




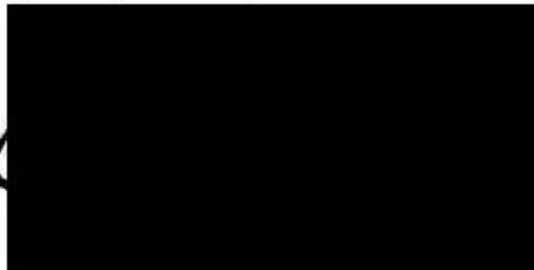

**Stubbins Lane, Catterall**

***Ecological Appraisal***

June 2017

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**Control sheet**

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## **1. Introduction**

- 1.1 Bowland Ecology Ltd was commissioned by Peter Waring of Midas Land Limited to complete an extended Phase 1 Habitat survey, building inspections and a nocturnal bat survey at Stubbins Lane, Catterall (NGR: SD 50682 42684). The site is subject to proposals for the conversion of a stone barn into two residential dwellings and one farm building for commercial use.
- 1.2 Stubbins House currently comprises a farm complex including the main farmhouse, one traditional stone barn and several single skin, open fronted barn structures, along with other ancillary sheds and pens. Livestock are housed on the farm, including sheep, pigs and poultry. Some sheds are also used for the commercial chopping of firewood (logs). The surrounding habitats are grazed fields with field boundaries comprising hawthorn dominated hedgerows and scattered trees. The Lancaster Canal lies one field to the east of the farm. The site lies within a predominantly pastoral area, and the Forest of Bowland AONB is located 2km to the east.
- 1.3 The purpose of the survey was to: 1) identify and map all habitats occurring within the survey area, 2) identify the presence of (or potential for) wildlife interests with particular reference to the need for further surveys and legal requirements, and 3) provide an ecological assessment, identify potential impacts and provide recommendations pertaining to the proposal.
- 1.4 This report includes a description of survey methods, a summary description of habitats and fauna and outlines recommendations to provide protection and enhancements for biodiversity and protected species. Target notes and a Phase 1 Habitat plan are presented as Appendices.

## 2. Methodology

- 2.1 The desk study, extended Phase 1 habitat survey and ecological appraisal followed the Guidelines for Preliminary Ecological Appraisal (GPEA) (CIEEM, 2013) and are in line with the British Standard BS42020:2013 'Biodiversity – Code of practice for planning and development'.

### **Desk Study**

- 2.2 The aim of the desk study was to identify the presence of statutory and non-statutory wildlife sites within the area and any legally protected species or Habitats and Species of Principal Importance for the conservation of biodiversity (Section 41 NERC Act 2006).
- 2.3 The Multi-Agency Geographic Information for the Countryside (MAGIC) website ([www.magic.gov.uk](http://www.magic.gov.uk)) was reviewed for information on locally, nationally and internationally designated sites of nature conservation importance (statutory sites only) on or within 1 km of the site boundary.
- 2.4 Local bat records on and within 1 km of the site were obtained following a data search with North Lancashire Bat Group.
- 2.5 Ordnance Survey maps and aerial photographs (<http://maps.google.co.uk/maps>) were reviewed to help identify any continuous habitat and any other notable habitats within the surrounding area.
- 2.6 English Nature<sup>1</sup> (2001) advised that, ponds up to 0.5 km away from a development site should be checked, if it is thought likely that great crested newt (*Triturus cristatus*) populations centred on these ponds would be affected by changes to the site.
- 2.7 Further to the above guidance, Natural England's licensing method statement template (Form WML-A14-2 (version December 2015<sup>2</sup>)) advises that, for developments resulting in permanent or temporary habitat loss at distances over 250 m from the nearest pond, careful consideration should be given to whether a survey is appropriate. Although the species may use suitable terrestrial habitat up to 500 m from a breeding pond, in this instance a 250 m search radius was considered appropriate due to the mostly sub-optimal nature of the habitats on site for amphibians and the small scale and temporary nature of the works (building conversion).

### **Extended Phase 1 Habitat Survey**

- 2.8 The survey was completed on 13<sup>th</sup> June 2017 by Ellen Milner MA (Hons), CEnv, MCIEEM, Class Licence Level 2 (WML-A34) and Jade Relf MSc BSc (Hons) GradCIEEM. The weather during the survey was overcast (100% cloud cover) and blustery (Beaufort Scale 6) with intermittent heavy showers and approximately 13°C.

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<sup>1</sup> English Nature was integrated with parts of both the Rural Development Service and the Countryside Agency from 1 October 2006, to form Natural England.

<sup>2</sup> <https://www.gov.uk/government/publications/great-crested-newts-apply-for-a-mitigation-licence>

- 2.9 The extended Phase 1 habitat survey followed standard methodology (JNCC, 2010 and CIEEM, 2013). All features of ecological significance were target noted.
- 2.10 This survey methodology records information on the habitats together with any evidence of and potential for legally protected and notable fauna, in particular:
- assessing the suitability of habitats for other notable and protected species such as nesting birds (including any active or disused nests), reptiles, water vole, otter, white-clawed crayfish, badger and invertebrates;
  - checking for the most common invasive plant species subject to strict legal control including; Japanese knotweed (*Fallopia japonica*), giant knotweed (*F. sachalinensis*), hybrid knotweed (*F. x bohemica*), giant hogweed (*Heracleum mantegazzianum*), rhododendron (*R. ponticum*, *R. ponticum x R. maximum* and *R. luteum*) and Indian balsam (*Impatiens glandulifera*);
  - assessing the suitability of the habitat for amphibians and for the protected great crested newts. Ponds on site and within 250 m (access permitting) were subject to a habitat suitability index (HSI) (Oldham *et al.* 2000) assessment for great crested newt<sup>3</sup>.

### **Building Inspection Survey**

- 2.11 A daytime building inspection of the buildings on site was also completed on the same day as the extended Phase 1 habitat survey. The survey included all buildings to be affected by the development plans.
- 2.12 A detailed inspection of the buildings was carried out to assess their potential to support roosting bats. This survey followed, and is in line with, the Bat Conservation Trust 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' (3<sup>rd</sup> Edition) (Collins, 2016). The assessment of roost potential follows the guidance set out in (Appendix A). High power torches (Cluson Clu-lite 500,000 candlepower) and ladders were used to aid the survey.
- 2.13 The survey involved searching both the interior and exterior of the buildings (where access was possible) to identify evidence such as bats, bat droppings, urine stains, bat feeding remains (moth wings, insect cases), bat staining, a distinctive smell of bats, scratch marks and smoothing of surfaces, which would indicate a roosting site. The survey also focused upon identifying potential roosting habitat such as suitable crevices and voids. Crevices can include features such as gaps behind barge boards, ridge tiles, loose mortar, flashing and slates. Voids can include loft spaces; cellars and cavity walls.
- 2.14 Natural England's Bat Mitigation Guidelines (A.J. Mitchell-Jones 2004) states that a significant bat roost can normally be determined on a single visit at any time of the year, provided that the entire structure is accessible and that signs of bats have not been removed by others.

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<sup>3</sup> An HSI is a numerical index, between 0 and 1. Values close to 0 indicate unsuitable habitat, 1 represents optimal habitat. The HSI for the great crested newt incorporates ten suitability indices, all of which are factors known to affect this species. The HSI for great crested newts is a measure of habitat suitability - it is not a substitute for newt surveys.

- 2.15 In addition to evidence of bats, the survey also searched for evidence of nesting birds, including barn owls. This includes droppings, pellets, feathers, nest debris and suitable places for barn owl to nest, such as ledges, wall tops, loft floors, hay bales etc.

### ***Nocturnal Bat Survey***

- 2.16 A nocturnal bat survey was conducted on 19<sup>th</sup> June 2017 by Matt Clifford MSc, BSc, ACIEEM, Sarah Birtley MBiolSci, ACIEEM and Jodie Ginley Msc, BSc, GradCIEEM. The weather during the survey was very warm (approximately 19°C falling to 17 °C at the end of the survey), clear (1/8 cloud cover) dry and still (Beaufort scale 0-1). The survey conditions were optimal.
- 2.17 Sunset was at 21.46. The survey began at 21.30 and continued until 23.15.
- 2.18 The nocturnal survey was informed by the daytime building inspection and consequently focused on Building A, as Building B was not considered to have any roosting potential. The surveyors positioned themselves around the building such that all elevations could be clearly observed. Sarah Birtley was in Survey Position 1, Jodie Ginley in Position 2 and Matt Clifford in Position 3.
- 2.19 Surveyors were equipped with the following equipment: Bat Box Duet, Echometer Touch and Anabat Express.

### ***Limitations***

- 2.20 Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. Therefore the survey of the study area has not produced a complete list of plants and animals.
- 2.21 The list of invasive plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is extensive and these plants are found in a range of different habitats, including aquatic habitats. The extended Phase 1 habitat survey checked, in particular, for the presence of Japanese knotweed, giant knotweed, hybrid knotweed, giant hogweed, rhododendron and Himalayan balsam. There may be other invasive plant species present on the site which were not recorded, but it is considered that this survey is sufficient to identify any significant constraints posed by invasive plants.

### 3. Results

#### *Designated Sites and Habitats of Principal Importance*

- 3.1 There are no statutory designated sites within 1 km of the site.
- 3.2 The site lies within the SSSI sensitive zone for Rough Hey Wood SSSI which lies 1.3 km to the east. Rough Hey Wood is a 5.9 ha planted mixed woodland supporting one of Britain's largest heronries. It lies within Claughton Hall Estate and at its peak supported 137 heron nests. In recent years regularly it has supported over 100 pairs (115 on average), which represents more than 1 % of the total British breeding population. The Claughton heronry is therefore of national importance and is one of only five heronries in Britain regularly containing over ten nests.
- 3.3 The location of the site within the sensitive zone suggests that the LPA should consult Natural England on possible risks of the development on the designating features of the SSSI.
- 3.4 The Lancaster Canal is a non- statutory wildlife site or Biological Heritage Site (BHS). This lies 150 m to the east of the application site. It is the largest and most species rich waterbody in the county and supports a very rich assemblage of plants and animals characteristic of slow-flowing waterbodies. A 200 m section of the bank adjacent to the towpath near Stubbins (SD 509425) is also included as it supports species rich grassland.
- 3.5 The search of the Multi Agency Geographical Information Centre ([www.magic.gov.uk](http://www.magic.gov.uk)) identified approximately 12 blocks (some interconnected) of priority habitat deciduous woodland. The closest of these is Fish Ponds Wood which lies approximately 185 m to the east, beyond the Lancaster Canal.
- 3.6 With regard to ponds, there is one pond located approximately 175 m to the south-east of the site. A further pond lies 185 m to the east of the site, although this is beyond the Lancaster Canal, within Fish Ponds Wood. The Lancaster Canal is considered to be a significant barrier to the dispersal of amphibians due to a vertical reinforced bank observed at the section near to the application site. A further three ponds lie at the limit of the 250 m search area, also within Fish Ponds Wood.

#### *Habitats*

- 3.7 Target notes summarising key interest features for wildlife recorded during the extended Phase 1 habitat survey are included in Appendix B. The Phase 1 habitat plan of the site presented in Appendix D and includes the locations of the target notes. Plant species nomenclature follows Stace (2010).

#### Buildings, hardstanding and stone walls

- 3.8 The majority of the farm comprises buildings and hardstanding areas, with associated stone walls (mortar filled rather than dry stone). Building descriptions for the two buildings to be affected by the proposals are provided in Appendix C and are discussed in more detail in relation to roosting bats and nesting birds below. The remaining buildings, which are not affected by the



proposals comprise the main farmhouse (occupied) and numerous single skinned, open fronted agricultural sheds/pens.

Species poor, semi-improved grassland

- 3.9 The fields around the farm, and specifically the field to the east of the access track is semi-improved species grassland (T4). It supports a range of grass species including crested dog's-tail, sweet vernal grass, red fescue, common bent, Yorkshire fog and meadow foxtail. Forbs include white clover, creeping buttercup, yarrow and cuckooflower. Patches of common nettle and creeping thistle are also present.

Running water

- 3.10 A stream is present immediately to the south of the roadside hedgerow, which is approximately 1.5 m wide. The base of the stream appears silty. The flow of water was quite fast, although this could be due to the amount of rainfall preceding the survey. It has shallow earth banks, which are slumped and collapsed in places. The banks are unfenced and are predominantly vegetated with grasses, along with numerous stands of hemlock water-dropwort which have recently been treated with herbicide by the farmer.

Hedgerow

- 3.11 A hawthorn dominated hedgerow with occasional elder (T6) is present along the road to the north of the field at T4. It is dense in structure and to approximately 3 m in height. The hedgerow base comprises mostly coarse grass species such as cock's-foot and Yorkshire fog with creeping buttercup and cow parsley.

Mature trees

- 3.12 There are several large mature oak trees around the farmyard (T1-3). In the wider landscape, alder and hawthorn were noted.

Standing water

- 3.13 An area of standing water is present approximately 175 m to the south-east of the site. This periodically forms due to leakage from the adjacent Lancaster Canal. The owner advised that this is repaired at intervals by lining the canal walls with clay, following which the water completely dries up. At the time of the survey there was a throughflow of water, running from the canal to a stream to the west of the water body. The surface of the water was completely covered with common duckweed. The only other aquatic species noted were soft rush and fool's watercress, the remaining species being those of the surrounding grassland.

***Species***

Bats

- 3.14 A review of aerial photographs found that there are notable bat foraging and commuting habitats surrounding the site. This includes areas of woodland to the east and the Lancaster Canal, which is likely to provide a significant foraging resource for the local bat population, and may also provide roosting locations in the form of bridges, which would be particularly suited to Daubenton's bats. There is also a network of hedgerows in the area which provide linear features for commuting bats. Overall, the habitats in the area are considered to be of high value for bats.

3.15 North Lancashire Bat Group provided the following records:

- Pipistrelle SD49842524/01/01 (1 no.)
- Pipistrelle SD49842808/07/96 (78 no.)
- Brown long eared bat SD499437 24/05/10 (12 no.)
- Common pipistrelle SD49943724/05/10 (7 no.)

3.16 The Multi Agency Geographical Information Centre also highlighted two European Protected Species licences which may be of relevance to the project:

- EPSM 2012-4600 which was for the destruction of a common pipistrelle and soprano pipistrelle resting site, between 2012 and 2014, 1.3 km to the north, near Catterall.
- EPSM 2012-5075 which was for the destruction of a common pipistrelle resting place in 2012, 1.4 km to the east of the site near Claughton.

#### *Building Inspection Results*

3.17 The building inspection results are provided in Appendix C. No definitive evidence of bat roosting was found during the surveys. Building A is considered to have some, albeit **low** potential to support a bat roost, in accordance with the guidance set out in Appendix A. This is due to the presence of two slated sloped roof sections on the north and south elevations. The northern elevation is in good condition but the southern elevation has some damaged slates. Lead flashing is also present, where these sloped sections join the main pitched roof structure. Mortar is present at the roof edges. These features may provide potential roosting crevices, although the presence of a single skin pitched corrugated roof renders it of lower potential than if the whole roof was slated. Mouse and rat droppings were found within this building. No bat droppings were found. A small number of butterfly wings were also found but the location of these was not consistent with predation by bats and are more likely to have been predated by spiders. Building B is considered to have **negligible** bat roosting potential as it has no crevices or other suitable features which could be used by roosting bats.

3.18 There are several mature oak trees around the buildings at the farm (T1, T2, T3). These are large and mature specimens and therefore support features such as cracked bark which may provide suitable roosting features for bats. One of the main boughs has broken off T2, resulting from damage when a building was blown into it during high winds several years ago, which provides additional roosting opportunities. Therefore, trees T1 and T3 are considered to have **low** bat roosting potential and T2 is considered to have **moderate** roosting potential

#### *Nocturnal Bat Survey Results*

3.19 A Bat Activity Plan is provided in Appendix E. On the basis of the building inspection, a nocturnal survey was undertaken on Building A to determine presence or likely absence of a bat roost. Building B was not considered to have any roosting potential.

3.20 The first bat heard was at 21.57 and was a commuting noctule which was heard but not seen. This observation was made by the surveyor in Position 1. A further noctule was observed at 22.10 commuting over the site by the surveyor in Position 3.

- 3.21 At 21.07, 21 minutes after sunset, a common pipistrelle (*Pipistrellus pipistrellus*) was observed commuting west to east across the site, heading towards the Lancaster Canal.
- 3.22 From this time, common pipistrelles began to appear at the site, foraging and commuting around the building, farmyard and mature trees. Observations from the surveyor at Position 1 were every couple of minutes. Activity then became more intense and at 22.27 between three and five common pipistrelles were flying in and out of the building (through open barn doors), social calling and foraging. The activity dropped off around 22.55 with only occasional bat passes for some time, followed by another period of more intense activity around 23.05 with 2 to 3 bats flying in and out of the barn (bats entering the barn was observed by the surveyors in Positions 1 and 2), criss-crossing the farm track and with constant foraging activity. Foraging was also observed along the roadside hedgerow, observed by the surveyor at Position 2.
- 3.23 At 22.54 five calls between 35 and 50kHz were recorded. Later analysis suggests this was a *Myotis* sp. which was heard but not seen. Further *Myotis* calls were recorded at 23.00 (commuting along the farm track) and at 23.11 (heard but not seen).

#### Birds

- 3.24 No evidence of barn owl was found during the survey. Several active swallow nests were observed, with parents attending to chicks in the nests. A number of other nests (of other species) were also found, though it was not possible to identify if these were currently active. Stock dove, sparrow and pied wagtail were noted to be present around the farmyard and could be nesting within the buildings. A buzzard was noted circling overhead and a heron took flight from the canal during the survey, but were not observed to be using habitats at the site.
- 3.25 The mature oak trees (T1-3) also provide breeding bird habitat, although no nests were observed. The hedgerow at T6 also provides nesting habitat and a chaffinch was observed entering the hedgerow several times, suggesting it was attending a nest.

#### Amphibians

- 3.26 Smooth newt and common frog are known to be present in the area but no records of great crested newt were retrieved during the data search. The farm owner advised that amphibian surveys have been undertaken in the locality in the last few years, for a separate proposed development nearby, with no great crested newts found to be present.
- 3.27 There are no ponds on the site. The closest pond lies approximately 175 m to the south east of the farm, caused due to leakage from the canal (described above). A Habitat Suitability Assessment score was determined for this area of standing water and found to be 0.53 which is below average.
- 3.28 Further ponds are present within 250 m of the site but are beyond the Lancaster Canal which is considered to be a significant barrier to amphibian dispersal

3.29 The terrestrial habitats on site are not considered to be of particular value to amphibians, comprising buildings, hardstanding and grazed grasslands.

Other mammals

3.30 A single hedgehog was observed to be using the site during the nocturnal bat survey. Brown hare may use the surrounding fields and the stream (T5) could support water vole, though no records were retrieved during the data search and no sightings by the farmer have been made.

Reptiles

3.31 Slow worms and grass snake could potentially be present in the area. The stream corridor at the northern edge of the site (T5) could be used by grass snake.

Other fauna

3.32 No evidence of other fauna was found during the survey.

## 4. Evaluation and Assessment of Potential Impacts

- 4.1 An assessment of effects on ecological features has been made using the available design and survey information and the professional judgement of the ecologist. This includes a consideration of the relevant legislation (see Legal Information below) and planning guidance. If there are changes to the proposals, such as a change to the proposed development design or to the construction method and programme, the assessment would need to be reviewed.
- 4.2 The proposed development (presented in Appendix F) comprises;
- The conversion of the existing stone barn (Building A) into two residential dwellings.
  - Conversion of Building B into a commercial building, comprising seven units and a shared service yard.
  - The creation of a new access road from the existing access road to the property, to the newly converted commercial building, requiring the demolition of a section of a stone wall.

### ***Designated Sites and Habitats of Principal Importance***

- 4.3 It is considered unlikely that the designating feature i.e. the heronry of Rough Hey Wood SSSI will be impacted by this small scale development comprising mainly building conversion and the loss of a small area of semi-improved grassland habitat. The SSSI is separated from the site by the Lancaster Canal, a railway line and the M6 motorway.
- 4.4 The Lancaster Canal BHS will not be impacted by the works, due to the distance from the proposed development (c. 180 m). The works will be small scale in nature and restricted to the existing farm boundary.
- 4.5 No Habitats of Principal Importance will be affected by the works due to their distance from the site and small scale nature of the works.

### ***Habitats***

- 4.6 The habitats are considered to be of ecological value at site level only.
- 4.7 Realisation of the proposed development will result in the loss of a small area of semi-improved grassland field (approximately 0.05 ha) for a new access track. There is sufficient hardstanding within the farmyard to support any storage requirements during the building works and therefore no other habitats will be affected.
- 4.8 No mature trees are to be directly impacted, and no works to the stream at T5 and the hedgerow at T6 are envisaged. These features may be at risk of some disturbance impacts such as run-off if works are undertaken without due care and attention.

## **Species**

### Bats

- 4.9 Building B is considered to be of negligible potential for bat roosts and therefore no impacts on roosts are envisaged as a result of works to this building.
- 4.10 On the basis of the daytime building inspections, Building A was considered to have some, albeit low potential to support roosting bats. The BCT Good Practice Guidelines (3<sup>rd</sup> Edition, 2016) state that the recommended minimum number of survey visits to give confidence in a negative result is one dusk or dawn survey for a building of low roosting potential.
- 4.11 The nocturnal survey recorded high levels of bat activity in the area, as expected due to the high quality foraging habitats in the area. The farmyard appears to be a well-used resource for foraging. Common pipistrelle, noctule and a Myotis sp. were noted.
- 4.12 No bats were observed to emerge from Building A, and the first recorded pipistrelle foraging was 21 minutes after sunset, suggesting that no roosts are present very close by, and bats are travelling to the site from roosts elsewhere.
- 4.13 Common pipistrelle were observed entering and leaving Building A and using the building for foraging. They are likely to be attracted to invertebrates found in the barn due to the presence of hay, chickens and geese. On this basis they are likely to forage within other barns where livestock are housed and feed. However, no roosting activity was observed and no roosts will be impacted as part of the scheme.
- 4.14 There are to be no impact to mature trees as a result of the scheme.

### Birds

- 4.15 If undertaken without due care and attention accidental killing or injury to birds including swallows could occur and active nest sites could be destroyed.

### Amphibians

- 4.16 Whilst an area of standing water is present within 250 m of the site, this is a temporary feature, and scores a 'below average' HSI score. The habitats on the site and specifically within the working area are of negligible value for amphibians. Therefore no impacts are envisaged as a result of the scheme.

### Other fauna

- 4.17 If rubble or log piles require moving, hedgehog could potentially be injured if the works are undertaken without due care and attention. Given the restricted nature of the works, no impacts to other fauna are envisaged.

## 5. Recommendations and Conclusions

- 5.1 This section provides the required measures to mitigate the impacts of the proposed development. A key element of the National Planning Policy Framework is to minimise impacts to biodiversity and provide enhancements. Paragraph 109 states that *'The planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible'*. It also states in Paragraph 118 that *'when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by encouraging opportunities to incorporate biodiversity in and around developments'*. This section also therefore includes suggested enhancement measures. The following recommendations are designed to comply with legal requirements and national and local planning policy.

### **Habitats**

- 5.2 Tree planting will be undertaken along the edge of the new access road. This will be native species of local provenance. Oak or alder would be most appropriate given the presence of these species in the local area.
- 5.3 Direct loss of trees is not required as a result of the project, however damage to trees and woodland may occur as a result of the works, for example to tree roots. If heavy plant is used in close proximity to mature trees it is recommended protective fencing is put in place.
- 5.4 The stream (T5) will not to be directly impacted by the project. However, it is advised that appropriate pollution prevention measures should be implemented to protect the watercourse. No machinery or material should be stored adjacent to the watercourse during both the construction and operational phase of the development.

### **Species**

#### Bats

- 5.5 Although flight within Building A and foraging activity was noted, no roosts were observed to be present and therefore it is considered unlikely that any bat roost will be impacted by the scheme. Due to the transient nature of bat roosts, despite the negative result it is always recommended that works to buildings, particularly re-roofing works are undertaken with caution.
- 5.6 If bats are found or suspected during works, as a legal requirement, works in that area should cease immediately until further advice has been sought from Natural England or the scheme ecologist. The following recommendations should also be adhered to throughout the duration of the works:
- Before any works proceed, all contractors should be made aware of the possible presence of bats and the signs to look for such as droppings;
  - During the works the contact details of a suitably licensed ecologist must be kept on site. If a bat is encountered or suspected all works must cease and the ecologist contacted immediately so they can attend site, check the health of the bat and then place it in a safe location.

- A bat should only be handled if it is in immediate danger. The bat must be handled with gloved hands and placed in a lidded ventilated box with a piece of clean cloth and a small shallow container with some water. The box must be kept in a safe, quiet location until a bat worker can attend sites.
- 5.7 It is recommended that bat boxes could be installed around the site as an enhancement. Six boxes, two boxes on each mature tree T1-T3 would be appropriate. In addition, incorporating bat friendly building design into the conversion of Building A is recommended which can include gaps in mortar, bat bricks, raised ridge tiles and use of a traditional roof liner.
- 5.8 The planting of trees of native species along the new access road will enhance the foraging habitats at the site, which will mitigate for the loss of a feeding area i.e .Building A.
- 5.9 Any new lighting schemes will be designed in accordance with the appropriate guidance (BCT & ILE 2008) to minimise the impacts on foraging bats likely to be utilising the habitats. This document includes (but not limited to) measures such as;
- use of low pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps; and
  - lighting should be directed to where it is needed and light spillage avoided, in particular, along the site boundaries.
- 5.10 Should the plans change and removal of mature trees become necessary then further survey of these trees may be required.

#### Birds

- 5.11 Any removal of potential nesting bird habitat/re-roofing or works that would restrict birds accessing nests will take place outside the breeding bird season, which runs from late February until September.
- 5.12 Replacement nesting sites will need to be provided in the form of artificial nest boxes. This will need to include artificial swallow boxes which can be sited in areas such as porches, under a canopy outbuilding, garage or stable. They will therefore need to be located in areas of the converted buildings that will still be accessible, or in alternative locations around the farm. Six artificial swallow boxes would provide approximately like for like replacement for the number of nests identified during the survey. Additional boxes would provide enhancement.

#### Other fauna

- 5.13 Removal of any log or rubble piles (if required) should be undertaken methodically and with care. Should any hedgehogs be found these will be relocated to similar habitat elsewhere on the farm.

### ***Potential Enhancement Measures***

- 5.14 The National Planning Policy Framework (NPPF, March 2012), states that the planning system should contribute 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 also states that "*opportunities to incorporate biodiversity in and around developments should be encouraged*".

- Additional plantings within the new development would provide foraging habitat for bats, and therefore have the potential to increase the value of the site. Native, nectar rich plants that attract insects would be recommended as they would enhance foraging opportunities for bats in the local area.
- Provision of artificial hedgehog boxes located in a quiet undisturbed area with ground covering vegetation, preferably against a bank, wall or fence. For example, three or four logs may be arranged to leave an appropriate sized hole for a hedgehog to nest in (big enough for the hedgehog and its nest) and covered with masses of twigs and leaves. Retaining wood piles attract invertebrates and fungi, providing a good local food source for hedgehogs and possible nesting sites (materials from site works could be used for this purpose).

### ***Re-survey of the Site***

- 5.15 If no works are undertaken on site within 12 months of this survey or if any changes to the proposals are made, a further ecological survey may be necessary (due to the mobility of animals and the potential for colonisation of the site).

## References

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## Appendix A – Bat Roost Potential and Habitat Suitability Categories



Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape (Collins, 2016).

Suitability	Description of Roosting Habitat	Commuting & Foraging Habitats
<b>Negligible</b>	Negligible habitat features on site likely to be used by roosting bats	Negligible habitat features on site likely to be used by commuting or foraging bats.
<b>Low</b>	<p>A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitats to be used on a regular basis or by a larger number of bats (i.e. unlikely to be suitable maternity or hibernation).</p> <p>A tree of sufficient size and age to contain potential roosting features but with none seen from the ground, or feature seen with only very limited roosting potential.</p>	<p>Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or u-vegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat.</p> <p>Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.</p>
<b>Moderate</b>	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status.	<p>Continuous habitat connected to the wider landscape that could be used by bats for commuting, such as lines of trees and scrub or linked back gardens.</p> <p>Habitat that is connected to the wider landscape that could be used by bats for foraging, such as trees, scrub, grassland or water.</p>
<b>High</b>	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis, and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	<p>Continuous high quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.</p> <p>High quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats, such as broadleaved woodland, tree-lined watercourses and grazed parkland.</p> <p>Site is close and connected to known roosts.</p>

## Appendix B – Target Notes



Reference	Description	Photograph
T1	<p>Large mature oak tree. Within small fenced area in farmyard.</p> <p><b>Nesting bird potential.</b> <b>Bat roosting potential.</b></p>	
T2	<p>Large mature oak with broken bough, that was damaged when a building was blown down in a storm and became stuck in the tree.</p> <p><b>Nesting bird potential.</b> <b>Bat roosting potential.</b></p>	 
T3	<p>Large mature oak tree. In relatively good condition.</p> <p><b>Nesting bird potential.</b> <b>Bat roosting potential.</b></p>	<p>See photo for T2 (tree on LHS of photo)</p>

<p>T4</p>	<p>Semi improved grassland field. Sheep grazed.</p> <p><i>Cynosurus cristatus</i> (Crested dog's-tail) - DAFOR: Abundant  <i>Anthoxanthum odoratum</i> (Sweet vernal-grass) - DAFOR: Frequent  <i>Holcus lanatus</i> (Yorkshire fog) - DAFOR: Frequent  <i>Trifolium repens</i> (White clover) - DAFOR: Frequent  <i>Alopecurus pratensis</i> (Meadow foxtail) - DAFOR: Frequent  <i>Agrostis capillaris</i> (<i>A. tenuis</i>) (Common bent) - DAFOR: Occasional  <i>Cirsium arvense</i> (Creeping thistle) - DAFOR: Occasional  <i>Festuca rubra</i> (Red fescue) - DAFOR: Occasional  <i>Ranunculus repens</i> (Creeping buttercup) - DAFOR: Occasional  <i>Urtica dioica</i> (Common nettle) - DAFOR: Rare  <i>Cardamine pratensis</i> (Cuckooflower) - DAFOR: Rare  <i>Achillea millefolium</i> (Yarrow) - DAFOR: Rare</p>	
<p>T5</p>	<p>Stream with running water. Shallow earth banks which are dumped in places. Vegetated with grasses. Adjacent to roadside hedgerow. Bridged access to farm. Stands of <i>Oenanthe crocata</i> (hemlock water dropwort) which have been recently treated with herbicide by the farmer. Approx 1 to 1.5 m wide. Moderate flow of water. Silty base.</p> <p><i>Cynosurus cristatus</i> (Crested dog's-tail) - DAFOR: Abundant  <i>Holcus lanatus</i> (Yorkshire fog) - DAFOR: Abundant  <i>Galium aparine</i> (Cleavers) - DAFOR: Frequent  <i>Geranium robertianum</i> (Herb Robert) - DAFOR: Occasional  <i>Ranunculus repens</i> (Creeping buttercup) - DAFOR: Occasional  <i>Urtica dioica</i> (Common nettle) - DAFOR: Occasional  <i>Anthoxanthum odoratum</i> (Sweet vernal-grass) - DAFOR: Rare  <i>Rumex spp.</i> (Docks and Sorrels) - DAFOR: Rare</p>	

	<p>Some potential to be used by water vole and grass snake (although no records in the area).</p>	
<p>T6</p>	<p>Roadside hedgerow. Well structured. 3m tall. Dense, no gaps.</p> <p><i>Crataegus monogyna</i> (Hawthorn) - DAFOR: Dominant  <i>Sambucus nigra</i> (Elder) - DAFOR: Frequent</p> <p><b>Nesting bird habitat (chaffinch noted entering hedgerow and likely to be nesting).</b></p>	
<p>T7</p>	<p>Area of standing water resulting from leakage from the adjacent Lancaster Canal.</p> <p><b>Potential for amphibians.</b></p>	

# Appendix C – Building Descriptions

## Building A (Low bat roost potential)

External		Internal	
Description	Photographs	Description	Photographs
<p>Stone barn, pitched corrugated fibre cement sheet roof with Perspex skylights. Externally the pointing work is in very good condition. Metal guttering and downpipes. Gutters failing in places. Re-roofed in 1980's when the previous roof blew off.</p> <p>Northern and southern elevations of building have sloped slate roof with metal roof ties and mortar-pointed roof edge. Roof unlined. Fairly good condition in the northern section but some missing/broken slates in southern section resulting in water/light ingress.</p>		<p>Exposed timber beams internally with hayloft. Roof unlined. Dry but very draughty inside, cobwebs at wall tops visibly moving with draught. No openings (blocked with hay) and timber barn door kept closed. Internal walls well pointed with no gaps. Cat present at time of survey and farmer advised kittens are sometimes present in the barn.</p> <p>Four mouse droppings were found in the hay loft at the northern end of building. Three butterfly wings found in hay store at southern end of building plus two piles of rat droppings.</p> <p>Below northern hay</p>	




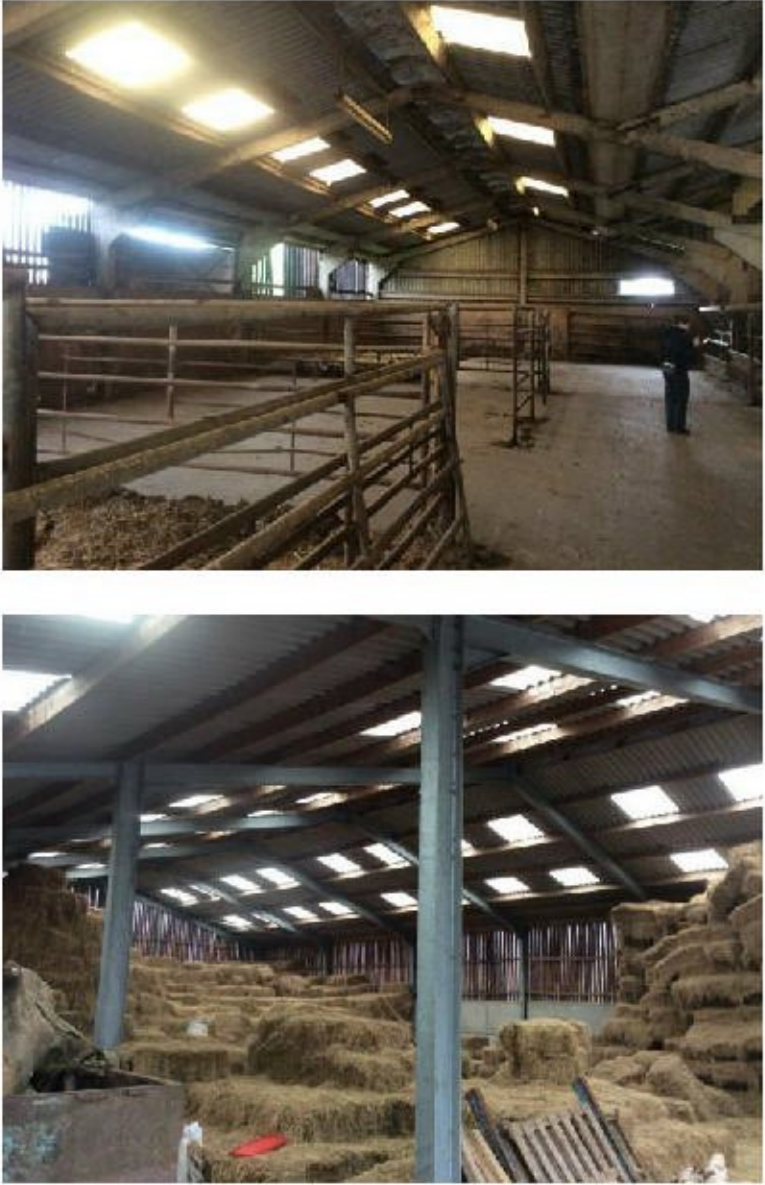
loft is a tool store. One pile of rat droppings found. Two swallow nests on western wall, no signs of current use and no obvious access point except hole in door at ground level.

Geese housed internally in the northern section and chickens in the southern section. Three active swallow nests. One old nest with straw. Swallow entered building through open window during survey. Chicks heard in nest.

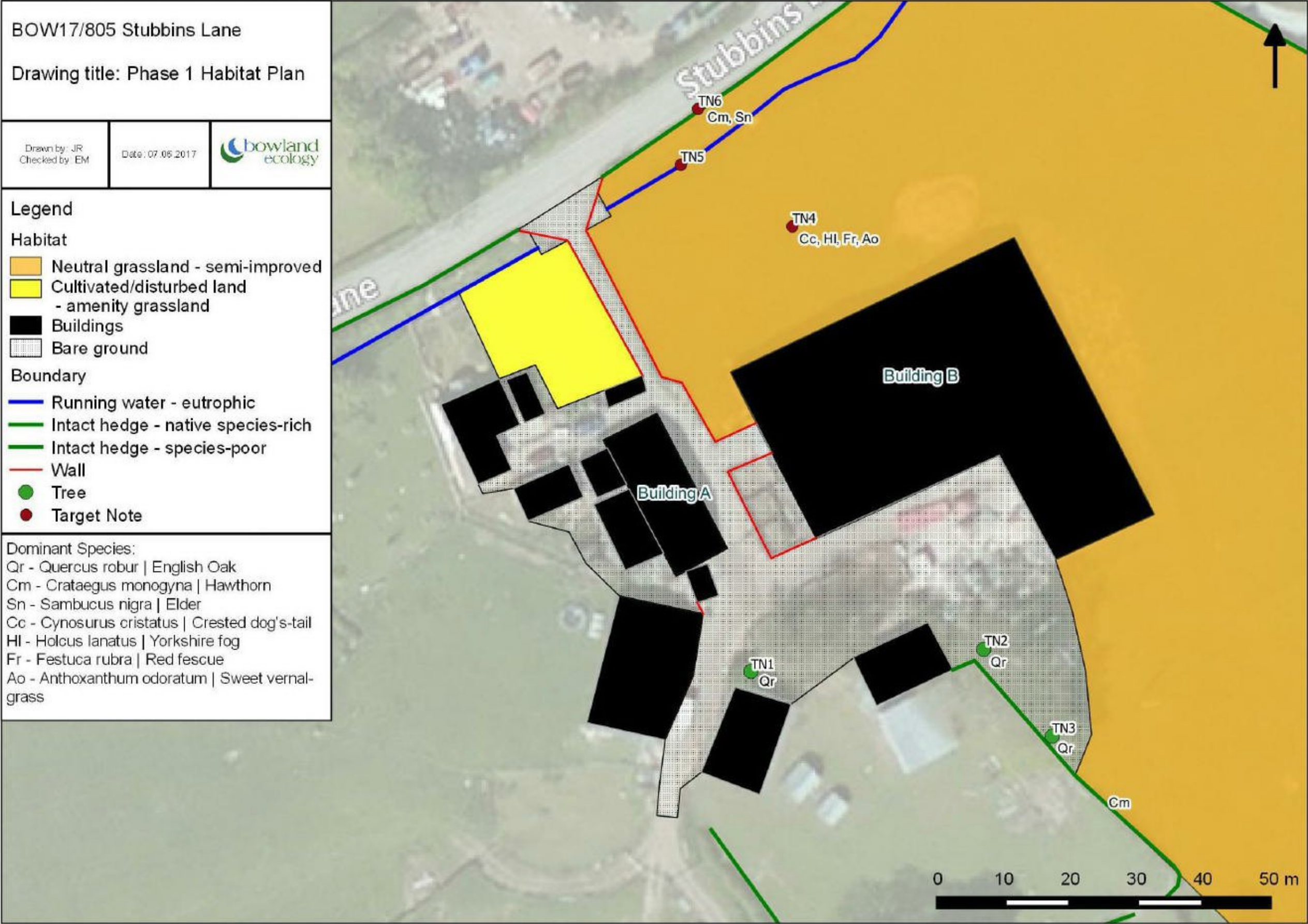




**Building B (Negligible bat roost potential)**

External		Internal	
Description	Photographs	Description	Photographs
<p>Extremely large agricultural building. Open fronted. Concrete floor. Concrete wall bases and slatted timber wall tops. Western section approximately 45 years old. Eastern section relatively modern.</p> <p>Eastern section steel framed structure, rest of design similar to adjacent older section.</p>		<p>Houses livestock and machinery. Eastern section used for hay storage, housing livestock and firewood (logs) storage.</p> <p>Open, draughty and high light conditions.</p> <p>Active swallow nest northern end of western section. Parents observed attending nest.</p>	

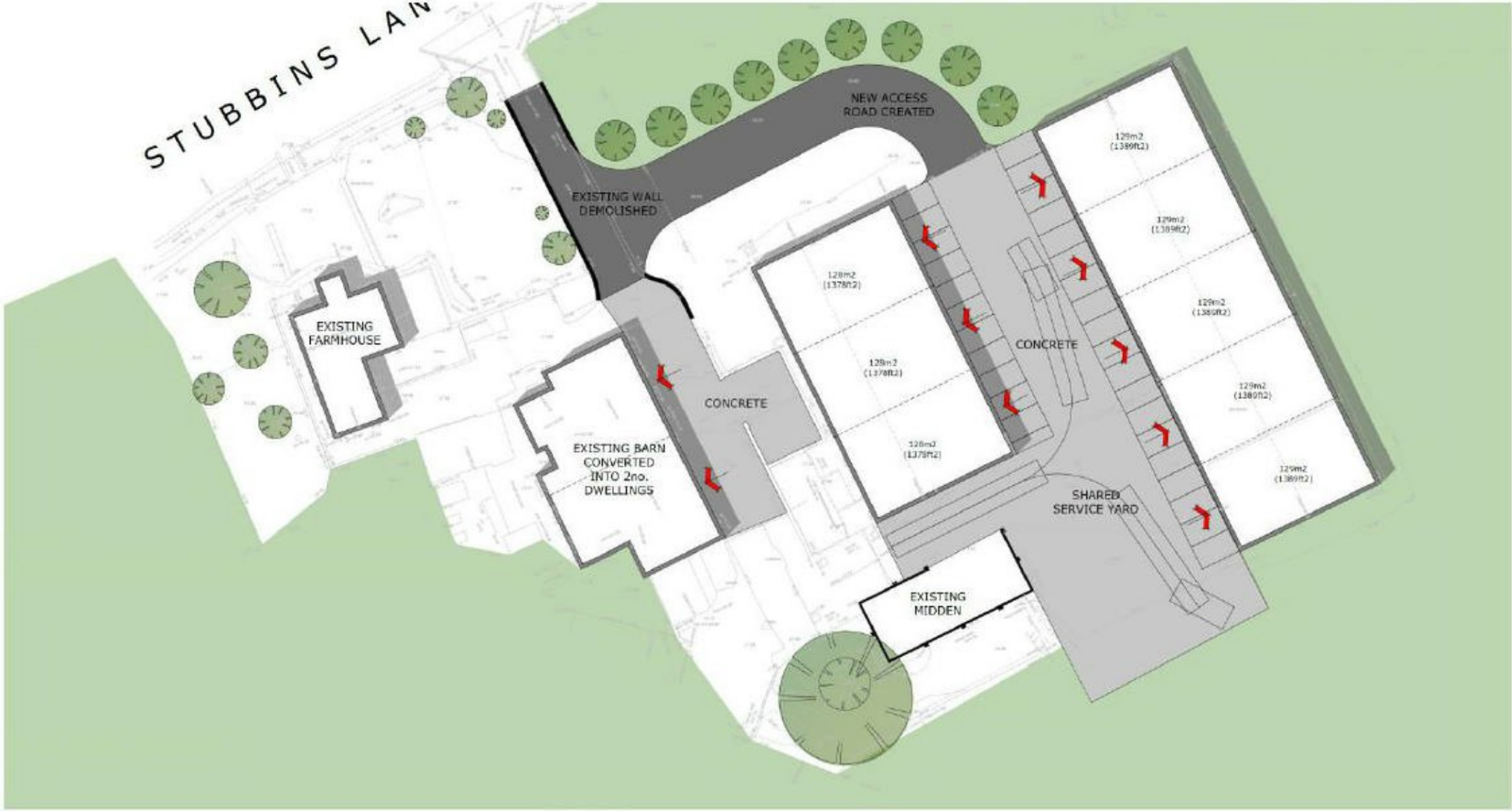
# Appendix D – Phase 1 Plan



# Appendix E - Bat Activity Plan



# Appendix F - Proposed Scheme



<p><b>Cassidy+Ashton</b> www.cassidyashton.co.uk</p> <p>Architecture • Building Surveying • Town Planning</p> <p>7 East Cliff, Preston, Lancashire, PR1 3JE 01772 258 356 10 Hunters Walk, Canal Street, Chester, CH1 4EG 01244 402 900</p>		Client <b>JWS</b>		Drawing Title <b>Existing Site Plan</b>	
		Project <b>Mixed Use Residential And Employment Scheme</b>		Drawn by <b>JP</b> Checked by <b>ND</b> Date <b>12.01.2017</b>	Status <b>PRELIMINARY</b> Scale @ A3 <b>1:500</b>
Rev.	Description	Date	Job no. <b>9009</b>	Dwg.no. <b>L01</b>	Rev.

## Appendix G - Legal Information

This report provides guidance of potential offences as part of the impact assessment. This report does not provide detailed legal advice and for full details of potential offences against protected species the relevant acts should be consulted in their original forms i.e. The Wildlife and Countryside Act, 1981, as amended, The Countryside and Rights of Way Act 2000, The Natural Environment and Rural Communities Act, 2006 and The Conservation of Habitats and Species Regulations 2010.

Species	Legislation	Offences	Notes on licensing procedures and further advice
<b>Species that are protected by European and national legislation</b>			
<b>Bats</b> <i>European protected species</i>	Conservation of Habitats and Species Regulations 2010 Reg 41	Deliberately <sup>1</sup> capture, injure or kill a bat; Deliberate disturbance <sup>2</sup> of bats; Damage or destroy a breeding site or resting place used by a bat. The protection of bat roosts is considered to apply regardless of whether bats are present.	An NE licence in respect of development is required in England. <a href="https://www.gov.uk/bats-protection-surveys-and-licences">https://www.gov.uk/bats-protection-surveys-and-licences</a> <i>European Protected Species: Mitigation Licensing- How to get a licence</i> (NE 2010). <i>Bat Mitigation Guidelines</i> (English Nature 2004). <i>Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)</i> (Bat Conservation Trust 2016)/ <i>BS8596:2015 Surveying for bats in trees and woodland</i> (BSI, 2015)
	Wildlife and Countryside Act 1981 (as amended) <sup>4</sup> S.9	Intentionally or recklessly <sup>3</sup> obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place.	Licence from NE is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.
<b>Birds</b>	Conservation of Habitats and Species (Amendment) Regulations 2012	N/A	Authorities are required to take steps to ensure the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat. This includes activities in relation to town and country planning functions.
	Wildlife and Countryside Act 1981 (as amended) <sup>4</sup> S.1	Intentionally kill, injure or take any wild bird; Intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; Intentionally take or destroy the nest or eggs of any wild bird.	No licences are available to disturb any birds in regard to development. Licences are available in certain circumstances to damage or destroy nests, but these only apply to the list of licensable activities in the Act and do not cover development. General licences are available in respect of 'pest species' but only for certain very specific purposes e.g. public health, public safety, air safety. <a href="https://www.gov.uk/wild-birds-protection-surveys-and-licences">https://www.gov.uk/wild-birds-protection-surveys-and-licences</a> <a href="https://www.gov.uk/prevent-wild-birds-damaging-your-land-farm-or-business">https://www.gov.uk/prevent-wild-birds-damaging-your-land-farm-or-business</a>
<b>Other species</b>			
<b>Rabbits, foxes and other wild mammals</b>	Wild Mammals (Protection) Act 1996	Intentionally inflict unnecessary suffering to any wild mammal.	Natural England provides guidance in relation to rabbits (Technical Information note TIN003, Rabbits- management options for preventing damage, July 2007) and foxes (which are also protected under the Wildlife and Countryside Act 1981 from live baits and decoys, see

Species	Legislation	Offences	Notes on licensing procedures and further advice
<b>For BAP species and Species of Principal Importance, see below</b>			Species Information notes SIN003 (2011), <i>Urban foxes</i> and SIN004 (2011) <i>The red fox in rural areas</i> as well as other wild mammals. Lawful and humane pest control of these species is permitted.

<sup>1</sup>Deliberate capture or killing is taken to include “accepting the possibility” of such capture or killing. <sup>2</sup>Deliberate disturbance of animals includes in particular any disturbance which is likely a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or b) to affect significantly the local distribution or abundance of the species to which they belong. Lower levels of disturbance not covered by the Conservation of Habitats and Species Regulations 2010 remain an offence under the Wildlife and Countryside Act 1981 although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided. Thus deliberate disturbance that does not result in either (a) or (b) above would be classed as a lower level of disturbance. <sup>3</sup>The term ‘reckless’ is defined by the case of Regina versus Caldwell 1982. The prosecution has to show that a person deliberately took an unacceptable risk, or failed to notice or consider an obvious risk. <sup>4</sup>The Wildlife and Countryside Act (1981) has been updated by various amendments, including the Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006. A full list of amendments can be found at <http://jncc.defra.gov.uk/page-1377>.

Site Designation	Legislation	Protection	Guidance
<b>Site of Special Scientific Interest (SSSI)</b>	Wildlife and Countryside Act 1981 (as amended)	It is an offence to carry out or permit to be carried out any potentially damaging operation. SSSIs are given protection through policies in the Local Development Plan.	Owners, occupiers, public bodies and statutory undertakers must give notice and obtain the appropriate consent under S.28 before undertaking operations likely to damage a SSSI. S.28G places a duty on all public bodies to further the conservation and enhancement of SSSIs. Further guidance can be found in the National Planning Policy Framework and the accompanying joint Circular (ODPM Circular 6/2005 & Defra Circular 01/2005) to PPS9 for England, which is still valid.
<b>Local Sites</b>	There is no statutory designation for Local Sites.	Local Sites are given protection through policies in the Local Development Plan.	Development proposals that would potentially affect a Local Site would need to provide a detailed justification for the work, an assessment of likely impacts, together with proposals for mitigation and restoration of habitats lost or damaged. Further guidance can be found in the National Planning Policy Framework and the accompanying joint Circular (ODPM Circular 6/2005 & Defra Circular 01/2005) to PPS9 for England, which is still valid.

Habitats & Species	Legislation	Guidance
<b>Species and Habitats of</b>	Natural Environment & Rural Communities	S.40 of the NERC Act 2006 sets out the duty for public authorities to conserve biodiversity in England. Habitats and species of principal importance for the conservation of biodiversity are identified by the Secretary of State in

Habitats & Species	Legislation	Guidance
<p><b>Principal Importance for the Conservation of Biodiversity</b></p>	<p>Act 2006 S.40 (which superseded S.74 of the Countryside &amp; Rights of Way Act 2000).</p>	<p>consultation with NE, are referred to in S.41 of the NERC Act for England. The list of habitats and species was updated in 2008:  <a href="http://webarchive.nationalarchives.gov.uk/20140605090108/http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx">http://webarchive.nationalarchives.gov.uk/20140605090108/http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx</a></p> <p>The habitats and species listed are not necessarily of higher biodiversity value, but they may be in decline. Habitat Action Plans and Species Action Plans are written for them or are in preparation, to guide their conservation.</p> <p>Ecological impact assessments should include an assessment of the likely impacts to these habitats and species.</p>

