Project Name: Croft End Farm

Client: John Hodgson (on behalf of Adams Planning and Development Ltd)

Ecological Impact Assessment

AIBM Ecology

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Rev 01	updates following review included minor edits to text, grammatical errors and comments on significant effects value in relation to standard practices for ensuring no effect on ecological receptors in line with guidelines. The report was updated to reflect comments.
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Executive Summary

AIBM Ecology was appointed by John Hodgson (in collaboration with Adams Planning and Development Ltd) to undertake an Ecological Impact Assessment (EcIA) of farm buildings and associated land at Croft End Farm in Beckermet (grid reference NY 0211 0665). The proposed development (the Site) will constitute a change of use from agricultural to residential and is for up to 5 residential properties, with a land take of approximately 0.2 ha. Due to the type and small scale of the proposed development, a formal Environmental Impact Assessment (EIA) is not required but this document follows the Ecological Impact Assessment (EcIA) approach as per the Guidelines for Ecological Impact Assessment for the UK and Ireland Vers 1.1 (Chartered Institute for Ecology and Environmental Management (CIEEM), 2018).

To inform the EcIA, a Preliminary Ecological Appraisal (PEA), barn owl survey and bat survey were undertaken, including a desk study and Extended Phase 1 Habitat Survey. An initial scoping survey and protected species assessment was carried out in January 2021 to provide baseline data for the Site and assess the ecological implications of the proposed change of use. A bat assessment and survey and update habitat survey were carried out in May 2021.

No statutory or non-statutory sites will be impacted by the development. There are no priority habitats on or in the local zone of influence of the Site (within 250m).

The scoping and PEA recorded buildings and concrete access tracks as the bulk of the site (0.12ha), the remaining areas were modified (semi-improved) grassland that were species poor (0.08ha). A rose species recorded on-site is likely to be Japanese Rose (*Rosa rugosa*), which is a Schedule 9 non-native invasive species. The grassland areas had debris such as brick, stone, fencing materials and agricultural machinery across them. There were also semi-mature trees and shrubs, a privet (*Ligustrum ovalifolium*) hedge and a non-native species hedgerow of Leyland cypress (*Cupressus* x *leylandii*) on the boundary of the Site, but these are unlikely to be directly affected by the development. Next to the proposed development is residential properties and pasture grassland.

The main barn was considered to hold low bat roost potential, and potential for use by barn owl. There was potential for hedgehog, reptiles, and amphibians in the grassland areas around the Site, where there was wood, stone and brick debris to provide shelter. Although given the site location, distance for other suitable habitat and regular use of the Site it is considered a low risk that reptiles and amphibians would be affected. No other protected species are likely to be affected by the proposal.

A bat survey (roost potential and emergence) was carried out on 25th May 2021. No bats were seen coming from the buildings surveyed and it was concluded no roost was present. No evidence of barn owl was seen in the barn.

Key recommendations include (see Section 6 and 7 for more detail):

- Avoid impact on ash tree adjacent to Site.
- An ecological watching brief during site clearance as a precaution to check for bats during works on and roof removal of main barn, and amphibians, reptiles, and hedgehogs during clearance of sored materials. Placement of a hibernaculum to replace the habitat lost.
- Implement mitigation to avoid spread of invasive non-native species as required.
- Works/site clearance should be completed outside of the bird nesting season (March to August inclusive). If this is not possible then a bird nest check of the buildings should be carried out.

- Implement good working practices to avoid environmental impact of construction and use of sensitive lighting during operation.
- As mitigation and for a biodiversity net gain, it is recommended that bat and bird boxes are put up on the buildings to encourage bat and bird (particularly swallow) use and provide additional roosting habitat on the Site.

The Site will need to be reassessed if there is a significant change to the type or scale of development proposed, or if there are any significant changes in the use or management of the land. If a planning application is made two years or more after the PEA (May 2023) it is advisable to review and update the survey data. The bat data remains valid for 12 months.

2. Introduction

2.1 Project background and requirements

AIBM Ecology was appointed by John Hodgson (in collaboration with Adams Planning and Development Ltd) to undertake an Ecological Impact Assessment (EcIA) of farm buildings and associated land at Croft End Farm in Beckermet (grid reference NY 0211 0665), proposed for development (the Site) and which will constitute a change of use from agricultural to residential (see Figure 1, Appendix A for immediate surrounding habitat and location map).

The proposed development of up to 5 residential properties, involves land take of approximately 0.2 ha, which includes the agricultural buildings and storage yard around the buildings. The detailed layout of the proposed development was unknown, although an outline plan was provided. The outline plan is for three new properties to the south and a barn conversion to provide 2 properties with car parking and garden space provided. The whole Site will be developed, so avoidance of existing habitat loss is not possible.

Due to the scale of the project, an Environmental Impact Assessment (EIA) is not needed for this development. As per the guidelines (CIEEM, 2018) all developments should be subject to an EcIA regardless of size unless there is no impact on ecological receptors from the development.

This aim of this report is to provide an assessment of the potential ecological constraints associated with the development and potential mitigation required in terms of loss of buildings and vegetation within the Site to inform the EcIA. The EcIA will be utilised in a planning submission for the development. The recommendations and guidance presented within this EcIA may need to be reviewed when the exact layout of the proposed development is known.

This report details the results of a scoping exercise and subsequent Preliminary Ecological Assessment (PEA) of the Site, including a desk study and Extended Phase 1 Habitat, which given the size of the scheme, are included as part of this EcIA (not as a separate PEA report). The report also summarises the findings of a barn owl and bat assessment and bat emergence survey (separate report appended). All this information has been used to inform the EcIA.

The approach applied when undertaking this EcIA (including the PEA) accords with (CIEEM, 2018) and the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017). The EcIA addresses relevant wildlife legislation and planning policy as summarised in Section 1.2 of this report and is consistent with the requirements of *British Standard 42020:2013 Biodiversity: Code of Practice for Planning and Development*.

The purpose of surveys and reporting was to:

- Identify and categorise all habitats present within the Site and any areas immediately outside of the Site where there may be potential for direct or indirect effects (the "zone of influence");
- Identify whether there are known or potential ecological features (nature conservation designations) on or local to the Site;
- Carry out an appraisal of the potential of the habitats recorded to support protected or notable species of fauna and flora and complete further survey as necessary;
- Identify key ecological constraints to the proposed development and evaluate the significance of any potential effects;

- Provide advice on any potential ecological constraints and opportunities in the zone of influence, including the identification (where relevant) of any requirements for follow-up habitat and species surveys and/or requirements for ecological mitigation; and
- Provide a map showing the location of the identified ecological receptors of relevance and areas potentially constrained by the potential presence of ecological receptors (Figures 1 and 2, Appendix A).

The surveys and reporting were carried out by suitably qualified ecologists, Dr Mark Hampton (34 years of experience in ecology and nature conservation) and Tamsin Douglas (18 years of experience in ecology and nature conservation and holds a Class 2 bat survey licence 2015-10308-CLS-CLS and Natural England Class survey license for barn owl CL29/00451).

No significant limitations were experienced but further detail is given in Section 3.

2.2 Wildlife Legislation and Planning Policy

2.2.1 Wildlife Legislation

The following wildlife legislation is potentially relevant to the proposed development:

- The Conservation of Habitats and Species Regulations 2017 (as amended);
- Wildlife and Countryside Act 1981 (as amended);
- Countryside and Rights of Way (CRoW) Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006; and
- The Hedgerows Regulations 1997.

The above legislation has been considered when planning and undertaking this EcIA using the methods described in Section 2 when identifying potential constraints to the proposed development, and when making recommendations for further survey and mitigation, as discussed in Section 6. Compliance with legislation may require the attainment of relevant protected species licences prior to the implementation of the proposed development.

Further information on the requirements of the above legislation is provided as Appendix B.

2.2.2 National Planning Policy

The National Planning Policy Framework (NPPF) was first published on 27th March 2012. The NPPF was revised in July 2018 and again in February 2019 and sets out the Government's planning policies for England and how these are expected to be applied. Promoting a strong theme of sustainable development, the Framework aims to strengthen local decision making and reinforce the importance of up-to-date plans. Core aims of the NPPF include:

- The Presumption in favour of Sustainable Development;
- Delivering Sustainable Development – Building a strong competitive economy and ensuring the vitality of town centres;
- Promoting sustainable transport;
- Meeting the challenge of climate change, flooding and coastal change;
- Conserving and enhancing the natural environment; and
- Conserving and enhancing the historic environment.

The NPPF states the commitment of the UK Government to minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity. It specifies the obligations that the Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation and how this is to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development, or if development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species, or where impact is unavoidable, compensation may be required.

Section 15, paragraphs 170-177 of the 2018 NPPF includes provision for measurable net gain and creating/maintaining coherent ecological networks. Please note that these paragraphs are also material considerations when making planning decisions, whether plans or specific development projects and applications.

Further information on the relevant parts of the NPPF is provided as Appendix B.

2.2.3 Local Planning Policy

The Copeland Local Plan (2013) contains relevant environmental policies, and 'ENV2 Coastal Management and ENV3 Biodiversity and Geodiversity' are particularly relevant to the proposed development. Policy ENV3 states that:

"The Council will contribute to the implementation of the UK and Cumbria Biodiversity Action Plan within the plan area by seeking to:

A. Improve the condition of internationally, nationally and locally designated sites

B. Ensure that development incorporates measures to protect and enhance any biodiversity interest

C. Enhance, extend and restore priority habitats and look for opportunities to create new habitat

D. Protect and strengthen populations of priority or other protected species

E. Boost the biodiversity value of existing wildlife corridors and create new corridors, and stepping stones that connect them, to develop a functional Ecological Network

F. Restrict access and usage where appropriate and necessary in order to conserve an area's biodiversity value."

These planning policies have been considered when assessing potential ecological constraints and opportunities identified, and when assessing requirements for further survey and ecological mitigation.

2.2.4 Cumbria Biodiversity Action Plan (BAP)

The Cumbria BAP was published in 2001, by the Cumbria Biodiversity Partnership. This aims to raise public awareness and understanding of the natural environment and hopes to encourage local people and politicians to take a closer interest in biodiversity in order to take action to help vulnerable wildlife and threatened habitats. Twenty-one species and eighteen habitats have been identified in the Cumbria BAP for priority action, with targets set for recovery. These include bats, reptiles and hedgehog (*Erinaceus europaeus*).

3. Methods

3.1 Scoping Exercise and desk study

A formal scoping exercise in terms of consulting the Local Planning Authority or regulators was not carried out prior to submission, due to the small scale of the development.

On 29th of January 2021 a site visit was undertaken to ascertain what general habitats were present and the likely zone of influence of the scheme to inform further survey requirements and promote initial discussion on design.

A desk study exercise was undertaken to inform the scoping assessment and further site surveys. This included examining OS maps for the area, a search of the National Biodiversity Network (NBN) website and the Defra Multi-Agency Geographic Information for the Countryside (MAGIC) website. In addition, there was publicly available planning information for local proposed developments, including ecological data, which were also considered, including Cumbria Biodiversity Data Centre (CBDC) data records from 2018, for surveys carried out in 2016 and 2017.

Data from CBDC was purchased in April 2021. The overall desk study identified any statutory nature conservation designations, local non-statutory nature conservation designations and protected and notable habitats and species within approximately 2 km of the Site boundary.

Table 1 summarises the desk study data collected. All measurements stated are approximations. Protected and notable habitats and species include those listed under Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended); Schedules 2 and 5 of the Habitat Regulations; species and habitats of principal importance for nature conservation in England listed under Section 41 of the NERC Act; and other species that are Nationally Rare, Nationally Scarce or listed in national or local Red Data Lists and Biodiversity Action Plans.

Table 1 Desk Study Data Sources

Data Source	Date	Purpose
Multi-Agency Geographic Information for the Countryside (MAGIC) website	January and May 2021	Statutory designations within 2 km. Ancient woodlands and notable habitats within 2 km. Higher Level Environmental Stewardship agreements applied to the Site. Information on habitats and habitat connections (based on aerial photography) relevant to interpretation of planning policy and assessment of potential protected and notable species constraints.
Recent planning application information from Copeland Borough Council and Cumbria County Council (where applicable Records Centre data records known for the area). Cumbria Biodiversity Data Centre (CBDC) data search. National Biodiversity Network (NBN). Natural England Open Data Portal.	January and April 2021	Review of recent planning applications – submitted and approved. Non-statutory designations within 2 km from records centre. Protected and notable species records within 2 km (records for the last 10 years only).
Ordnance Survey 1:2500 Pathfinder maps and aerial photography	January 2021	Information on habitats and habitat connections (based on aerial photography) relevant to interpretation of planning policy and assessment of potential protected and notable species constraints.
Cumbria Local Biodiversity Action Plan (LBAP)	January and April 2021	General information on Local Biodiversity Action Plan Priority Habitats and Species.

Whilst a more detailed and up-to-date search was carried out, there were available previous records, which were used to inform the assessment. Also, the author lives in the village and has carried out various data collection exercises in the local and wider area, including plants, bats, birds, otter *Lutra lutra*, reptiles and amphibians (predominantly natterjack toad *Epidalea calamita*).

In addition, and as part of the scoping exercise, discussion was held with the planning agent (Russell Adams) and the landowner (John Hodgson) as to the scope and design of the development.

3.2 Field Survey

The field survey comprised a Phase 1 habitat survey alongside an appraisal of the potential suitability of the habitats present to support protected and notable species, specifically bats and barn owl in the buildings, alongside a general site appraisal. Following the initial appraisal, bat and barn owl surveys by a licenced ecologist were commissioned which included a bat emergence survey.

3.2.1 Phase 1 Habitat Survey

A Phase 1 habitat survey was undertaken following the standard survey method (Joint Nature Conservation Committee, 2010). Phase 1 habitat survey is a standard method of environmental audit. It involves categorising different habitat types and habitat features within a survey area. The information

gained from the survey can be used to determine the likely ecological value of a site, and to direct any more specific survey work which may need to be carried out prior to the submission of a planning application. The standard Phase 1 habitat survey method can be "extended" to record target notes on protected, notable, and invasive species.

An initial survey was undertaken on 29th January 2021 (see above), which was updated on 25th May 2021 by a suitably experienced AIBM-E ecologist who recorded and mapped all habitat types present within the survey area, along with any associated relevant ecological features observed. The survey area encompassed all safely accessible parts of the Site and adjacent habitats to a maximum distance of 50 metres, where access permission had been granted in advance of survey, or this land was visible from within the Site boundary or from public rights of way, or other publicly accessible areas.

Photographs of the Site were taken (Appendix C) and where relevant ecological features were present, target notes (Appendix C) were recorded and the position of these shown on the Phase 1 Habitat map (Figure 2 in Appendix A). Typical and notable plant species were recorded for different habitat types and reflect the conditions at the time of survey. This was not intended to be a detailed inventory of the plant species present in the survey area, as this is not required for the purposes of Phase 1 habitat survey.

3.2.2 Appraisal of Potential Suitability of Habitats to Support Protected and Notable Species

An appraisal was made of the potential suitability of the habitats present to support protected and notable species of plants or animals. Field signs, habitat features with potential to support protected species and any sightings or auditory evidence were recorded when encountered; further, more detailed surveys were carried for bat species, which included undertaking a preliminary bat roost appraisal of all trees and buildings within and on the boundary of the Site and carrying out an emergence survey (see Appendix D).

In addition, specific attention was given to identifying instances of invasive non-native plant species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Locations of plants or stands of any such invasive non-native plant species if found were recorded.

Section 5 of this report identifies further requirements for species surveys based on the results of the desk study and habitat survey. These surveys should be completed prior to submission of a planning application as the results are likely to be material for determination of the planning application.

3.2.3 Preliminary Bat Roost Appraisal and Emergence Survey

An initial external inspection of all trees and external and internal inspection of all buildings within or on the boundary of the Site was undertaken on 25th May 2021 by Tamsin Douglas. In addition, an emergence survey was carried out on 25th May 2021.

This survey was conducted in line with the bat survey guidelines (Collins, 2016) and in accordance with the *British Standards Institution (2015) BS 8596:2015 Surveying for bats in trees and woodland guide*.

A separate bat report including details of methods utilised for the surveys is included in Appendix D.

3.2.4 Barn Owl Survey

A barn owl (*Tyto alba*) survey was carried out on 25th May 2021 by Tamsin Douglas, who holds a barn owl licence. The details of methods utilised for the survey is included in Appendix D.

3.3 Assessment

The methodology used to assess the impacts of the Scheme impacts on ecological receptors is based on the published guidelines (CIEEM, 2018).

Areas and/or species of ecological value within the assessment study area and the main factors contributing to their value are described herein. An ecological resource or feature is considered to be valuable (or have potential value) at the following scales:

- International and European
- National
- Regional
- Metropolitan, County, vice-county or other local authority-wide area
- River Basin District
- Estuarine system/Coastal cell
- Local.

The impact on a resource or feature has a number of characteristics that need to be fully described before the significance of the effect can be assessed. These include:

- Direction (positive, negative or neutral impact);
- Magnitude (the amount or level of impact);
- Extent (area in hectares, linear metres, etc);
- Duration (in time or related to species life-cycles);
- Reversibility (i.e. is the impact permanent or temporary);
- Timing and frequency (e.g. related to breeding seasons); and
- Cumulative effects (i.e. impacts from a number of sources and/ or the combined effects of other developments in the area).

The CIEEM guidance states that impacts should be determined as being significant when they have an adverse or positive effect "on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographical area". Such impacts may be significant at the level of importance defined in the Evaluation section or, for habitats and species, at a lesser geographical scale.

Using this information and professional judgement, it is then determined whether the effects would be significant or not on the integrity (of sites/ecosystems) or conservation status (of habitats/species) of each ecological feature and the impact significance is determined at the appropriate geographical scale. For example, a limited impact on woodland of County importance can be assessed as significant at the District level of importance.

In general, the impact assessment process involves:

- identifying and characterising impacts and their effects;
- incorporating measures to avoid and mitigate negative impacts and effects;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects;
- identifying opportunities for ecological enhancement.

The terms ‘impacts’ and ‘effects’ are noted as:

- Impact – Actions resulting in changes to an ecological feature. For example, the construction

activities of a development removing a hedgerow.

- Effect – Outcome to an ecological feature from an impact. For example, the effects on foraging and movement of a bat population from loss of a hedgerow.

Mitigation/Compensation

Whilst it is considered only essential to assess and report significant residual effects that remain after mitigation measures have been taken into account, consideration is given to the effect of an impact prior to mitigation. Relevant ecological features that may represent constraints to the proposed development are identified in Section 3 of this report.

The NPPF and local planning policy (summarised in Section 1.2 of this report) specify requirements for the protection of features of importance for biodiversity. Such considerations are a material consideration when determining planning applications.

Compliance with planning policy requires that the proposed development considers and engages the following mitigation hierarchy where there is potential for impacts on relevant ecological receptors:

1. Avoid features where possible;
2. Minimise impact by design, method of working or other measures (mitigation) e.g. by enhancing existing features; and
3. Compensate for significant residual impacts, e.g. by providing suitable habitats elsewhere (legally enforceable through planning condition or Section 106 agreement).

This hierarchy requires the highest level to be applied where possible. Only where this cannot reasonably be adopted should lower levels be considered. The rationale for the proposed mitigation and/or compensation should be provided with planning applications, including sufficient detail to show that these measures are feasible and would be provided.

The likelihood of the relevant ecological features constraining the proposed development has been assessed with reference to the scale described in Table 2. The higher the importance of the ecological feature for the conservation of biodiversity at national and local scales, the more likely it is to be a material consideration during determination of a planning application.

Table 2 Scale of Constraint to Development

Likelihood	Definition
High	An actual or potential constraint that is subject to relevant legal protection and is likely to be a material consideration in determining the planning application (e.g. statutory nature conservation designations and European/nationally protected species). Further survey likely to be required (as detailed in this report) to support a planning application.
Medium	An actual or potential constraint that is covered by national or local planning policy and, depending on the level of the potential impact as a result of the proposed development, may be a material consideration in determining the planning application. Further survey may be required (as detailed in this report) to support a planning application.
Low	Unlikely to be a constraint to development or require further survey prior to submission of a planning application. Mitigation is likely to be covered under Construction Environmental Management Plan (CEMP) or precautionary working method statement (e.g. generic requirements for the management of nesting bird risks).

3.4 Desk Study and Field Study Limitations

The aim of a desk study is to help characterise the baseline context of a proposed development and provide valuable background information that would not be captured by a single site survey alone. Information obtained during a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular habitat or species does not necessarily mean that the habitats or species do not occur in the study area. Likewise, the presence of records for particular habitats and species does not automatically mean that these still occur within the area of interest or are relevant in the context of the proposed development.

Where habitat boundaries coincide with physical boundaries recorded on OS maps the resolution is as determined by the scale of mapping. Elsewhere, habitat mapping is as estimated in the field and/or recorded by hand-held GPS. Where areas of habitat are given, they are approximate and should be verified by measurement on site where required for design or construction. While indicative locations of trees are recorded this does not replace requirements for detailed specialist arboricultural survey to *British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction*.

The optimum time for undertaking a Phase 1 habitat survey is between May and September when flowering plants are at their most visible. The initial survey was undertaken on 29th January 2021 but was subsequently updated in May 2021 to allow identification of plants within certain habitats that may not have been visible or could only be identified to genus rather than species level in January.

4. Baseline Conditions

4.1 Scoping

Site

An initial site visit determined that the Site was made up of agricultural buildings (generally lean-to structures for materials and machinery storage, along with a workshop) with the main building being a stone-built barn, along with hardstanding (as concrete access tracks) and small areas of what appeared to be low quality improved/modified grassland, which were covered with materials such as fencing posts and wire, stone and rubble and machinery. There were shrubs and semi-mature trees on the boundary of the site (often outside the ownership boundary). Currently, the Site is used regularly as an agricultural yard, workshop, and storage area with regular activity on Site and within the buildings present.

Adjacent and local Land Use and habitats

The adjacent land-use was residential properties and gardens, pasture grassland and arable fields (see Figure 1 for immediate habitat around Site). To the north (approx. 60m away) beyond a road and residential properties was a treelined beck (Black Beck) but there was limited ecological connectivity from the Site to the beck. The arable fields and pasture grassland were the main habitats within 250m to the south of the Site. Directly east and west was residential land, with pasture grassland beyond. It is a rural/agricultural setting, with the Site being in a small village. The nearest ponds were around 400m away to the south.

Outcome

The scoping visit determined the need for:

- a Phase 1 Habitat Survey to capture all habitats fully on Site and to ensure no species were

missed such as invasive non-native species.

- a bat and barn owl appraisal of the main barn and a bat appraisal of the other buildings on Site as a precaution and to be carried out by a suitably qualified ecologist (with bat and barn owl licenses).
- If required emergence or re-entry surveys of any trees or buildings assessed to have bat roost potential.

4.2 Desk Study

Below are the results for statutory and non-statutory designated sites. Species data is listed under the relevant species section.

4.2.1 Statutory Designated Sites

Low Church Moss Site of Special Scientific Interest (SSSI) is approximately 0.9km to the southwest of the Site. This comprises wetland and a pond, which has historically held great crested newts (*Triturus cristatus*). This site is also notable for its invertebrate interest. The next nearest SSSI is Silver Tarn, Hollas and Harnsey Mosses, which is around 2.2km to the west of the Site.

There are no statutory designated sites in the zone of influence of the development. No impacts or significant effects on statutory designated sites are foreseen and they are not considered further in the report.

4.2.2 Non-Statutory Sites

Four County Wildlife Sites were within 2km of the Site. These were Low Church Moss Site of Invertebrate Significance (0.9 km to the southwest), Terence Bank Wood (1.7km to the southeast), Braystones Coast (1.8m to the west/southwest) and Gibb Tarn (1.85km to the west).

There is an ancient woodland site Nursery Wood approximately 560m to the southeast of the Site.

There are no non-statutory designated sites in the zone of influence of the development. No impacts or significant effects on non-statutory designated sites are foreseen and they are not considered further in the report.

4.3 Phase 1 Habitat Survey and Protected Species Assessment

4.3.1 Habitats

The habitats recorded and their approximate extent are detailed below and shown in Table 3 and on the Figure 2 in Appendix A. The associated target notes are provided in Appendix C.

Table 3 Habitats present, in descending order based on spatial area occupied

Habitat	Area m^2	% of Site Area
Improved Grassland	770	38.5
Buildings and hardstanding	1200	60
Scattered trees and shrubs	30	1.5
Hedgerows intact (native)	Length – 24m	n/a
Hedgerows intact (non-native)	Length - 38m (outside boundary)	n/a
Hedgerows (defunct)	Length – 18m	n/a

Semi-improved Grassland

Semi-improved grassland was present in several locations within the Site, which has likely been sown with grass seed mixes in the past and the areas were generally quite disturbed, with machinery being stored on much of the areas seen.

The species recorded included Yorkshire fog (*Holcus lanatus*), cocksfoot (*Dactylis glomerata*), perennial rye grass (*Lolium perenne*), annual meadow grass (*Poa annua*), meadow foxtail (*Alopecurus pratensis*), sterile brome (*Bromus sterilis*), sweet vernal grass (Anthoxanthum odoratum), red fescue (*Festuca rubra*) and creeping bent (*Agrostis stolonifera*). Herb species recorded included silverweed (*Potentilla anserina*), common mouse ear (*Cerastium fontanum*), cow parsley (*Anthriscus sylvestris*), broad-leaved dock (*Rumex obtusifolius*), ribwort plantain (*Plantago lanceolata*), greater plantain (*Plantago major*), hogweed (*Heracleum sphondylium*), a willowherb (*Epilobium* sp.), dandelion (T*araxacum* agg.), daisy (*Bellis perennis*), cleavers (*Galium aparine*), white clover (*Trifolium repens*), tormentil (*Potentilla erecta*), garlic mustard (*Alliaria petiolata*) and hairy bittercress (*Cardamine hirsuta*).

There were areas of stored materials and machinery on the grassland areas (see below).

Scattered Trees and Shrubs

There are several semi-mature trees on the Site including ash (*Fraxinus excelsior*), holly (*Ilex aquifolium*) and sycamore (*Acer pseudoplatanus*). One ash was outside the Site, on a boundary bank, which may have been part of a now defunct hedgerow that is growing out (TN1 and Photograph 1). The base appeared to be quite old, but the stems appeared semi-mature in width and height. Some of the sycamore appeared to have been laid as part of a now defunct hedge on the eastern boundary.

There were shrubs noted again along the boundary mainly to the southeast and included a rose, which appeared to be Japanese Rose (TN2 and Photograph 2), garden privet, elder (*Sambucus nigra*) and bramble (*Rubus fruticosus* agg).

Japanese Rose is an invasive non-native species as listed on Schedule 9 of the Wildlife and Countryside Act (1981, as amended).

Buildings and Hardstanding

There was a large stone barn, which was the main stone building on the Site (B3, TN3 and see Photographs 3 and 4). This had machinery and straw bales stored in it. It was open inside with no roof space, along with small 'window' openings on all sides (no glass present). The roof was corrugated asbestos with metal beams. There were storage rooms under the barn, accessed via B2.

There were nine other structures across the Site. B1, B2, B4, B5 and B6 had brick walls and metal or asbestos corrugated roofs, with no roof space present. B7a&b, B8 and B9 were mainly 'lean-to' structures with brick or breeze block sides (often to half the building height or completely open, and with wooden framework with corrugated metal or asbestos roofs. There was also a metal corrugated tunnel to far southwest corner, which had wood material stored in it. A summary of these buildings is given as follows:

- B1 was a small brick-built storage structure with a metal corrugated roof.
- B2 was the front roadside section with a brick wall as the front of the building, which had a corrugated asbestos roof. This was separated into various section by brick/block walls and connected to further storage space under B3.
- B4 was an old milking parlour with brick walls and slate roof.

- B5 was a small storage building with brick walls and metal corrugated roof.
- B6 was brick built with a corrugated asbestos roof and was a grain store.
- B7a was an open fronted and sides with wooden framework and breeze blocks to half its height, connected to B7b with a corrugated asbestos roof, utilised for storing equipment.
- B7b was spilt into two with the northern section being an open structure with half breeze block and half wooden slat walls, whereas the southern section had breeze block wall and metal roof. The northern section was a workshop, and the southern section was used for storage of equipment and wood.
- B8 was completely open fronted hay barn with breeze block sides and back. The roof was corrugated asbestos and was fully open. This was also used for storing tractors and other large farm machinery.
- B9 connected to B7 and consisted of a wooden lean-to connected to B7 as open space with a metal corrugated roof, which linked to a second area with breeze block walls and corrugated metal roof. Both sections were storage for farm materials, small machinery and wood.

The entrance to the Site and running through much of the Site between and under the buildings, was a concrete track.

Hedgerows and Fences

The boundaries of the Site were predominantly scattered trees and shrubs (generally outside the Site ownership boundary), post and wire fencing and/or stone walls. A privet hedge (H1) was recorded on the western boundary towards the entrance to the Site. A defunct hedge was seen north-east of the Site, which contained an old laid sycamore (H2). There was also a section of Leyland cypress hedge on the eastern boundary, running to the south-east corner of the Site and along the back of B8 (H3), just outside the landownership (red line) boundary. Some of the stone walling was falling into disrepair, although to the southeast and going south away from the Site, the stone wall was more intact.

There was wooden, post and rail fence on the southern boundary of the Site, with a gate.

Stored Materials

There were areas of the Site that had stone, brick and wood piles (TN4) and machinery was scattered around the Site (see Photographs 5 and 6). The stone, brick and wood piles offer suitable habitat to a variety of species (see below).

Summary Assessment

The areas of grassland appeared to be of low conservation value but there was stored fencing, brick and stone rubble/material that offer resting and hibernating habitat for hedgehog (*Erinaceus europaeus*), amphibians and reptiles (see below).

The ash tree outside of the Site but on the boundary (on a bank, which likely had a hedgerow that is now gone) was many stemmed with some ivy cover. The tree appeared semi-mature from the stem size but had an old base, suggesting coppicing/hedgerow management had occurred. Japanese Rose is potentially present on Site.

4.3.2 Protected and notable species

Bats

Bat records include a common pipistrelle (*Pipistrellus pipistrellus*) roost (house) in Beckermet around 150 m to the west and two soprano pipistrelle (*Pipistrellus pygmaeus*) roosts (houses) around 500 m and 600 m to the north-west, respectively. Other species noted included noctule (*Nyctalus noctule*) and brown long-eared (*Plecotus auritus*) within 2 km of the Site, but not within the village. The author has recorded common and soprano pipistrelle, and noctule locally, with roost locations being noted in the village. The Site itself has not previously been surveyed for bats. For further desk study detail see Appendix D.

A bat assessment of the buildings and the overall Site was carried out by a bat licensed ecologist. The detail of the bat survey and findings is found in Appendix D.

In summary, B3 held low to moderate and B6 held low potential for roosting bats. The other buildings were considered to hold negligible (B7a&b and B9), to very low potential (B1, B2, B4, B5 and B8) for roosting bats. The very low category, assigned by the bat licensed ecologist, is based on a remote possibility of use, which cannot be fully ruled out as negligible, but no further surveys are required due to the nature of the buildings and their limited capacity to hold bat roosts.

The bat guidelines (Collins, 2016) recommend that all buildings with low potential should have one survey carried out (either dusk or dawn) and moderate potential, two surveys are recommended. As such further survey was recommended for B3 and B6. Based on the experience of the bat ecologist, one emergence survey was undertaken on B3 and B6 and which also covered buildings B4 and B5).

During the emergence survey, no bats were recorded exiting (or entering) any potential roost spaces of the buildings surveyed. Foraging pipistrelles were recorded around the buildings during the survey.

The ash tree (TN1) was considered to have low potential for bat roosts and so no further survey is required on the tree (Collins, 2016).

Bat species are considered further in terms of precautionary methods and enhancement.

Birds

Barn Owl is known locally and is regularly seen local to the village, mainly seen foraging over wetland to the southwest (approx. 1.5km southwest of the Site). Species such as yellowhammer (*Emberiza citronella*), greater spotted woodpecker (*Dendrocopos major*), skylark (*Alauda arvensis*), curlew (*Numenius arquata*), swallow (*Hirundo rustica*), sparrowhawk (*Accipiter nisus*) and lapwing (*Vanellus vanellus*) have all been recorded within 2km of the Site. A swallow nest was recorded in the hay barn (B8).

A barn owl survey of B3 was completed by a licensed ecologist. No evidence of barn owl was recorded, and the species is not considered further (see Appendix D for further detail).

A swallow nest was recorded in B8.

Bird species are considered further in terms of precautionary working and enhancement.

Reptiles

Adders (*Vipera berus*) are known locally with the nearest sightings being 1.3 km to the southwest along an old disused railway. Slowworm (*Anguis fragilis*) has also been recorded locally but again this is around 1.2 km to the south of the Site. Grass snake (*Natrix helvetica*) (nearest record 1 km to southwest) and common lizard (*Zootoca vivipara*) (nearest record 1 km to southwest) have also been recorded within 2 km of the Site.

Whilst restricted in suitability for reptiles, there were stored fencing, brick, and stone rubble/material in various locations (TN4), and these offer some limited resting and hibernating habitat for reptiles and as such these species are considered further.

Amphibians

Great crested newts (GCN) are known in the wider area, with nearest record being 900m away in Low Church Moss SSSI. Natterjack toads are known around the coast, but the nearest locations are around 2km away.

There was no suitable breeding habitat on Site for either species, and it is considered highly unlikely GCN, or natterjack toads would be present given the distance to the nearest populations. These species are not considered further.

The stored fencing, brick and stone rubble/material and these were considered to offer resting and hibernating habitat for amphibians such as toads (*Bufo bufo*), frogs and smooth newts (*Lissotriton vulgaris*). Smooth newts have been recorded around 300 m to the west of the Site. The nearest common toad record was around 600 m to the northwest of the Site. These species are considered further.

Otter

An otter territory is known on the River Ehen around 1.7 km from the Site and evidence has been noted at various locations local to the village (spraints, footprints and resting up sites). These are generally close to the watercourses such as Black Beck, Kirk Beck and the River Ehen, with the nearest being around 500 m from the Site.

Given the type and nature of the Site and its use, it is highly unlikely that otter would use the Site and this species is not considered further.

Hedgehog

There were various records for hedgehog in the local area. The nearest record was 300 m to the northwest, within the village. There was potential habitat present on Site for hedgehog (TN4) and they are considered further.

Invertebrates

There were many invertebrate records from the local and wider area and important invertebrate sites are known locally (Low Church Moss SSSI). The more local records were for butterflies and moths and many Local BAP species were present including small heath (*Coenonympha pamphilus*) and garden tiger moth (*Arctia caja*). However, given the nature of the habitats present and use of the Site, it is unlikely that an important invertebrate fauna would be present and the development would not affect the status of invertebrate populations in the local area and so this group is not considered further.

5. Important Ecological features

Given the development, the present site use and the habitats noted within local zone of influence it is considered the impact assessment be only for the Site itself. There are no designated sites that would be impacted, and no other species would be impacted other than those potentially on the Site.

The habitat surrounding the Site is of only low nature conservation value and there are no connecting habitats impacted that may have linked the site to wider potential areas of nature conservation interest.

The main barn (B3) was considered to hold potential for bat roosts and barn owl breeding. However, no bats were recorded using the building during the survey and barn owl was not present. A swallow nest was found in the hay barn (B8) and should be a consideration for the development.

There is habitat on Site that could be utilised by reptiles, amphibians and hedgehog. Whilst it is considered unlikely that the Site is a significant habitat resource for these species, an assessment is required to ensure no harm come to these species.

6. Evaluation and Assessment of Effects and Mitigation, Compensation and Enhancement Measures

6.1 Outline development proposals

The development proposal is for up to five residential properties on Site. The main barn would be converted to two properties, with a further three properties to the rear of the main barn. The lean-to structures would all be removed, and the Site (including all materials and vegetation) cleared for building. The front of the barn is likely to be car parking, with soft landscaping such as shrubs and herbs. To the rear of the barn would be gardens and further south three more standalone properties with garden space.

No direct impact outside of the Site boundary is expected (possible indirect Impact on ash tree outside Site boundary). All the services and access requirements are within the Site boundary. The key impacts outside the Site are likely to be indirect impacts and from construction works, such as the potential for noise and dust generation. Standard construction and best practice methods for reducing any impacts will be employed, such as dust suppression and noise attenuation. In consultation with the planning consultant, it was agreed that the development would not impact the ash tree, with the agreement that the design include a garden area in this location to the boundary and the tree being subject to a buffer zone from building works.

6.2 Scope of Assessment

The assessment of effects from the proposed development is based on the criteria set out in Section 2. The outline development proposals mean that the whole Site will be developed – the main barn (B3) will stay but is to be converted to residential use. The assessment of effects is based on the clearance of the Site, with no effects expected on wider/adjacent land).

In summary the proposed development will result in:

- Direction - negative impact, although there will be garden space created;
- Magnitude - loss of all potential habitat (buildings, shrubs and improved grassland – 0.2 ha);
- Extent - whole Site – 0.2 ha;

- Duration - unknown but possibly 12-month period;
- Reversibility - impact is permanent;
- Timing and frequency - unknown at this point but site clearance is recommended for late autumn/winter; and
- Cumulative effects – no other sources of impact are foreseen and there are no other significant developments in the local or wider area, with the nearest ones being a residential barn conversion and small extensions such as conservatories.

In terms of the mitigation hierarchy, given the small area of the Site, loss of the on-site habitats to the proposed development is not feasible. However, where possible, the detailed design will avoid boundary features, and mitigation and compensation provided where there a potential significant negative effect on a given habitat/species is identified. Measures to enhance biodiversity are also provided to enable the Project to contribute to an overall biodiversity net gain, as per local planning guidance.

6.3 Habitats

In general, the habitats found on Site and within the zone of influence are of low nature conservation value and have at best a local value with a low level of constraint to the development.

The only habitat feature of interest is an ash tree and this outside the landownership boundary. If the proposed development was close to this tree, there is the potential for an indirect effect on the tree during construction from dust and disturbance to the root zone and on completion from a change in shade or local soil conditions. However, the design avoids impact on this feature with soft landscaping in the area next to the tree and during construction, a tree protection zone will be in place, to ensure no negative impacts on the tree and so it is concluded that there would be no significant effects on the tree from the proposed development.

6.4 Protected and Notable Species

Bats

Roosting

Buildings B3 and B6 were assessed to have low Bat Roost Potential. An emergence survey was carried out and no bats were recorded using either building for roosting. All other buildings had very low/negligible potential for roosting bats and so the proposed development would have no significant effect on roosting bats.

The ash tree (TN1) just off-site had low Bat Roost Potential, with no major features such as holes and fissures seen. This tree is outside the Site boundary and so will not be lost to the proposed development. However, there is potential to indirectly affect a roost if one was present, but this avoided by design with no dwelling being built close to the tree and the immediate area is to be a garden space and so no significant effects are foreseen on roosting bats even if present in the tree.

The summary findings are given as follows:

- No known roosts will be affected by these proposals.

- The development will result in the loss of several poor-quality roosting sites in stonework around the barn walls and under the roof. These roosting sites could be used by crevice roosting species at any time of the year but are more suited to use during the active season (April- October).

- The potential roost features are not typical of those used by hibernating bats, but pipistrelle bats have been encountered in unexpected locations over the winter period (Korsten et al 2015) – often in proximity to a known roosting location.

- Bats are highly mobile animals, especially males and non-breeding individuals, and can often change roosting location as conditions change. As the emergence surveys showed that the property is used by foraging bats, and the barn has some potential to host roosting bats at any time of the year, there is a low possibility that bats may be present when building works take place.

- Based on the evidence gathered from the inspection and emergence surveys, and the experience of the surveyor, it is unlikely that an offence will to be committed by the proposed development under the above legislation, and as such no EPS licence will need to be obtained.

Whilst no roosts have been found in Buildings B3 and B6, the following precautionary measures would be undertaken to minimise any risk to individual bats:

1. Any non-structural gaps in the external stonework would be left un-pointed where practical, or checked for presence of bats before re-pointing by a licenced bat worker.

2. Removal of the roof coverings in the barn would be done with care under supervision of a licenced bat worker who would check for any bats around any of the roof timbers.

3. If any bats are found, then works would stop and the licenced ecologist would advise how to proceed.

Foraging

Several bat roosts have been recorded locally and foraging bats were recorded during the emergence survey of the buildings. However, given the limited extent of foraging habitat, the proposed development would not have a significant impact on the use of the area by bats. All works would be carried out in the day and no lighting would be used in the area at night during construction.

Currently, the area around Croft End Farm is not brightly lit. Many species of bat actively avoid well-lit areas, although pipistrelles recorded foraging during the emergence survey, are species that are relatively tolerant of lighting. Wherever possible external lighting would be minimised but where un-avoidable, low level down-lights would be used to ensure that foraging and commuting habitat is not impacted by the development. Based on the restricted use of external lighting and use of low-level downlights, there would be no significant overall increase in lighting in the area and it is concluded there would be no significant effects on foraging bats from the proposed development.

In summary, the area surrounding 'Croft End Farm' is a moderate foraging location for bats. The proposed development is unlikely to have a detrimental impact on the quality of the foraging habitat for bats, though care will have to be taken with planning external lighting for the new development.

Enhancement Measures for Roosting Bats

Whilst no bat roosts are lost to the proposed development but suitable roosing features are, to replace the loss of the roosting features and to provide biodiversity net gain as per local planning guidance, at least three bat boxes would be installed.

These would be external boxes attached near to the eaves on the south or west elevations of the

converted barn or new builds, or integral boxes built into the walls of the new build properties (these are self-contained boxes, do not allow access by bats into the interior of the building, and do not affect the insulative properties of the house).

The following design is suggested for external boxes, which have a flat back to sit flush with the wall:

Schwegler 1FF External wall or tree mounted box. The internal panel on this model provides additional roosting space for species such as Pipistrelles (also Schwegler Bat Box 2F-DFP is good for Pipistrelles).

Barn Owl

Building B3 was considered to hold potential for barn owl use but a survey recorded no evidence of use, and the proposed development would have no significant impact on barn owl.

Other Birds

There was potential for birds to be nesting in the buildings on Site and a swallow nest was recorded in the hay barn (B8).

There is potential for other bird species to utilise the buildings on Site for nesting. All species of bird are protected under the Wildlife and Countryside Act 1981 (as amended) with additional protection afforded to certain species under Schedule 1 of the act. This legislation makes it an offence to intentionally:

- Kill, injure or take any wild bird;
- Take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- Take, destroy an egg of any wild bird.

To ensure compliance with legislation protecting nesting birds, removal of any building/vegetation that might be used by nesting birds would ideally be carried out outside the nesting season (generally taken to be March to August inclusive). Where this is not possible, an appropriately experienced ecologist would check the areas for nests immediately prior to removal. If a nest(s) is found, it would be kept and remain undisturbed until an ecologist has confirmed that the young have fledged.

Enhancement Measures for Swallows

To compensate for the loss of nesting features suitable for swallows and to provide biodiversity net gain as per local planning guidance, a space for swallows to nest would be included in the design.

Swallows require a canopy/deep sheltered roof with easy access for nesting (they need to fly through any gaps to access the nest). Open porch roofs, car ports and canopies can also provide potential nesting sites, and the scheme would consider these for incorporation into the final designs for the proposed development. An alternative would be a canopy overhang as shown on https://www.richardgreenecology.co.uk/swallow-nest-site-mitigation/ which can reduce any issues with droppings from nesting birds by doorways/ cars etc in car ports as shown below:

House design with canopy overhang, as developed by Richard Green Ecology.

Enhancement Measures for Nesting Birds

To compensate for the loss of features suitable for nesting birds and to provide biodiversity net gain as per local planning guidance, at least three standard bird nesting boxes would be provided (such as a sparrow terrace) and installed between 2 and 4m high on the north or east external elevations of the buildings. They would be positioned where they cannot be predated by mammals (especially cats).

An example bird box is shown below, which again has a flat back to sit flush with a wall:

The most popular nest box for use in gardens. The 32-mm diameter hole is suitable for Great Tits, House Sparrows and Redstarts. For Blue and Coal Tits, Pied Flycatcher and Tree Sparrow choose the 26-mm diameter hole. The oval hole is suitable for Redstarts.

Reptiles and Amphibians

No European protected species of reptiles or amphibian would be utilising the Site, given the distance of the proposed development from suitable aquatic habitat - nearest pond 400 m; nearest pond with population of GCN 900 m. However, commoner species are known locally and there are records for common toads and smooth newts in the village. Whilst there is no suitable aquatic habitat present for these species, the piles of debris in particular provide suitable hibernating and resting places for these and the common reptile species.

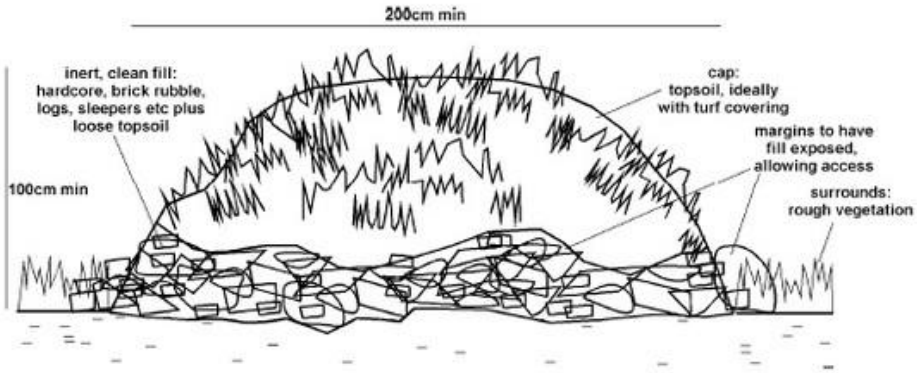
Reptiles are protected from harm under Schedule 5 of the Wildlife and Countryside Act 1981. In addition, all reptiles are a Species of Principle Importance in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

Common toad is a Species of Principle Importance in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

Significant populations are not expected given the restricted suitable habitat, should one or more be present, there is a potential for a significant negative effect on reptiles and amphibians at a Local scale from site clearance work prior to construction works. There is also the potential for an offence where reptile presence is suspected, and no measures are taken to minimise the risk of harm.

To ensure no harm to these species and to mitigate for the loss of the small areas of suitable habitat, an ecologist would supervise the removal of the site debris and site clearance and any animals found would be relocated to a suitable receptor site. The receptor site would be on land owned by the developer adjacent to and south of the Site (see Figure 2 for proposed location). Hibernacula would be constructed in the receptor area using stone and brick debris and covered in turf and any animals found would be placed in the base of the hibernaculum.

An example of hibernaculum design is shown below.



Hedgehog

There is potential for hedgehog to utilise the Site for foraging at night and as a resting place during the day. Site clearance could disturb/harm any hedgehogs that may be present and whilst the extent of suitable habitat is small, there is potential for a significant negative effect at the Local scale on hedgehog.

Hedgehogs are protected from harm under Schedule 6 of the Wildlife and Countryside Act 1981. In

addition, hedgehogs are a Species of Principle Importance in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

To ensure no harm to this species, the as a precautionary mitigation measure, a supervised site clearance would be carried out. An ecologist would supervise the removal of the site debris such as piles of rubble and any animals found would be relocated to the receptor site to be created for reptiles and amphibians (see Figure 2 for proposed location).

Invasive Non-native Species

Several stands of a rose, likely to be Japanese Rose, which is an invasive non-native species (INNS), were recorded at the south-west corner of the Site. It is illegal to cause the spread of INNS on to adjacent land and in the wild and if the stands of the rose and associated soil have to be removed as part of site clearance, as it is classified as controlled waste, it would have to be disposed of to a licensed landfill. At present the design is for garden in this area and it may be the plants can remain undisturbed, although it would be best practice to remove the plants as part of the scheme (see below).

In the first instance, the identification of the species would be confirmed at the right time of year with flowers and fruit present. If confirmed, the plants would either be sprayed with herbicide (2 or 3 applications during the growing season), but this may take more than one season to kill the plants and sufficient time should be allowed to ensure eradication or the above ground stems cut and disposed of on Site by chipping/or burning. Any soil required to be removed from this area, would remain on Site and sieved to remove all roots, which would also be chipped/burned on Site.

Summary

Table 4 provides a summary of the significant effects before and after mitigation on the features identified as sensitive to the proposed development.

Table 4 Summary impacts and significant effects prior to and after mitigation

Ecological Receptor	Nature of Impact	Significance of effect prior to mitigation	Mitigation	Significance of effect with mitigation
Habitats				
Ash Tree	Indirect potential negative impact on the tree from construction and operation depending on location of build.	Significant negative effect at the Local scale.	Root protection zone during construction and garden placed in location of tree rather than building.	Not Significant.
Species				
Amphibians, reptiles, and hedgehogs	Removal of stone, brick and wood materials during site clearance that could act as resting and hibernation habitat.	Significant negative effect at the Local scale.	Ecological Supervision during clearance and placement of receptor hibernacula local to Site.	Not Significant.
Invasive non-native species – Japanese Rose	Site clearance removes plant and infected soil from Site and causes it to spread off-site.	Non-compliance with legal requirements associated with non-native invasive species.	Plant remains undisturbed by site clearance and is cordoned off; construction team are made aware of its presence and legislative requirements. If cleared, it must be dealt with on-site (cut and chipped and soil sieved for roots) or plants and locally infected soil are taken to a licensed facility.	Not Significant.

7. Overall Summary

No statutory or non-statutory designated sites for conservation would be significantly affected by the proposed development.

There are no habitats that would be directly affected by the proposed development of more than Site biodiversity value.

There is the potential for the presence of several protected and/or notable species but only nesting birds have been recorded. The size of the Site means even if present, the species would not be significant populations but as best practice and/or to avoid the potential for an offence, mitigation and compensation are provided to ensure no species are harmed by the works and to provide habitat for species to utilise the development once operational.

In summary, all identified potential significant effects/constraints to the development and identified impacts would be mitigated for as follows:

- No building would be placed local to the ash tree at TN1 that has low bat roost potential and the overall design in that area will be garden/ soft landscaping.

- Creation of habitat (hibernacula) outside the development footprint to enable use by amphibians, reptiles, and hedgehogs.

- Ecology watching brief of site clearance of areas of rubble, stone and wood to ensure no harm to any animals using this material for resting and/or hibernation. It is recommended these are cleared outside the hibernation period (Nov – Feb).

- Ensure that the non-native invasive species Japanese Rose, if confirmed, is not spread off-site. Any removal work of the plant or associated soil would be dealt with appropriately (disposal on site and location recorded as part of the construction plans) and in-line with legislation.

To avoid the potential of harm to bats and nesting birds that may be found during conversion of the barn and to provide biodiversity benefit to the local and wider environment, the following standard practice would be employed:

- Standard Construction methods would be employed to ensure no impact on the environment from dust and noise during construction.

- Ground clearance and demolition of buildings would be done wherever possible outside the main bird breeding season (Mar-Aug), however, some species, such as swallow, can have second or third broods into September if weather conditions are favourable and so where it is not possible to avoid these months, a check for nesting birds would be carried out. If birds are found nesting in any of the buildings, demolition of that building(s) can only proceed once it has been confirmed that the birds have fledged.

- To minimise the risk of any harm to individual bats and support the favourable status of bats in the locality, the following is proposed:

    - Any non-structural gaps in the external stonework would be left un-pointed or where not possible, checked for presence of bats by a licenced bat ecologist before re-pointing.

- Removal of the roof coverings in the barn would be undertaken under supervision of a licenced ecologist, checking for any bats around any of the roof timbers.

- If any bats are found, then works must stop immediately on that building and the licenced ecologist assess what is required to proceed.

- External lighting for the proposed development would be kept to a minimum and low level down-lights used where practical, to ensure that foraging and commuting habitat is not affected.

The following enhancement measures would be provided to offset losses of suitable potential nesting and roosting features:

- External and/or internal bat boxes would be incorporated into the design of the houses. The type and location would be agreed with an experienced bat ecologist.

- Bird nesting boxes, including open-fronted, cavity fronted and nest boxes suitable for swallow attached or built into suitable structures would be incorporated into the design of the houses. The type and location would be agreed with an experienced ornithologist.

8. References

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Chartered Institute for Ecology and Environmental Management (2018) Guidelines for Ecological Impact Assessment for the UK and Ireland Vers 1.1. Chartered Institute for Ecology and Environmental Management, Winchester.

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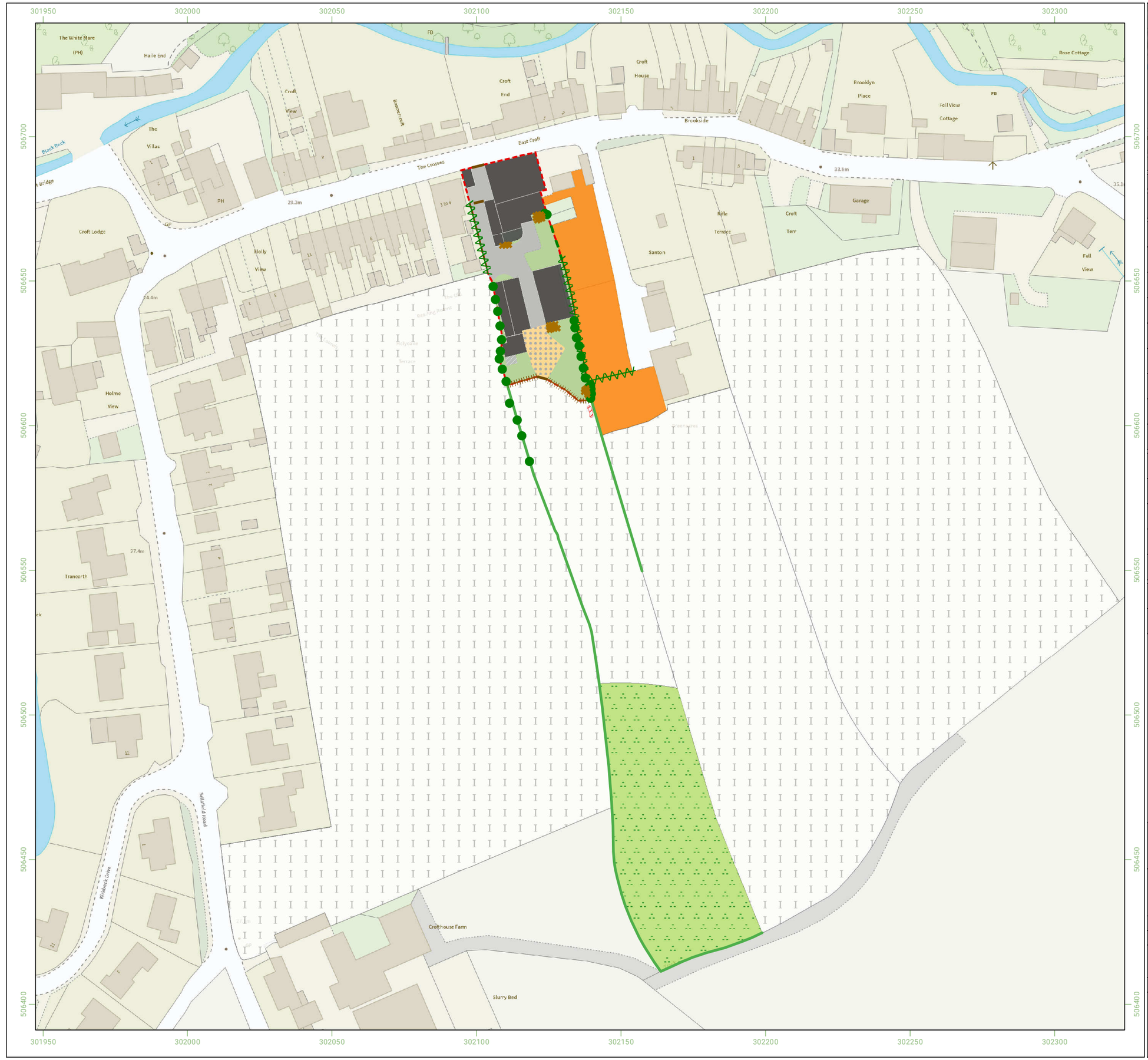
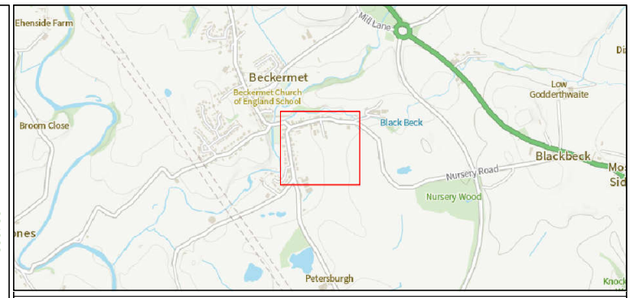
Appendix A Figures





Survey Information

	Site boundary
	Neutral grassland - semi-improved *
	Improved grassland*
	Poor semi-improved grassland (rush pasture)*
	Poor semi-improved grassland
	Disturbed ground
	Hardstanding
	Metal storage tunnel
	Building
	Proposed hibernacula
	Hedgerow
	Species poor intact hedgerow
	Defunct hedgerow
	Fence
	Gate
	Trees and shrubs
	Brick, stone, wood debris

* = not fully surveyed

0 5 10 20
Metres

PROJECT TITLE

CROFT END FARM

DRAWING TITLE

Figure 1: Phase 1 Map - Wider Site Context

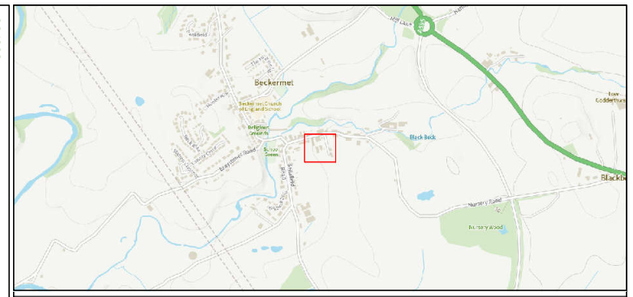
VER	DATE	COMMENTS	Drawn	Checked
1.1	11/06/21	Field map	MP	MH

DRAWING NUMBER:

AIBMECOLOGY//CroftEndFarm/P1Wider

SCALE	1:1,250	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

AIBM Ecology
The Warehouse
Devonshire Road
Millom
Cumbria
LA18 4JP



Survey Information	
	Site boundary
	Neutral grassland - semi-improved *
	Improved grassland *
	Poor semi-improved grassland (rush pasture) *
	Poor semi-improved grassland
	Disturbed ground
	Hardstanding
	Metal storage tunnel
	Building
	Proposed hibernacula
	Hedgerow
	Species poor intact hedgerow
	Defunct hedgerow
	Fence
	Gate
	Trees and shrubs
	Brick, stone, wood debris
X	Target note

* = not fully surveyed

0 2.5 5 10
Metres

PROJECT TITLE

CROFT END FARM

DRAWING TITLE

Figure 2: Phase 1 Map - Site

VER	DATE	COMMENTS	Drawn	Checked
1.1	11/06/21	Field map	MP	MH

DRAWING NUMBER:

AIBMECOLOGY//CroftEndFarm/P1Site

SCALE	1:400	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

AIBM Ecology
The Warehouse
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Appendix B Legislation and Planning Policy

The Conservation of Habitats and Species Regulations 2017 (as amended)

The original Regulations transposed the EU Directive on Natural Habitats, and Wild Fauna and Flora 9/43/EEC) into domestic legislation. Amendments in 2007 and 2009 addressed several gaps and inconsistencies in the original legislation and provided a greater legal certainty and clarity in a number of areas. In April 2010, the Regulations were brought up to date to consolidate changes made since 1994. The Regulations afford a high level of protection to a variety of species that are considered important at a European scale. The Regulations identify European Protected Species and various habitats of importance within the European Union, with important sites for these habitats/species or both being designated as special Areas of Conservation (SAC). Any proposed works that may have a significant effect on a SAC or Special Protection Area (SPA) should be assessed in relation to the site's 'conservation objectives', i.e. the reasons for which the Site is designated.

The new Regulations simplified the species protection regime to better reflect the Habitats Directive, providing a clear legal basis for surveillance and monitoring of European Protected Species (EPS). The Regulations also amended the WCA, updating Schedules 5 and 8 to consider provisions made by the Habitats Regulations 1994 in relation to the protection of EPS. They also offered further clarification to Part 4 of Section 9 considering "reckless" offences on wild animals, which was previously amended by the CROW Act 2000.

In 2012, the Regulations were further amended to place new duties on public bodies to take measures to preserve, maintain and re-establish habitat for wild birds. They were also amended to ensure certain provision of the Habitats Directive and the Birds Directive were transposed clearly and Section 15 was amended to make clear that Local Nature Reserves can be designated for re-establishing bird habitat

The current Regulations came into force on 28th December 2018. They amended the Conservation of Habitats and Species Regulations 2017, the Neighbourhood Planning (General) Regulations 2012, the Town and Country Planning (Permission in Principle) Order 2017 and the Town and Country Planning (Brownfield Land Register) Regulations 2017.

Regulation 2 amends the Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations") applicable to special development orders, local development orders, neighbourhood development orders, simplified planning zones, enterprise zones and the conversion of footpaths into cycle tracks to incorporate the habitats assessments provisions in regulation 63 of the Habitats Regulations. Except for the conversion of footpaths into cycle tracks, this regulation also incorporates regulations 65 and 66 for the review of existing decisions and consents.

Regulation 2 also amends the Habitats Regulations to allow for the application of regulation 63 to applications for permission in principle.

Regulation 3 amends the Neighbourhood Planning (General) Regulations 2012 to change the prescribed condition relating to habitats for the purpose of examination of neighbourhood development plans to require that a neighbourhood development plan complies with the provisions applicable to land use plans in Chapter 8 of Part 6 of the Habitats Regulations.

Regulation 4 amends the Town and Country Planning (Permission in Principle) Order 2017 to change the definition of habitats development (for which a local planning authority may not grant permission

in principle) to incorporate the habitats assessment process under regulation 63 of the Habitats Regulations.

Regulation 5 amends the Town and Country Planning (Brownfield Land Register) Regulations 2017 to change the definition of habitats development (which a local planning authority may not enter onto Part 2 of the Brownfield Land Register) to incorporate the habitats assessment process under regulation 63 of the Habitats Regulations.

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 is the major domestic legal instrument for wildlife protection in the UK, and is the primary means by which the following are implemented:

The Convention on the Conservation of European Wildlife and Natural Habitats ('the Bern Convention'); and
The Council Directive 79/409/EEC on the Conservation of Wild birds (the 'Bird Directive')
Wild Birds

The Act makes it an offence (with exception to species listed in Schedule 2) to intentionally:

- kill, injure, or take any wild bird, take, damage or destroy the nest of any wild bird while that nest is in use or being built (also [take, damage or destroy the nest of a wild bird included in Schedule ZA1] under the Natural Environment and Rural Communities Act 2006), or take or destroy an egg of any wild bird.

- Special penalties are available for offences related to birds listed on Schedule 1, for which there are additional offences of disturbing these birds at their nests, or their dependent young.

- The Secretary of State may also designate Areas of Special Protection (subject to exceptions) to provide further protection to birds. The Act also prohibits certain methods of killing, injuring, or taking birds, restricts the sale and possession of captive bred birds, and sets standards for keeping birds in captivity.

Other Animals

The Act makes it an offence (subject to exceptions) to intentionally kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places. The Act also prohibits certain methods of killing, injuring, or taking wild animals.

Flora, Fungi and Lichens

The Act makes it an offence (subject to exceptions) to intentionally) pick, uproot or destroy:

any wild plant listed in Schedule 8, or
unless an authorised person, to intentionally uproot any wild plant not included in Schedule 8,
to sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.
Non-native Species

The Act contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9 in England and Wales. It also provides a mechanism making any of the above offences

legal through the granting of licences by the appropriate authorities.

The Countryside and Rights of Way (CroW) Act, 2000

Part III of this Act deals specifically with wildlife protection and nature conservation in England and Wales. The CroW Act strengthened the safeguards afforded to SSSIs.

Natural Environment and Rural Communities (NERC) Act 2006

Section 41 of the NERC Act requires the listing of habitats and species that are considered to be of principle importance for the conservation of biodiversity in England, including habitats and species in England that have been identified as priorities within the UK Biodiversity Action Plan (UKBAP).

The NERC Act requires that the Section 41 list be used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the NERC Act 2006 'to have regard' to the conservation of biodiversity in England, when carrying out their normal functions.

The EU Invasive Alien Species Regulations 2014
The EU Invasive Alien Species Regulations sets out to address the problems concerned with invasive alien species (IASs) to protect native biodiversity and ecosystem services and minimize and mitigate the human health and/or economic impacts that IASs can have. It sets out rules to prevent and manage the introduction and spread of IASs in the EU through prevention, early detection and rapid eradication, and management.

National Planning Policy Framework

The NPPF came into being in March 2012 and was revised and updated in July 2018, relevant sections are as follows (although full details should be considered, which are found at https://www.gov.uk/government/publications/national-planning-policy-framework--2):

Section 15 of the NPPF relates specifically to "Conserving and Enhancing the Natural Environment". Paragraph 170 states that "*Planning policies and decisions should contribute to and enhance the natural and local environment by:*

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate."

Paragraph 171 states that Plans should: distinguish between the **hierarchy of international, national and locally designated sites**; allocate land with the least environmental or amenity value, where

consistent with other policies in this Framework; take a **strategic approach to maintaining and enhancing networks of habitats and green infrastructure**; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries

Paragraph 174 states that: *To protect and enhance biodiversity and geodiversity, plans should:*

a) Identify, map and safeguard components of local wildlife-rich habitats and wider **ecological networks**, including the hierarchy of international, national and locally designated sites of importance for biodiversity; **wildlife corridors and stepping stones** that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and

b) promote the **conservation, restoration and enhancement of priority habitats**, **ecological networks** and the protection and **recovery of priority species**; and identify and **pursue opportunities for securing measurable net gains for biodiversity**.

Paragraph 175 states: *When determining planning applications, local planning authorities should apply the following principles:*

a) if significant harm to biodiversity 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;

b) **development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it** (either individually or in combination with other developments), **should not normally be permitted**. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the Site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) **development resulting in the loss or deterioration of irreplaceable habitats** (such as ancient woodland and ancient or veteran trees) **should be refused,** unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while **opportunities to incorporate biodiversity improvements in and around developments should be encouraged**, especially where this can secure measurable net gains for biodiversity.

Paragraph 176 states: ***The following should be given the same protection as habitats sites****:*
potential Special Protection Areas and possible Special Areas of Conservation;

a) listed or proposed Ramsar sites; and

b) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

Paragraph 177 states: **The presumption in favour of sustainable development does not apply where development requiring appropriate assessmen**t because of its potential impact on a habitats site is being planned or determined.

Appendix C Photographs and Target Notes

Target Note (TN) Description	Photograph
Photograph 1 and Target Note 1: Ash Tree on boundary (outside) of the Site.	

Target Note (TN) Description	Photograph
Photograph 2 and Target Note 2: Rose, possibly Japanese rose, to southeast of site.	
Photograph 3 and Target Note 3: Main Barn (B3)	

Target Note (TN) Description	Photograph
Photograph 4 and Target Note 3: Main Barn (B3)	
Photograph 5 and Target Note 4: Stored materials	

Target Note (TN) Description	Photograph
Photograph 6 and Target Note 4: Stored materials	

Appendix D Bat and Bird Survey Report

Bat and Barn Owl Survey

Croft End Farm, Beckermet

7th June 2021

Report No. 0621/1

Final version 16.6.21

Report commissioned by;

Mark Hampton,

AIBM Ecology Ltd

Report prepared by;

South Lakes Ecology
Survey and Habitat Management

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Executive Summary

Croft End Farm comprises a variety of barns and outbuildings in the village of Beckermet. The owner wishes to demolish all buildings except the large barn to allow a small housing development. The barn would be converted into two residences with a maximum of 3 other dwellings built elsewhere on the site.

This report was commissioned to accompany a planning application, and involved an inspection of the buildings, desktop search and dusk bat emergence survey to assess whether bats are using, or have used them for roosting purposes. An assessment is also made of the potential the buildings have to host barn owl, and whether this proposed development will have any negative impacts on individual bats or barn owl, or the local bat population.

The buildings affected by the proposed development were inspected inside and outside for evidence of bat or barn owl activity. There were no constraints on access.

There are nine buildings on the site, of varying construction. The main barn is a large building with sandstone walls and pitched corrugate roof. There are some other stone walled buildings with lean-to roofs (both corrugate and slate), and other outbuildings with corrugate roof and brick or block walls – many of which are open fronted and in poor state of repair. Most buildings were assessed as having very low potential to host bats, two had negligible potential. Building B6 had low potential as there were some low-quality potential roosts by roof timbers. The main barn had low to moderate potential with potential roosting sites in gaps in the external walls and around roof timbers inside the building. The main barn and the hay store (B8) had some scope for use by barn owl, but the presence of several resident feral cats is likely to deter them.

The surrounding habitat is primarily agricultural (mostly pasture and silage) with managed hedgerows. There are many shrubs and trees around the village and along Black Beck. Overall habitat is assessed as moderate for feeding and commuting bats, and suitable for barn owl.

No evidence of bats or barn owls was found during the inspection, and no records of bats or barn owls at the property were found in the data search. No bats emerged from, or showed any interest in, the buildings during the dusk survey (which was focussed on the main barn and buildings B4, B5 and B6 only).

The outbuildings at Croft End Farm provide several low-quality potential roosts for bats in various areas, but primarily within the large barn. No evidence was found to suggest a roost at the property, as such, damage to surrounding bat populations by the proposed development is considered unlikely. Bats are very mobile animals and change roosting location as environmental conditions change. There are many records of bats in the area and foraging activity was observed around the buildings during the dusk survey, as such there is always a slight chance of an itinerant bat being present at the time building works commence. Some simple precautions regarding methods of works (including a licensed watching brief for the roof strip) have been included to ensure that if any itinerant bats are present, risk of harm to them is minimised.

Nesting swallows and jackdaws were also observed during the survey- so demolition schedules need to consider the bird nesting season as active nests are protected until chicks have fledged.

Biodiversity enhancement measures have been included. Recommendations include installation of 3 bat boxes, provision of a swallow nesting area/ canopy and installation of 3 bird boxes on or around the new dwellings.

Contents

1 Introduction

1.1 Site description

Croft End Farm is located in the village of Beckermet, 4km south of Egremont. It is situated at NY0210 0667, at approximately 30m above sea level.

The farm encompasses several farm buildings, many of which are still in active use- though several are in a poor state of repair. The main building is a large sandstone barn, with various lean-to sheds and separate barns and outbuildings.

The land surrounding the village is agricultural (pasture, silage fields and some arable) and field boundaries are mostly managed hedgerows. There are linear areas of scrub alongside becks but no large areas of woodland.

Figure 1 shows the location of Croft End Farm. Satellite imagery of the surrounding habitat and the area immediately surrounding the property is presented in figure 2. Photographs of the buildings are included in the appendices to this report.

1.2 Proposed works

It is proposed that all of the outbuildings are demolished, and the barn is renovated to provide additional housing for the village. A maximum of 5 new properties are proposed (2 in the barn and 3 to the rear). There is no fixed timescale for this project.

1.3 Aims of survey

This survey was commissioned to accompany a Preliminary Ecological Appraisal (PEA) report (written by AIBM Ecology Ltd) for a planning application to Copeland Borough Council. The aim of the survey is to assess whether any bats or barn owl are likely to be harmed or otherwise negatively impacted by the proposed works.

Bats and their roosting places are protected under British and European legislation. This survey aims to establish whether bats use, or have used, Croft End Farm; and if so how it has been used. From this data an assessment will be made as to whether any particular roost and/or the surrounding bat population would be affected by the proposed development. If they are likely to be affected then appropriate mitigation proposals will be included in this report.

Barn owl are protected under the Wildlife and Countryside Act 1981 (as amended), under schedule 1, where they, their nests, eggs and chicks are protected against harm and also against disturbance whilst at the nest site. All British bird species and their actively used nests (those being built, or with eggs and/or chicks in) are protected during the breeding season. This survey aims to assess the likelihood of nesting birds being present, and also whether any sensitive species of bird (such as barn owl) are likely to be affected by the proposed works.

The inspection survey and ensuing report follow guidance and structure provided by Bat Conservation Trust (Bat Surveys Good Practice Guidelines, 3rd edition 2016).

Figure 1. Location Map

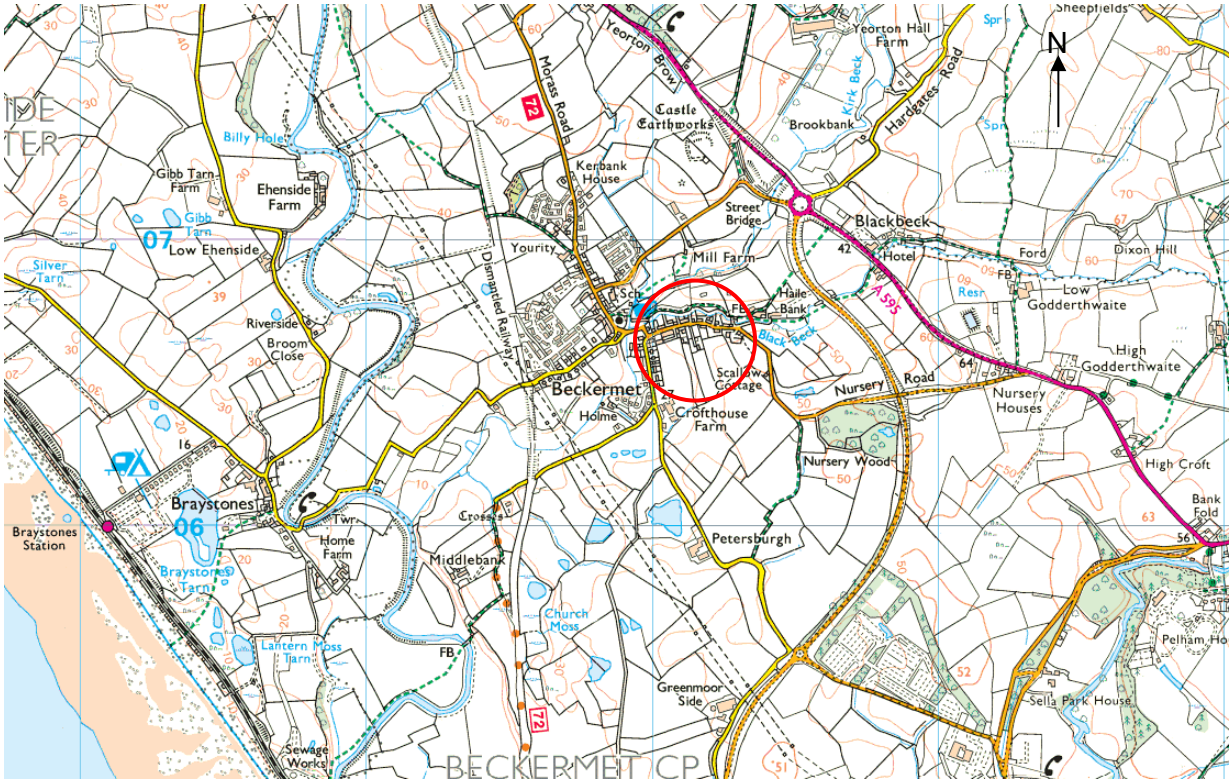

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Figure 2. Aerial photograph showing surrounding habitat

Imagery date 2018

2 Methods

2.1 Desktop data search

A search of current literature (including the Bat Conservation Trust publication 'The Distribution Atlas of Bats in Britain and Ireland', Cumbria Biodiversity Data Centre's Mammal Atlas, 'Mammals of the British Isles', and 'The Breeding Birds of Cumbria) was done, looking for bat and barn owl records in the 10km gird square in which the property is situated.

An internet search was also carried out, noting any land with statutory designations within 5km of 'Croft End Farm'. Reasons for any relevant land designations were researched to check whether bats or barn owls were important features. A search was also carried out for local EPS (European Protected Species) licenses for disturbance to bats (this will give further indication of species present in the area). Searches for statutory designations, and relevant citations were done on a DEFRA website www.magic.defra.gov.uk .

A detailed search for records of notable species within 2km of the property was commissioned by AIBM from Cumbria Biodiversity Data Centre for the PEA report. Records relating to bats and barn owl will be discussed in this report.

2.2 Surveyor information

The inspection was undertaken by Tamsin Douglas MCIEEM, experienced ecologist (holds Natural England Bat Class Licence – registration number 2015-10308-CLS-CLS and NE Class survey license for barn owl CL29/00451).

The emergence survey was undertaken by Tamsin Douglas with assistance from Mark Hampton from AIBM Ecology Ltd.

2.3 Field survey

2.3.1 Daytime inspection

A daylight inspection of the buildings to identify possible roosting and nesting locations and access routes to these locations was carried out on 25th May 2021 between 19.30 and 21.00 by Tamsin Douglas.

The external and internal inspection was carried out (where necessary) using ladders, 10 x 42 binoculars, endoscope (Vscope VOxx-10WW) and a 1 million candlepower torch. The weather was calm and overcast after earlier rain.

Bats

The building inspection involves a detailed internal and external daylight search for evidence of current or past use of the building by bats. Outside, particular attention is paid to the ground and ledges under any potential access points, weather boarding, hanging tiles, eaves, cracks and crevices in walls, and under tiles/slates. Internal inspections focus on areas around and below any potential roosting spots, ledges and lintels, behind crumbling render, and on and around roof timbers.

Evidence from a search which would indicate presence of bats includes-

- Roosting bats
- Corpses
- Droppings and urine staining on and around potential roosting areas (further evidence derived from amount and freshness of droppings)
- Droppings, staining and/or scratch marks at potential roost entrances

- Cleaner areas of woodwork, areas free of cobwebs suggesting bat activity such as crawling or flying
- Feeding detritus- such as moth wings
- Chattering or squeaking noise from roosting bats.

A general assessment is also made of the suitability of the surrounding habitat for bats, and connectivity to other areas of good quality foraging and commuting habitat.

Direct evidence of bats can be hard to detect and, as such, during the preliminary roost assessment the building is also appraised for its potential to host roosting bats. This potential is based on several factors:

- Presence of suitable internal or external features for roosting bats, and good access routes to these features
- Number of bats that these features could support
- Suitable conditions for roosting either in active season or for hibernation (humidity, temperature, exposure)
- Surrounding foraging and commuting habitat, connectivity to good habitat features
- Proximity to known roosts (especially for hibernation of species such as pipistrelles)

The need to undertake a roost emergence/ re-entry survey or hibernation survey (to provide further evidence as to whether bats use the building affected by these proposals) was determined by the results of this inspection.

Barn owl

Inspection of the buildings for use by barn owl involves searches for debris from nesting and feeding (including owl pellets), and other sign of owl use (such as feathers). Potential access routes into buildings were identified, and floors, roof supports, tops of walls, crevices, ledges and suitable perching places were checked using torch and ladders.

A general assessment was made of the suitability of the surrounding habitat for barn owls.

2.3.2 Roost surveys - bats

During the dusk or dawn roost survey, all suitable elevations of the property are observed for a standard period before and after sunrise or sunset. Surveys are carried out between May and September, when bats are most active. Surveyors watch all potential roosting locations to see if any bats emerge. Bat detectors (personal and static), digital recording devices and night-vision monoculars are used to aid detection and identification of any emerging bats.

A hibernation survey typically involves a detailed inspection of possible roosting sites using torch, mirror and endoscope, and can involve deploying static bat detectors. The survey is carried out in mid-winter, typically in January and February. The exact parameters of the survey depend on the nature of the site.

One dusk emergence survey was carried out on 25th May 2021. Locations of surveyors are shown in figure 3 (in section 3.2.3 below).

Table 1. Emergence survey details.

	Survey Start	Survey End	Temperature	Weather
25th May 2021	21.13 (sunset 21.28)	22.58	10C	Overcast, calm. Small amount light drizzle during survey (22.30-22.40)

Tamsin Douglas used an Echometer Touch with android recording device. Mark Hampton used a Batlogger. Any bat echolocation recorded was analysed using Analook software after conversion using Kaleidoscope if necessary.

3 Results

3.1 Desktop search

3.1.1 Designated sites

There are five areas of designated land within 5km of 'Croft End Farm. All of these are SSSIs, the closest of which is 1km to the south, and designated for its botanical interest. Although these sites may support bat and/ or barn owl populations, none of them detail these animals in the supporting citations.

The property is located 2km west of the boundary of the Lake District National Park.

3.1.2 Protected species

3.1.2.1 Bats

Eight species of bat are currently known to breed in Cumbria, with a further two species that have been recorded within the county. All species of bat in the UK are fully protected under UK and European law.

Table 2. Status of bats in Cumbria

Species	Status in Cumbria
Whiskered bat *Myotis mystacinus*	Widespread, but uncommon. Maternity and hibernation roosts recorded.
Brandt's bat *M.brandtii*	Widespread, but uncommon. Maternity and hibernation roosts recorded.
Natterer's bat *M.nattereri*	Widespread. Maternity and hibernation roosts recorded.
Daubenton's bat *M.daubentonii*	Widespread. Strongly associated with still or slow moving water. Maternity and hibernation roosts recorded.
Noctule *Nyctalus noctula*	Widespread, but uncommon. Rarely associated with buildings. Breeding roosts recorded.
Leisler's bat *N.leisleri*	Rare. Only a confirmed bat detector record in Cumbria.
Common pipistrelle *Pipistrellus pipistrellus*	Widespread. Roosts often associated with modern buildings, forages in a variety of habitats. Maternity and hibernation roosts recorded.
Soprano pipistrelle *P.pygmaeus*	Widespread. Only recently separated as a species from common pipistrelle, often associated with waterbodies, though forages in wide range of habitats. Maternity and hibernation roosts recorded.
Nathusius' pipistrelle *P.nathusii*	Rare. Recently added to Cumbria's list of bats. No confirmed breeding roosts recorded yet.
Brown long-eared bat *Plecotus auritus*	Widespread, but uncommon. Often associated with older buildings with good roof space. Maternity and hibernation roosts recorded.

The literature search provided records of summer roosts for four species of bats within the hectad NY00 (10km square) in which Croft End Farm is located. These are Daubenton's bat, Natterer's bat, pipistrelle and brown long eared bat. The CBDC Mammal Atlas had recent (post-2000) confirmed records in NY00 for the species above, as well as whiskered bat and noctule.

The internet search looking at nearby granted EPS (European Protected Species) licenses for bats produced several records. The closest license was for disturbance to a common

pipistrelle, soprano pipistrelle, noctule and daubenton's bat roost 2.5km from Croft End Farm. Other species identified on licenses within 5km of the property include brown long eared bat.

The detailed site search carried out by Cumbria Biodiversity Data Centre provided over 160 records of five species of bats within 2km of the property. These were common pipistrelle, soprano pipistrelle, daubenton's bat, noctule and brown long-eared bat. Half of the records were of roosts- the majority of which were from bat boxes in Sellafield. Twenty-two of the records were of roosts that were not bat boxes. The closest of these was a roost of pipistrelles 100m from the property. A grounded bat was also recorded within 100m of Croft End Farm. Records dated from 1990 to 2018 – most records were post-2000.

Bats are generally an under-recorded group, and as such biological records such as those above can only be used as a guide to illustrate potential distributions in the area, and are not definitive.

3.1.2.2 Barn Owl

The CBDC non-passerine bird atlas has breeding and wintering records for barn owl in the tetrad in which Croft End Farm is located. The west coast plains are part of the core area for barn owl in Cumbria.

The data search for records within 2km of the property produced 35 records of barn owl, including breeding records. These records dated from 1995 to 2012 – the closest breeding record being from 300m away in 2005.

3.2 Field survey - bats

3.2.1 Habitat assessment

The land holding has tall hedges along the east and west boundaries and there is agricultural pasture to the south. To the north are residential properties and the tree-lined Black Beck. Beyond the immediate surroundings of the farm there is a large amount of agricultural land – primarily pasture and silage fields, and most of these have managed hedgerow boundaries. There are small tracts of woodland and some ponds to the south, and more extensive wooded areas further east near Calder Bridge.

Bats can fly several kilometres to their feeding grounds, often following linear features such as hedgerows. Sheltered areas, particularly around water, tend to have greater amounts of invertebrate prey, and as such are sought out by foraging bats.

The habitat around Croft End Farm offers moderate quality foraging habitat and commuting habitat for bats.

3.2.2 Roosting assessment

Table 3: Factors affecting the probability of a building being used by bats in summer

Factors increasing probability	Disused or little used; largely undisturbed Large roof void with unobstructed flying spaces Large dimension roof timbers with cracks, joints and holes Uneven roof covering with gaps, though not too draughty Entrances that bats can fly in through Hanging tiles or wood cladding, especially on south-facing walls Rural setting Close to woodland and/or water Pre-20th century or early 20th century construction Roof warmed by the sun

Factors decreasing probability	Urban setting or highly urbanised area with few feeding places Small or cluttered roof void (esp. for Plecotus) Heavily disturbed Modern construction with few gaps around soffits or eaves (but be aware these may be used by pipistrelles in particular) Prefabricated with steel and sheet materials Active industrial premises Roof shaded from the sun

(Taken from A. Mitchell-Jones, 2004)

Building construction

An overview of the layout of the site and the building numbers is illustrated in figure 4 below.

The main building is a large barn with sandstone walls and pitched corrugate roof. The barn doors to the south are open, allowing easy access to the interior which is light and airy. Walls are mostly well pointed, though there a few notable gaps on the west gable and at the eaves throughout. The corrugate roof is on a metal framework with some wooden support beams. There are store rooms under the barn, accessible from the north as the land drops. These are all dark and sheltered. The ceiling joists are heavily cobwebbed. Several feral cats live in the upper barn.

There are several outbuildings attached to this main barn. Three of these (B4, B5 and B6) all have low sandstone walls. B4 has a slate roof which is in very poor condition and partially collapsed near to the join with the main barn. B5 and B6 have corrugate roof. All three of these buildings are easily accessed as there are large gaps in and around the roof, and B5 is open fronted to the south. A large open sided outbuilding (B2) is attached to the north elevation of the barn. This has a corrugate roof on a timber framework with some brick supporting walls. The area is mostly light and airy, and used as storage and sheep pens.

A grain store (B1) is located near to the entrance gate to the north of the site. This building is weatherproof and has brick walls with corrugate roof. The roof is lined inside, and no easy access to the interior was noted, though small gaps are present between the corrugate and the roof lining.

To the rear of the main barn is a hay store (B8), which has a corrugate roof on timber framework with concrete block walls and supports. The barn is open to the north and east and has several bales of hay and equipment stored inside.

A further collection of outbuildings is opposite the hay store (B7a, B7b and B9). All three of these have corrugate roof with metal framework. B7a has a pitched roof and is relatively sheltered from the elements with some timber cladding on external walls. B7b and B9 both have lean-to roof and are open and draughty.

Suitability for bats

The main barn has low to moderate roosting potential for crevice roosting bats, with roosting sites in gaps in the stonework and behind roof timbers inside the barn. The main barn is sheltered, though light and open.

Building B6 has low scope to host bats. It is broadly weatherproof and offers some low quality roost sites behind roof timbers under the corrugate.

Buildings B9 and B7a have negligible scope for use by bats as they are so open and draughty with no suitable roosting sites. All other buildings have very low scope for use by bats, and offer only a few low quality possible roost sites which are unlikely to be used (though it is

possible they can be used so they are not categorised as 'negligible'). No further survey is required on any of these buildings as the risk of bats using them is slight.

Evidence of bats

No evidence of bats was seen during the inspection.

3.2.3 Summary of suitability of site for bats

Based on the evidence above, and using published guidance (summarised below) Croft End Farm is assessed as having low potential for roosting bats, and surrounding habitat has moderate suitability for commuting and foraging bats. Most buildings on site have very low/ negligible scope to host bats, but the main barn has low to moderate potential, the building B6 has low potential.

The property was assessed as having low potential to host hibernating bats, based on type and exposure of roosting features present, connectivity of habitat and proximity of known roosts.

As a result of this assessment a minimum of 1 summer roost survey was carried out with a focus on the large sandstone barn, also covering buildings B4, B5 and B6 (other buildings had very low, or negligible potential).

Table 4: Summary of overall site suitability for bats.

Suitability	Roosting habitat	Commuting/ foraging habitat
Negligible	No features found that are likely to be used	No features found that are likely to be used
Low	A structure with one or more potential roost sites, suitable for opportunistic use. Unlikely to be used by large numbers of bats or on a regular basis.	Habitat that could be used by small numbers of commuting or foraging bats, but isolated and not well connected to other suitable features.
Moderate	Structure with one or more potential roost sites, that could be used by bats – but unlikely to support roost of high conservation status.	Continuous habitat connected to wider landscape that could be used by bats for foraging and/ or commuting.
High	Structure with one or more roost sites that are obviously suitable for larger numbers of bats on a more regular basis or for a longer period of time.	Continuous high-quality habitat that is well connected to the wider landscape and likely to be used regularly by foraging and/or commuting bats. Site near to and well connected to known bat roosts.

Table based on Table 4.1 of 'Bat Surveys for Professional Ecologists', BCT 2016

3.3 Roost surveys- bats

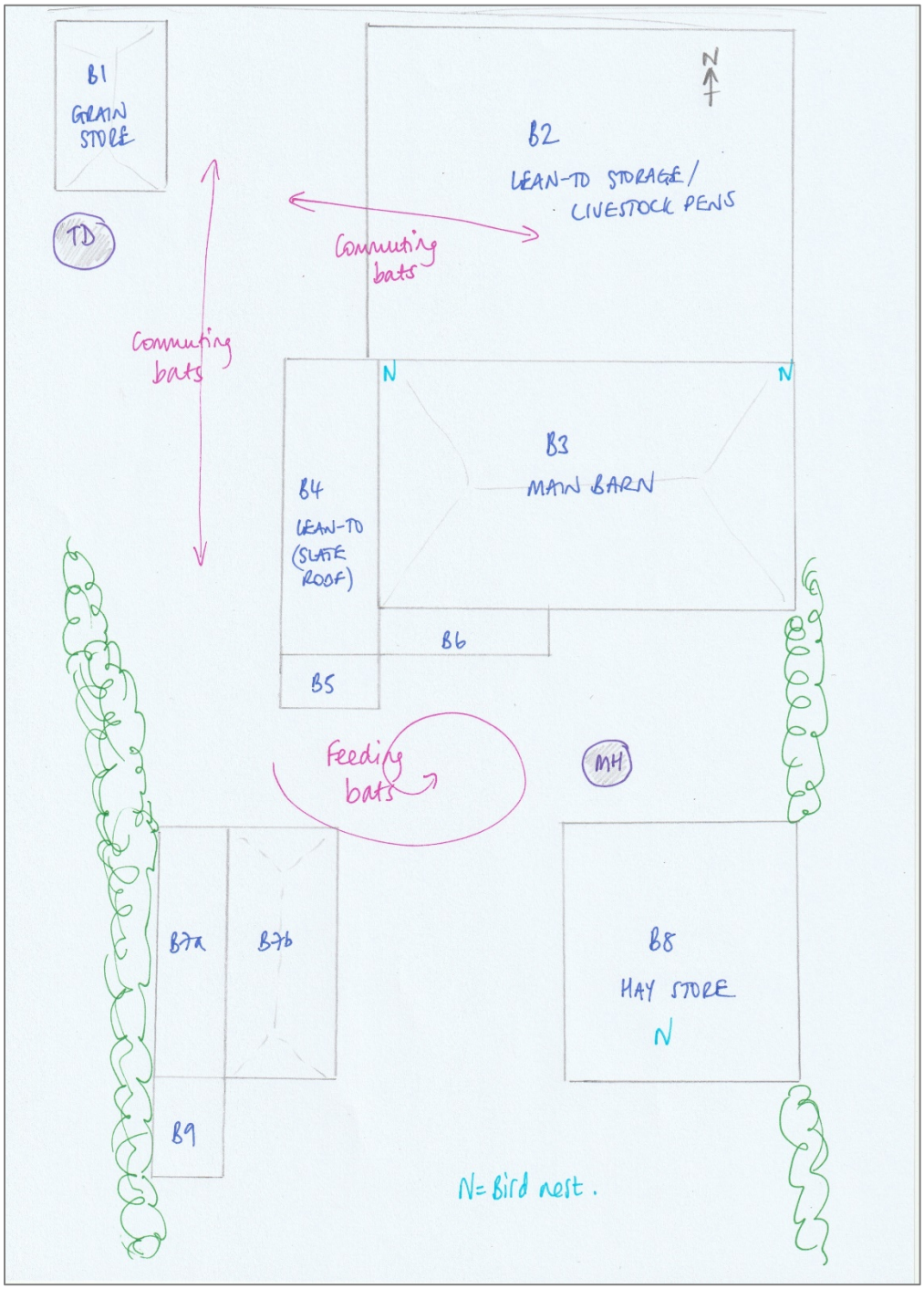
During the dusk emergence survey no bats were seen emerging from, or showing any particular interest in, the main barn (or any other buildings on the site).

The first bat seen was a noctule at 21.53 commuting high over the buildings. At 21.54 (26 minutes after sunset) a soprano pipistrelle passed along the eastern side of the barn heading south. Frequent foraging (mostly by soprano pipistrelle, but also some common pipistrelle) was heard around the southern elevation of the barn and over the yard from 22.13 for about

ten minutes. Sporadic feeding and passes were seen around the southern elevation, over the lean-to roof to the north of the barn and along the west side (a maximum of 3 bats seen at one time) for the rest of the survey.

No other species were seen or heard.

Figure 4. Sketch showing bat activity and position of surveyors (TD and MH) during emergence surveys.



3.4 Field survey – barn owl

3.4.1 Habitat assessment

Barn Owl hunt over extensive areas, especially along the rougher edges of fields and woodland which support good number of voles and mice.

The agricultural fields around Beckermet, especially the rougher and rushy fields, provide reasonable foraging areas for barn owl as they are relatively sheltered and likely to support fair populations of small mammals.

3.4.2 Suitability for and evidence of barn owl

The main barn and the hay store (B8) both offer some scope for use by barn owl and can be easily accessed by these birds. There are no broad ledges or beams in the main barn suitable for roosting, but tall stacks of hay bales can be used as nest sites on occasion. The presence of several feral cats (some of which were seen on the roof of buildings B6 and B4 and climbing on the hay bales of B8 during the dusk survey) is likely to be a considerable deterrent to nesting and possibly also to roosting.

No evidence of barn owl activity was seen.

3.5 Other species

Two active jackdaw nests (with chicks) were seen under the eaves on the north-east and north-west corners of the main barn. Access to the nests was through the interior of the barn and at the eaves.

A swallow nest was seen in the hay store (B8), and several swallows were active in the area.

4 Assessment

4.1 Constraints on survey information

Heavy rain on the night prior to the survey could have washed away any external evidence of bats, such as droppings. There was light spotting of rain for a short time during the dusk survey, but bats were active before, during and after this and so it is not considered to have impacted on the survey.

Close access was possible to the all the lower walls and eaves of lower buildings, with the exception of the eastern gable of the main barn. Upper walls, eaves and roof of the main barn could only be inspected using high power torch and binoculars.

Many of the outbuildings had equipment stored in them, restricting access inside in some circumstances – though as the buildings had very low scope for bats this is not considered to affect the findings of the report.

The eastern gable end of the main barn could not be closely accessed for the dusk survey as we had no access permission on the adjacent property. The barn wall was too distant to be reliably surveyed (by person or camera) from the road. All other elevations could be clearly seen.

None of these constraints are considered to affect the validity or the results of this survey and report.

4.2 Constraints on equipment used

The conditions during the surveys were suitable for survey purposes and for the equipment used.

4.3 Potential impacts of the development

4.3.1 Designated sites

The proposed development will not have any negative impacts on nearby designated sites.

4.3.2 Bat roosts

No known roosts will be affected by these proposals.

The development will result in the loss of several poor quality roosting sites in stonework around the barn walls and under the roof. These roosting sites could be used by crevice roosting species at any time of the year but are more suited to use during the active season (April- October).

These potential roosts are not typical of those used by hibernating bats, but pipistrelle bats in particular have been encountered in unexpected locations over the winter period (Korsten et al 2015) – often in proximity to a known roosting location.

Bats are highly mobile animals, especially males and non-breeding individuals, and can frequently change roosting location as conditions change. As the emergence surveys indicated that the property is used by foraging bats, and the barn has some potential to host roosting bats at any time of the year, there is always a slight possibility that bats may be present when building works take place.

4.3.3 Bat commuting and foraging habitat

The area surrounding 'Croft End Farm' is a moderate foraging location for bats. The proposed development is unlikely to have a detrimental impact on the quality of the foraging habitat for bats, though care needs to be taken with planning external lighting for the new development.

4.3.4 Barn owl

No recent barn owl activity was noted during the surveys, and no evidence seen at the property. There are several local records of breeding barn owl, but the presence of several feral cats in the sandstone barn is likely to be a deterrent.

4.4 Legislation and Policy guidance

Bats have declined in numbers dramatically across the UK and Western Europe in recent decades. Key factors linked to their decline are loss of roosting places due to building works and woodland destruction. Other factors implicated in their decline are changes in the countryside resulting in habitat loss and greater fragmentation of foraging habitats, and severing of commuting flight lines due to transport developments and hedgerow destruction.

As a consequence of these significant declines, bats and their roosts are protected under British and European law.

All bats are listed under Annexe IV of the EU Habitats Directive, and some under Annexe II. This law is transposed into English law into the Conservation of Habitats and Species Regulations (2010). Bats are also protected in the UK under the Wildlife and Countryside Act 1981 (as amended).

As a result of the above legislation it is an offence to;

- Deliberately capture, injure or kill a bat,
- Disturb a bat such that their survival, reproductive capacity, or the wellbeing of the local population is affected
- Intentionally or recklessly disturb a roosting bat, or block access to its roost.

If the proposed works were assessed as likely to commit an offence under the above legislation, then a European Protected Species (EPS) mitigation licence would need to be sought. Based on the evidence gathered from the inspection and emergence surveys, and the experience of the surveyor, it is unlikely that an offence will to be committed by the proposed development under the above legislation, and as such no EPS licence will need to be obtained.

Barn owl

Under Section 1 of the Wildlife and Countryside Act 1981 (as amended), all wild birds are protected from being killed, injured or captured. Under this legislation their nests and eggs are also protected from being damaged, destroyed or taken (this includes nests in the process of being built as well as those with eggs and/or chicks in).

Barn owl receive additional protection under schedule 1 of the above legislation, where they, their nests, eggs and chicks are protected against harm and also against disturbance whilst at the nest site.

Based on the evidence gathered from the inspection survey, and the experience of the surveyor, it is unlikely that an offence will to be committed by the proposed development under the above legislation.

5 Recommendations and mitigation

5.1 Further survey

No further survey is required.

The findings of this inspection report are valid provided that work commences within 12 months of the date of this report.

5.2 Mitigation measures

5.2.1 Proposed mitigation for roost sites

To minimise the risk of any harm to individual bats and maintain the favourable status of bats in the locality, the following mitigation is recommended:

1. Any non-structural gaps in the external stonework should be left un-pointed (preferable), or checked for presence of bats before re-pointing.

2. Removal of the roof coverings in the main barn should be done with care, under supervision of a licensed bat ecologist who will check for any bats around the roof timbers as the corrugate roof is removed.

3. If any itinerant bats are found, then works must stop immediately on that building. Contact should be made with AIBM Ecology or South Lakes Ecology to advise how to proceed.

5.2.2 Proposed mitigation for foraging and commuting habitat

The area around Croft End Farm is not brightly lit. External lighting for the new development should be minimal, as many species of bat actively avoid well-lit areas. If un-avoidable, low level down-lights should be used to ensure that foraging and commuting habitat is not impacted by this development.

5.3 Mitigation licenses

As stated in section 4.4, based on the evidence gained from the surveys, it is considered that the proposed building works at Croft End Farm will not require a license.

5.4 Barn owl and other bird species

There is no evidence of barn owl currently using this site.

There was evidence of breeding birds in and around some of the buildings surveyed on the property. Breeding birds are therefore a material consideration for the project.

Birds and their nests are protected under British and European law, and no work should take place which would disturb breeding birds. The main breeding bird season is from 1st March until the end of August. Some species, such as swallow, can have second or third broods into September if weather conditions are favourable.

If works are proposed for this period, then pre-works checks of the buildings need to be carried out by an ecologist to ensure no active nests are present. Any active nests must be left undisturbed until chicks are fledged.

5.5 Enhancement measures

Following local planning guidance, measures to encourage a net gain of biodiversity should be included for all new developments.

It is recommended that measures to provide additional roosting sites for bats, and some nesting provision for birds are included in the new buildings.

At least 3 bat boxes should be installed on the new developments. These can be external boxes attached near to the eaves on the south or west elevations of the converted barn or new builds, or integral boxes built into the walls of the new build properties (these are self - contained boxes and do not allow access by bats into the interior of the building, and they do not affect the insulative properties of the house).

Swallows will be displaced from their regular nesting site by these proposals, and these birds are declining in part due to loss of nesting sites. They require a canopy/ deep sheltered roof with easy access for nesting (they need to fly through any gaps to access the nest). Open porch roofs, car ports and canopies can provide potential nesting sites, and it is encouraged that these are incorporated into the final designs for the site. An alternative suggestion is to provide a canopy overhang as shown on https://www.richardgreenecology.co.uk/swallow-nest-site-mitigation/ which can reduce any issues with droppings from nesting birds by doorways/ cars etc in car ports.

At least 3 standard bird nesting boxes should also be provided (such as a sparrow terrace), and these should be installed on the north or east elevations between 2 and 4m high on the external walls, or on suitable mature trees on the landholding. They should be positioned in a location where they cannot be predated by mammals (especially cats).

6 Summary

A desktop search, thorough daylight inspection and dusk emergence survey were carried out to assess whether bats use, or have recently used, any of the buildings at Croft End Farm, Beckermet. An assessment was also made regarding the potential of these buildings to host bats, and whether the proposed development was likely to harm bats or have an adverse impact on the local bat population.

There are nine buildings on the site, of varying construction. The main barn is a large building with sandstone walls and pitched corrugate roof. There are some other stone walled buildings with lean-to roofs (both corrugate and slate), and other outbuildings with corrugate roof and brick or block walls – many of which are open fronted and in poor state of repair. Most buildings were assessed as having very low potential to host bats, two had negligible potential. Building B6 had low potential as there were some low-quality potential roosts by roof timbers. The main barn had low to moderate potential with potential roosting sites in gaps in the external walls and around roof timbers inside the building.

The surrounding habitat is primarily agricultural (mostly pasture and silage) with managed hedgerows. There are many shrubs and trees around the village and along Black Beck. Overall habitat is assessed as moderate for feeding and commuting bats.

No evidence of bats was found during the inspection, and no records of bats at the property found in the data search. No bats emerged from, or showed any interest in, the buildings during the dusk survey.

The buildings were also assessed for their potential to host barn owl. Only the main barn and the hay store (B8) offered suitable perching areas, with nesting potential on the tall stack of hay bales in the store. These buildings are open, allowing easy access. Several feral cats are resident in the large barn, which are likely to deter owls from using the site. No evidence of barn owl was seen during the survey.

There were birds' nests in the barn and hay store (jackdaw and swallow). Birds and their nests are protected under British and European law, and no work should take place which would disturb breeding birds. The main breeding bird season is from 1st March until the end of August. Some species, such as swallow, can have second or third broods into September if weather conditions are favourable. Work schedules should be designed to ensure that there is no impact on nesting birds.

There were no constraints on the survey conditions or equipment used that are considered to compromise the validity of the findings of this report.

No evidence of bats currently using these buildings was found, and as such it is considered that this development would not require an EPS licence. Bats are, however, very mobile animals, and change roosting locations through the season as environmental conditions change (especially males and non-breeding females). The presence of potential roost sites, observations of foraging bats around the barn during the dusk survey, and numerous local records of bats means that there is always a possibility of bats being present at the time building works are being carried out. As such, cautionary measures (including presence of a licensed bat ecologist for the removal of the roof covering) have been recommended in section 5.2 of this report, minimising the risk of harm to any itinerant bats present.

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Appendices

i) Photographs

Image 1. Southern elevation of main barn, with lean-to buildings B4, B5 and B6 in the foreground.

Image 2.
Western gable of the main barn, with lean-to building B4 in the foreground and B2 to the left.

The stonework is generally in good repair with few large gaps other than at the eaves.

Image 3.
Eastern gable and northern elevation of the barn.
Small gaps at eaves and through decorative air vents into interior.

Image 4.
Interior of barn. Note the light and ariy interior and predominantly metal framework for the roof. Internal walls are well pointed with few notable gaps.

Several feral cats are resident in the barn.

Image 5.
Southern elevation of the barn showing large open doorway providing easy access by bats and birds into the barn. Lean-to building B6 in the foreground.

Image 6.
Hay store (B8) with flat corrugate roof. Some scope for use by bats and birds, but feral cats very active in here during the survey.

Image 7.
Interior of hay store (B8) showing timber framework supporting the roof. Barn owl could roost on the hay bales.

One active swallow nest in this building.

Image 8.
Buildings 7b (left) and 7a (right).

Both very open and draughty. 7a negligible scope, 7b with very low scope for bats. No scope for barn owl.

Image 9.
Building B1, the grain store. Well sealed, limited scope for bats to roost between corrugate and roof lining. Very low scope overall. No scope for barn owl.

Image 10.
Interior of one of the lower store rooms below the barn. Very dense cobweb- undisturbed for a considerable amount of time.

Image 11.
Northern half of lean-to building B2. Used for storage and housing livestock. Light and draughty. Very low scope for use by bats.