Macclesfield Old Road, Buxton

Phase 1 Habitat and Bat Survey Report

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Contents

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Executive Summary

A Phase 1 habitat and bat scoping survey was commissioned by Persimmon Homes in December 2012 to accompany a planning application for a residential development on a parcel of land adjacent to Macclesfield Old Road, Buxton, High Peak, Derbyshire. The application site is centred on SK 036 723 and is shown on Figure 1 (Appendix 1). It is understood that the residential development will comprise of 29 new dwellings and associated garden space, with parking. An existing access track and mature trees on site are to be retained as part of the development design. It is not currently known when the development is scheduled to commence.

An ecological survey of the site was undertaken by Ecologically Bats in 2008, which incorporated a building inspection and subsequent emergence surveys for bats and barn owl and additional scoping for protected species. The survey confirmed the presence of roosting bats, including common pipistrelle (*Pipistrellus pipistrellus*) within an existing bungalow on site and a Myotis species (Whiskered or Brandts) within one of the stone barns. 15+ pipistrelle bats were also observed emerging from the building next door (115 Macclesfield Old Road). No other evidence of protected or notable species was noted in 2008.

An ecological update survey undertaken by NLG Ecology in December 2012 comprised of mapping and describing habitats across the application site, combined with building inspections for bats and barn owl, including an internal inspection of an existing dwelling (B1). Evidence of bats was found in the form of scattered droppings (c.10) and c. 4 pairs of feeding remains. Eight droppings were of the size and shape of brown long-eared (*Plecotus auritus*) bat droppings, and two corresponding to pipistrelle sp (*Pipistrellus spp*). As such, it is recommended in line with the Bat Conservation Trust Guidelines 2012 that three bat activity surveys (2 dusk and 1 dawn) be conducted within the core survey months (between May and August) to establish the use of the buildings by bats. Internal access will also be required to all buildings for thorough inspection. In order to continue with the development lawfully, a licence from Natural England will be required. More details of this will be made available on completion of the further surveys that are required to inform on the licence.

No other evidence of protected species was identified during the 2012 survey, although habitats on site are capable of supporting breeding birds and building B5 has potential for barn owl (*Tyto alba*), although no internal inspection could be made at the time of the survey. In terms of habitats, mature trees on site represent good examples of their type, forming a distinctive attribute to the local context and being characteristic of the wider landscape. The remaining habitats are considered to support common and widespread plant species, although they do form direct habitat connections to the wider landscape. There is an intact boundary dry stone wall around the site forms an intrinsic feature characteristic of a Derbyshire landscape.

Given that the habitats have potential to support birds during the breeding season (March-August, inclusive), any future site clearance or demolition works would need to take place outside of the breeding bird season.

Opportunities exist to enhance the sites biodiversity as an integral part of the development; i.e. provision bird nest boxes and features of potential value to roosting bats. Landscape planting could incorporate native species typically characteristic of the local landscape. Any net gains for biodiversity as an integral part of a development planning application will be viewed favourably by the Local Planning Authority.

1.0 Introduction

1.1 Background

A Phase 1 habitat and bat scoping survey was commissioned by Persimmon Homes in December 2012 to accompany a planning application for a residential development on a parcel of land adjacent to Macclesfield Old Road, Buxton, High Peak, Derbyshire. This survey was undertaken by NLG Ecology on the 18th December 2012 and incorporated the entirety of the application site, which is centred on SK 036 723 and shown on Figure 1 (Appendix 1).

The application area equates to c. 1.10ha and currently contains six existing buildings, with the main access track leading to the buildings fringed with mature broad-leaved trees. Macclesfield Road borders the site to the north, residential housing is located to the east and the west and southern boundary to the sites forms direct connections to undeveloped upland habitat, of approximately 366m above sea level. The main habitats within the surrounding landscape context mainly include grazed pasture.

It is understood that the residential development will comprise of 29 new dwellings and associated garden space, with parking, as shown on drawing MOR:PL:001 Rev B (Persimmon Homes, 13/02/2013). The existing access track and matures trees that fringe this track will be retained within the development. It is not currently known when the development shall commence.

The site was first surveyed in 2008 by Ecologically Bats, which incorporated a building inspection for bats and barn owl and additional scoping for protected species. The survey confirmed the presence of roosting bats, including common pipistrelle (*Pipistrellus pipistrellus*) within an exiting bungalow (B1) on site and a *Myotis* species (Whiskered or Brandts) within a stone barn. The location of the buildings are shown on Figure 1.

This report provides an update of the ecological baseline for the and where necessary makes recommendations for further survey effort. Generic recommendations are also provided in respect of general biodiversity enhancement that could be integrated with the development design.

The survey information is presented in this report by incorporating the following sections:

- **Methods**: identifies and describe standard survey techniques for the Phase 1 habitat and bat scoping survey.
- **Results**: describes the findings from the Phase 1 habitat survey, followed by the bat survey findings. Information is also given in respect of other protected and notable species.
- **Evaluation:** of wildlife interests applying standard terms and methods to provide a contextual assessment of the features of wildlife value at the site.
- The final section, **conclusions and recommendations** includes details of further survey requirements, mitigation for integration with the development and enhancement measures that would add value for nature conservation within the locality.

1.2 Legislation

Overview
Protected species are those with statutory protection according to the following legal Acts and Regulations:

- The European Communities Council Directive on the Conservation of Habitats and Species Regulations 2010 (as amended).
- The Wildlife and Countryside Act 1981 (as amended), which gives general protection measures for wildlife and special measures for species included on Schedules of the Act.
- The Countryside and Rights of Way Act (CROW Act) 2000 amended the Wildlife and Countryside Act 1981 to also make it an offence to intentionally or recklessly damage, destroy or obstruct a place that a species, listed on Schedules of the Wildlife and Countryside Act, uses for shelter or protection. The repealed Section 74 of the CROW Act listed habitats and species important to biological diversity in England, in accordance with the 1992 UN Convention on Biodiversity (Habitats and Species Action Plans under The UK Biodiversity Action Plan is the means by which the government complied with it's duty under Section 74).
- Section 41 of the Natural Environment and Rural Communities Act (2006) replaces Section 74 of the Countryside and Rights of Way Act, 2000 and refers to the list of organisms and habitats of principal importance published under the repealed Section 74 of the CROW Act 2000. The Secretary of State must take such steps to further the conservation of the living organisms and types of habitat included in the list and promote the taking by others of such steps.
- The Protection of Badgers Act (1992) which principally relates to animal welfare rather than

Legislation specific to bats
Bats receive full protection under the Wildlife and Countryside Act 1981 and are also protected under the Conservation of Habitats and Species Regulations 2010 (as amended). The legislation makes it an offence to:

- Intentionally kill, injure or take any wild bat.
- Intentionally damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection. This is taken to mean all bat roosts whether bats are present or not.
- Intentionally disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection.

A bat roost has been interpreted to mean any structure or place which is used for shelter or protection whether or not bats are present at the time. Bat roosts may be defined (Hunt, L, 2012) as either:

- Transition Roosts
- Maternity roosts
- Satellite Roosts
- Mating Roost
- Hibernation roosts
- Night Roost
- Day Roost
- Feeding Roost
- Swarming Sites

The Countryside and Rights of Way Act 2000 amends the Wildlife and Countryside Act to also make it an offence to intentionally or recklessly damage, destroy or obstruct a place that bats use for shelter or protection. The term 'reckless' is defined by the case of Regina v Caldwell 1982. The prosecution has to show that a person either deliberately took an unacceptable risk, or failed to notice or consider an obvious risk.

Licences to disturb or take bats can be issued for certain purposes under Section 16 of the Wildlife and Countryside Act 1981 and under Regulation 44 of the Conservation of Habitats and Species Regulations 2010, permitting activities that would otherwise be illegal under the legislation. Licences can take up to thirty working days to be issued by Natural England.

Where impacts upon bats are unavoidable mitigation will be required to maintain and enhance the favourable conservation status of bat populations. Losses of bat roosts must be compensated for by the provision of new roosting sites and planting of new foraging habitat. Mitigation measures will need to be designed on a site specific basis and only in consultation with an expert. All mitigation proposals must be agreed with Natural England and put in place prior to the commencement of works.

2.0 Methodology

2.1 Desk Study

A desk top study was undertaken in December 2012 to provide background information on the ecological interest of the site. This is an important element of an ecological survey as it complements data collected in the field, by providing additional ecological context for the site and the wider landscape.

The desk top study comprised of a 1km radius search for statutory and non-statutory designated sites and for protected and notable animal species. The following resources and organisations were consulted as part of the survey:

- Consultation with Derbyshire Wildlife Trust (DWT), as recommended by the Derbyshire Biological Records Centre, including a request for protected and notable species and non-statutory designated sites.
- Multi-Agency Geographic Information for the Countryside (MAGIC) website to search for European and National Statutory designated sites, including Special Protected Ares (SPA's), Special Areas of Conservation (SACs), Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNRs);
- Natural England Nature on a Map website http://www.natureonthemap.naturalengland.org.uk/map.aspx?m=nreserves; for citation details associated with any European and Nationally designated sites identified as part of the MAGIC search;
- National Biodiversity Network (NBN) Gateway to search for protected species records;
- The Flora of Derbyshire, checklist, maps and sample accounts: http://www.derby.gov.uk/dccwebdev/museum/flora/flora.aspx?SpeciesID=1245
- Google EarthTM aerial satellite images to identify habitat types and potential wildlife corridors;
- Ordnance Survey (OS) maps (1:25,000 scale) were reviewed to identify water bodies within 500m of the site; and,
- A review of the UK and LBAP for the High Peak: A Living Landscape - Biodiversity Action Plan for the Peak District.

2.2 Phase 1 Habitat Survey

A Phase 1 habitat survey of the site was undertaken on the 18th December 2012. The survey approach adhered to the standard methodology as detailed in the JNCC publication Handbook for Phase 1 Habitat Survey, A technique for Environmental Audit (JNCC, 1993).

This entailed mapping and describing the habitats present on site and compiling a plant species list. Target notes (TN) were also used to illustrate ecological interest that was otherwise too small to map, or to highlight the location of an invasive plant species.

In accordance with Guidance for Baseline Ecological Assessment (Institute of Environmental Assessment, 1995), the site and immediate surrounding habitats were searched for signs of any protected species that may be using the site, or identifying habitats within the site which may be capable of supporting such species. The following species were considered as part of the survey:

- Badgers (*Meles meles*): including a search for badgers setts and associated field activity such as pathways, foraging and latrines;
- Reptiles: assessing habitat value for basking and winter hibernation;
- Birds: assessing habitat value for nesting birds, including the potential for bird species to utilise the buildings for nesting, with specific focus on notable species such as barn owl (*Tyto alba*).

No searches were made for riparian mammals as there are no watercourses within the application site.

2.3 Bat Survey

Building Inspections

Where accessible and safe to do so, inspections of the interior and exterior of the site buildings were undertaken on 18th December 2012. The surveys were carried out by Andrew Leese (MIEEM), and Miranda Cowan (MIEEM) who are experienced bat workers and ecologists. The aim of the inspection was to search for evidence of roosting bats within and around the buildings to inform and advise on the proposed demolition of buildings.

During the building inspections, externally the walls, roof and any associated voids were inspected with binoculars and a high powered torch (1 million candlepower) for staining around potential entrance points, bat droppings, scratch marks and feeding remains. The doorways and windowsills of the buildings were also inspected for the presence of bat droppings and feeding remains.

Internally, the rooms were inspected for the presence of bat droppings, dead bats and feeding remains with the aid of ladders and a torch.

Tree Assessment

A tree assessment was also undertaken with regards to bats. A preliminary visual inspection of the mature trees on site was undertaken to identify the possible use of the trees as bat roosts. This was undertaken with close focussing binoculars and high powered torch. Features for roosting were searched for including the following in Table 1, as extracted from Hundt, L, (2012).

Table 1 – Features in trees used by roosting bats

Features of trees used as bat roosts	Signs indicating possible use by bats
Natural holes	Tiny scratches around entrance points
Woodpecker holes	Staining around entrance points
Cracks/splits in major limbs	Bat droppings in, around or below entrance
Loose bark	Audible squeaking at dusk or in warm weather
Hollows and cavities	Flies around entrance point
Dense epicormic growth	Distinctive smell of bats
Bird and bat boxes	Smoothing of surfaces around cavity

Trees with features or bat signs were put into the following categories: (Table 2 is based on the tree assessment table from Hundt, L, (2012).

Table 2 – Tree categories for bat potential

Tree Category and description	Stage 1- Initial survey requirements	Stage 2-Further measures to inform mitigation	Stage 3- Likely mitigation
Confirmed Roost	Establish the extent to which bats use the site		Tree felled under European Protected Species Licence only following habitat replacement
Category 1* Trees with multiple highly suitable features capable of supporting large roosts	Further assessment to provide best judgement on the potential use of cavities **Consultant required**	Avoid disturbance to trees where possible Dusk and pre-dawn survey required	Felling undertaken using reasonable avoidance measures such as soft felling to avoid harm to bats Confirmed roosts to be felled under EPS licence as above
Category 1 Trees with definite bat potential with less features than 1* and more single bat occupancy	Further assessment to provide best judgement on the potential use of cavities **Consultant required**	Avoid disturbance to trees where possible Dusk and pre-dawn survey required	Confirmed roosts to be felled under EPS licence as above No confirmed roost. Tree may be downgraded to category 2 below
Category 2 Trees with no obvious potential	**Consultant unlikely to be required**	Avoid disturbance to trees where possible, no further surveys required	Trees felled using reasonable avoidance measures Stop works and seek advice if bats found or suspected
Category 3 Trees with no bat potential	**Consultant not required unless fresh evidence and change**	None	No mitigation required

Survey Limitations

It was not possible to gain access to some areas of the bungalow (B1) void. This was due to the floor moving despite standing on the floor joists and therefore being considered not entirely safe. The landowner also advised that a gas man had recently fallen through the void. Many stored items were also present restricting access somewhat. Heavy dust and debris within the bungalow void may also have masked bat evidence. Evidence of bats may therefore have been missed. A cellar was also present but no access was possible.

No internal access to out building B4 and the upper floor of B5 was possible due to barriers present and advice from the landowner to keep out due to the presence of domestic pigs. Also, no access to a neighbouring property (B3) was possible within the application site, although this appears to be retained within the proposed development from the plans provided.

3.0 Results

3.1 Desk Study

There are several statutory designated sites within 1km of the site. The Goyt Valley Site of Special Scientific Interest (SSSI) is designated for its grazed acidic grassland, dwarf shrub heath and blanket mires. Leek Moors SSSI is designated for its blocks of open moorland separated by enclosed pastures, and Pooles Cavern and Grin Low Wood SSSI is designated for its herb rich spoil tip grasslands that are similar in composition to calcareous grassland. The closest SSSI (The east end of the Goyt Valley SSSI) is located 30m west of the site over the barrier of Macclesfield Old Road. These sites will not be affected by the proposals due to the distances involved and/or the presence of existing barriers, such as roads.

Other sites of interest provided by Derbyshire Wildlife Trust include Burbage edge plantation located c. 600m north of the site. This is included in the Goyt Valley SSSI. Grin Quarry Tip is located 700m east. Grin Low Grassland (A Local Wildlife Site) is located c. 900m east. This site is noted for its unimproved calcareous grassland. Cutting area H (another local wildlife site) is located 900m southeast. This site is noted for its fungi species. Again these sites will remain unaffected by the proposals.

A site noted as having potential as a Local Wildlife Site is located adjacent to the site just beyond the southern boundary. This site is called Anncroft Meadows and Stream. It encompasses a section of the River Wye. This site has been identified as having wildlife interest in terms of its rush pasture and unimproved neutral grassland habitats but has not been formally assessed against the wildlife site selection guidelines. It is possible that this site may be affected by run off associated with the proposals, particularly as the application site slopes down towards the watercourse within Anncroft Meadows.

Table 3 summarises the protected / notable faunal and flora species records provided by Derbyshire Wildlife Trust. Exact locations of badger setts have been omitted for confidentiality reasons. Three records of badger were provided from 1997 and 1998, although these records do not pose a constraint to the application site. Although records for Otter (*Lutra lutra*) and water vole (*Arvicola amphibius*) are included, there is no suitable habitat for these species at present over the site, although it is recognised that these species may utilise the water course associated with Anncroft Meadows.

Table 3 – Protected species records from Derbyshire Wildlife Trust (December 2012)

Species	Location	Distance / relevance to site	Date of record
Common pipistrelle bat (*Pipistrellus pipistrellus*)	SK037742	1800m north	2008
Otter (*Lutra lutra*)	SK04167225	500m east	2008
Water vole (*Arvicola terrestris*)	SK0473	700m northeast	1997
Frog Orchid (*Coeloglossum viride*)	Grin Low Quarry & Grin Wood Buxton	c.1km to the east and separated by Leek Road although hydrological connections via the River Wye to the south of the site.	
Maiden pink (*Dianthus deltoids*)	Ladmanlow tip		1970 - 1996
Large flowered hemp nettle (*Galeopsis speciosa*)	Grinl Low Quarry		1970 -1996
Mountain everlasting (*Antennaria dioica*)	Grin Wood Buxton		1970 -1996
Green hellebore (*Helleborus viridis*)	Grin Low		1970 - 1996
Marsh valerian (*Valeriana dioica*)	Grin Low Quarry area		1970 - 1996

Previous survey data

An ecological survey of the site was undertaken by Ecologically Bats in 2008, which incorporated a building inspection and subsequent emergence surveys for bats and barn owl and additional scoping for protected species. The survey confirmed the presence of roosting bats, including common pipistrelle (*Pipistrellus pipistrellus*) within an exiting bungalow on site and a *Myotis* species (Whiskered or Brandts) within a stone barn. 15+ pipistrelle bats were also observed emerging from the building next door (115 Macclesfield Old Road). No other evidence of protected or notable species was noted in 2008.

3.2 Phase 1 habitat

The habitats recorded on site are shown on Figure 1 (Appendix 1), with the accompanying species list and target notes presented in Appendix 2. The broad habitats occurring on site are listed below:

- Mature scattered broad leaved and coniferous trees;
- Semi-improved neutral grassland and amenity
- Tall herb
- Continuous Introduced scrub and scattered native scrub
- Miscellaneous including dry stone wall and rubble / brash piles

Taking into context the above habitats, the application site comprises of two distinct halves, which are separated by a dry stone wall, edges of outhouses and a fence. The eastern half of the site comprises of an occupied dwelling house (B1), which is surrounded by a large unmanaged garden and detached outbuildings (B2 - B5). All of the above listed habitats are present within the eastern half of the application site.

The western half of the application site is characterised by semi-improved neutral grassland that appears to be maintained under a regular grazing regime and is bounded by an intact dry stone wall.

The individual habitat types are described further below.

Mature scattered broad-leaved and coniferous trees
The main access track leading into the eastern section of the application site is lined with mature broad-leaved trees. The main species present include beech (*Fagus sylvatica*) and sycamore (*Acer pseudoplatanus*), which have wide spreading canopies and cast shade over and adjacent to the access track. A ground cover of ivy (*Hedera helix*) is dominant in these areas, indicated by target note 1 on Figure 1.

The coniferous trees are mature leyland Cyprus (*Leylandii*) and also occur along the main access track. Trees and their potential for bats are discussed separately under section 3.3.

Semi-improved neutral grassland
The semi-improved neutral grassland occurring within the western half of the site (target note 2) is generally species poor, although floristic species associated with spring and summer periods may have not been detected. The main species observed at the time of the survey included the grasses Yorkshire-fog (*Holcus lanatus*), crested dog's-tail (*Cynosorus cristatus*), perennial rye-grass (*Lolium perenne*) and cock's-foot (*Dactylis glomerata*). The dominant herbaceous plant is creeping buttercup (*Ranunculus repens*).

Within the eastern section of the application site are small patches of unmanaged semi-improved neutral grassland (target note 3), with the tussock forming grass species cock's-foot being dominant in these areas.

Amenity grassland comprised of a regular mown lawn extends around the occupied dwelling of B1.

Tall herb
Tall herb is the dominant habitat in the eastern section of the application site and reflects the abandoned character of the garden. The dominant species present is rosebay willow-herb (*Chamerion angustifolium*) and to a lesser extent common nettle (*Urtica dioica*) is present, along with elements of unmanaged semi-improved grassland, which would a have been the main habitat prior to the establishment of tall herb.

Continuous introduced and scattered native scrub
Continuous scrub habitat comprises mostly of the ornamental shrub snowberry bush (*Symphoricarpos* sp.), which due to the unmanaged nature of the garden (eastern half of site) has extended along the boundary edges and into areas of tall herb. It is the most dominant species on site.

In the absence of management native shrubs are also starting to colonise, mainly goat willow (*Salix caprea*) (target note 4) in the damper hollows and also sycamore on the freer draining areas. At the time of the survey the damp hollows did not support sufficient water to support amphibian species.

There is a singe mature hawthorn (*Crataegus monogyna*) on the dry stone wall boundary that separates the site into east and western half sections.

Miscellaneous
The dry stone wall that forms the perimeter to the application site is a prominent feature that varies in height and is mostly intact, except in the eastern section of the application site where the wall is defunct in many areas.

Within the eastern section of the site, the access track extends in front of the occupied house (B1) and opens out to an area that is characterised by stored building material and scrap metal (see target note 5).

Target note 6 refers to a rectangular shaped mound that appears to be formed of tipped waste (mostly fridges and freezers). It has been covered with top soil and colonised by tall herb.

3.3 Bat Survey Findings

The proposed development site at West Hill has good connectivity within the wider landscape, along the River Wye. There is also a large region of deciduous woodland to the north of the site. This is a demonstrable linear feature which would provide suitable foraging potential for bats and extends along to Burbage Edge.

Building Inspection
The buildings included an occupied bungalow and a series of out-buildings. The buildings area described further below.

Buildings B1
This building is a large occupied bungalow with a side car port extension built of brick with a corrugated asbestos roof. The bungalow itself is stone built with a pitched slate tile roof. The stone work is in general good condition but there are occasional areas where there is missing mortar and gaps extending into the wall. A good example of this is on the west side of the building. Several slate tiles were observed as slipped with suitably sized gaps beneath. The ridge tiles also had several gaps below with many areas of missing mortar. Barge boards are present on the front elevation surrounding a dormer window. These barge boards have suitable gaps behind them presenting roosting opportunities for bats. Hanging tiles are also present around the dormer window with suitable access gaps below. Gaps at the eaves were also observed under tiles as well as access gaps through into the roof void.

Internally, the loft void was found to be large with timber purlins around the perimeter. No underfelt is present beneath the slates and there is a lack of insulation to the void floor. Lots of dust and debris was found throughout. The ridge boards were found to have gaps above, as well as several gaps noted between the slates. One section within the southern side has a skylight present allowing an influx of light into the void. Roosting in this section may therefore be restricted to crevice dwelling. Other areas in the void however still remain suitably dark. A total of c. 10 bat droppings were found scattered throughout the void with no obvious single roosting point located. The droppings were not immediately fresh but dark black in colour suggesting they are from this year. Eight droppings were of the size and shape consistent with brown long-eared bats (*Plecotus auritus*) and twoc droppings were smaller with a size and shape consistent with pipistrelle bats. Feeding remains were also found in the form of large yellow underwing (*Noctua pronuba*) moth wings which are typical prey remains of brown long-eared bats.

Building B2

This building is an open single storey garage made of breeze block and a single skin corrugated asbestos panel roof. The garage is wide open without doors and so has ample flight access for bats and birds. The building is generally suboptimal structurally for bat roosting. However, gaps are present where the roof panels overlap, as well as occasional suitable sized gaps in timber supports and between breezeblocks. No evidence of bats was found externally or internally during the survey.

Building B3

This building is a neighbouring property. It is a modern built stone effect building with a manufactured tile roof. From a distance the building appears to be modern and tight fitting with no obvious gaps beneath tiles and ridge tiles. However, no access was provided to this property and so close external and internal inspection was not possible. It therefore has unknown bat potential. It appears that the building is to remain on the proposal plan provided, and so may not be affected.

Building B4

B4 is a traditional stone out-building with slate tile roof. Many of the slates are slipped and missing providing suitable gaps for roosting bats. Gaps are also present beneath ridge tiles. Much of the stonework is also damaged particularly on the east side also presenting opportunities. No evidence was found externally around the building. No access was made available for internal inspection.

Building B5

B5 is a dilapidated stone barn with a corrugated asbestos roof. Gaps are present behind barge boards and lots of gaps are again present in stone work. Flight access is present on the east side through a broken upper circular window. It is possible that bats as well as barn owl may access the building through this hole. Internal access was limited due to barriers present and domestic pigs. Most of this building, including the upper floors was therefore not accessible. The southern lower floor section could be accessed. Where available for inspection, no bat evidence was found on this lower floor.

Building B6

This is a complex of kennel buildings of wood, brick, stone and breeze block construction. It is currently occupied and used as a builder's workshop. The roof is constructed of asbestos cement sheets. The building is generally suboptimal structurally for bat roosting. However, occasional gaps are present in the brick and stone work and where the roof sheeting overlaps. No evidence of bats was found throughout this building externally or internally during the inspection.

Tree Inspection

The site trees were generally found to have a lack of suitable cracks and crevices for bat roosting and so are categorised as category 2 trees. However, table 4 details the trees that were found to contain bat potential.

Table 4-Bat tree survey findings

Tree number	Species	Features	Category
T1	Beech	Broken branch cavity c. 4m up	1
T2	Beech	An open knot c. 10m up. Cannot see if extends in due to height	1
T3	Sycamore	Single suitably sized hole c. 3m up.	1
T4	Sycamore	Dense Ivy covering	1
T5	Beech	Folded over branches with associated cracks	1

3.4 Badgers

No badger setts or associated field evidence was observed during the Phase 1 habitat and bat scoping survey.

3.5 Reptiles

Whilst there are rubble and brash piles are present on site, the overall potential for reptiles is considered to be sub-optimal. This is due to the densely vegetated nature of the site and shady conditions posed by the trees and buildings.

3.6 Breeding birds

The habitats across the site and all buildings have potential for breeding birds. Building B1 and B2 were found to contain disused nests. B1 had many disused nests at the gaps at the eaves and bird droppings were found within the roof void.

No evidence was found to suggest that the buildings were utilised by notable bird species such as barn owl. However, building B5 has a good flight access point on the east side with the presence of a broken window (Target note 7). Barn owl cannot therefore be ruled out at this stage especially given the lack of access into the building for internal inspection.

3.7 Great crested newts

No breeding habitat for amphibians was found within 500m of the site.

5.0 Conclusions and recommendations

5.1 Habitats

The survey undertaken by NLG Ecology in December 2012 has identified that the most notable habitats / features on site relates to the presence of mature trees, the perimeter dry stone wall and the area of semi-improved neutral grassland to the west of the application site due to its direct connection with the wider landscape and being typically characteristic of the local landscape. Recommendations in respect of these features are as follows:

- Where possible retain mature trees to offer a sense of maturity for the development and consider sympathetic management such as pollarding to increase longevity. All tree work would need to compliment any arboricultural recommendations.
- Retain and repair defunct sections of the perimeter dry stone wall.
- Consider a 15 m buffer along the southern edge of the application site to allow for habitat creation of native species and to compliment adjacent land such as the potential Local Wildlife Site Anncroft Meadows and Stream.

Any future proposed landscape planting should consider the use of native species, which would provide greater biodiversity gain. From the plans provided it appears that many of the site trees are planned to be retained. It is recommended the site is developed to consider biodiversity gain in accordance with local planning policy.

5.2 Bats

During the building inspections in 2012 evidence of bats was found in the form of droppings and feeding remains in the bungalow B1 building only. As such it is recommended in line with the Bat Conservation Trust Guidelines 2012 that three bat activity surveys (2 dusk and 1 dawn) be conducted within the core survey months (between May and August) to establish the use of the building by bats. Internal access will also be required to all buildings for thorough inspection including B4 and B5. It is currently anticipated from the site plans provided that building B3 will be unaffected by the proposals. Should this not be the case, a thorough internal and external inspection will need to be conducted, as access was not made available for the purposes of this survey.

In order to continue with the development lawfully, a licence from Natural England will be required. More details of this will be made available on completion of the further surveys that are required to inform on the licence.

Site trees T1-T5 were categorised as category 1 trees due to features present suitable for roosting bats. Many of the site trees are being retained as part of the proposals. If however, a category 1 tree (T1-T5) should need to be felled, further surveys in the form of a dusk and pre-dawn survey will be required. Should the tree subsequently be found not used by bats, the trees may then be categorised as category 2 trees and dealt with as below. The remaining site trees were categorised as category 2 trees. In line with the Bat Conservation Trust guidelines, the category 2 trees may be felled if necessary by taking reasonable avoidance measures. These are detailed below;

- Ideally carry out work on likely trees in **autumn** this avoids periods when bats are particularly vulnerable – during hibernation or when non-flying young are present.
- When preparing to cut a tree look for evidence of bat occupancy – woodpecker hole; staining around the hole; maze of tiny scratch marks around the hole; noise coming from a hole; on close inspection the hole may contain droppings.
- Bats may be anywhere inside a hole, try to cut as far above a hole as possible.
- If in doubt if it is a roost, do not cut and seek ecological advice.
- Bats may be inside cracks held open by the weight of a branch, which will close when branch taken off. Search such splits for bats before removing large limbs.
- Where possible ring bark and leave up to 15 metres standing dead wood (trunk), with due regard to Health and Safety issues.

If bats are found:

- If the roost is still intact and bats are not injured, seek ecological advice immediately. If help is not available allow bats to fly out of harms way.
- If the timber is felled, the roost is not exposed and the bats are not injured, temporarily seal and isolate roost and seek ecological advice immediately and contact Natural England. If help not readily available, position the roost off the ground, re-open it and allow bats to relocate of their own accord.
- If roost has been exposed, and bats have been injured, collect bats into a secure box or bag (using a glove) and seek ecological advice immediately. **Do not handle bats without gloves.**
- In all cases where bats are found to occupy a tree, inform ecologist and Natural England immediately.

5.3 Breeding Birds

All habitats on site and buildings have the potential to accommodate breeding birds, which is taken to fall between March and August, inclusive. It is therefore recommended that vegetation clearance and building works is undertaken outside of the main breeding bird season. Where this is not possible, a survey to check for any nesting birds would need to be carried out prior to any tree or scrub clearance or building demolition. The survey check would need to be carried out by a suitably qualified ecologist, no more than 24hrs prior to commencement of works, in order to minimise opportunities for nest building between the survey and start of works. If any evidence of nesting birds is found, an exclusion zone will need to be set up until any young have fledged. The extent of the exclusion zone will be dependent upon the species and range from 2m to 6m (or possibly greater) from the nest. The nest will need to be monitored by an ecologist, who will confirm when it is possible to remove the tree/shrub. In this respect vegetation clearance outside the breeding bird season is the favoured option.

No evidence was found to suggest that the buildings were utilised by notable bird species such as barn owl. However, building B5 has a good flight access point on the east side with the presence of a broken window (Target note 7). Barn owl cannot therefore be ruled out at this stage especially given the lack of access into the building. It is therefore recommended, as for bats, that access be made available for

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a thorough internal inspection with respect to barn owl particularly building B5, although it may be that the upper floors are unsafe to access as they were for the 2008 survey. The further emergence surveys with respect to bats will also shed light on the use of the buildings by barn owl due to the nature of the species to hunt for food typically in low light levels.

6.0 References

Text

Hunt, L, 2012. *Bat Surveys: Good Practice Guidelines, 2nd Edition*, Bat Conservation Trust

IEA (1995). *Guidelines for Baseline Ecological Assessment*. Chapman and Hall.

Joint Nature Conservation Committee (1993). *Handbook for Phase 1 Habitat Survey: A technique for environmental audit.* JNCC.

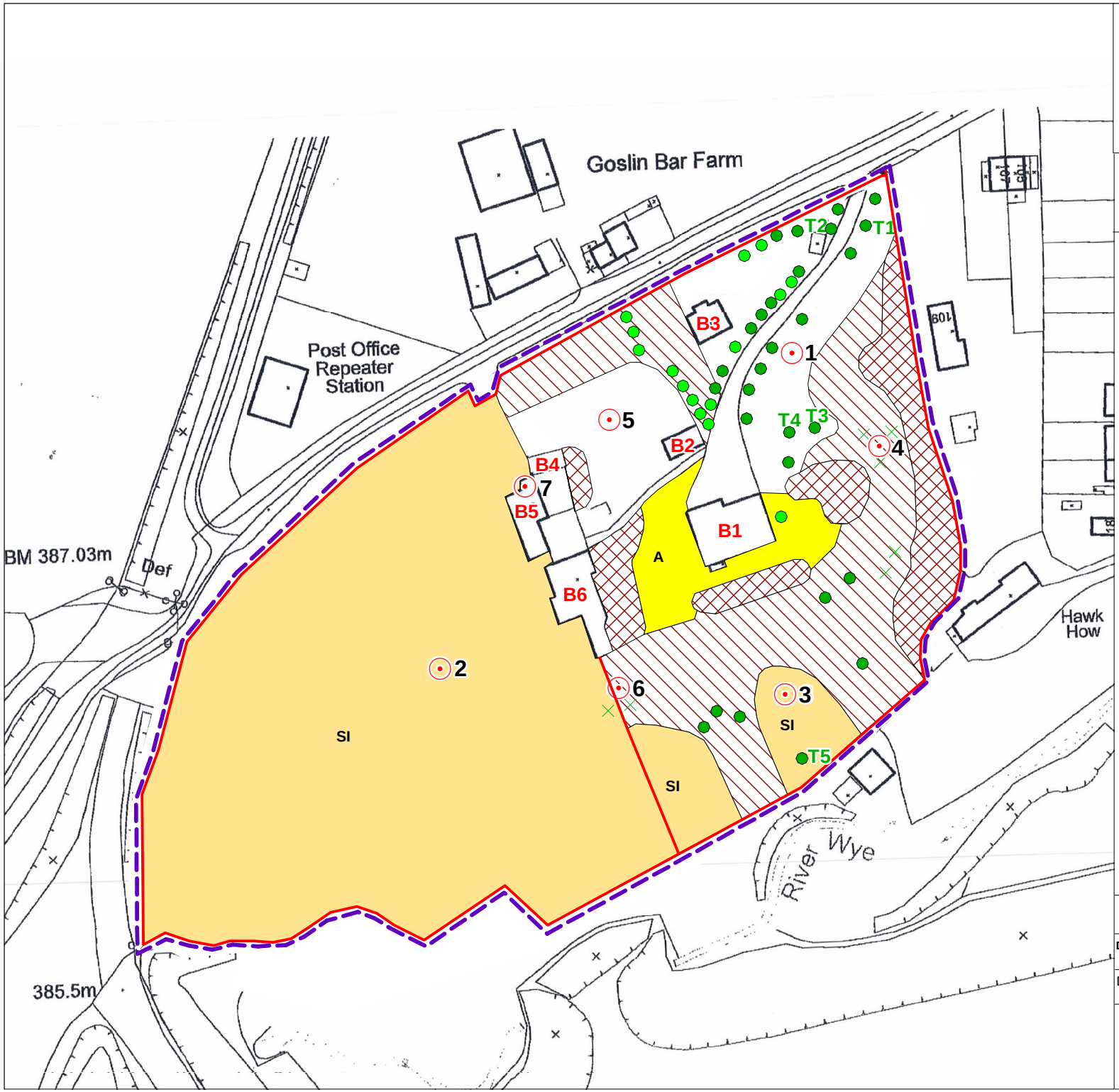
Oldham, R.S, Keeble, J, Swan, M.J.S & Jeffcote, M; (2000); *Evaluating the suitability of habitat for the great crested newt.* The Herpetological Journal Vol 10, No 4, pages 143 – 156

Internet

www.magic.gov.uk

www.ukbap.org.uk

Appendix 1: Location of Application Site, Phase 1 Habitat Plan and Bat Scoping Findings



nlg ecology ltd

Macclesfield Old Road

Location of Application Site, Phase 1 Habitat and Bat Scoping Findings

- Application site
- Dry stone wall
- Mature broad-leaved trees
- Mature coniferous trees
- Introduced shrub
- Scattered native scrub
- SI — Semi-improved neutral grassland
- A — Amenity
- Tall herb
- B1 — Building
- T1 — Bat tree reference
- 1 — Target note

		SCALE NTS	REVISION
DRAWN BY LK	CHECKED BY MC	DATE 19/12/12	
DRAWING NUMBER			

Map Provided by Persimmon Homes 2012

Appendix 2: Target Notes and Plant Species List

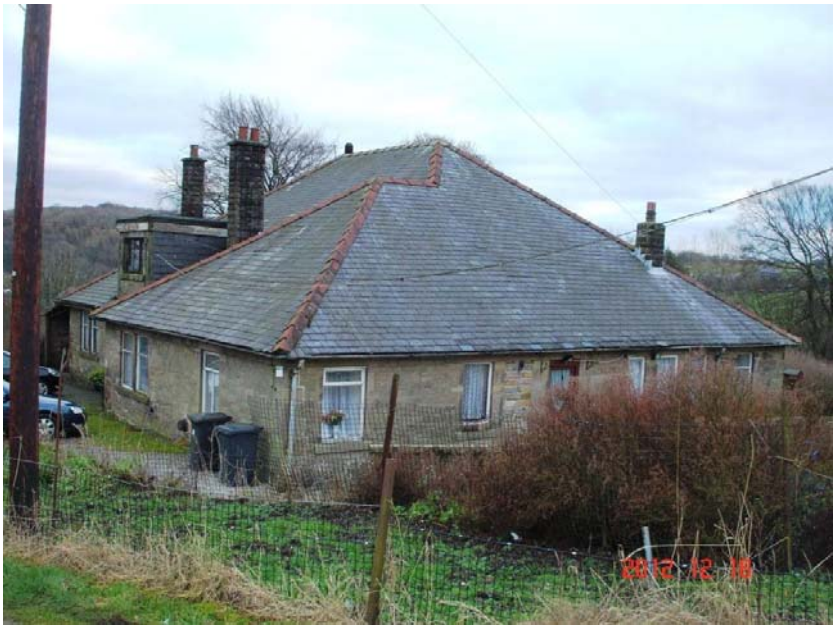
Target notes

TARGET NOTE	DESCRIPTION	COMMENTS ON POTENTIAL FAUNAL AND HABITAT VALUE
1	A line of mature broad-leaved trees along the main access track leading up to the occupied dwelling of building B1. The main species include beech (*Fagus sylvatica*) and sycamore (*Acer psuedoplatanus*) and there is the occasional coniferous species between the broad-leaved specimens. The canopy spread of the trees has prevented vegetative growth across the ground. The dominant ground flora species in this area is ivy (*Hedera helix*).	The mature trees T1, T2, T3, T4 and T5 have been noted for their moderate bat potential. The trees will also offer nesting potential for birds. In terms of habitat value the trees form a significant attribute to the local site context.
2	The western section of the application site is characterised by species poor semi-improved neutral grassland, which is maintained under a regular grazing regime. The grassland is surrounded by an intact dry stone wall and forms direct habitat links to the wider landscape.	Habitat value in terms of direct connections to the wider landscape and potentially important buffer habitats to designated sites.
3	This target note reflects to all areas of unmanaged semi-improved grassland within the eastern section of the application site, which is succeeding towards a tall herb habitat. The grassland also support soft-rush (*Juncus effuses*) indicating the damp conditions of the site.	Potentially good foraging habitat for barn owl (*Tyoto alba*).
4	A sunken area of the garden which has damp conditions as indicated by the presence of goat willow (*Salix caprea*) scrub and soft-rush. No water was present at the time of the survey, thus it is considered that no water will be retained at other times of the year.	Breeding birds are likely to be associated with the scrub.
5	An concrete area adjacent to the outbuilding which has piles of tipped building materials.	Some value to breeding birds.
6	An area of tipped waste (fridges and freezers) which has been covered over with top soil and subsequently colonised by tall herb habitat.	Potential breeding bird habitat, particularly low ground nesting species such as wren (*Troglodytes troglodytes*).
7	Small building with potential to support barn owl, although not accessible at the time of the survey. The building is built of local stone and has a round open window, which is of sufficient size to accommodate barn owl. The surrounding habitats, within the application site and wider area offer wide opportunities for barn owls to forage.	Potential location for barn owl.

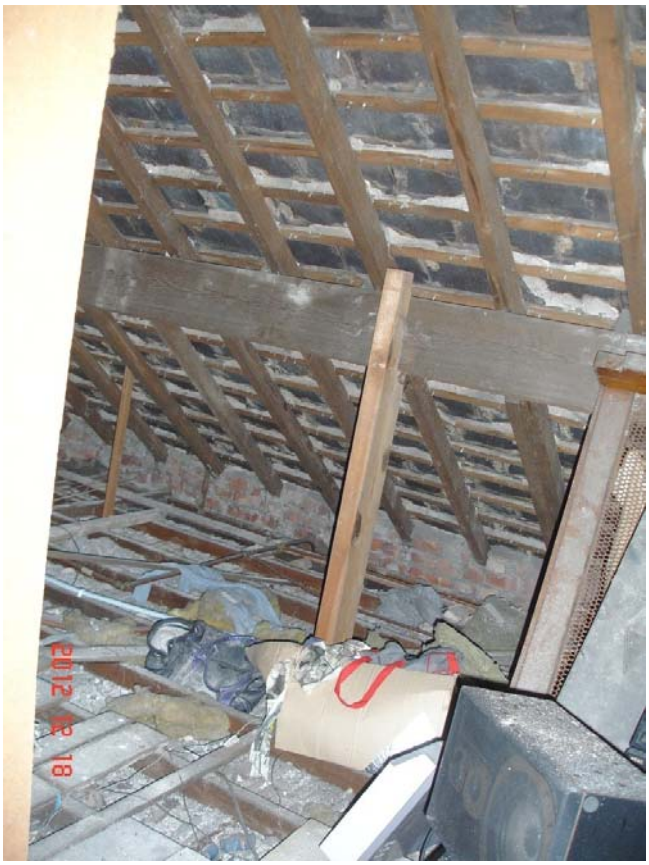
Plant species list

Habitat		Scattered trees	Introduced / Scattered native Scrub	Semi-improved neutral grassland	Tall herb
Woody Species					
Bramble	*Rubus fruticosus* agg.		+		
Beech	*Fagus sylvatica*	+			
Common lime	*Tilia x europaea*	+			
Dog rose	*Rosa canina*		+		
Elder	*Sambucus nigra*		+		
Goat willow	*Salix caprea*		+		
Hawthorn	*Crataegus monogyna*		+		
Ivy	*Hedera helix*	+	+		
Sycamore	*Acer psuedoplatanus*	+	+		
Herbaceous species					
Broad-leaved dock	*Rumex obtusifolius*		+		+
Cleavers	*Galium aparine*				+
Common mouse-ear	*Cerastium fontanum*			+	
Common nettle	*Urtica dioica*				+
Creeping buttercup	*Ranunculus repens*			+	
Creeping thistle	*Cirsium arvense*			+	+
Dandelion	*Taraxacum officinale* agg.				
Great willowherb	*Epilobium hirsutum*			+	+
Mugwort	*Artemisia vulgaris*				+
Ribwort plantain	*Plantago lanceolata*			+	
Rosebay willowherb	*Chamerion angustifolium*				+
Grasses, Sedges, Rushes					
Cock's-foot	*Dactylis glomerata*			+	+
Common bent	*Agrostis capillaris*			+	
Creeping bent	*Agrostis stolonifera*			+	
Crested dog's-tail	*Cynosurus cristatus*			+	
False oat-grass	*Arrhenatherum elatius*			+	
Perennial rye-grass	*Lolium perenne*			+	
Soft-rush	*Juncus effusus*			+	+
Yorkshire-fog	*Holcus lanatus*			+	

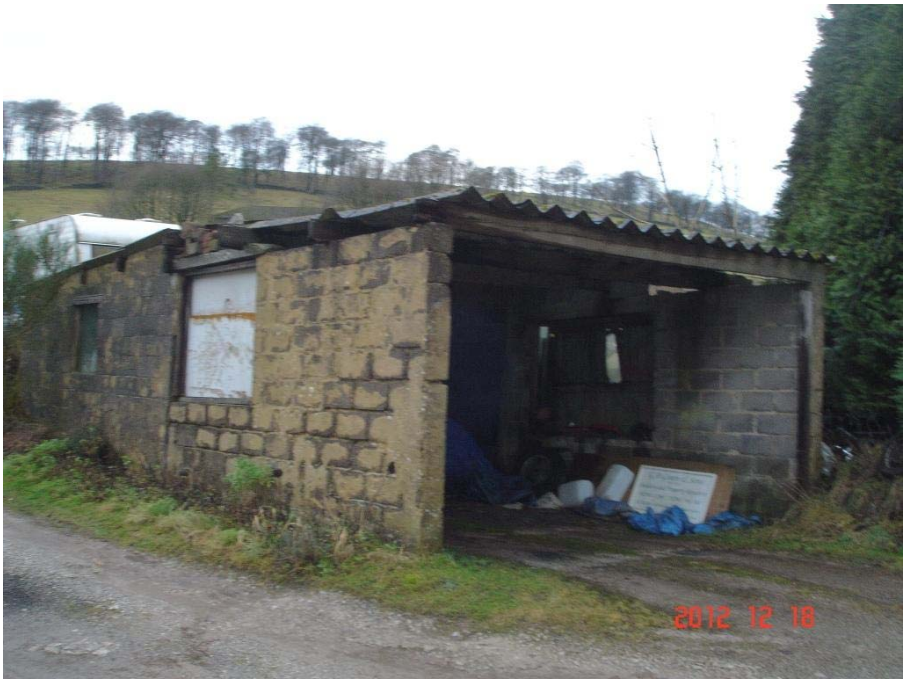
Appendix 3: Photographic Plates



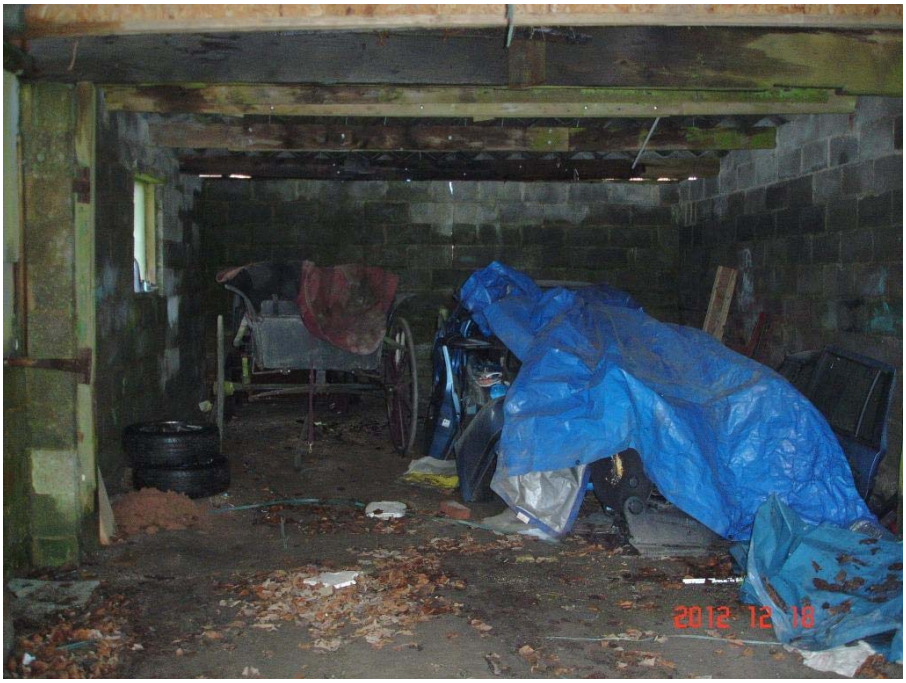
Bungalow building B1



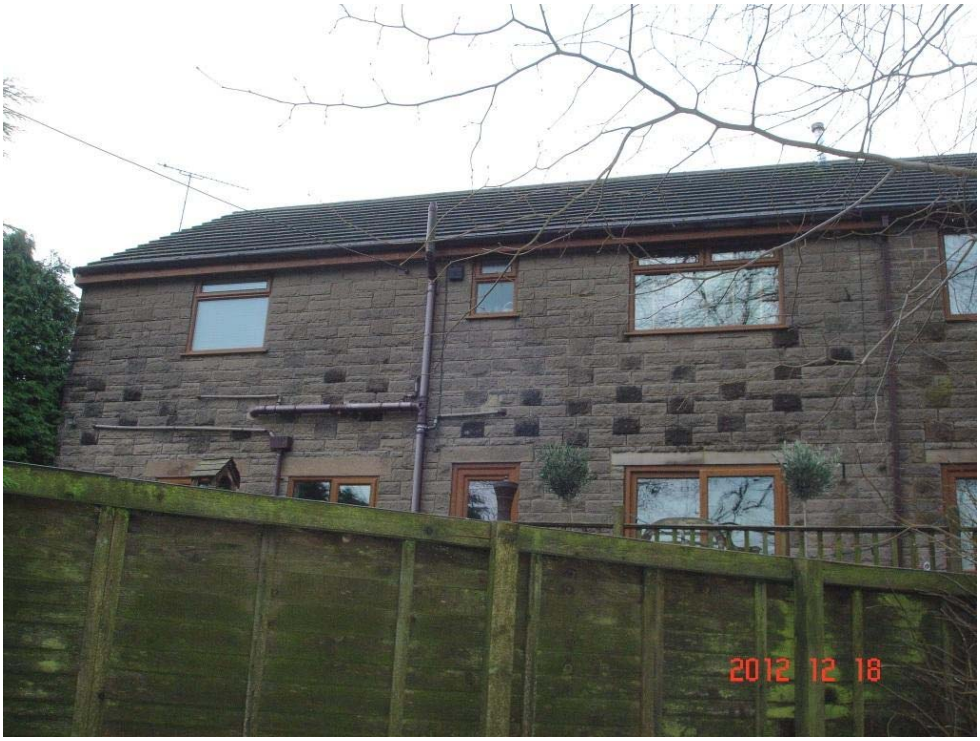
Internal view of B1 void



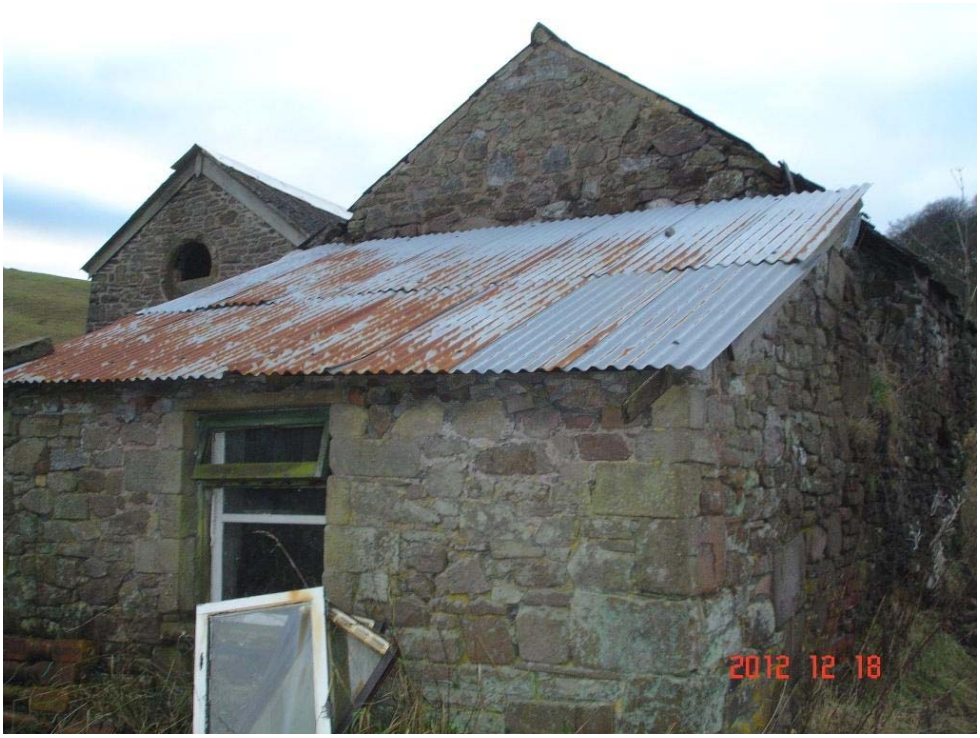
External view of building B2



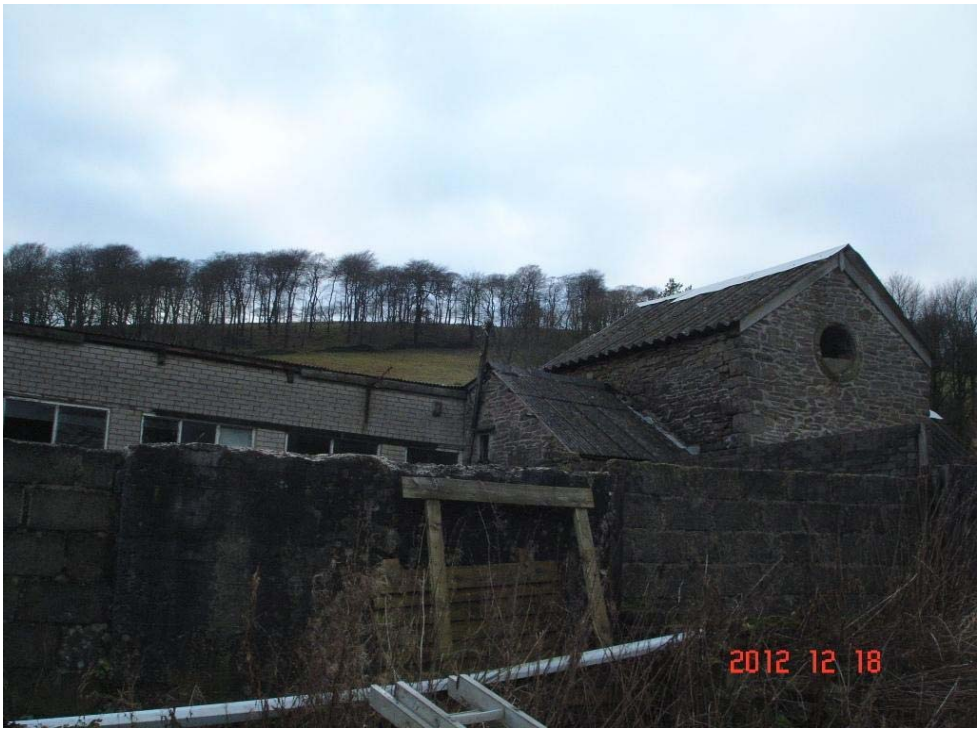
Internal view of building B2



Building B3



Building B4



Building B5

Building B6