby. Common pipistrelle arrived to forage around 10.30pm, probably from a roost a little further away. There are many traditionally built buildings in the area with good bat roosting potential.

During the two dusk emergence surveys, no bats were observed exiting the building, either from the roof, walls or from any other point during either survey. During the second survey on the 11th July a bat was seen flying into the building through a window on the west elevation and then flying back out of the building through a window on the south elevation.



Impact Assessment & Mitigation

As no bats were using the building for roosting, the proposed demolition of the building will not impact on the bat population in the area and no mitigation is necessary.

However due to the good bat foraging in the area and the high numbers of bats observed during the survey it is recommended that one bat slate and one bat brick are installed in the new building in order to increase the bat roosting potential in the area.

Note: While this survey found no evidence of bats roosting in the building, this is no guarantee that bats will not come to use the building, and builders should be alert to the possibility of bats when working on the roof area of the building. If bats are found work should stop immediately and Scottish Natural Heritage (Bat Licensing) contacted for advice (Tel 01463 725364). Any bats found should not be handled unless necessary (e.g. if it is on the ground, on an outside wall or in an exposed area where it could be vulnerable). If bats need to be moved, they should be handled carefully, using gloves or a towel and should be put safely in a cardboard box or cotton bag and kept quiet until advice is received.

Appendix A: External and Internal Photos



Photo 1: North gable of ruin. In good condition other than large crack next to wooden board. No evidence of bats.



Photo 2: 'Inside' of north gable of ruin. Some gaps but not used by bats as nettles and other weeds are growing from them.





Photo 3: Northwest corner of ruin. Remaining wall generally well-sealed.



Photo 4: North elevation. Wall in poor condition, with large gap at the ridge. Large cracks are shallow and offer no bat roost potential. No evidence of bats.



Photo 5: West elevation of mill. Plants are growing from cracks in places show wall is damp. Some loose and missing slates on roof provide limited bat roost potential. No evidence of bats found.



Photo 7: South elevation of mill. Some large holes in wall which had some cracks, however, no evidence of bats were found. Small, shallow cracks near top of mill could provide limited roosting potential. No evidence of bats was found.





Photo 8: South gable end. A loose slate has caused a small hole in the roof contributing to the dampness inside the mill and in the roof. Lifted and missing slates provide limited roosting potential. No evidence of bats was found.



Photo 10: Eastern elevation of Mill building. Roof has several missing slates but is mainly in good condition. Windows are broken allowing water inside contributing to the damp. Ridge appears intact.



Photo 9: Southeast corner of building. Damage to wall and a missing slate has caused a large crack to form. This has no bat roosting potential and no evidence of bats was found.



Photo 11: North gable. Large hole in northeast corner of the wall. Roof and floor rotten in places. The building is in poor condition and becoming dangerous.





Photo 12: View of staircase from ground floor to lower ground floor. Area is dangerous with rotten floorboards and some joists are not attached to the wall.



Photo 14: Lower floor, north gable of main building. Grain drying kiln floor has fallen in. The walls are damp and have no cracks. The grain kiln has a collapsed chimney. Inspection showed no evidence of bats



Photo 13: South gable. Roof rotten and collapsing in places. Algae on floor and walls are further evidence of damp with rainwater entering the building. There is no enclosed roof space and limited bat roost potential.



Photo 15: Lower floor ceiling beams rotten and dangerous. The wall is very damp with no bat roost potential.



Appendix B: Bats in Scotland

Bats are nocturnal animals which roost all day, huddled together in dark sheltered places. At dusk they will leave their roosts and forage. All British bats primarily feed on invertebrates, with most of their diet consisting of flies, beetles and moths. Bats therefore prefer to forage in areas with a high insect population such as woodlands, scrub, wetlands, river corridors and flower rich grasslands.

Bat Habitat

Bats use different roosts during different times of year, and for different purposes. A bat colony will generally return to the same roosts year after year.

Bats hibernate over winter in a communal roost and generally remain inside from autumn to spring, although some can be drawn out of hibernation by a moderately high midday temperature or a mild night, when a temperature of 40°F (4.5°C) is sufficient to wake them and bring them out for an hour's hunt. Winter roosts are typically caves, mines, buildings and hollow trees which have constant low temperatures and high humidity.

In spring, the bats may use alternative roost sites which are used during the day.

By summer the female bats will be found at a maternity roost where they will give birth and suckle young. Preferred sites for a maternity roost are hollow trees, buildings and bridges.

Signs of Bat Habitation

In areas where bats are roosting dark pellet-like droppings will be found on walls and floors, as well as dark smudges and urine stains.

Due to the bats using roosting areas for many years, these droppings will accumulate and become an obvious sign of the presence or absence of bats.

On exiting the roost area bats normally void urine, which over time will leave characteristic marks at the entrance/exit to the roost.

Appendix C: Bat Licensing

Much bat work can be carried out without a license. Survey planning, bat detection and looking for signs of bat presence do not require a license. A license is only needed once it has been established that there are bats present. A license is required by anyone needing to disturb, take, or possess bats for either scientific or survey purposes.

Further advice is available from the Bat Conservation Trust, www.bats.org.uk and Scottish Natural Heritage licensing@snh.gov.uk 01463 725364

Appendix D: Bats and the Law

Because populations of most species have declined in past decades, all British bats have been protected by law since 1981. The legal protection they receive has recently been strengthened by changes to the law arising from European Union obligations. All bat species found in Scotland are classed as European Protected Species.

All bat species are protected by the Wildlife and Countryside Act, 1981 (as amended), and the Conservation (Natural Habitats, etc.) Regulations, 1994. This legislation makes it illegal to intentionally or recklessly kill, injure or disturb bats, or destroy their roosts. It is therefore essential to establish whether the works being proposed will affect bats or their roosts.

Appendix E: References

- www.nbn.org.uk - National Biodiversity Network web site.
- Bat Surveys for Professional Ecologists - Good Practice Guidelines (3rd Edition - 2016)
Bat Conservation Trust, 250 Kennington Lane, London.
- Bat Workers Manual 3rd Ed - Mitchell-Jones & Mc Leish (2012),
Joint Nature Conservation Committee. Peterborough.
- Social Calls of the Bats of Britain & Ireland



Appendix F Surveyor Qualifications

Nigel Astell has a BSc Botany (Hons) and a BSc Zoology (Ord). He is a member of the Arboricultural Association and CIEEM. He has attended BCT training courses, CIEEM bat training courses and bat training courses with Echoes Ecology. He has been involved in bat survey work for the last 12 years and has carried out over 370 bat surveys in this time. He has been involved in designing mitigation for bat roosts and has worked on protected species license applications for a number of projects.

Murray Gauld is a marine biology student at Aberdeen University and has been trained on a CIEEM bat surveying course. This is his fourth season of bat surveying.

Tim Stephen has a BSc (Hons) Ecology from Aberdeen University and has been trained on a CIEEM bat surveying course. This is his second season of bat surveying.

Euan Mackenzie has a BSc (Hons) Zoology from the University of Aberdeen and is currently completing an MSc in Ecology and Environmental Sustainability also at the University of Aberdeen. This is his second season of bat surveying.

Ailsa Sharp has a BSc (Hons) Conservation Biology from University of Aberdeen. She is currently being trained in bat surveying. This is her second season of bat surveying.

Appendix G: Contact Details

Client: Mr Darren Flynn
8 Crimon Place,
Aberdeen
AB10 1RX

Environmental Consultant: Nigel Astell
Astell Associates
26 Binghill Crescent
Milltimber,
Aberdeen
AB13 0HP
Tel 01224 868458
email: info@astellassociates.co.uk



Nigel Astell
Astell Associates

