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Ecological Consultants
Environmental and Rural Chartered Surveyors

Ecological Appraisal

Chatburn Road North
Clitheroe

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ACCURACY OF REPORT

This report has been compiled based on the methodology as detailed and the professional experience of the surveyor. Whilst the report reflects the situation found as accurately as possible, all of the protected species this survey covers are wild and can move freely from site to site. Their presence or absence detailed in this report does not entirely preclude the possibility of a different past, current or future use of the site surveyed.

We would ask all clients acting upon the contents of this report to show due diligence when undertaking work on their site and/or in their interaction with protected species. If protected species are found during a work programme, and continuing the work programme could result in their disturbance, injury or death, either directly or indirectly an offence may be committed.

If in doubt, stop work and seek further professional advice.

Quality and Environmental Assurance

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Contents

1. EXECUTIVE SUMMARY

1.1.1 Envirotech NW Ltd were commissioned in July 2019 by Oakmere Homes to carry out an ecological appraisal of land off Chatburn Road, Clitheroe. It is proposed that new houses are constructed on the site.

1.1.2 A data search and desk study of the site and an area within 2km of the site were undertaken to establish the presence of protected species and notable habitats.

1.1.3 The site was then visited by Envirotech NW Ltd on the 1st and 12th August 2019. A full botanical survey of the site was initially undertaken and this was followed by surveys to establish the presence or absence of bats, amphibians, nesting birds, brown hares, otters, water vole and badgers at the site or in proximity such that they may be affected by the proposed development.

1.1.4 The plant species assemblages recorded across the core development area are all common in the local area and are considered to be of low ecological value. Higher potential habitats on or adjacent to site boundaries are to be retained or improved.

1.1.5 There are no hedgerows around the site perimeter which were considered important under the Hedgerow Regulations (1997).

1.1.6 Low numbers of common bat species were recorded foraging over the site. Higher potential foraging habitats occur locally. No bats were recorded roosting on or near site. It is proposed that some roosting provision for bats will however be incorporated into the new houses on site.

1.1.7 Birds are likely to utilise the tree line and woodland on site boundaries for nesting between March and September. Any vegetation clearance should therefore be undertaken outside of this period.

1.1.8 No other notable or protected species were recorded on the site.

2. INTRODUCTION

2.1 Background

2.1.1 In July 2019 Envirotech NW Ltd were commissioned by Oakmere Homes to carry out an Ecological Appraisal of land off Chatburn Road, Clitheroe central grid reference SD 75384 43111 (Figure 1). A site investigation was undertaken and a report compiled which includes recommendations for any future actions and or mitigation required.

2.1.2 The survey was requested in connection with the proposed construction of new houses.

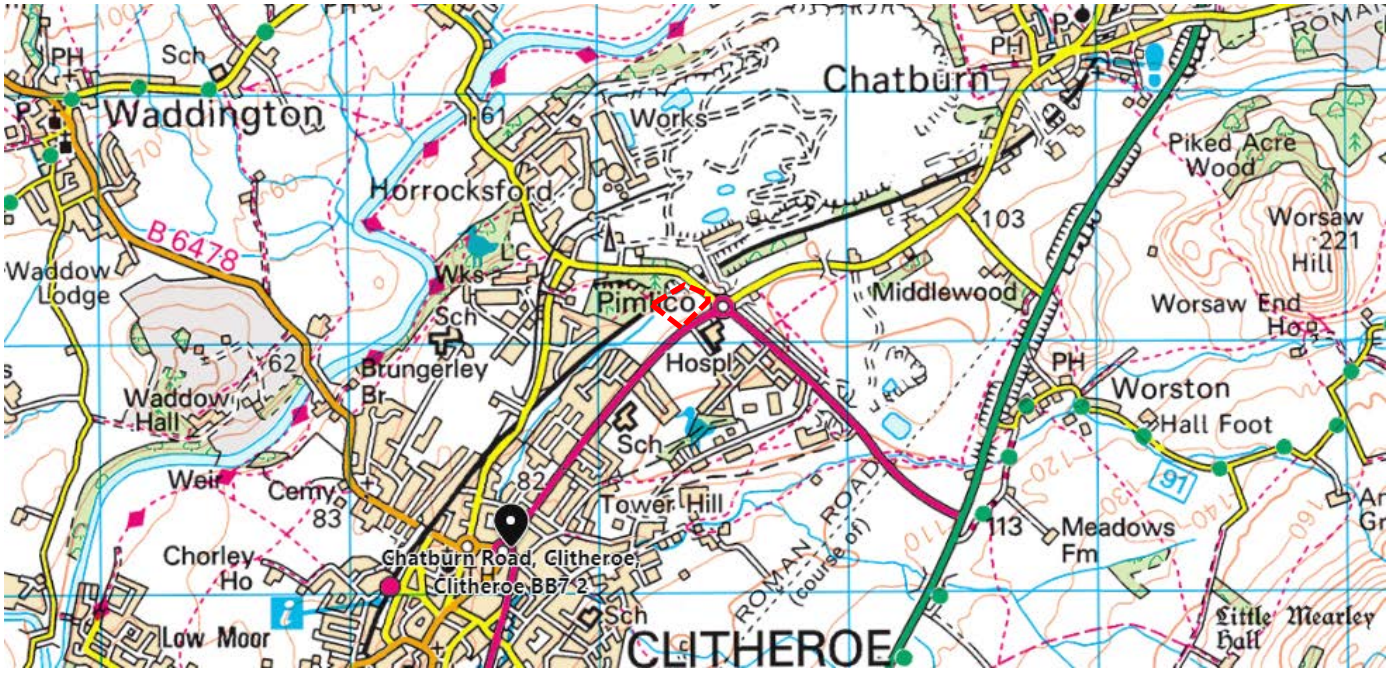

Figure 1 *Site location at* SD 75384 43111 *outlined red*.

2.2 Objectives

2.2.1 The main objectives of the study were:

- The completion of a Phase 1 Habitat Survey including the preparation of a vegetation and habitat map of the site and the immediate surrounding area.
- The survey and assessment of all habitats for statutorily protected species.
- An evaluation of the ecological significance of the site.
- The identification of any potential development constraints and the specification of the scope of mitigation and enhancement required in accordance with wildlife legislation, planning policy and other relevant guidance, and;
- The identification of any further surveys or precautionary assessments that may be required prior to the commencement of any development activities.

3. METHODOLOGY AND SOURCES OF INFORMATION

3.1 Data Search

3.1.1 Past ecological surveys of adjacent sites, the Envirotech dataset, and the Multi-Agency Geographic Information for the Countryside (MAGIC) were searched to establish the presence of any records of statutorily protected, notable or rare species, and any designated sites of international, national, regional or local importance within a 2km radius of the site boundary.

3.1.2 The Envirotech dataset is compiled from extensive field surveys from the period 2004-present, as well as records obtained from third parties during this time.

3.1.3 Google Earth and Google Street View were consulted to establish the presence of any features of ecological importance within the local area.

3.2 Vegetation and Habitats

3.2.1 A vegetation and habitat map was produced for the site and the immediate surrounding area. The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC 2003).

3.2.2 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the Wildlife and Countryside Act (1981) and indicators of important and uncommon plant communities. All plant nomenclature follows Stace (1991).

3.2.3 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the Wildlife and Countryside Act (1981), namely Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*) on terrestrial habitat and aquatic species such as floating pennywort (*Hydrocotyle ranunculoides*), water hyacinth (*Eichhornia crassipes*) and New Zealand pygmyweed (*Crassula helmsii*).

3.3 Timing and Personnel

3.3.1 During the visits, weather conditions were suitable for the survey types undertaken being warm and dry in midsummer.

3.3.2 The site and surrounding land was visited on the 1st August 2019 and 12th August 2019 by

- (EW) Mrs Emma Walker BSc (Hons) Grad CIEEM
  Natural England Bat Class Licence (Level 1)
  Natural England Great Crested Newt Licence (Level 1)

- (JW) Mr Jonny Walker BSc (Hons)
  Unlicenced observer with experience in bat emergence and ornithological surveys

4. SPECIES SURVEY METHODOLOGY

4.1 Amphibian

4.1.1 Great crested newts (*Triturus cristatus*) are listed on Annexes II and IV of the EC Habitats Directive and Appendix II of the Bern Convention. It is protected under Schedule 2 of the Conservation (Natural Habitats) Regulations (2017) and Schedule 5 of the Wildlife & Countryside Act (1981).

4.1.2 Water-bodies located within or adjacent to the study area were identified and where access was possible were assessed for their potential to support great crested newts.

4.1.3 The criteria used in the assessment are based on those contained in the Herpetofauna Workers Manual and Oldham et al, 2000, and in applying these criteria a precautionary approach was adopted. Following the criteria developed by Oldham et al (2000), the HSI tool developed for use with great crested newts and forming part of Natural England's EPS Licensing process was used to determine the suitability of ponds for great crested newts.

4.1.4 The pond assessment was undertaken in order to determine which water-bodies, based on their potential to support great crested newts, should be subject to presence/absence surveys.

4.2 Badger

4.2.1 Badgers (*Meles meles*) and their setts are protected under the Protection of Badgers Act (1992). This legislation arises from animal welfare issues (rather than on the basis of nature conservation grounds) and protects badgers from being killed, injured or disturbed whilst occupying a sett.

4.2.2 A disturbance to badgers in their setts may occur as a result of construction operations. Natural England recommends that the use of heavy machinery in proximity of a sett entrance should be avoided, with a 'disturbance free-zone' being established.

4.2.3 The degree of disturbance attributed to construction activity is a function of the background level of activity badgers are accustomed to and that which will be attributed to a proposed activity. The "disturbance free zone" is therefore site specific.

4.2.4 The survey for badgers comprised an assessment of all suitable habitat within and outside the study area boundary (where this was possible) to a distance of 30m for indications of use by badgers.

4.2.5 Signs of badgers which were searched for included:

- Setts - 'D' shaped entrances at least 25cms wide and wider than they are high with large spoil mounds
- Discarded bedding at sett entrances (this includes grass and leaves)
- Scratching posts on shrubs and trees close to a sett entrance

- The presence of badger hairs which are coarse, up to 100mm long with a long black section and a white tip
- Dung pit latrines and footprints
- Habitual runs through vegetation and beneath fences
- Hedgehog carcases

4.3 Bats

4.3.1 All British bat species are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981), and are included on Schedule 2 of the Conservation (of Natural Habitats) Regulations (2017), as European Protected Species. Taken together, these pieces of legislation make it an offence to:

- Intentionally or recklessly kill, injure or capture bats;
- Deliberately or recklessly disturb bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts.

4.3.2 The Bat Conservation Trust (Hundt (2012) and Collins, J. (ed) (2016) issued guidelines on bat survey methodology, a key feature of their recommendation is for the undertaking of a pre-survey assessment – an initial desk-study and a walkover assessment of the survey area and its surrounding area to identify the relative value of the habitats present for bats and likely commuting routes. This is to be followed by a survey program that is appropriate to the likely level of bat activity within the survey area to be determined by and based on the experience of the surveyor.

4.3.3 The potential value of the survey area for foraging bats was assessed through consideration of two main factors: professional knowledge of bat ecology and foraging behaviour in combination with the geographical location, topography and habitats present within the survey area and surrounds.

4.3.4 As a result of the potential suitability of the habitat along the site boundaries for foraging bats two bat activity survey were deemed necessary. The survey was based upon standard guidelines Hundt (2012), Collins, J. (ed) (2016) and NCC (1987) and Mitchell-Jones (2004) and was undertaken in suitable weather conditions by suitably qualified and experienced personnel.

4.3.5 The survey methods comprised a transect route which was walked in order to cover all on-site habitats from sunset until light levels dropped to the extent that bat flight heights could not be determined and walking over the site in the dark was judged to be unsafe.

4.3.6 In addition to the activity surveys, trees and structures on and within the survey area boundary were assessed for their potential to support roosting or hibernating bats. This comprised a close inspection of all trees on the site to allow an assessment of their potential to be used by bats to be made by a licensed surveyor.

4.3.7 Trees were all assessed in accordance with Collins, J. (ed) (2016).

4.4 Birds

4.4.1 All breeding birds, other than pest species, are protected under the Wildlife and Countryside Act of 1981 when building a nest, rearing young or sitting on eggs. Some bird species, such as barn owl (*Tyto alba*), are protected when near an active nest site. Several birds are listed as UK and or County BAP species.

4.4.2 Bird species and behaviour was noted during the other field surveys. All areas are covered equally, in order to avoid the subjective survey of better quality 'bird habitat'.

4.5 Brown Hare

4.5.1 The brown hare (*Lepus europaeus*) is a UK BAP species.

4.5.2 The survey method involved walking boundaries and surveying with binoculars. The survey was conducted at a suitable distance to ensure that the hares were not disturbed. Generally, surveys were undertaken in the early evening when hares are thought to be most active and feeding.

4.5.3 Where present the number of brown hares in each field or hedgerow was recorded, together with the nature and use of the field, climatic conditions and time of day. The presence of forms and faeces where present were also recorded.

4.6 Invertebrates

4.6.1 The presence of invertebrates was noted during the other surveys which were undertaken. The extent of sampling was limited in that it could be confirmed that no priority or BAP species would be likely to be affected by the proposal.

4.7 Otter

4.7.1 Otters (*Lutra lutra*) are given protection by Annexes II & IV of the Habitats Directive and by Schedule 5 of the Wildlife and Countryside Act (1981) as amended and Schedule 2 of the Conservation (Natural Habitats etc.) Regulations (2017).

This protection means that it is an offence to deliberately or recklessly:

- Kill or injure otters;
- Destroy, damage or obstruct their dens, and
- Disturb them whilst in the den.

4.7.2 Watercourses were assessed for their suitability and for the presence of otters within 10m of the banks. The banks and scrub vegetation were carefully searched for spraints, feeding remains, runs, prints and couches/holts.

4.8 Reptiles

4.8.1 All native reptiles are protected in Britain under the Wildlife and Countryside Act of 1981. It is an offence to intentionally kill, injure, sell or advertise to sell any of the six native species.

4.8.2 The survey for these species was based on assessing the habitat type and suitability of the site. This comprised an assessment of satellite imagery for the site and surrounding area as well as comparison of the results from the records searches with habitat types. The general habitat at the site was evaluated in terms of its suitability to reptiles for foraging or breeding.

4.8.3 Reptile surveys comprising visual encounter surveys were undertaken. Habitat at the site was not considered sufficiently suitable for a full presence/ absence survey to be warranted.

4.9 Water Vole

4.9.1 Water voles (*Arvicola amphibious*) and their habitat are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981). This provides protection from killing or taking by certain prohibited methods and their breeding and resting places are fully protected from destruction or obstruction, it is also an offence to disturb them in these places.

4.9.2 There is a stream on the North-west boundary of the site. This watercourse was surveyed and assessed for evidence of the presence of water vole.

4.9.3 This involved intensive searches by wading upstream where possible, and observing from the banks where not; looking for burrows and other signs including footprints, droppings and chewed vegetation.

4.10 Survey limitations

4.10.1 The surveys were undertaken in summer. At this time of most year plant species are easily identified although the activity of some species is reduced.

4.10.2 Due to the habitats present on site there were no significant constraints in respect of identifying the botanical interest of the site. Bats were active at the time of the survey.

4.10.3 The duration, extent and scope of the surveys were considered sufficient to plan appropriate mitigation and recommend additional precautionary survey work required prior to the commencement of work.

4.10.4 No significant survey limitations were encountered.

5. RESULTS

5.1 Data Search

5.1.1 Envirotech and other ecology reports issued for the adjacent land hold no records of protected or notable species for the site. There are however records of protected or notable species within 2km. These are discussed in the relevant sections below.

5.1.2 The nearest non-statutory site is 250m to the South being Salthill Quarry LNR.

5.1.3 The nearest statutory protected site is Coplow Quarry Site of Special Scientific Interest (SSSI) c. 50m to the West of the site (Figure 2). Whilst this SSSI is in close proximity to the survey site, an active railway line runs between the two and is likely to deter the movement of some species.

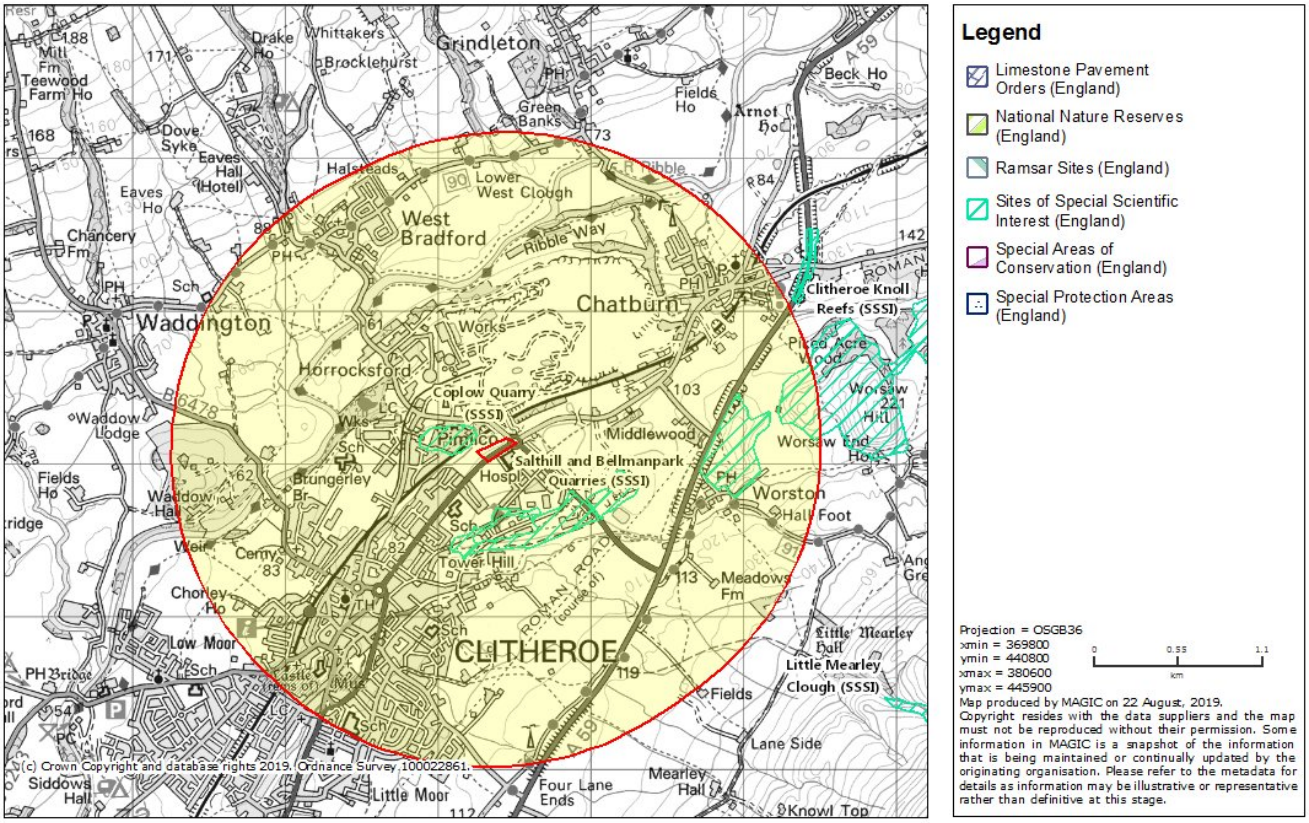

Figure 2 *Statutory designated sites 2km buffer.*

6. PHASE 1 SURVEY RESULTS

6.1 Habitat Results

6.1.1 The site is a field of poor semi-improved grassland with tall ruderal vegetation around its peripheries. Streams run along the North-east and North-west boundaries from which broadleaf woodland extends out. A defunct hedgerow grows on the South-west boundary and a stone wall bounds the South-east.

6.1.2 See Figure 3 for the Phase 1 Habitat Plan and Table 1 for the descriptive Botanical and Faunal Target Notes, hereafter referred to as BTN and FTN.

Target Note	Description	Comment
BTN1	Poor semi-improved grassland	The majority of the site is vegetated by species poor grassland. Perennial rye grass (*Lolium perenne*) is the dominant graminoid within the sward although it does not occur at sufficient density for the grassland to be categorised as improved. Additional species recorded were all occasional within the sward but commonly occurring locally they include: creeping buttercup (*Ranunculus repens*), common sorrel (*Rumex acetosa*), meadow sweet (*Filipendula ulmaria*), cocksfoot (*Dactylis glomerata*), white clover (*Trifolium repens*) and broadleaved dock (*Rumex obtusifolia*).
BTN2	Other tall herb/ fern – ruderal	Tall ruderal vegetation grows around the field margins where the frequency of cutting is reduced. Species present in these areas include nettle (*Urtica dioica*), common hogweed (*Heracleum sphondylium*), cocksfoot, sweet vernal grass (*Anthoxanthum odoratum*), Yorkshire fog (*Holcus lanatus*), herb-robert (*Geranium robertanium*), cleavers (*Galium aparine*), creeping buttercup, meadowsweet, crested dogs tail (*Cynusursu cristatus*) and common mouse ear (*Cerastium fontanum*). The Schedule 9 non-native invasive species Himalayan balsam (*Impatiens glandulifera*) is frequent around the peripheries of the site, occurring on the North-east, North-west and South-east site boundaries.
BTN3	Broadleaf woodland	Broadleaf woodland occurs to the North-west of the site and forms a strip adjacent to the North-east boundary. There are several mature standard trees within this habitat; most notably on the North-west site boundary along the stream here. Ash (*Fraxinus excelsior*), alder (*Alnus glutinosa*), elm (*Ulmus* sp.) and goat willow (*Salix caprea*) were seen to grow in the canopy. Species within the understory which were visible from within the site were blackthorn (*Prunus spinosa*), hawthorn (*Crataegus monogyna*), holly (Ilex aquifolium) and hazel (*Corylus avellana*). Species diversity within the ground flora appeared good with the ancient woodland indicator species dogs mercury (*Mercurialis perennis*) and lords and ladies (*Arum maculatum*) occasional alongside wood avens (*Geum urbanum*), ivy (*Hedera helix*) and bramble (*Rubus fruticosus*). This habitat is outside the proposed development area.

BTN4	Scattered broadleaf trees	A tree line in the East of the site includes ash, hawthorn, sycamore (*Acer pseudoplantanus*), Himalayan honeysuckle (*Leycesteria Formosa*), rosebay willowherb (*Chamaenerion angustifolium*), ivy, elder (Sambucus nigra), bramble and hogweed. This is not described as a hedgerow as it shows no signs of past or current management as such.
BTN5	Running Water	A small stream with an average width of c.1m and average depth at the time of the survey of c.100mm flows in a South west direction along the North-east site boundary. The banks of the stream are low (less than 400mm) and steep. Water quality appeared low in this stream, with a high level of suspended sediments giving it an opaque, grey colour, presumably resulting from quarry or other earth moving activities upstream. This is reflected in the substrate which in many places is a fine grey mud. Water also runs along the North-west site boundary. This stream is smaller and was estimated to be on average 600mm wide and was shallow with gradually sloping sides. Although visibility of this stream was reduced, due to dense vegetation surrounding it, in sections which could be inspected the water was clearer with less suspended sediment. Both are very small watercourses on the edge of fragmented woodland (described in BTN3). Himalayan balsam is frequent along both along with occasional pendulous sedge (*Carex pendula*), and great willowherb (*Epilobium hirsutum*).
BTN6	Defunct hedgerow	The South-west site boundary is formed by a post and wire fence with intermittent scattered hawthorn. There was no notable ground flora vegetation, listed in the hedgerow regulations assessment, present at the base of the hedge at the time of the survey. This feature lacks structural density or species richness. The hedgerow would not be capable of enclosing stock.
FTN1	Roe deer	A single roe deer was recorded on site at the start of the second site survey on the 12th August 2019. Tracks for this species were also visible in mud on the banks of the stream.
FTN2	Bats	Several trees, of a size that may result in potential bat roost sites being present, were recorded on the site boundaries. Two ash trees, seen to contain gaps in their structure with potential for such use, were recorded on the North-west boundary.
FTN3	Water vole	Streams on the site boundaries were searched for evidence of use by water vole. No such evidence was recorded.

FTN4	Otter	Streams were searched for evidence of use by otter. No such evidence was recorded.

Table 1 *Details of Botanical and Faunal Target Notes.*

Key

- Site Boundary
- Botanical Target Note
- Faunal Target Note
- Broadleaved woodland - semi-natural
- Other tall herb and fern - ruderal
- SI — Poor semi-improved grassland
- Hardstanding
- Fence
- Running water
- Broadleaved Parkland/ scattered trees

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Figure 3

Results* of Extended Phase 1 Habitat Survey

SCALE: NTS | REV 01

*Habitats outside the site boundary are indicative only and have been mapped from within the site boundary or from publicly accessible land

	Poor semi-improved grassland covers the majority of the site. Tall ruderal vegetation grows around the peripheries.
 	Broadleaf woodland encompasses the North of the site and contains a good diversity of plant species.

	A tree line in the East has never been managed as a hedgerow.
	Defunct, species poor hedgerow in the South-west.
	The stream on the North-west boundary.

	The stream on the North-east boundary.
	Several mature trees grow on the North-east and North-west boundaries. These include a very large, ivy covered ash immediately opposite the access gate and a dead ash in the West site corner.

Table 2 *Photographs*

6.2 Vegetation

6.2.1 Details of the plant species found on site are included in the target notes. Species recorded within the proposed development area are all commonly occurring and undoubtedly occur elsewhere in similar habitats in the local area.

6.2.2 The poor semi-improved grassland has a very low species diversity and ecological value. Whilst the assemblage of species within it is higher than improved pasture, the species are all indicative of regular disturbance, this habitat does not constitute a BAP habitat.

6.2.3 The defunct species poor hedgerow bounding the South-west of the site also has a low ecological value. It has no understory and has been significantly impacted by livestock grazing. Should this hedgerow need to be lost, transplanting it is unlikely to be of ecological benefit. New native hedgerow planting would be suitable compensation for its loss and is likely to provide an ecological improvement in time.

6.2.4 The hedgerow is not classified as important under the Hedgerow Regulations (1997).

6.2.5 Habitats of greater ecological value, including running water and woodland, occur on and adjacent to the site boundaries. These habitats provide potential foraging and commuting areas for a range of species as well as supporting a much greater diversity of plant species and structures than the habitats within the site. Protection of these habitats will be an important factor in maintaining the potential ecological functionality of the site post development.

6.2.6 Mature trees within the woodland and on the site boundaries include large ash, alder and elm. They should as far as possible be retained.

6.2.7 Himalayan balsam is frequent within and adjacent to the site along the stream to the North. No other invasive or notable weed species listed on Schedule 9 (Section 14) of the Wildlife and Countryside Act (1981) (as amended) was identified within the site or adjacent land.

6.3 Amphibian

6.3.1 There is no standing water on site. Two ponds are visible on OS mapping or aerial photography within 250m of the site boundaries. Pond 1 is a long, narrow body of standing water in the former quarry c.112m to the North-west of the site. Pond 2 is a large pond in an industrial area c.162m to the South-east (Figure 4). Whilst full access to these ponds was not taken due to them being outside the site boundary, they could both be viewed from adjacent public rights of ways and HSI scores have been compiled. They have been reviewed more closely during other surveys for adjacent land.

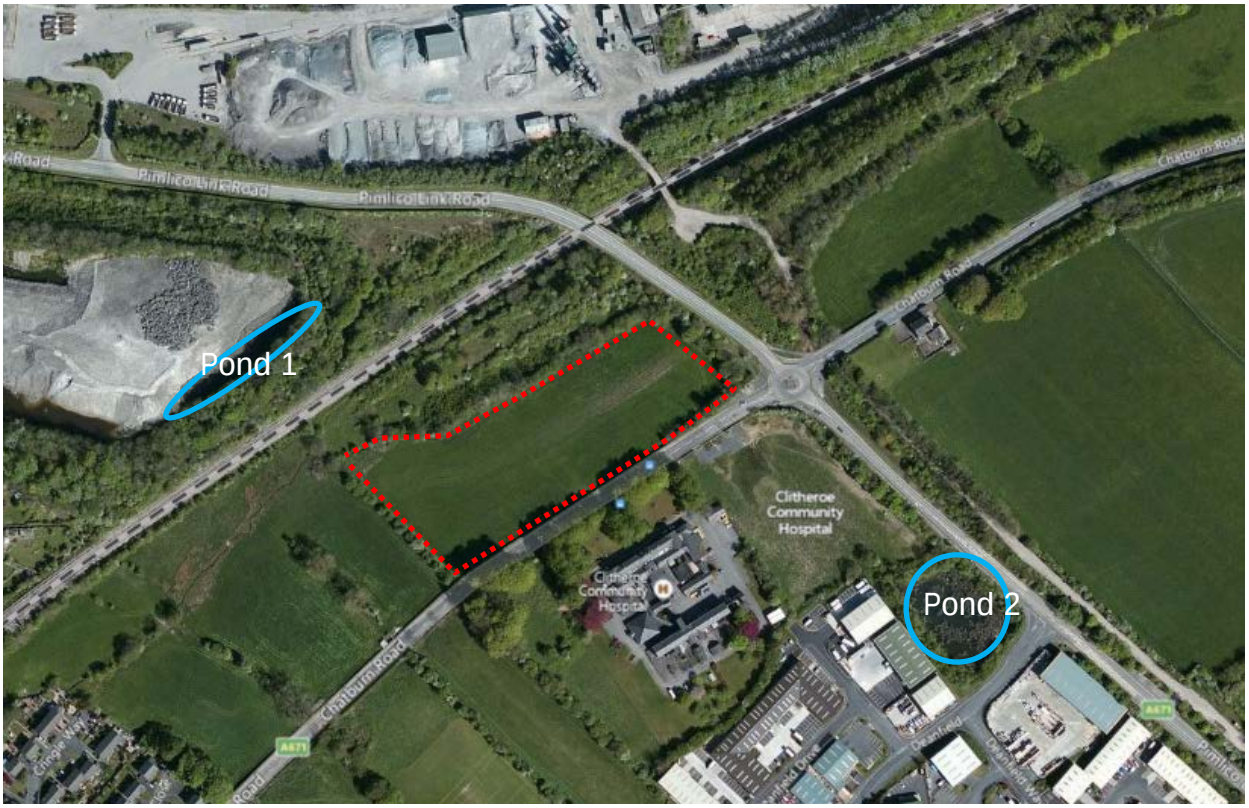

Figure 4 – Pond locations circled blue, site outlined red

6.3.2 Pond 1 is situated at the base of deep excavations and has steep sides of either rock, spoil or of stone block construction. No significant aquatic vegetation was recorded in this pond. As GCN lay their eggs of macrophytic vegetation, the lack of this would suggest the pond would not be ideal for this species to breed. The habitat adjacent to Pond 1 is comprised of dense scrub and deciduous woodland. This would provide potential high quality foraging, refuge and hibernation habitat for amphibians.

6.3.3 Pond 2 by contrast was found to have a significant presence of emergent and aquatic plants. Potential foraging habitat is however limited to small strips of low quality scrub around the ponds edge. The pond is isolated amongst industrial and commercial units, with roads and large areas of hardstanding on all four sides.

6.3.4 These ponds, together with an additional pond c. 254m to the North of the site, also in the former quarry have previously been surveyed by Envirotech in 2015. The results of these previous surveys were consistent with the results of the current survey.

6.3.5 Following the criteria developed by Oldham et al (2000), the HSI tool developed for use with great crested newts and forming part of Natural England's EPS Licensing process was used to determine the suitability of Pond 1 and Pond 2 for great crested newts. The HSI was developed as a tool to aid fieldworkers to give ponds and their surrounding habitat a numerical score in terms of their suitability for great crested newts. See Table 3.

Pond 1	1	2
Location	0.5	0.5
Pond area	0.6	0.6
Pond drying	0.5	0.9
Water quality	0.67	0.67
Shade	1	1
Fowl	0.67	0.01
Fish	1	1
Ponds	1	1
Terrestrial habitat	1	0.01
Macrophytes	0.3	1
HSI	*0.68*	*0.34*

Table 3 Results of Habitat Suitability Index.

6.3.6 A HSI of 0.68 and 0.34 respectively categorises Pond 1 as of average and Pond 2 as of poor potential suitability as a habitat for Great Crested Newts.

6.3.7 In reference to Pond 1, the HSI does not however take into account the poor accessibility afforded to Pond 1 due to its extremely steep sides. It is considered that this would further deter GCN from utilising this pond.

6.3.8 Pond 2 has poor suitability for great crested newts due to its isolation and very limited terrestrial habitat. This pond was subject to full presence/absence surveys in 2008, carried out by ERAP (*Robinson B*, 2012). These surveys did not record the presence of great crested newts.

6.3.9 The proposed development will not result in the permanent loss of or a substantial negative effect on any waterbodies. Boundary areas which may provide foraging or refuge sites, are to be retained.

6.3.10 Structural diversity at ground level across the proposed development area is very poor. There are no areas with log, rubble piles or compost heaps which would be particularly favourable to amphibians. As such precautionary mitigation would be appropriate in respect of construction activities.

6.4 Badger

6.4.1 Badger setts do not occur on site and a lack of feeding signs or runs across the site would suggest that they do not occur within 30m of site boundaries.

6.4.2 The proposed development will not impact on any existing badger runs or setts. The porosity of the surrounding fields to the passage of badgers will not be affected.

6.5 Bats

6.5.1 The woodland adjacent to the site provides shelter and is likely to attract invertebrates for bats to forage on. The streams on site boundaries provide potential

for these areas to be used by bats which favour riparian habitats. Despite this, the core development area remains a fundamentally open and relatively exposed field of low potential bat habitat.

6.5.2 The higher potential bat habitat adjacent to the site extends across the local area.

6.5.3 To confirm the site is not used by significant numbers of bats, two walked transects of the site, each for a period of 1.5hrs, were undertaken by two surveyors on the 1st and 12th August 2019 . During both surveys, bat activity was consistently low with only occasional passes of common bat species along the boundaries. Survey results are shown in Figure 5. It is considered likely that bats are favouring more suitable habitats locally which are better connected with other high potential habitats or have less pollution from street lights.

6.5.4 It is not considered there would be significant degradation of foraging habitat as a result of the proposal so long as the adjacent woodland and running water are retained and protected from excessive disturbance or additional light pollution.

6.5.5 Trees around the site perimeter were assessed in accordance with Collins ed. (2016) and assigned a risk category. Several trees were considered to be category 2 (low) and two trees were recorded as category 1. The approximate positions of these trees in recorded in Figure 5. Risk categories from Hundt (2012) and the requirement for mitigation for each tree category are shown on Figure 6.

6.5.6 We consider bat species are highly unlikely to rely on the site for feeding but do occur in the local area. Bats may opportunistically roost in mature or veteran trees on the site boundaries although no bats were seen to emerge from or re-enter any of the trees during the activity surveys.

Figure 5
Bat Activity and
Tree Risk
Categories

Tree category and description	Stage 1 Initial survey requirements	Stage 2 Further measures to inform proposed mitigation	Stage 3 Likely mitigation
Known or confirmed roost	Follow SNCO guidance and these guidelines wherever possible, to establish the extent to which bats use the site. This is particularly important for roosts of high risk species and/or roosts of district or higher importance and above		The tree can be felled only under EPS licence following the installation of equivalent habitats as a replacement.
Category 1* Trees with multiple, highly suitable features capable of supporting larger roosts	Tree identified on a map and on the ground. Further assessment to provide a best expert judgement on the likely use of the roost, numbers and species of bat, by analysis of droppings or other field evidence. ***A consultant ecologist is required***	Avoid disturbance to trees, where possible. Further dusk and pre-dawn survey to establish more accurately the presence, species, numbers of bats present and the type of roost, and to inform the requirements for mitigation if felling is required.	Felling would be undertaken taking reasonable avoidance measures[3] such as 'soft felling' to minimise the risk of harm to individual bats.
Category 1 Trees with definite bat potential, supporting fewer suitable features that category 1* trees or with potential for use by single bats	Tree identified on a map and on the ground. Further assessed to provide a best expert judgement on the potential use of suitable cavities, based on the habitat preferences of bats. ***A consultant ecologist required***	Avoid disturbance to trees, where possible. More detailed, off the ground visual assessment. Further dusk and pre-dawn survey to establish the presence of bats, and if present, the species and numbers of bats and type of roost, to inform the requirements for mitigation if felling is required.	Trees with confirmed roosts following further survey are upgraded to Category 1* and felled under licence as above. Trees with no confirmed roosts may be downgraded to Category 2 dependent on survey findings
Category 2 Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats.	None. ***A consultant ecologist is unlikely to be required***	Avoid disturbance to trees, where possible. No further surveys.	Trees may be felled taking reasonable avoidance measures. Stop works and seek advice in the event bats are found, in order to comply with relevant legislation.
Category 3 Trees with no potential to support bats	None. ***A consultant ecologist is not required unless new evidence is found***	None.	No mitigation for bats required.

Figure 6 *Tree risk categories from Hundt (2012).*

6.7 Birds

6.7.1 No bird nesting behaviour or active bird nests were recorded within the site during the surveys. The poor semi-improved grassland has a low potential for use by nesting birds as the grassland is regularly cut and disturbed.

6.7.2 The woodland and tree line adjacent to the site and on its boundaries provides high potential habitat for feeding and nesting birds. Surveys of adjacent land were undertaken from within the site. Whilst no active nest sites were recorded in the areas visible this cannot be used conclude that nesting does not occur within these adjacent habitats.

6.7.3 The gappy defunct hedge on the South-west site boundary has insufficient density to be of high value to nesting birds. No nest sites were recorded in this habitat at the time of the surveys.

6.7.4 Potential bird nest sites do occur in the habitats on and adjacent to the site boundaries. Potential nest sites do not occur within the core development area. As such, precautionary mitigation is considered appropriate to ensure the potential functionality of these adjacent habitats is maintained.

6.8 Brown Hare

6.8.1 No indication of brown hares was recorded on the site.

6.8.2 The site is unlikely to be attractive to this species, which favours open farmland, due to the enclosed adjacent habitats and regular human presence along the road and footpath to the South-east. .

6.8.3 A risk assessment of the site in respect of its future potential for and value to brown hares could be adequately made. We consider the risk to brown hares is very low.

6.9 Invertebrates

6.9.1 No deadwood or vegetation was recorded on site which would provide an important resource for invertebrates in the local area. Habitats adjacent to the site have a much greater potential to be attractive to a range of invertebrate species.

6.9.2 The plant species assemblages found on site are not representative of those found in sites which are designated for their invertebrate interest.

6.9.3 Given the poor quality habitats contained within the site in comparison to the wider area, it is not considered that this site is of any local significance for invertebrates.

6.10 Otter

6.10.1 The streams are considered unlikely to contain sufficient fish to support this species. While they may provide potential commuting/ dispersal routes through the landscape, there was no indication of the present or past use of the site by otter.

6.10.2 A lack of evidence of use by otter, such as holts or spraints, during either site survey would indicate that the site is not of significance to this species locally. Precautionary mitigation would be appropriate in respect of construction activities which will need to be restricted at night.

6.11 Reptiles

6.11.1 There are no areas of the core development area which would be particularly favourable to reptiles. Habitats present do not form the mosaic of open basking sites and sheltered refuge sites these species require.

6.11.2 No indication of reptiles was recorded at the site.

6.11.3 As a consequence, precautionary mitigation would be appropriate in respect of construction activities so as to ensure reasonable avoidance measures are taken to avoid the killing or injury of these species.

6.12 Water vole

6.12.1 The stream on the North-west site boundary was considered to provide potentially suitable habitat for use by this species. Banks were often of sufficient depth that they could burrow into them and some rush and sedge vegetation was present in adjacent land to provide potential forage.

6.12.2 Searches of the stream on the North-west boundary were undertaken. Surveyors waded upstream searching emergent features and banks for evidence of use by water vole such as feeding piles, latrines or burrows. No such evidence as recorded during either survey.

6.12.3 The stream on the North-east boundary was seen to be much shallower, with more steadily sloping banks considered to be less suitable for this species to form burrows. Detailed searches of this stream could not be undertaken due to it being outside the site boundary and covered by very dense vegetation. Searches of the riparian vegetation did not show any feeding remains, latrines or runs which may have indicated use by water vole.

6.12.4 Precautionary mitigation would be appropriate in order to maintain potential for this species to utilise the streams adjacent to the site.

6.13 Other

6.13.1 A single roe deer was recorded on site during the second survey. This species has no statutory protection.

6.14 Statutory and Non-Statutory Sites

<u>Direct Impacts:</u>

6.14.1 There are no statutory or non-statutory sites which are connected to the site such that site development would directly affect the dispersal of species between them or directly impact upon their integrity.

6.14.2 The habitats on site do not represent or are linked to those found in any of the statutory or non-statutory sites locally.

Indirect Impacts:

6.14.3 There are no statutory or non-statutory sites which are connected to the site such that site development would indirectly affect the dispersal of species between them or indirectly impact upon their integrity.

7. MITIGATION/RECOMMENDATIONS

7.1 Compensatory planting and habitat enhancement

7.1.1 The roots of trees on the site and its boundaries should be adequately protected during work in accordance with industry standards. All trees should as far as possible be retained in the scheme. It is however considered likely that some may require removal if found to be potentially dangerous. If this is the case, new tree planting of native species should be undertaken to compensate for their loss. Trees such as *Sorbus* spp. provide food for birds in winter and are unlikely to grow to a size which could create similar hazards in the future. A like for like replacement of ash trees in not recommended due to the prevalence of ash diseases and resultant branch weaknesses.

7.1.2 The implementation of a program to control Himalayan balsam at the site would be beneficial. This plant can be pulled from the ground with ease. Annual removal in this way, before the plants begin to set seed, would be beneficial in reducing its prevalence within the site and adjacent land, in turn providing more opportunities for native ground flora than currently occur.

7.1.3 Due to the presence of Himalayan balsam at the site appropriate measures should be taken in regards to the movement of soil over and from the site. Viable seed can remain in the soil for some time, movement of which may facilitate its spread.

7.1.4 The landscaping scheme should utilise plants which are native and wildlife friendly. In particular night flowering species would be beneficial to bats. Wildflower seed could be used to plant verges to enhance the ecological value of the site and continuity between the site and the wider area.

7.1.5 If the defunct species poor hedges are removed, transplantation of them is not considered to be of significant ecological benefit as there are no notable species assemblages associated with them, replanting of linear lines of trees or native hedgerow mixes would be more beneficial.

7.2 Amphibians

7.2.1 There is no requirement for specific mitigation for these species. There are currently no suitable breeding sites on or near the site. However, as a precautionary measure, in the unlikely event that any signs of any amphibian activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.2.2 Consider the use of SUDS on site to provide new aquatic habitat during development. Such areas would be best placed in public open space where connectivity to the site boundaries and wider area is improved.

7.2.3 In order to further minimise impacts on amphibians the following points should also be followed.

- All work must take place during daylight hours as amphibians are more likely to be commuting over night and this will ensure the risk to any amphibians commuting through the site will be minimised.

- During the development, measures should be put in place to discourage amphibians from using the development area, the creation of any piles of earth, materials and rubble which could form potential artificial hibernacula and refuge should be avoided at all times. It is recommended that any spoil or rubble will be removed immediately to skips, or on hard standing or short grass. This will ensure that no potential amphibian hibernation or resting sites are created.

- The storage of all loose materials must be palletised or similar so they are off the ground whenever possible.

- Should any trenches and excavations be required, an escape route for animals that enter the trench must be provided, especially if left open overnight. Ramps should be no greater than of 45 degrees in angle. Ideally, any holes should be securely covered. This will ensure amphibians are not trapped during work.

- All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling. Back filling should be completed immediately after any excavations, ideally back filling as an on-going process to the work in hand.

7.3 Badger

7.3.1 No badger setts will be disturbed by work but in order to minimise impacts on badgers passing over the site the following points should also be followed.

- All work must take place during daylight hours as badgers are more likely to be commuting over the site at night and this will ensure the risk to any badgers passing through the site will be minimised.

- Should any trenches and excavations be required, an escape route for animals that enter the trench must be provided, especially if left open overnight. Ramps should be no greater than of 45 degrees in angle. Ideally, any holes should be securely covered. This will ensure badgers are not trapped during work.

- All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling. Back filling should be completed immediately after any excavations, ideally back filling as an on-going process to the work in hand.

7.4 Bats

7.4.1 Work at night should be restricted and lighting around the woodland edge and streams should be minimised.

7.4.2 New planting within the site should enhance structural diversity. Any new hedgerow or linear tree planting across the core development area would be beneficial in providing potential commuting routes.

7.4.3 New roosting provision for crevice dwelling bats should be incorporated into the buildings on site or bat boxes could be erected in retained trees.

7.4.4 Any category 1 or 2 trees to be felled should be re-inspected for bats to confirm they remain absent.

7.4.5 Overall it is considered there is more than sufficient scope for mitigation and compensation at the site such that there will be no adverse impact on the favourable conservation status of bats affected by the proposal.

7.5 Birds

7.5.1 Nesting by birds within the core development area is considered unlikely to occur. Birds are however likely to nest in the woodland and tree line on the site boundaries.

7.5.2 Any vegetation to be trimmed or cleared should be checked for nesting birds before it is removed. Ideally this should occur outside the bird nesting period March-September. If vegetation clearance is to occur in the March-September period a check for nesting birds should be conducted first by a suitably qualified individual.

7.5.3 New planting within the site and the protection of habitats adjacent to the site boundary will maintain the ecological functionality of the site for breeding birds.

7.5.4 If nesting birds are found at the site all site works shall cease and further ecological advice shall be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.6 Brown Hares

7.6.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any brown hare activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.6.2 The points in respect of not working at night and leaving open trenches with means of escape detailed for badgers are also applicable to this species.

7.7 Invertebrates

7.7.1 Landscaping should include native or wildlife friendly species including night flowering plants.

7.7.2 Contaminants should not be allowed to enter the streams or substrates during work. To effect this, spill kits should be provided on site. Re-fuelling of all plant and

machinery should be undertaken away from open drains and water courses. Drip trays should be used under static machinery.

7.8 Otter

7.8.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any otter activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.8.2 The points in respect of not working at night and leaving open trenches with means of escape detailed for amphibians are also applicable to this species which is only likely to pass through the site at night.

7.9 Reptiles

7.9.1 There is no requirement for specific mitigation for these species. However, as a precautionary measure, in the unlikely event that any signs of any reptile activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.9.2 The points in respect of not leaving open trenches without means of escape detailed for badgers are also applicable to these species.

7.10 Water vole

7.10.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any Water vole activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

Figure 7 *Proposed site Plan.*

8. CONCLUSION

8.1.1 Ecological surveys, site appraisals and impact assessments were carried out with respect to land comprising species poor semi-improved grassland and tall ruderal vegetation off Chatburn Road, Clitheroe. It is proposed new houses will be constructed on the site.

8.1.2 There was no conclusive evidence of any specifically protected species regularly occurring on the site or the surrounding areas which would be negatively affected by site development following the mitigation proposed.

8.1.3 The vegetation to be cleared has a low ecological significance in the local area; the higher value habitats adjacent to the site will be retained.

8.1.4 The protection of trees on the site boundary and landscaping to incorporate new hedgerow and tree planting will promote structural diversity across a currently open grassland area.

8.1.5 Contractors will be observant for protected species and all nesting birds. Should any species be found during construction, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.