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Ecological Appraisal

LAND AT HIGHER COLLEGE FARM, LONGRIDGE

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1. EXECUTIVE SUMMARY

1.1.1 Envirotech NW Ltd were commissioned in May 2017 by Judith Douglas Town Planning Ltd to carry out an ecological appraisal of land at Higher College Farm, off Blackburn Road, Longridge, Lancashire. It is proposed that new industrial units 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 a licenced ecologist from Envirotech NW Ltd on the 12th June 2017. 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 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 at the site are all common in the local area and of considered of low ecological value. Sympathetically landscaped open space is considered to offer habitat of equal or greater ecological value.

1.1.5 None of the hedgerows around the site perimeter were considered important under the Hedgerow Regulations (1997).

1.1.6 Birds are likely to utilise scrub on site for nesting between March and September. Any vegetation clearance should therefore be undertaken outside of this period.

1.1.7 No notable or protected species were recorded on the site.

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.

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 (2010) 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) 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

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 throughout the early afternoon and evening when hares are thought to be most active and feeding.

4.5.3 There 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 A general assessment was made of the study area's suitability for supporting invertebrates during the phase 1 survey. The study area's lack of habitat diversity, species-poor composition and uniformity of vegetation structure (i.e., lack of variation in height and microtopography) resulted in our belief that a low diversity of invertebrates would be likely to occur across the site.

4.6.2 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 Reptiles

4.7.1 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.

4.7.2 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.

4.7.3 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.

4.8 Survey limitations

4.8.1 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.

5. RESULTS

5.1 Data Search

5.1.1 Envirotech and LERN hold no records of protected or notable species for the site. There are however records of protected or notable species within 2km (Figure 2). These are discussed in the relevant sections below.

5.1.2 There are several non-statutory designated sites within 2km, the nearest being Spade Mill Reservoirs Biological Heritage Site, adjacent to the North (Figure 3). This is designated for its ornithological interest.

5.1.3 There are no statutory designated sites within 2km, the nearest being Red Scar and Tun Brook Woods Site of Special Scientific Interest, c.3900m to the South-west (Figure 4).

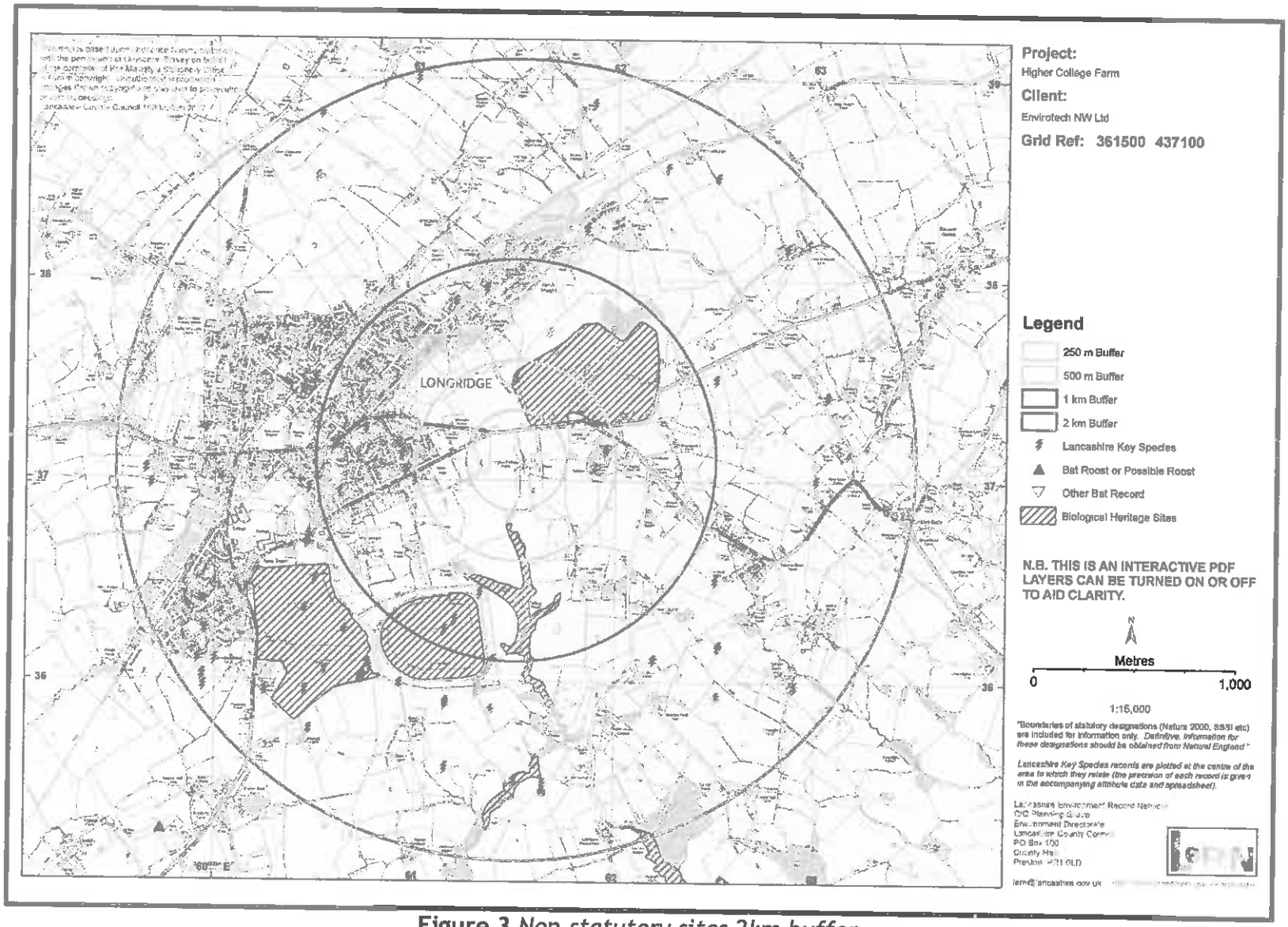

Figure 3 *Non-statutory sites 2km buffer*

6. PHASE 1 SURVEY RESULTS

6.1 Habitat Results

6.1.1 The site comprises two distinct sections; a field of poor semi-improved grassland with hedges on its boundary to the North, and a residential dwelling with associated outbuildings and amenity grassland lawns to the South.

6.1.2 The site abuts a farm complex to the South, an access track to the East, public highway to the North and agricultural land to the West.

6.1.3 See Figure 5 for the Phase 1 Habitat Plan and Table 1 for the descriptive Botanical and Faunal Target Notes, hereafter referred to as BTN and FTN.

BTN9	Intact hedge - species poor	The hedgerow in BTN8 also forms the Eastern edge of the access track. Opposite it to the West is a parallel hedge composed of hawthorn, elder, sycamore, hazel and small ash (*Fraxinus excelsior*) trees, interwoven with honeysuckle (*Lonicera periclymenum*) and bramble.
BTN10	Intact hedge - species poor	The Northern boundary hedgerow is predominantly blackthorn, with hawthorn, elder and sycamore. The ground flora of this hedge is more diverse than elsewhere, with nettle, red campion, cow parsley, hogweed (*Heracleum sphondylium*), dog mercury (*Mercurialis perennis*) and tufted vetch (*Vicia cracca*).
BTN11	Scattered/parkland broadleaf trees	A single large sycamore tree stands within the hedgerow on the Northern boundary (BTN10).
BTN12	Scattered/parkland broadleaf trees	Three small apple (*Malus domestica*) trees in the lawn to the North of the buildings.
BTN13	Scattered/parkland broadleaf trees	Two large oak (*Quercus* sp.) trees stand in the Eastern part of the site, within the garden of the buildings.
FTN1	Bats	The potential of the buildings on site to be used by roosting bats is not considered in this report.
FTN2	Bats	The two oak trees in the Eastern part of the site are assessed as being category 2, following BCT guidelines, and should be re-inspected if they are to be felled or otherwise affected by the proposed work.
FTN3	Birds	Hedgerows and trees are likely to be used by feeding and nesting birds.

Table 1 *Details of Botanical and Faunal Target Notes*

	The Northern part of the site is poor semi improved grassland (BTN1), bound on all sides by hedgerows (BTN6-BTN10).
	The Southern part of the site contains buildings (BTN4) and amenity lawns (BTN2).
	The site is accessed by a track leading from the public highway to the North (BTN3) which is flanked by hedges (BTN8 & BTN9).

6.2 Vegetation

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

6.2.2 The poor semi-improved and amenity grassland have 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 grazing/mowing and disturbance; these habitats do not constitute BAP habitats.

6.2.3 The intact hedges bounding the site to the North and South are species poor and contain a low diversity of woody plant species but all hedgerows are a UK BAP habitat. They should be retained in any proposed scheme and where lengths need to be lost, they should be transplanted or new hedges planted as compensation.

6.2.4 None of the hedgerows are classified as important under the Hedgerow Regulations (1997) (See Appendix 1).

6.2.5 Trees within the site boundary comprise scattered oak, sycamore and fruit trees, and small specimens within some of the hedgerows. These trees do not form woodland but young, semi-mature, mature, veteran trees should be retained in any proposed scheme and or where they are removed new tree planting should be undertaken. Cut wood from felled trees should be stacked on the site boundaries where it can decay naturally and provide habitat for invertebrates.

6.2.6 There is no evidence of Japanese knotweed, giant hogweed or Himalayan balsam on the site. 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 are 114 records for amphibians within 2km of the site, comprising 70 records of great crested newt, 17 records of smooth newt (*Lissotriton vulgaris*), 21 records of common frog (*Rana temporaria*) and six records of common toad (*Bufo bufo*).

6.3.2 There is no standing water on site, though there are several ponds in the immediate area. Three ponds occur to the East (Ponds 1-3). These could all be accessed and inspected. To the North is a large reservoir (Pond 4), the size of which and abundance of waterfowl makes it unsuitable for use by great crested newts.

6.3.3 Another small pond (Pond 5) can be seen on aerial photography, c.200m to the North-west. This is on private land and so could not be inspected, but the presence of a major public highway between the pond and the site poses a significant barrier to the dispersal of amphibians and is considered sufficient to prevent their ingress, if present.

6.3.4 The locations of the ponds and their respective distances from the site are shown on Figure 6.

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 the three ponds to the East 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.

Index	Pond 1	Pond 2	Pond 3
Location	1	1	1
Pond area	0.2	0.2	0.2
Pond drying	1	0.1	0.1
Water quality	0.01	0.01	0.01
Shade	1	0.2	0.2
Fowl	0.01	0.67	0.67
Fish	1	1	1
Ponds	1	1	1
Terrestrial habitat	0.33	0.33	0.33
Macrophytes	0.33	0.33	0.33
HSI	0.27	0.28	0.28

Table 3 *Habitat Suitability Index of the ponds*

6.3.6 All of the ponds scored low HSI scores. Their geographical location, the presence of large numbers of waterfowl, lack of significant foraging opportunities and low water quality all contributed to this. Scores of 0.5 or less are considered to be of 'poor' suitability for great crested newts.

6.3.7 The majority of the site has negligible value to any amphibian species using these ponds for breeding. Amenity and semi-improved grassland habitats offer negligible foraging opportunities to these species. The commuting and refuge opportunities offered by these habitats are also negligible.

6.3.8 Amphibians would be unlikely to attempt to cross the site as it comprises an area that is mostly open with uniform length grass. Whilst not a physical barrier to the dispersal of amphibians, the site is regarded as being a potentially hostile environment to them.

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

6.3.10 Amphibians are considered highly unlikely to habitually occur on the site. As such precautionary mitigation would be appropriate in respect of construction activities.

6.4 Badger

6.4.1 No records of badgers occur within 2km of the site.

6.4.2 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.

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Figure 7
Results* of
Bat 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

6.7 Birds

6.7.1 There are numerous records of birds within 2km of the site.

6.7.2 The intact hedgerows and scattered trees offer potential habitat for feeding and nesting birds. The grassland areas have a low potential for use by nesting birds as the swards are maintained at a short sward height.

6.7.3 There were no rot holes or cracks in the trees within the site boundary which would support tree hole nesting species such as woodpeckers.

6.7.4 A risk assessment of the site in respect of its future potential for and value to nesting birds could be adequately made.

6.7.5 The habitat on site is not considered to be of anything more than of local significance, habitats present are well represented in the local area. The impact on nesting birds is therefore considered likely to be minor.

6.7.6 Precautionary mitigation would be appropriate in respect of construction activities and compensation for lost nesting and foraging opportunities will be required.

6.8 Brown Hare

6.8.1 Brown hare are a UK BAP priority species. There are no records of brown hares within 2km of the site.

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

6.8.3 The site boundary has some potential for brown hares to create forms but use of the site is likely to be limited due to its open and exposed nature and regular human presence.

6.8.4 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 Notable invertebrates have been recorded within 2km of the site.

6.9.2 No deadwood was recorded on site, and the plant assemblages present are not noteworthy for supporting invertebrates.

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.

6.9.4 Impacts on the species are considered likely to be negligible; post development landscaping is likely to create greater habitat diversity in the area than already exists.

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. Young or Semi-mature or Mature or Veteran or all trees should as far as possible be retained in the scheme.

7.1.2 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.

7.1.3 Hedgerows around the site should be retained or improved where possible. Any lengths of intact hedgerow to be removed to facilitate development should be transplanted and or replanted in order that there is no net negative impact on this BAP habitat due to development. The roots of hedgerow plants/trees should be adequately protected during development from compaction/ground disturbance.

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 be observed;

- 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.

7.5 Birds

7.5.1 Nesting by birds within the development area is considered unlikely to occur. Birds may nest within hedges on the periphery of the site.

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 retention of trees and shrubs on the site boundary will maintain the ecological functionality of the site for breeding birds.

7.5.4 Artificial bird nesting sites for swallow could be incorporated into the new buildings under the eaves in suitable locations.

7.5.5 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.

7.8 Reptiles

7.8.1 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.

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

8. CONCLUSION

8.1.1 Ecological surveys, site appraisals and impact assessments were carried out with respect to land at Higher College Farm, off Blackburn Road, Longridge, Lancashire. It is proposed new industrial units 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 trees close to but outside the development area are generally of low quality.

8.1.4 The protection of trees on the site boundary and landscaping will promote structural diversity in both the canopy and at ground level and will encourage a wider variety of wildlife to use the site than already occurs.

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.

10. APPENDIX

Feature / Hedge	1	2	3	4	5	6	7	8
Length 20m +	Yes	Yes	Yes	No	Yes	No	Yes	Yes
Hedge is not bounding the curtilage of dwelling	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hedge established more than 30years	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hedge boundary of protected or common land or land used for agriculture or forestry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ARCHAEOLOGY AND HISTORY								
Archaeological feature which is included in the schedule of monuments	No*	No*	No*	No*	No*	No*	No*	No*
Situated wholly or partly within an archaeological site	No*	No*	No*	No*	No*	No*	No*	No*
Boundary of a pre-1600 AD estate	No*	No*	No*	No*	No*	No*	No*	No*
Integral part of a field system	No*	No*	No*	No*	No*	No*	No*	No*
Protected species records	No	No	No	No	No	No	No	No
Yes = Automatic pass								
No = Automatic failure								
FEATURES								
Bank or wall	No	No	No	No	No	No	No	No
Gaps less than 10%	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Standard trees	Yes	No	No	No	Yes	Yes	No	No
Ditch	No	No	No	No	No	No	No	No
Parallel hedge	Yes	Yes	Yes	No	No	No	No	No
Footpath/ Bridleway	No	No	No	No	No	No	No	No
Connection points	2	2	1	2	2	2	3	2
Woody species	4	4	2	3	0	0	0	3
Average ground flora species	0	1	0	0	0	0	0	1
HEDGE CLASSIFIED AS IMPORTANT	No	No	No	No	No	No	No	No
7 woody species or 6 woody species + 3 features or 5 woody species + 4 features or highway + 4 woody species and 2 features								

* Historic and archaeological records have not been checked for this site.