



envirotech

Ecological Consultants
Environmental and Rural Chartered Surveyors

Preliminary Ecological Appraisal

Mill Lonning Lowca Lane



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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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Author	Andrew Gardner	Date	31/7/2023
Checked by	Andrew Gardner	Date	31/7/2023
Report Version	1		
Field data entered	<input type="checkbox"/>		
Report Reference	8716		

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1. EXECUTIVE SUMMARY

- 1.1.1 Envirotech NW Ltd were commissioned to carry out a Preliminary Ecological Appraisal of land at Mill Lonning, Lowca Lane. It is proposed that a new agricultural building is constructed on the site. The site has recently been infilled with inert materials to raise the land levels.
- 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 29th June 2023. A full botanical survey of the site was initially undertaken and this was followed by surveys to establish the presence or absence of notable species 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 are considered to be 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 No bats were recorded roosting on or near site.
- 1.1.7 Birds are likely to utilise hedgerows 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.
- 1.1.9 Development will occur on an area of hardstanding with negligible ecological value. A small length of hedge will be lost for a new site access, and the existing access closed, with a new hedge planted.
- 1.1.10 Overall impacts on ecology will be negligible.

2. INTRODUCTION

2.1 Background

- 2.1.1 Envirotech NW Ltd were commissioned to carry out a Preliminary Ecological Appraisal of land at Mill Lonning, Lowca Lane, central grid reference NX996228 (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 a new agricultural building.
- 2.1.3 The entire field was subject to survey in order to provide context for the development which is located to the field corner.



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 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.
- 3.1.4 Due to the scale of development, in accordance with CIEEM guidelines, a data search of the county records centre was not required. The likely presence and impact on protected species could be adequately determined from the level of data search undertaken.

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 (2019).
- 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*).
- 3.2.4 The survey was also informed by questioning the landowner/site agent to ascertain the recent history of the site.
- 3.2.5 Habitats of Principal Importance (HPI) were cross referenced with Natural England's inventory against the site boundary and where found ground truthed.

3.3 Timing and Personnel

- 3.3.1 During the visit, weather conditions were suitable for the survey types undertaken being warm and dry in mid summer.

3.3.2 The site and surrounding land was visited on the 29th June 2023 by

- (AG) Mr Andrew Gardner BSc (Hons), MSc, MRICS
Natural England Bat Class Licence (Level 2)
Natural England Bat Low Impact Class Licence
Natural England Barn Owl Licence
Natural England Great Crested Newt Licence (Level 1)
Natural England Badger Class Licence
Natural England White Clawed Crayfish Licence

4. SPECIES SURVEY METHODOLOGY

4.1 Amphibian

- 4.1.1 Great crested newts (*Triturus cristatus*) are protected under Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 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 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.
- 4.1.5 The site was considered sufficiently low risk for GCN that no further assessments were warranted.

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 carcasses

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 Habitats and Species (Amendment) (EU Exit) Regulations 2019, as a 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 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 and buildings on the site to allow an assessment of their potential to be used by bats to be made by a licensed surveyor.

4.3.5 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 Species of Principal Importance (SPI).

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'. All birds displaying breeding behaviour were recorded.

4.5 Brown Hare

4.5.1 The brown hare (*Lepus europaeus*) is a SPI.

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 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 Red Squirrel

4.6.1 The site was walked over and the species of any tree over 15 years old was recorded.

4.6.2 At 50m intervals a check for signs of red squirrels (*Sciurus vulgaris*) was made and a note made of whether these are few, moderate or many. This was done by looking for feeding activity such as the remains of tree seeds, and whether or not there are dreys. Tree seed availability can vary greatly at different times of the year and from year to year. Seeds of broadleaved trees will usually be available from the autumn and the abundance of seeds will decline through winter and spring. Conifer seeds are available from summer, and often through to the following spring or summer. Thus, looking for signs of squirrel feeding activity can provide useful clues as to whether squirrels are currently resident and feeding within the site.

4.7 Survey limitations

4.7.1 Due to the habitats present on site there were no significant constraints in respect of identifying the botanical interest of the site.

4.7.2 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.

4.7.3 No significant survey limitations were encountered.

5. RESULTS

5.1 *Data Search*

- 5.1.1 Envirotech 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 The site does not lie in or adjacent any protected site or HPI areas. Ancient woodland occurs in the local landscape, Figure 3.
- 5.1.3 The nearest statutory protected site is the Solway Firth SPA, MNR, 1.8km to the West (Figure 4).



- Boundary
- Bats**
 - Common Pipistrelle
 - Pipistrelle
- NERC**
 - Common Dolphin
 - Eurasian Red Squirrel
 - European Otter
 - Grasshopper Warbler
 - Grey Partridge
 - House Sparrow
 - Reed Bunting
 - Spotted Flycatcher
 - Tree Pipit
 - West European Hedgehog
 - Wood Warbler
 - Yellowhammer

Figure 2
Protected and Notable Species





-  Boundary
 -  Ancient Woodland
- Priority Habitat Inventory
England North
-  Deciduous woodland
 -  Maritime cliff and slope
 -  No main habitat but additional habitats present
 -  Purple moor grass and rush pastures
 -  Traditional orchard

Figure 3

BAP and Noteable Habitats





Figure 4
Protected Sites



6. PHASE 1 SURVEY RESULTS

6.1 *Habitat Results*

- 6.1.1 A drone was overflown on the 29th June 2023. This produced a number of images which were stitched together to form a orthomosaic map and provided upto date imagery of the site from which phase 1 habitat mapping has been based. Figure 5 shows the hi-resolution imagery overlain to google earth without the phase 1 mapping overlay.
- 6.1.2 The site comprises poor semi-improved grassland with hedges on its boundary and an area of hardstanding.
- 6.1.3 See Figure 6 for the Phase 1 Habitat Plan and Table 1 for the descriptive Target Notes.




 Boundary

Figure 5

Orthomosaic map
drone imagery taken

29th June 2023



Target Note	Description	Comment
TN1	Poor semi-improved grassland	An open field, in an exposed location with species poor sward which appears to have been mown or grazed in the past. Species composition suggests some improvement but not recent re-seeding. Extensive Yorkshire Fog (<i>Holcus lanatus</i>) with occasional Common Bent (<i>Agrostis capillaris</i>), Couch (<i>Elymus repens</i>), Meadow Buttercup (<i>Ranunculus acris</i>), Timothy-grass (<i>Phleum pratense</i>), Broad-leaved dock (<i>Rumex obtusifolius</i>) and Ribwort Plantain (<i>Plantago lanceolata</i>).
TN2	Improved grassland	A recently re-seeded area of grassland to an earth bank. Perennial Ryegrass (<i>Lolium perenne</i>) along with Greater plantain (<i>Plantago major</i>), Redshank (<i>Persicaria maculosa</i>), White clover (<i>Trifolium repens</i>), Scarlet Pimpernel (<i>Anagallis arvensis</i>) and Sun Spurge (<i>Euphorbia helioscopia</i>). These plants are indicative of disturbed ground.
TN3	Hard standing	An open area of compacted bare ground
TN4	Species rich hedgerows	Native species rich hedgerows. Hawthorn (<i>Crataegus monogyna</i>) dominant. Goat Willow (<i>Salix caprea</i>), Honeysuckle (<i>Lonicera periclymenum</i>), Oak (<i>Quercus Sp.</i>), Ash (<i>Fraxinus excelsior</i>) and Sycamore (<i>Acer pseudoplatanus</i>). Ground flora includes Cleavers (<i>Galium aparine</i>), Nettle (<i>Urtica dioica</i>) and Red campion (<i>Silene dioica</i>) but appears degraded, likely due to livestock grazing.
Table 1 Details of Target Notes.		










-  Boundary
-  Target Note
-  Hardstanding
-  Improved Grassland
-  Poor Semi-Improved Grassland
-  Intact Hedge - Native Species-rich
-  Parkland/scattered Trees - Broad-leaved

Figure 6
Phase 1 Habitat Survey





TN1- Poor semi improved
grassland



TN2- Sharp transition to improved
grassland



Improved grassland with sparse grass cover



Hardstanding with containers





Species rich hedgerows with impoverished understory

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 are all commonly occurring and undoubtedly occur elsewhere in similar habitats in the local area.
- 6.2.2 The poor semi-improved and improved grassland has a very low species diversity and ecological value. Whilst the assemblage of species within it is higher than normal improved pasture, the species are all indicative of regular grazing and or disturbance, this habitat does not constitute a Habitat of Principal Importance (HPI).
- 6.2.3 The intact hedges bounding the site are species rich and all hedgerows are a HPI. 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 Trees within the site boundary comprise small trees within the hedge lines.
- 6.2.5 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 no records for amphibians adjacent the site.
- 6.3.2 The core development area has a low value to amphibians being open and exposed. The boundary hedgerows could be utilised as refuges and/or hibernacula but there are no breeding ponds in proximity to the site.
- 6.3.3 Structural diversity at ground level across the site is very poor. There are no areas with log, rubble piles or compost heaps which would be particularly favourable to amphibians.
- 6.3.4 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.
- 6.3.5 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.

6.4 Badger

- 6.4.1 No records of badgers occur within proximity 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.
- 6.4.3 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 There are records of bats within 2km of the site.
- 6.5.2 The foraging habitat at the site is very poor for bat species being open and exposed. The improved and poor semi-improved grassland offers negligible foraging opportunities for bats. The hedge and tree lines are poor in terms of their structure, diversity and interconnectivity.
- 6.5.3 Despite being poor, the trees and hedgerows on the site offer the best foraging habitat for bats on the site as the remainder of it comprises open and exposed pasture. Whilst these areas of the site are the most structurally diverse but they are not considered exceptional in the local area. More extensive areas of medium and high quality habitat occur locally, including the woodland and residential dwellings adjacent.
- 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 hedgerows and trees are retained and or their loss is compensated for in any landscaping scheme.
- 6.5.5 All trees around the site perimeter were also assessed in accordance with Collins ed. (2016) and assigned a risk category. All of the trees on site were category 3 (negligible) risk. No indications of roosting or highly suitable roost sites were located within the trees. All of the trees could be adequately inspected.
- 6.5.6 There are containers on the site which are fully sealed and have no potential for bat roosting.

6.6 Birds

- 6.6.1 There are records of birds within 2km of the site.
- 6.6.2 The intact hedgerows offer potential habitat for feeding and nesting birds.
- 6.6.3 There were no rot holes or cracks in the trees within the site boundary which would support tree hole nesting species such as woodpeckers.
- 6.6.4 A risk assessment of the site in respect of its future potential for and value to nesting birds could be adequately made.

6.7 Red Squirrel

- 6.7.1 This species has been recorded locally.
- 6.7.2 There is poor connectivity across the site and no potential sites for dreys were located.

6.8 Statutory and Non-Statutory Sites

Direct Impacts:

- 6.8.1 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.
- 6.8.2 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:

- 6.8.3 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. 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 HPI 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.

7.3 *Badger*

- 7.3.1 Badger setts are known to occur within 2km of the site. These setts will be undisturbed 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 New planting within the site should enhance structural diversity and light spill onto the boundary should be minimised.

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 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 Red Squirrels

- 7.7.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any Red Squirrel 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.

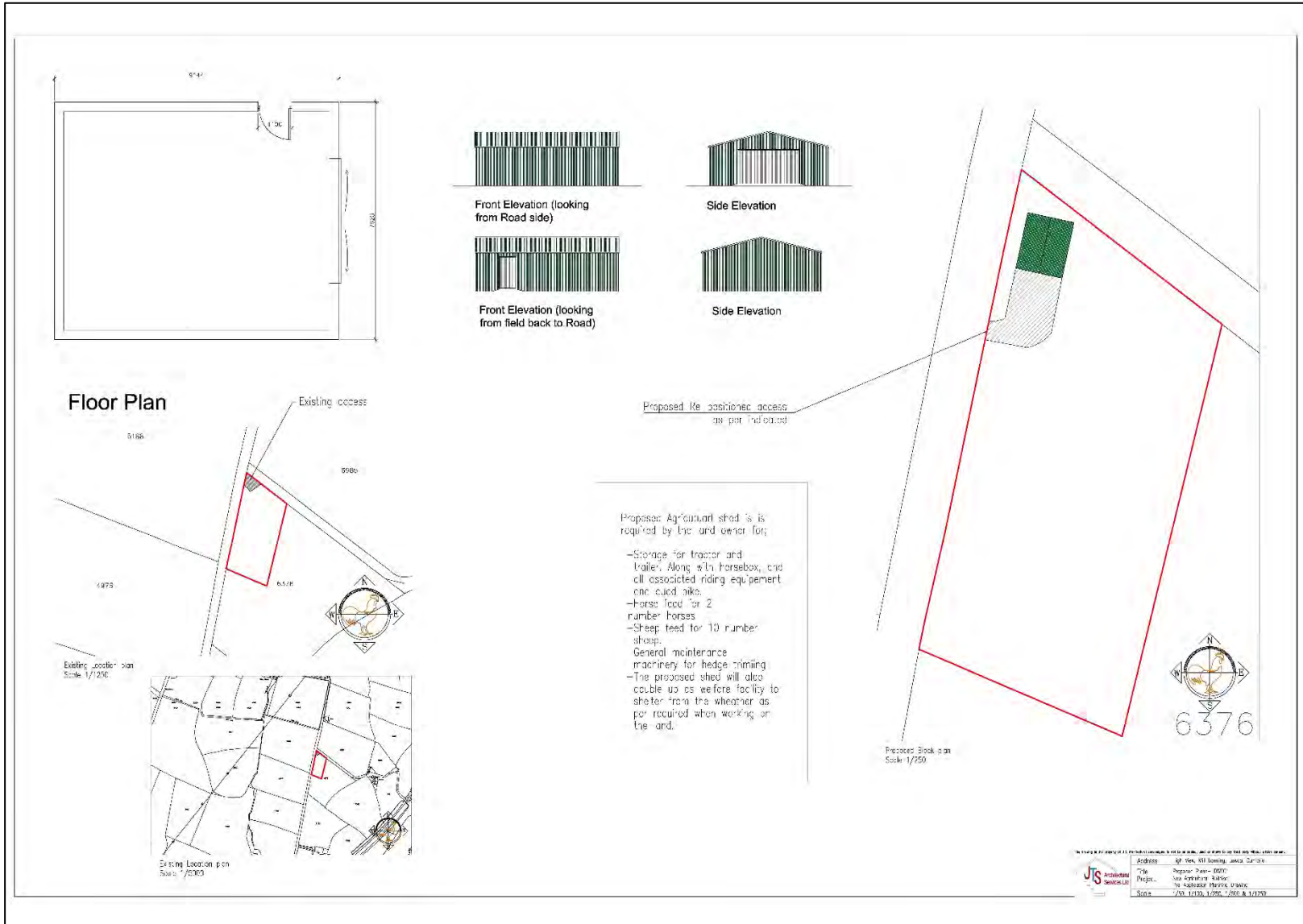


Figure 6 Proposed site plan

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9. APPENDIX

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

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