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Ecological Appraisal - Bats & Buildings
13 West Street
Norham



Commissioned by:

Dobson Design Ltd
on behalf of the property owners

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EXECUTIVE SUMMARY

A bats and buildings risk assessment as well as a dusk activity survey were undertaken at 13 West Street, Norham in June 2022. In addition to bat survey work, a general assessment with regard to protected and notable species or habitats was completed.

The building is a terraced slate-over-stone property. It is proposed to renovate the property to provide accommodation. At the time of the survey works to remove a rear structure, rear stonewall, an external stone staircase and an outbuilding had been completed. Internally, all walls and ceilings had been removed. Plaster/wall coverings had been stripped back to stone and some floors had been dug out to the earth beneath. The rear garden had been levelled to soil. Works were ongoing at the time of the visit and the works remaining are understood to include: raising of the overall height of the rear of the property; re-covering part of the rear roof; adding a small extension; refurbishment of an upper floor bay window; external rendering; internal works to bring the property up to modern living standards and landscaping of the garden. Access was provided to exterior and interior sections of the property. The remaining outbuildings in the rear garden could not be accessed internally; it is understood these will be retained.

The property is located in the village of Norham. Surrounding properties appear to have medium to large gardens with established planting including broadleaf trees. There is street lighting to the front of the property. Agricultural land is present to all directions which is dominated by large arable fields. Field boundary features appear to be hawthorn hedgerows with occasional hedgerow trees. Woodland within 500m is limited to small fragments. Ponds were not detected within a 500m search area on aerial images or Ordnance Survey maps. The River Tweed is located 420m to the north.

Based on the habitats present, the local bat assemblage would be expected to contain bats associated with buildings such as pipistrelles, whiskered/Brandt's and Natterer's. Woodland and wetland specialist would be unexpected.

The front elevation of the property does not display any gaps in the stonework or associated with the window/door frames. There are no soffits or bargeboards and the front-facing roof pitch has only occasional lifted tiles. The rear elevation was found to have a small number of crevices associated with failed mortar/render. The roof covering was in poorer condition with areas of missing tiles which has been patched with plastic sheeting as well as areas of lifted, slipped and broken tiles. Above a rear door, there was a wooden boxed in section which had deteriorated and permitted access into this feature. No field signs of bat use were detected. The ability to detect field signs was difficult due to the nature of the works having been undertaken and progressing at the time of the field survey.

Based on the building inspection, it is possible that bats may have used the building as a roost location. This could have been associated with individual roof tile crevices, or if bats had been able to access the former loft void, then aggregations of bats could not have been ruled out. In its current condition there is a low risk of transient summer use by individual crevice roosting bats.

An activity survey was undertaken in good survey conditions and at an optimal time of year. Activity was low and limited to common and soprano pipistrelles to the rear of the property. Activity suggested that individual roosts in adjacent properties are likely and bats are leaving such roosts to forage over habitat to the south.

Nesting house martin are present beneath the bay window on the front elevation. An inactive nest is present at eaves height. During the survey an individual house martin entered the building to roost. The active nest is legally protected until it is no longer in use when dependent young have fledged.

No other protected or notable species were recorded.

The summary table below provides an assessment of the likely impacts to species and habitats both on, or immediately adjacent to, the site.

Summary Table: 13 West Street, Norham. Based on the condition of the property at the time of the survey												
Species	Local status	Roosting suitability*	Field signs	Foraging/ Commuting suitability*	CSZ** effects	Potential impacts in the absence of mitigation	Required Mitigation (in brief)	Impacts after implementation of mitigation				
Common pipistrelle	Common & widespread	Low (individual)	None detected	Moderate foraging over adjacent garden habitats and fields to south	No effects to wider habitats (small footprint of works). CSZ's unaffected for all species	Low likelihood of impacts to individual bat roosts	Section 7 of this report must be provided to all contractors working on site prior to the start of any works being undertaken. This is the responsibility of the property owner.	Negligible risk of significant effects at a local level, county or national level				
Soprano pipistrelle		Negligible (maternity)							Negligible likelihood of impacts to maternity colonies or hibernating bats	Specific methods of stripping roof to be adhered to.	Roosting opportunities provided post-development	
Brandt's/ Whiskered	Relatively common & widespread (where suitable habitat available)	Negligible (hibernation)				Low	Low (based on limited available information)	No risk of harm to roost locations or individual bats	No long term affect on commuting or foraging habitat	Creation of 4 crevice roosting opportunities	Negligible risk of significant effects at a local level.	
Brown long-eared		Low										No risk of harm to maternity colonies or hibernating bats. No predicted long term affects.
Nathusius' pipistrelle	Likely under-recorded but likely low in number	Low				Negligible	Moderate foraging over adjacent garden habitats and fields to south	No risk of harm to roost locations or individual bats	No risk of harm to maternity colonies or hibernating bats	No species specific mitigation (though crevices suitable for individual roosting bats will be provided as part of mitigation for pipistrelles)		Negligible risk of significant effects at county or national level
Noctule	Common & widespread	Negligible				Negligible						
Natterers	Relatively common & widespread (where suitable habitat available)	Low (individual)				Negligible.	Negligible.	No risk of harm to maternity colonies or hibernating bats	No long term affects.			
Daubenton's		Negligible.										

* = Based on tables 3.2, 3.4 and 4.1 of the BCT Good Practice Guidelines 3rd Ed. ** = Core Sustenance Zones

Species	Field signs	Foraging/ Commuting value	Potential impacts in the absence of mitigation	Required Mitigation measures (in brief)	Impacts following implementation of mitigation
Birds	Active house martin nest	Surrounding gardens and fields provide foraging and nesting habitat for a range of species Ornamental hedging at the gardens eastern and western boundaries provide nesting habitat	Loss of a single active house martin nest	Nesting bird checking survey required for any works commencing between March and August to upgrade the bay window or to render the front of the property. This check must be undertaken by a suitably qualified ecologist and show nesting birds have fledged and the nest is no longer in use prior to the start of works. Inclusion of two house martin nesting cups	No predicted impacts of conservation significance at a site level (or at any higher level)
Habitats	Bare ground accounts for the length of the rear garden with ornamental hedging present to both boundaries	Of value to nesting birds	Loss of nesting habitat if these hedges are removed	Retention of hedges Enhancement of the rear garden through a planting scheme which focuses on plant species which are locally native and of value to foraging insects.	No predicted impacts of conservation significance at a site level (or at any higher level)
Other species	None recorded	Potential to support the notable species hedgehog or common toad	Entrapment in open trenches Disturbance through light spill	Means of escape from open trenches Appropriate site lighting	

1 INTRODUCTION

1.1 Instruction

This report is produced on the instruction of the property owners via Dobson Design Ltd and concerns the assessment of a residential dwelling with regard to its potential to support roosting bats as well as a general risk assessment regarding protected and notable species or habitats.

1.2 Background

The building is a two-storey stone-built property with a pitched, slate-covered roof. The planning application seeks to re-roof a rear section, heighten the rear elevation, add a rear extension, render the property and upgrade an existing bay window. Works to demolish rear structures had been undertaken at the time of the survey. Internally the building had been stripped back to bare walls and ceilings had been removed.

The proposal is a standalone suite of works and does not form part of a phased application.

It is not known whether any survey works regarding bat species have been undertaken by a consultant in the recent past and this report references only the findings of searches and surveys undertaken by BeatyMadine Ecological Consultants.

1.3 Ecological Reporting Objectives

BeatyMadine, informed by current legislation and guidance, regard the objectives of this type of survey to be:

- Inform the client as to the nature of survey work which should be undertaken and ensure that such recommendations are proportionate. (This is an ongoing dialogue during the course of site works as the results of survey work are interpreted);
- Determine the use, or the potential risk of use, of the site by bat species;
- Assess the functionality of the site to the local bat population with regard to roosting, foraging and commuting behaviours;
- Determine whether, insofar as is reasonably possible, the proposed development will impact upon bats both on site and within the local area;
- Determine whether habitats of ecological value will be disturbed by the proposed development;
- Ensure that a mitigation strategy, where necessary, is designed to avoid harm to bats and that mitigation measures installed will act to preserve the local conservation status of bat species post-development;
- Provide mitigation measures which are deliverable, agreed with the client and that are proportionate to the conclusions of the bat survey work undertaken at the site;
- Advise when proposals pose a significant risk to other protected species, habitats or statutory sites; and;
- Provide a report within which the considerations, conclusions and recommendations are clear to the client and any statutory body reviewing this document.

1.4 Site Description and Context

An approximate six-figure grid reference for the property is NT 899 472.

13 West Street lies to the southern extent of the small village of Norham. Residential properties have good sized mature gardens. Agricultural land surrounds the village. There are no watercourses or waterbodies in close proximity. Woodland is also lacking. Street lighting is present on major roads.

Aerial imagery of the site is provided in Appendix 1.

2 LEGISLATION AND POLICY GUIDANCE

2.1 Planning Policy Context

The Government's National Planning Policy Framework (NPPF) requires planning decisions by the Local Planning Authorities to: *promote ecological networks and the recovery of priority species and habitats (Para. 174) and where biodiversity cannot be conserved, enhanced, mitigated or compensated for, the planning permission should be refused (Para.175).*

Several pieces of legislation including the Wildlife and Countryside Act (1981) and the Natural Environment and Rural Communities Act (2006) work together to create provisions to protect, conserve, enhance or restore protected species, habitats and site biodiversity.

Under the Conservation of Habitats and Species Regulations (2017) and the ODPM Circular 06/05: Biodiversity and Geological Conservation, the planning authority are required to ensure that the conservation status of European protected species is maintained. This must be achieved by providing up-to-date information as early as possible within the planning process and prior to the granting of planning permission. Protected species surveys cannot be conditioned unless there are exceptional circumstances.

2.2 Habitats

In England, Natural England is the statutory body responsible for advice and any enforcement action for any offences to Special Protection Areas (SPAs), Special Areas of Conservation (SACs), RAMSAR sites, Sites of Special Scientific Interest (SSSI) and those of higher value. Listed sites of lower than international/European value are generally protected by enforcement powers of Local Authorities.

2.3 Wildlife Legislation

Table 1. Summary of Key Legislation (relevant to the site)									
Species	European Level Protection: Regulation 41 of the Conservation of Habitats & Species Regulations 2010	National Level Protection: Wildlife and Countryside Act 1981, Section 9, Schedule 5	Intentional and Reckless Protection from:						Having in ones possession any live animals or a part/derivative of such a species
			Killing	Injury	Capture/ take	Disturbance	Transport	Destruction, disturbance or obstruction of a resting place	
Bat species	✓	✓	✓	✓	✓	✓	✓	✓	✓
Birds	✓ *	✓	✓	✓	✓	✓ *	✓	When nesting	✓
Great crested newt	✓	✓	✓	✓	✓	✓	✓	✓	✓
Badger *protection of badgers Act 1992			✓	✓	✓	✓	✓	✓	✓
Red squirrel		✓		✓	✓	✓		✓	✓
Priority Species and Habitats	A range of species and habitats are listed as of 'principal importance' and requiring conservation action due to declines in abundance and range retractions. These species and habitats do not routinely receive legal protection but must be considered at the outset as a material consideration within the planning process. In England, Natural England is the statutory body responsible for advice and any enforcement action for any offences to SPAs, SACs, RAMSAR, SSSI sites and those of higher value. Listed sites of lower than international/European value are generally protected by enforcement powers of Local Authorities.								

Additional legislation which must be considered includes: the CRoW Act (2000) which amends certain provisions within the Wildlife and Countryside Act, to allow for prosecution when offences have been committed and creates the offence of reckless disturbance; the NERC Act (2006) which imposes a duty to conserve biodiversity and provides a list of priority species and habitats based on UKBAP lists; provisions under the Bern Convention; provisions under the Bonn Convention; and provisions under the Wild Mammals Protection Act (1996).

✓ * A small number of rarer species only

2.4 Additional considerations

It should be noted that the granting of planning permission does not override protected species law. Consented developments must adhere to protected species and habitat regulations and obtain any licences necessary from the regulatory body Natural England.

Any breach of protected species legislation, whether intentional or reckless, carries the risk of prosecution leading to fines or imprisonment for each offence committed.

3 SURVEY METHODOLOGY

3.1 Desk-top study

The desk study was undertaken by referring to the following data sources:

- Aerial imagery, including historic images where available;
- Ordnance Survey maps;
- Historic maps;
- The Multi-Agency Geographic Information for the Countryside website;
- In-house knowledge.

3.2 Survey timing and weather conditions

The initial buildings inspection was undertaken on the 9th of June 2022 and lasted approximately 1.5 hours. Conditions were dry and bright with no immediately preceding rain. Access was available to the building's exterior and interior.

Details of bat activity survey visit(s) are given in the table below.

Date	Survey type	Wind speed	Rain	Cloud cover (%)	Temperature (°C)	Personnel present
18.06.22	Dusk bat activity survey	Start: F1 End: F1	Dry	Start: 30 End: 40	Start: 12.5 End: 9.5	ER + assistant CB

Personnel

Survey, reporting and mapping was undertaken by: Elizabeth Ross BSc MSc MCIEEM, bat licence registration number 2015-11464-CLS-CLS and an assistant appointed by BeatyMadine.

Elizabeth has 11 years experience of surveying for bat species in the northeast of England, has held a bat survey licence for the past 7 years and has been the named ecologist on Natural England development licences. Sites surveyed include inner-city buildings, schools, care homes, police stations, country houses, barn conversions, micro-turbine installations, road infrastructure, commercial development sites and large on-shore windfarms.

3.3 Survey equipment

During survey work the surveyor used:

- Aerial imagery/Ordnance Survey map
- Weather writer
- Digital camera
- Close-focussing binoculars
- High power Lenser torch
- Multi-meter (Lux, humidity and decibel)
- Batduet detectors paired with Anabat Express detectors
- Echo Song Meter 2 Pro

3.4 DNA testing

No DNA samples have been analysed in relation to bats at this site. No droppings or bat carcasses were found.

3.5 Survey Methods

Descriptive survey methods relating to bats and birds are provided in Appendix 5.

4 RESULTS

4.1 Desk-top study data

A review of aerial imagery, current & historic maps as well as Ordnance Survey maps allowed collation of the following information:

Historical

Historic maps show that the properties forming the eastern end of West Street are present from at least 1866. This is the oldest map that could be examined of this area.

Contextual

The property is located within a terrace of residential dwellings and village shops. It lies within the southern extent of the village of Norham. Street lighting is present along the road network to the north of the property. A rear single-width access track is unlit.

An aerial and ordnance survey assessment of habitats present in the wider area concluded that:

- Agricultural land is present to all directions. Arable fields dominate, however, there are a small number of pasture fields immediately to the south of the terrace.
- Habitat features of higher value include mature garden habitats, hedgerows and trees.
- Mature woodland is lacking with the closest fragment of broadleaf habitat located 460m to the east.
- The nearest major watercourse is the River Tweed located 420m to the north.
- There are no ponds visible on OS maps or aerial images within 500m of the property. The presence of garden ponds cannot be ruled out.

MAGIC

Using a 2km search radius, information derived from the Multi-Agency Geographic Information for the Countryside website is as follows:

- This stretch of the River Tweed forms the Lower Tweed and Whiteadder Site of Special Scientific Interest (SSSI's). Designated for its aquatic species, habitats and vegetation. It is considered in unfavourable condition. The property lies within the zone of impacts for this SSSI but does not trigger the criteria for further survey work in relation to impacts of the proposal on this feature.
- The River Tweed is also a Special Area of Conservation (SAC).
- Habitats of Principal Importance are noted as:
 - Good quality semi-improved grassland 650m to the northeast
 - Ancient and semi-natural woodland at 870m southwest and 1.1km northeast.
 - Deciduous woodland at 655m east
 - The River Tweed important plant area.
- Species of Principal Importance are noted as:
 - Lapwing
 - The arable farmland assemblage is noted for lapwing, grey partridge and tree sparrow.
- Records relating to the granting of European Protected Species Mitigation (EPSM) licences by Natural England are limited to:
 - 3km south - an returned licence relating to the destruction of resting places used by common pipistrelle, soprano pipistrelle and Natterer's bats.
- The closest pond surveyed as part of the 2017-2019 Great Crested Newt (GCN) pond surveys is 1.8km to the southeast and GCN were recorded as absent.

4.2 External data consultation

No external records searches have been completed at this stage.

4.3 Field Survey

A Figure showing a 500m radius of the property and a buildings layout is provided in Appendix 1. Site photographs are provided in Appendix 2. Comments relating to the building(s) condition refer solely to potential use by wildlife species.

At the time of the site visit, works to improve the property were on-going. Works completed to date include: demolition of a rear building, demolition of rear external staircase, demolition of a garden store building, removal of a small chimney, removal of all interior wall coverings back to the stonework, removal of internal dividing walls, removal of upper ceilings and removal of solid floors in the lower front rooms. The garden has been cleared of vegetation including tree cover.

The proposal to complete the renovation of the property to include: complete internal refurbishment, add a small rear extension, raise the height of the rear elevation wall, re-cover a rear section of roof, repair sections of roof in poor condition, making good an existing upper bay window and externally render the property.

4.3.1 Buildings

Main dwelling - external

- The building is two-storey height.
- It is of stone construction with corner quoins and stone lintels/sills. The front elevation appears sound with regard to potential bat roosting locations. The rear elevation has areas of failing mortar and where rendered, some areas are lifted/flaking. There is a single area of missing mortar at eaves height.
- There are no soffits, bargeboards or fascias at the wall tops. Guttering is mounted straight onto the stonework.
- The roof is covered with slate tiles. The front-facing roof pitch has only occasional lifted tiles. Ridge mortaring is not associated with any gaps. The rear-facing roof pitch is in poorer condition with several areas of lifted, broken and missing tiles. Two areas have been patch repaired with plastic sheeting. One of these areas appears to have formerly been a small chimney.
- There are three chimneys remaining. These are of brick construction. Some mortaring has worn away but does not appear to create gaps or holes suited to roost use. Where the chimneys connect to the roof, mortar appears sound. There is a single area of lifted lead flashing.
- Mortar between this property and the roofs of neighbouring properties appears sound.
- Windows and doors are wooden-framed. The frames are well-sealed to surrounding stonework.
- The single-storey rear section has a corrugated metal mono-pitched roof and the stone elevations are rendered. Above the rear entry door there is a small soffit box. This is constructed of wood and has deteriorated significantly, leaving an access gap into this feature. There was no evidence of bat use associated with this soffit.
- A rear security light is inactive.

No field signs indicating the presence of bats were noted externally.

Main dwelling - internal

- The loft void has been removed through the removal of upper ceilings. No inspection of this former feature was possible.
- The roof is an A-frame of timbers with offset ridge beam. Two lines of sarking are present at the roof apex.

- The roof is lined with bitumastic roofing felt. There are a minor number of areas where light spill from the exterior can be seen.
- The chimney walls on the gables have minor mortar gaps and there is hole through into the chimney cavity.
- All interior walls have been stripped back to the original stonework.

There was no ability to detect field signs associated with the interior as the building had been stripped to its framework and was swept clean where flooring was present. There was no evidence of the presence of live bats at the time of the survey.

External - store/garage

- To the rear of the property and adjacent to its southern boundary, there appears to be two structures. It is unclear if these are interconnected internally as no access was available.
- It is reported that the buildings will remain and be unaffected by proposals.
- A small building has been demolished in this area.
- The larger structure is single storey, of stone construction and with a pitched corrugated metal roof. The smaller structure is of the same construction but with a mono pitched roof.
- Window and door spaces are wooden-framed.
- Stonework and mortar is generally well-sealed. There are some small gaps at the wall tops where they meet the roof.
- Internally, it appears the structures are used for storage.
- An immature elm tree grows adjacent to the buildings (between the buildings and the neighbouring property).

No field signs indicative of bats were found externally. There was no access to the interior.

4.3.2 Bat Activity survey

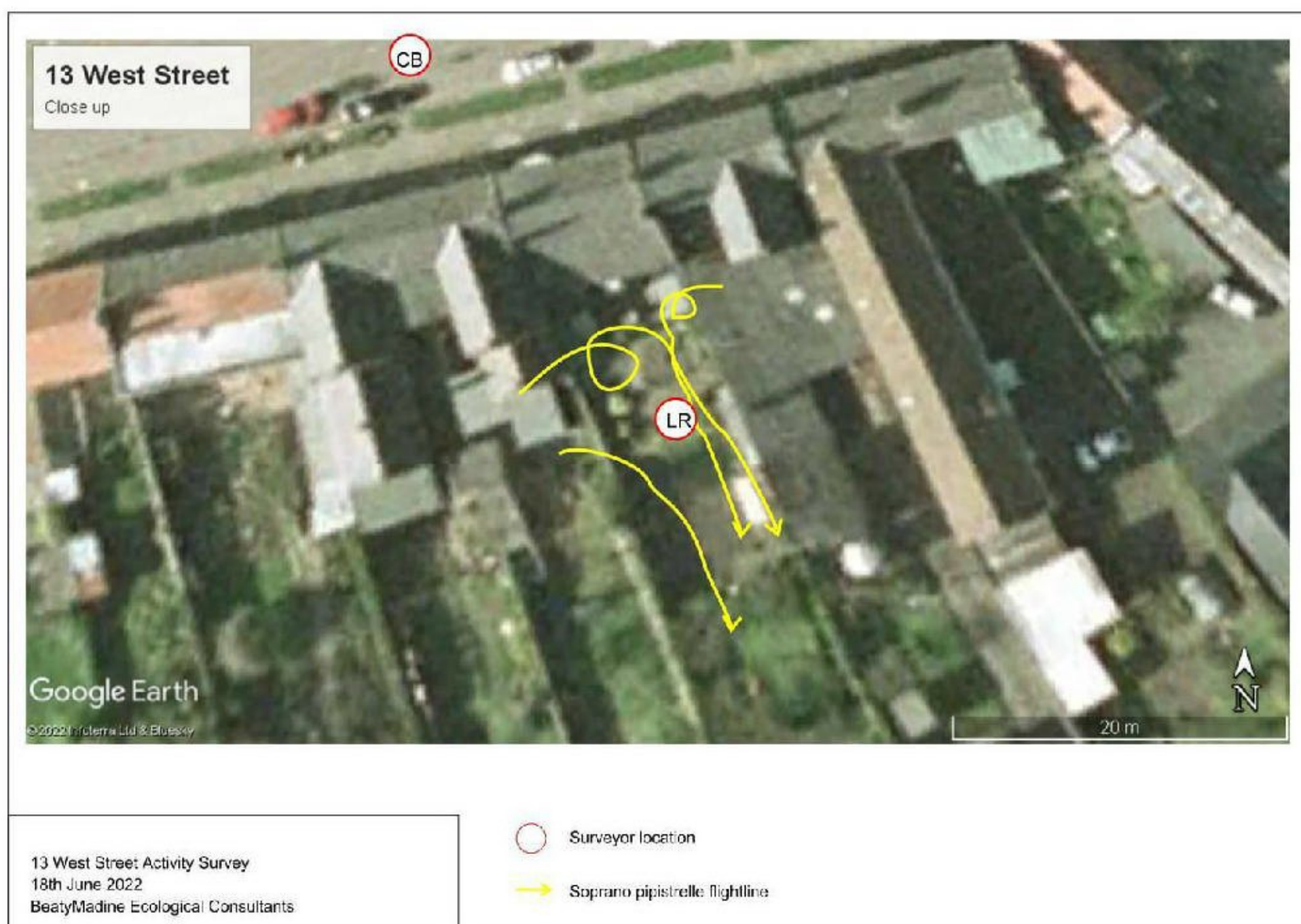
Figures are enlarged in Appendix 3 & Raw Data presented in Appendix 4.

18th of June 2022 - Dusk survey

Survey conditions were optimal for dusk survey work. There was no heavy rain or high winds and the assumption was that any bats roosting on site would emerge to forage. Street lighting was present to the front of the property. No security lighting or street lighting was present to the rear.

No activity was recorded to the front of the property. To the rear of the property, activity was low. Six bat calls were detected. Three of these were observed and comprised commuting soprano pipistrelles. A single soprano pipistrelle had a very short foraging bout within the site. The first bat was heard 32 minutes after sunset. Bats either entered the site from the west or east and commuted through the site to the south. This activity is likely to reflect bats emerging from individual roost sites and commuting to foraging habitat over pasture to the south.

No roost emergences were recorded from 13 West Street.



4.4 Birds

Evidence of nesting house martin was recorded beneath the bay window. A disused house martin nest was present at eaves height. A roosting house martin entered the front of the property. Urban passerine activity was noted within the rear ornamental boundary hedges.

4.5 Other species

No other protected species were recorded within the site.

It is likely that the notable species hedgehog and common toad will be present in the wider area.

4.6 Habitats

The only remaining habitat is the ornamental hedging and the immature elm tree. Neither will be affected by the proposals. All other greenspace has been levelled to bare soil.

4.7 Constraints and Reasoning

Access was available to the exterior and interior of the dwelling. Rear garden buildings could be inspected externally.

Bat survey work was undertaken to best practice guidance within accepted survey periods.

The survey was terminated when it became too dark to observe building features and the emergence light levels for all locally occurring bat species had been surpassed by a significant margin.

Species which have been excluded from detailed discussion, due to a lack of suitable habitat, include:

- great crested newt
- otter
- water vole
- reptiles
- badger
- red squirrel
- fish and bi-valves

The building works undertaken on site to date represent a significant constraint to assessing how the building may have been used by bat species. Removal of the ceilings, some floors, non-load bearing walls and stripping of the interior back to stonework will have created prolonged disturbance through noise, dust and vibration. Such disturbance would undoubtedly have affected bat use, if they had been present previously. It was also extremely difficult to assess for field signs such as droppings. Floors had been swept clean or were bare earth where floors had been removed. To the rear, works to date had removed features including an external staircase, rear stone wall, rear building, a garden building and all garden greenspace. Old stone features are known to be of value to roosting bats and removal of these features means assessment was not possible. The removal of the interior upper ceilings and the rear stone wall was deemed necessary due to health and safety considerations.

5 ECOLOGICAL APPRAISAL

5.1 Bat species

No evidence of the presence of roost locations was confirmed through survey. The activity recorded was limited to pipistrelle bats.

Based on the building inspection, it is not possible to conclude the value to the site to bat species prior to site works.

In its present condition, there is a low risk of transient use of the property by individual summer roosting pipistrelle bats. This would mostly likely be opportunistic rather than regular use given the levels of regular disturbance which will be experienced.

Maternity colonies of any species are considered to be absent. The risk of hibernation use is considered to be very unlikely due to the absence of deeper crevices which would maintain low temperatures throughout the winter months.

The likelihood of population level or locally significant effects as a result of the proposed works is considered to be negligible.

5.2 Birds

House martin have an active nest beneath the bay window of the property. Adults were observed to regularly return to feed chicks.

House martin are a red listed Bird of Conservation Concern. Red listed species are of most concern within the UK.

The nest is of local conservation significance and must not be removed while active.

5.3 Other protected or notable species

No evidence of other protected or notable species was recorded.

Hedgehog and common toad may be present in surrounding gardens and the site at times. This use is unlikely to be affected in the longer term, following the completion of this project.

5.4 Habitats

All green space associated with the rear garden has been stripped. There are two dividing hedgerows which remain insitu. An immature elm tree is present to the south of the site. These habitats will be retained and unaffected.

6 ASSESSMENT OF IMPACTS

The impact assessment below considers potential impacts **in the absence of mitigation**.

6.1 Short term impacts

Short term impacts consider the potential impacts during the proposed works. These impacts may be temporary or reversible and for this proposal include:

- A risk of harm to individual roosting bats, if present at the time of works.
- A risk of harm to nesting house martin and their chicks.
- Potential disturbance to wildlife commuting habitat through increased site lighting, if required during site works.
- Potential for entrapment of wildlife in any trenches created which are to remain open overnight.

6.2 Long term impacts

Long term impacts address the potential effects of development which are permanent, experienced post-development and may only become apparent in the longer term. These include:

- Loss of a small number of features which may be used opportunistically by individual roosting bats on occasion over the summer months.
- Entrapment of wildlife in breathable roofing membranes used to line the underside of the roof coverings within re-covered section.
- Permanent disruption to wildlife commuting corridors due to inappropriate lighting.

6.3 Potential ecological benefits

It is possible to provide specified bat roosting provision, bird nesting provision and garden greenspace to enhance the value of the site in the long post-development.

6.4 Conservation significance

The proposals are not associated with habitat impacts that would affect local core sustenance zones for any bat species.

The proposals are not considered to impact the local conservation status of any bat species.

There are no predicted impacts to statutory sites.

The proposals have potential to impact on the local conservation status of the bird species, house martin.

Other wildlife species can be protected from harm in the long term through mitigation recommendations and good working practice detailed within this report.

7 MITIGATION STRATEGY

All mitigation measures must be followed to prevent breaches of protected species legislation.

7.1 Retention of known roosting locations

No roosts have been identified therefore no retention is proposed.

7.2 Creation of suitable roost provision

A small amount of roosting provision will be required to ensure long-term potential roost sites post-development. In order to meet this requirement a total of 4 roosting opportunities, suited to individual crevice roosting bats, will be provided. The opportunities do not permit access to interior void spaces and will be created by:

- the installation of 4 bat bricks within the heightened rear elevation. These should be as close to eaves height as possible and away from any external light sources. www.nhbs.com and www.wildcare.co.uk provide various designs and styles.

7.3 Other species

- Works must not be undertaken to the bay window until the house martin chicks have fledged and the nest is no longer in use.
- Two house martin nesting cups will be installed. One at eaves height and one below the bay window after it has been replaced. These can be sourced from www.nhbs.com or RSPB.org.uk.
- The ornamental hedgerow will only be cut back over the winter months (September to February).

7.4 Roof stripping

- Works to strip the lower roof coverings over the rear of the building will ensure that all stripping of lifted, missing, slipped or broke tiles is undertaken by hand. Each tile must be lifted and turned to ensure no bats are present beneath these features. Following inspection, the tiles can be discarded.
- Should bats be discovered, all works must stop and the project ecologist must be contacted immediately on 07737719536.

7.5 Habitats

- Ornamental hedgerows and the elm tree will be retained.
- The planting scheme will feature native species which are of value to foraging invertebrates.

7.6 Good working practice

- No trenches will be left open overnight without a means of escape for wildlife species provided by a ramp of 30cm width, angled at no more than 45 degrees.
- Only roofing membranes approved by the Bat Conservation Trust will be used to line beneath the roof coverings.
- Light spill of greater than 2 lux will not be permitted to the eaves or roof coverings from installed light sources e.g. security lighting. Any security lighting will operate on a short timer.
- No uplighting of the building will be permitted.
- The building owners will be responsible for ensuring that all site contractors are provided with the requirements and the good practice working methods within this report.

7.7 Conclusions / Residual impacts/ Obligations

Provided that the mitigation scheme designed for the site is implemented, the residual risk to protected or notable species can be managed to ensure that harm to such species is avoided.

There are no predicted impacts to statutory sites.

The data presented is valid for 18 months from the date of this report.

The building owners will be responsible for ensuring that all site contractors are provided with the mitigation requirements and the good practice working methods within this report.

8 REFERENCES

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The Mammal Society, Publication 9 – Surveying Badgers.

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Bat Conservation Trust www.bats.org.uk

Multi-Agency Geographic Information for the Countryside magic.defra.gov

Bing Maps

Google Earth Pro

Historic land maps www.oldmaps.co.uk

APPENDICES

Appendix 1. Figures

Figure 1. Site Close Up



Figure 2. 500m radius



Appendix 2. Site Photographs



Photograph 1. Front elevation



Photograph 2. Active house martin nest beneath bay window



Photograph 3. Rear of property. Staircase below central window and built structure to right of image have been removed. Shallow mortar gaps can be seen



Photograph 4. Roof tile damage at rear



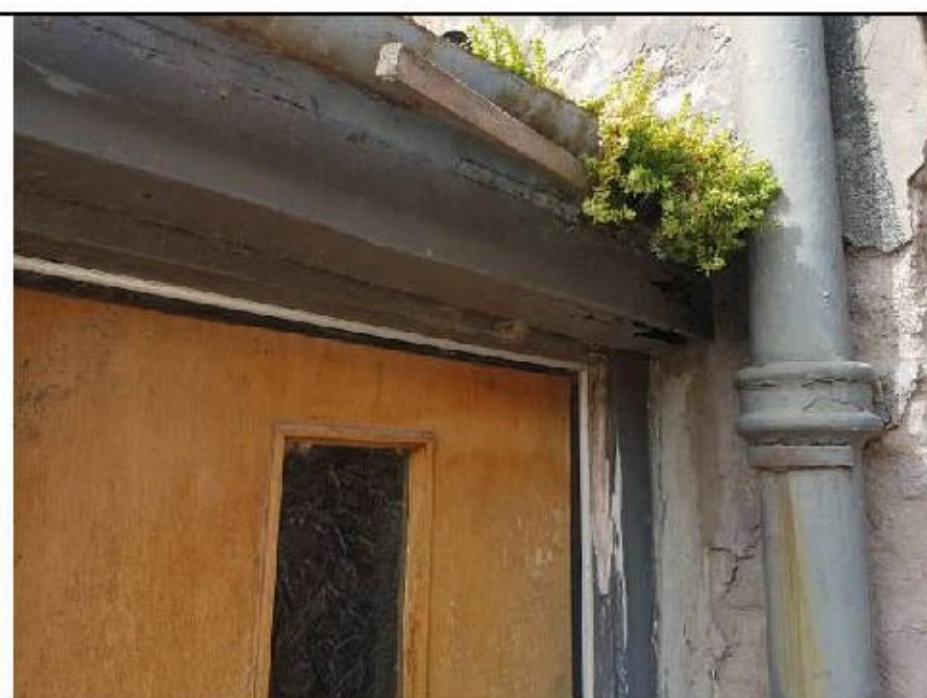
Photograph 5. Examples of slipped and lifted tiles as well as lifted lead flashing at rear



Photograph 6. Section of missing mortar at eaves height behind drainage stack.



Photograph 7. Lower floor single storey section



Photograph 8. Hole into soffit box above rear door



Photograph 9. Rear garden looking south



Photograph 10. Buildings at rear of garden which will be unaffected



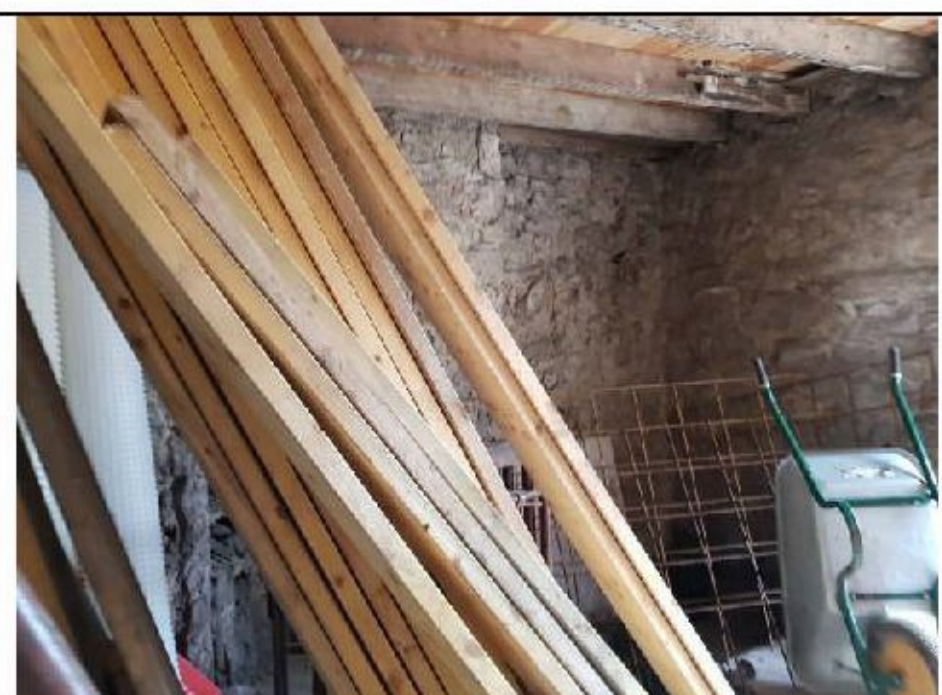
Photograph 11. Buildings at rear of garden which will be unaffected (2)



Photograph 12. Buildings at rear of garden which will be unaffected (3). Immature elm visible to right of image



Photograph 13. Example interior (ground floor)



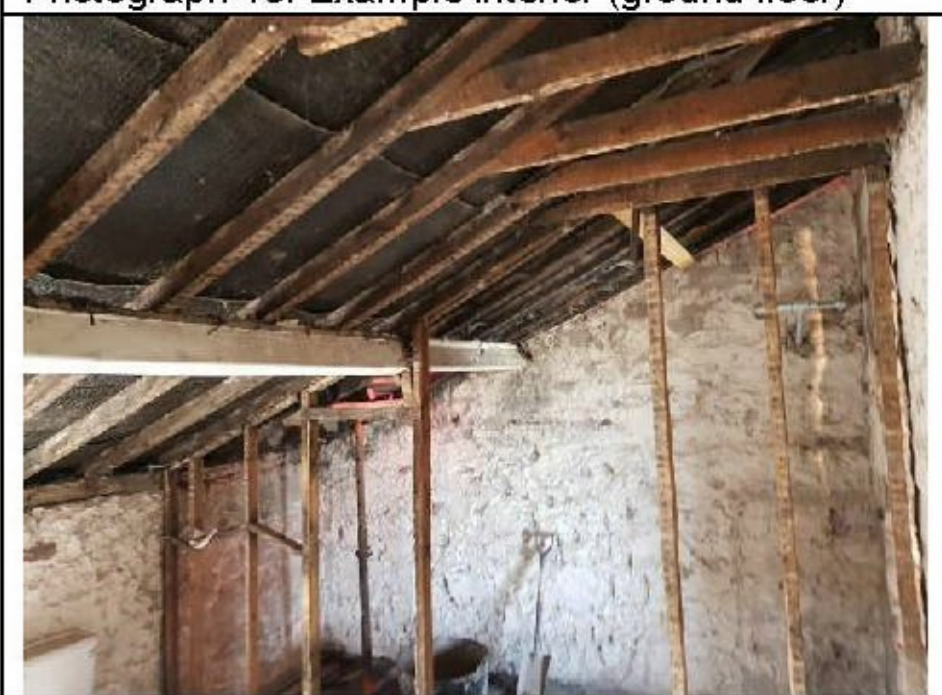
Photograph 14. Example interior (ground floor)



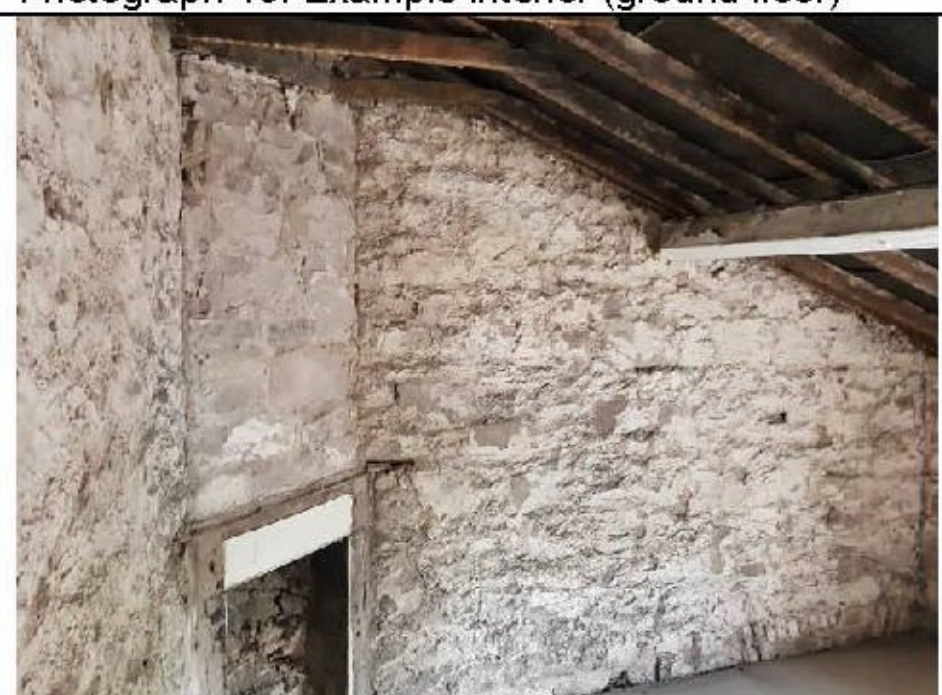
Photograph 15. Example interior (ground floor)



Photograph 16. Example interior (ground floor)



Photograph 17. Example interior (upper floor)



Photograph 18. Example interior (upper floor)



Photograph 19. Example interior (upper floor)



Photograph 20. Example roof construction and former void space



Photograph 21. Example interior access through roof coverings to exterior

Appendix 3. Bat activity survey - enlarged Figures



Appendix 4. Bat activity survey - raw data

Site name		Date		Lead surveyor		Total No. of surveyors + Initials		Period (dawn, dusk)		Sunset/sunrise time				
13 West Street, Norham		18.06.22		Elizabeth Ross		2 ER, CB		Dusk		21:57				
Weather Conditions (at 15 minute intervals or sooner if required)														
Time	00:00	00:15	00:30	00:45	01:00	01:15	01:30	01:45	02:00	02:15	02:30	02:45	03:00	Additional information
Wind	F1	F1	F1	F0	F1	F1	F1	F2						
Cloud (% cover)	30	30	20	10	40	10	10	40						
Rain	0	0	0	0	0	0	0	0						
Temperature	12.5							9.5						
Start time	21:40			End time	23:25			Start temp	12.5			End temp	9.5	
Surveyor name		ER						Surveyor name		CB				
Licence no. (or n/a)		2015-11464-CLS-CLS						Licence no. (or n/a)		n/a				
Time	Lux	Activity						Activity						
21:40														
21:45														
21:50														
21:55														
22:00														
22:05														
22:10														
22:15														
22:20														
22:25		22:27 P55 C south 22:29 P55 C south												
22:30		22:30 P55 C and F south												
22:35														
22:40		22:43 P45 HNS C												
22:45														
22:50														
22:55		22:56 P55 HNS C												
23:00														
23:05														
23:10														
23:15														
23:20														
23:25														

Abbreviations: 45 = common pipistrelle, 55 = soprano pipistrelle, Noc = noctule, BLE = brown long-eared. Myo = Myotis C= commuting, F = foraging, HNS = heard not seen, Ci = circling, RE = roost entry, Rem = Roost emergence

Appendix 5. Survey methodologies

Bats

Survey methodology is devised from guidance within Hundt L (2016) Bat Surveys: Good Practice Guidelines, 3rd edition, Bat Conservation Trust

Roosting bats use a variety of locations which are dependent on the species, time of year, sex and breeding status. Summer and winter roost sites are usually distinctly different. Similarly, roosts used by individuals are often different in nature to those used by maternity colonies. Establishing the nature and location of any roosting activity assists in assessing the potential impact(s) upon bat species and designing appropriate mitigation, compensation or enhancement schemes to ensure that the conservation status of local bat species is maintained.

The risk of bat use can be investigated by external and, where safe, internal inspection of buildings. The primary objective of which is to identify any roosting potential, signs of bat use and entry/exit points. This is complimented by activity surveys, where needed, which aim to determine the exact location, species and number of individuals present.

The external assessment of a building is approached systematically from the top to bottom of a property as follows:

- The roof coverings are assessed for the presence of:
 - Lifted or missing roof tiles, ridge tiles, coping stones or other coverings
 - Mortar gaps between ridge tiles or beneath tiles on gable end pointing
 - Lifted lead flashing
 - Damaged or lifted roofing felt
 - Damage to any other roof coverings
 - Chimney presence, construction type and condition of coverings and pointing
 - Condition of eaves height coverings such as soffit boxes, bargeboards, fascias & weatherboarding
 - Any other features which could provide potential crevice roosting locations or access to interior void spaces
- The elevations of the buildings are assessed for the presence of:
 - Areas of missing mortar
 - Stress fractures and weathering of stone/brick work
 - Lifted rendering or paintwork
 - Hanging tiles and the condition of such tiles
 - Exterior cladding and the condition of this cladding
 - Gaps associated with architectural features such as corner quoins
 - Condition of window/door lintels, sills and the fit of windows and doors
 - Potential access points into wall cavities
 - Assessment of the presence of field signs associated with potential roost sites - scattered droppings below entry/exit points/ fur-oil staining/ audible chatter
 - The presence of external light sources
 - Any other features such as signage, dense vegetation (e.g. ivy), previously installed bat mitigation, bird boxes etc are noted
- Surrounding habitats are assessed in terms of foraging and commuting provisions for local bat populations and how the habitat connects from the site into the surrounding area.

The internal assessment of a building by a licensed surveyor is approached as follows:

- Loft voids are accessed (where present and safe)
- The surveyor listens for any audible noise (bat chattering or bird alarm calls)
- A note is made of roofing materials, the roof construction & approximate dimension of the void
- Ridge boards, other horizontal timbers and timber joints are inspected for the presence of void roosting bats, scratch marks, fur-oil staining, clean areas of ridge board free from cobwebbing which could not be attributed to draughts

- Cobwebs throughout the void are inspected for bat droppings which may be caught within them
- The nature of the roof linings, if any, or the presence of sarking is noted.
- In the absence of artificial light sources, the surveyor assesses for daylight visible through the roof coverings or at eaves height. Measurements of lux are taken
- Any water-ingress damage is noted and humidity levels are recorded
- The surveyor then moves systematically around the loft void checking for scattered or piled bat droppings (if found, samples may be collected for DNA profiling). All surfaces including insulating materials, crawl-boards, stored items, water tanks etc are checked for bat droppings or feeding remains. A note is made of attempts to sweep or clean surfaces
- Evidence of bats (alive or dead) and whether young or adult are recorded
- Careful attention is paid to the condition of any chimney or gable end walls
- Where possible, wall top access is investigated
- The presence of any lighting is recorded and an assessment of the use of the lighting and loft space is requested from the owner/occupant
- Should bat colonies be present and become agitated then the surveyor will leave the loft void.

Bat activity survey

- Surveyor numbers and locations were selected to ensure coverage of all building elevations affected by the proposals
- Survey evenings/mornings were selected for a dry forecast & temperatures greater than 10°C
- Surveyors adopted their allocated positions at least 15 minutes before dusk (or 1.5 hours before dawn) and remained in position for 1.5hrs after dusk (or 15 minutes after dawn) or when low light conditions made observation of the buildings impossible
- A sample of calls (and any calls that were not recognised) were recorded for later analysis
- All surveyors used Batbox duet detectors paired with an Anabat Express or Echo Touch Meter Pro 2 attached to android phones and recorded the time, activity, direction of travel and number of bats observed. Any emergencies were highlighted on aerial images, survey recording forms and brought to the attention of the lead surveyor.
- The time of calls was used to cross-reference activity between the surveyors in order to link flight paths and directions. This also allows a method of identifying any bats detected by one surveyor and not another. If it is reasonable to assume that a 2nd surveyor would have detected the bat given the direction of travel, records would be highlighted as a '?emergence'.
- Weather data and temperature was collected every 15 minutes throughout the survey. Lux levels were collected every 5 minutes. If activity levels were high, the focus was on capturing data relating to the bat activity. Background parameters were taken at the next opportunity.
- All maps and survey forms were cross referenced and any recorded calls downloaded for analysis through BatSounds/Kaleidoscope software.

Breeding birds

The suitability of the exterior of the building and internal spaces (if accessible to bird species) are assessed to determine use/potential use by swallows (Bird of Conservation Concern amber listed), swift (BoCC amber listed) house martins (BoCC amber listed), house sparrow (BoCC red listed) and starling (BoCC red listed) as well as any other nesting bird species considered to nest in the type(s) of building present. Within the breeding season (March-August), this assessment is aided by species displaying breeding behaviour such as singing, alarm calling, nesting building or provisioning. Outside of the breeding season, this assessment is based on data consultation records, the presence of disused nests and the experience of the surveyor.

Notable species

The preliminary assessment included an evaluation of the likelihood of the presence of notable species based on sightings, field signs and risk assessment by an experienced surveyor. Target

notes for any records of species of conservation interest or habitat suitable for use by such species were made.