



ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE



PRELIMINARY ECOLOGICAL APPRAISAL

MOSS LANE

Project name: Moss Lane Arowry Hanmer Wrexham SY13 2JX

Grid Reference: SJ46313807

Date: 15/12/2022

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1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Planning permission will be sought for the installation of an earth banked slurry store and access track on land at Moss Lane, Arowry.

Arbor Vitae were commissioned by Roger Parry and Partners to undertake a Preliminary Ecological Appraisal in order to assess the impact of the development on habitats and protected species.

1.2 SCOPE OF SURVEY

The survey is primarily designed to:

- Identify and record habitats and important ecological features on site;
- Evaluate the potential of the proposed development site to provide opportunities for protected species;
- Determine any likely impact which the development and landscape proposals may have on these.
- Identify opportunities for the enhancement of habitats and biodiversity features on site.

1.3 KEY PRINCIPLES

All ecological surveys conducted by Arbor Vitae Environment Ltd are underpinned by the following key principles, as outlined by CIEEM (2018):

Avoidance - Seek options that avoid harm to ecological features (for example, by locating on an alternative site).

Mitigation - Adverse effects should be avoided or minimized through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed – for example, through a condition or planning obligation.

Compensation - Where there are significant residual adverse ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures.

Enhancements - Seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation.

2 SITE DESCRIPTION

2.1 LOCATION, LANDSCAPE, AND BACKGROUND

The site is accessed from New Road and lies adjacent to the A495 between Bronington and Breaden Heath in Wrexham. The site is surrounded by agriculturally improved grassland, intensively managed arable land and mixed plantation woodland. Residential properties are found sporadically throughout the landscape.

The proposals will include the creation of an earth bunded area to accommodate a slurry store. A new access track will be installed through the field using an existing field gate on New Road.

3 SURVEY METHODOLOGY

3.1 DESK STUDY

An initial desk study was composed to gain background information regarding any protected species or designations within the area. The main sources of information were MagicMap, Lle Geoportal and NBN Atlas.

3.2 SITE SURVEY

A site visit was made on 09/12/2022. The survey was carried out in accordance with CIEEM (2017) best practice guidelines. The objective of the survey was to find and record any signs of use by protected species and to note the habitat features present.

An assessment of the available habitats both on and adjacent to the site led to consideration of the potential of the site for the following protected species:

- Badger
- Bats
- Breeding birds
- Great Crested Newt

The survey methodology was tailored to evaluate the area for these species in the following ways:

Badger

An area within 50 metres of the site was closely searched for the following signs of badger activity:

- Setts,

- Tracks and footprints,
- Latrines,
- Snuffle holes.

Bats

The site was assessed in terms of its suitability to support bat species. Hedgerow habitat and nearby potential habitat were assessed and recorded and potential impacts from the proposals considered.

Breeding birds

The site was assessed in terms of its suitability to support breeding bird populations. Hedgerow habitat and nearby potential habitat were assessed and recorded.

Great crested newt

A desk study and a ground search were conducted to search for any areas of open water within 250 metres. Waterbodies were then assessed based on the Habitat Suitability Index for great crested newts (Oldham et al., 2000 and ARG UK, 2010).

Other protected species

The site does not accommodate suitable habitat for: hazel dormice, otter, reptile species or any other protected species. These species were not considered any further.

3.3 PERSONNEL

The survey was carried out by Phillipa Stirling MSc ACIEEM: Ecologist. Natural Resources Wales bat licence number: S091037-1 and GCN licence number: S089109-1.

3.4 CONSTRAINTS

Breeding birds would not have been present at the time of the survey but previous nesting and appropriate nesting sites would have been apparent.

4 SURVEY RESULTS

4.1 DESK STUDY

The desk study found that within 1km of the site there were the following designations:

Name	Designation	Distance from site
Hamer Mere	Ramsar	1km

Llyn Bedydd	SSSI	1km
The Garden House Wood	Ancient Woodland	0.1km
Merehead Cottage Wood	Ancient Woodland	0.2km
The Rookery	Ancient Woodland	0.5km
Bettisfield Park	Ancient Woodland	0.7km
The search included Ramsar, SSSI, SAC, SPA, LWS, NNR and LNR. ¹		

Results from the desk study revealed that within a 1km radius of the proposed development site the following protected species have been recorded:

Species	Distance	Protection
Birds		
Kestrel	0.5km	Wildlife and Countryside Act 1981.
Amphibians		
Great crested newt	1km	European Protected Species, Wildlife and Countryside Act 1981.

4.2 HABITATS ON SITE

All habitats are classified using JNCC's Phase 1 Habitat Survey Handbook (JNCC, 2010).

Improved grassland

The site is part of a large agriculturally improved grassland field, used for grazing cattle. The sward is uniform and lush with fertiliser applied annually. Species recorded are: Ryegrass, white clover, chickweed and curled dock.

4.3 ADJACENT HABITATS

Native hedgerow

There is a native hedgerow along the east boundary of the field site which includes mainly hawthorn. The base of the hedge has large gaps, presumably from grazing pressure. The ground flora of the hedge is dominated by grassland species as described above. The hedge is uniform in profile and height, standing at around 1.5m.

¹ SSSI: Site of Special Scientific Interest, SAC: Special Area of Conservation, SPA: Special Protection Area, LWS: Local Wildlife Site NNR: National Nature Reserve, LNR: Local Nature Reserve.

Standing water

There are several areas of standing water mapped within 250m of the site boundary. Some of these exist on the ground and some do not.

Plantation woodland

Mixed planted woodland sits at the west boundary of the field and extends around half of the north field boundary. Two groups of mature trees are found along the east field boundary consisting of oak, sycamore, hawthorn and alder.

4.4 PROTECTED SPECIES

Badgers

There are no historical records of badger at the site and no field signs were found within the search area.

Bats

The site does not provide any suitable roosting features for bat species. Adjacent habitats in the landscape (woodland) may provide foraging and commuting opportunities for bats.

Breeding birds

The field site does not provide suitable nesting opportunities for breeding birds given the management regime in place.

Great Crested Newt

Pond number	Description
1	Dry wooded basin. No pond.
2	Wooded area with maximum 1ft water, poor quality. Ground flora entirely bare. Area used for rearing waterfowl.
3	Wooded area with maximum 1ft water, poor quality. Ground flora entirely bare. Area used for rearing waterfowl.
4	Dry and vegetated with dense scrub. No pond.
5	Dry and vegetated with dense scrub. No pond.
6	Dry and vegetated. No pond.
7	Dry and vegetated with dense scrub. No pond.
8	Dry and vegetated with dense scrub/woodland. No pond.
9	Dry and vegetated with dense scrub/woodland. No pond.
10	Dry and vegetated with dense scrub/woodland. Seasonal flooding due to heavy clay soil but not a permanent pond feature.

11	Woodland ponds connected by overflow pipe. Used for rearing waterfowl. Ground flora base soil, water quality poor.
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GCN HSI Calculator				
	Pond Name	POND 11	POND 2	POND 3
SI No	SI Description			
1	Geographic location	1	1	1
2	Pond area	1	0.8	0.8
3	Pond permanence	0.9	0.9	0.9
4	Water quality	0.33	0.33	0.33
1	Shade	0.2	0.2	0.2
6	Water fowl effect	0.01	0.01	0.01
7	Fish presence	0.67	1	1
0.6	Pond Density	0.7	0.7	0.7
9	Terrestrial habitat	0.33	0.33	0.33
10	Macrophyte cover	0.3	0.3	0.3
HSI Score		0.35	0.36	0.36
Pond suitability (see below)		<i>Poor</i>	<i>Poor</i>	<i>Poor</i>

5 POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

The proposals will result in the loss of 0.47ha of agriculturally improved grassland which provides a monoculture field. The project will not result in the loss of any protected or priority habitats nor will it impact adjacent habitats.

Hanmer Mere Ramsar site and Llyn Bedydd SSSI both lie 1km from the site. Aquatic pathways between the site and these protected sites are limited and drainage will be designed on site to prevent any leaching of pollutants into the environment.

5.2 PROTECTED SPECIES ASSESSMENT

Badger

The proposals will have no impact upon badger, their setts or habitat which may be adopted by this species.

Bats

The project will have no impact upon potential roosting sites, foraging areas nor linear landscape features which may be used by commuting bats. The proposals will not result in any artificial lighting either and therefore inadvertent impacts are not expected.

Breeding birds

The field site does not provide suitable nesting opportunities for breeding birds and the proposals will not result in the removal of any hedgerow/vegetation. Therefore, no impact on breeding birds is predicted.

Great crested newt

Of the 11 areas of open water found on maps such as OS Maps and Magic Maps within 250m of the site, 3 exist on the ground. All three ponds are used for rearing and holding waterfowl and they are all found within wooded areas. Pond 2, 3 and 11 provide 'poor' suitability as breeding sites for GCN and the nearest record of GCN originates from 1km south and dates to 2005.

Studies have demonstrated that 95% of all summer refuges of GCN fall within 63m of their summer breeding pond (Jehle, 2000). Subsequent studies also found that capture rates of GCN were at their highest within 50m of a breeding site with a significant reduction in capture rates beyond 100m (Cresswell and Whitworth, 2004).

The field site itself does not provide suitable terrestrial habitat for GCN and there are no opportunities beneath ground level for amphibians. There are no suitable breeding ponds for GCN within 1km of the site and the loss of 0.27ha and re-surfacing of 0.2ha of agriculturally improved grassland is highly unlikely to have any impact on GCN.

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.005
Individual great crested newts	No effect	0
		Maximum: 0.005
Rapid risk assessment result:		GREEN: OFFENCE HIGHLY UNLIKELY

No further survey work or assessment is required with regard to GCN and a European Protected Species Development Licence will **not** be required.

6 AVOIDANCE, MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

Mitigation will not be required for the loss of low-quality terrestrial habitat but enhancement measures will be adopted on site to deliver a net gain in biodiversity on site.

6.2 PROTECTED SPECIES MITIGATION

Breeding birds

If any hedgerow removal becomes necessary, this will be carried out during winter months and before 1st March.

General avoidance measures

The following measures should be implemented to decrease the likelihood of killing/injuring small animals which may be encountered during work on site:

- The grassland areas should be kept short prior to and during construction to avoid creating attractive habitats for wildlife.
- All building materials, rubble, bricks and soil must be stored on raised platform (e.g. wooden pallets) to prevent their use as refuges by wildlife.
- Where possible, trenches should be opened and closed in the same day to prevent any wildlife becoming trapped. If it is necessary to leave a trench open overnight then it should be provided with a means of escape in the form of a shallow ramp.
- Any open pipework should be capped overnight. All open trenches and pipework should be inspected at the start of each working day to ensure no animal is trapped.
- Any common reptiles or amphibians discovered should be allowed to naturally disperse. Advice should be sought from an appropriately qualified and experienced ecologist if large numbers of common reptiles or amphibians are present.
- If a great crested newt is discovered at any stage then all work must immediately halt and an appropriately qualified and experienced ecologist should be contacted for advice.

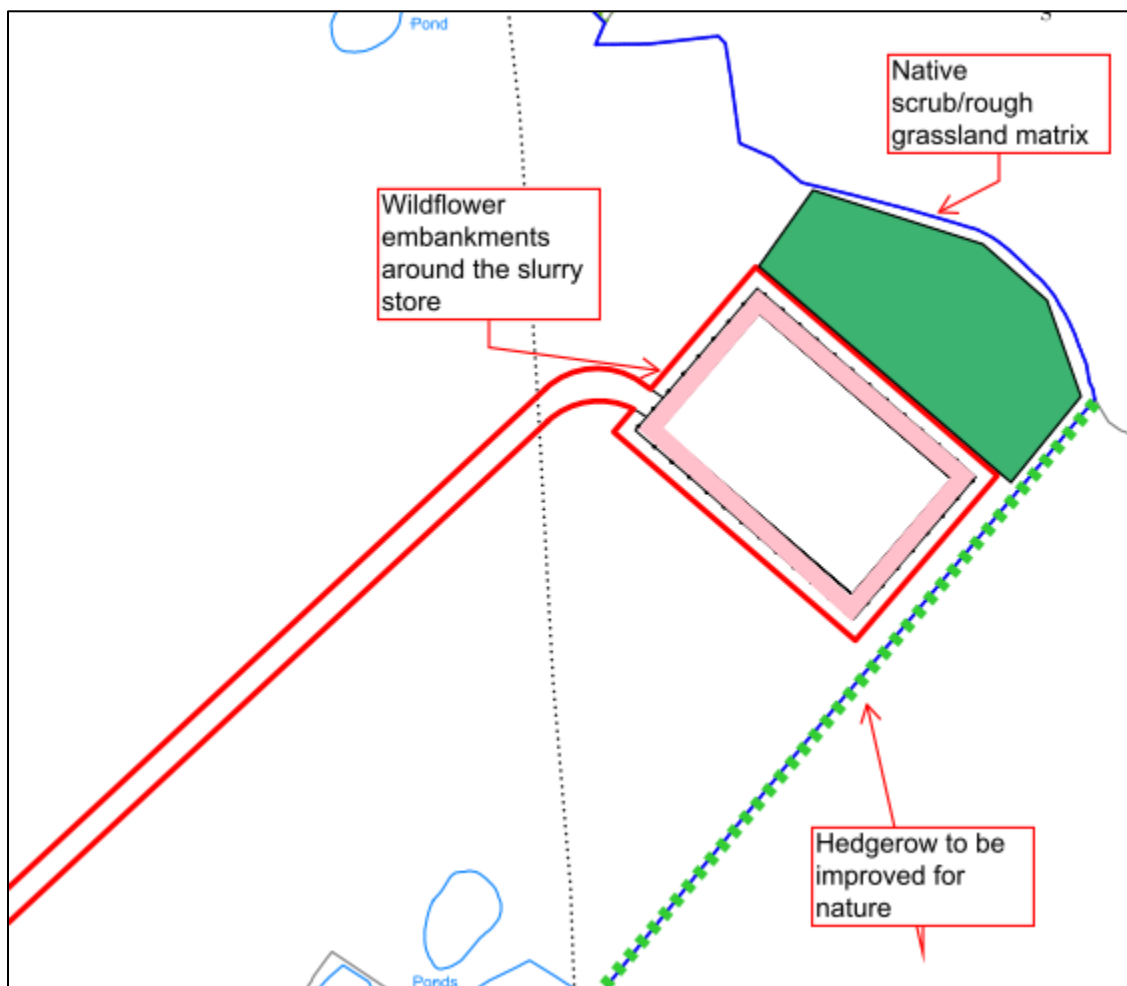
6.3 ECOLOGICAL ENHANCEMENT

The hedgerow along the east boundary of the field site will be managed to allow an increase in height and width. The hedge currently sits at 1.5m high by approximately 1m

wide. The aim will be to encourage the hedge to reach a height of 3m and a width of 2m. Hedge cutting will be carried out in alternating years and an 'A' profile will be adopted.

The outer embankment for the slurry store will be seeded with a native wildflower and grassland mix. This will provide approximately 500m² of species-rich native grassland. An 80:20 native grassland to native wildflower mix will be selected and sewn at an appropriate time of the year once all work on site has finished.

The area between the proposed slurry store and the north boundary will be planted with native scrub and shrub species, creating approximately 0.18ha of rough grassland/scrub matrix.



7 SUMMARY

Planning permission will be sought for the installation of an earth banked slurry store and access track on land at Moss Lane, Arowry. Arbor Vitae were commissioned by Roger Parry and Partners to undertake a Preliminary Ecological Appraisal in order to assess the impact of the development on habitats and protected species.

The key findings are:

- The proposals will result in the loss of 0.47ha of agriculturally improved grassland which provides a monoculture field. The project will not result in the loss of any protected or priority habitats nor will it impact adjacent habitats.
- Hanmer Mere Ramsar site and Llyn Bedydd SSSI both lie 1km from the site. Aquatic pathways between the site and these protected sites are limited and drainage will be designed on site to prevent any leaching of pollutants into the environment.
- The proposals will have no impact upon badger, their setts or habitat which may be adopted by this species.
- The project will have no impact upon potential roosting sites, foraging areas nor linear landscape features which may be used by commuting bats. The proposals will not result in any artificial lighting either and therefore inadvertent impacts are not expected.
- The field site does not provide suitable nesting opportunities for breeding birds and the proposals will not result in the removal of any hedgerow/vegetation. Therefore, no impact on breeding birds is predicted.
- The field site itself does not provide suitable terrestrial habitat for GCN and there are no opportunities beneath ground level for amphibians. There are no suitable breeding ponds for GCN within 1km of the site and the loss of 0.27ha and re-surfacing of 0.2ha of agriculturally improved grassland is highly unlikely to have any impact on GCN.
- No further survey work or assessment is required with regard to GCN and a European Protected Species Development Licence will **not** be required.
- Ecological enhancement will be delivered on site through: the enhancement of an existing hedgerow adjacent to the site, creation of 0.05ha of species-rich grassland embankments and the creation of 0.18ha of rough grassland/scrub matrix to the north of the proposed slurry storage area.

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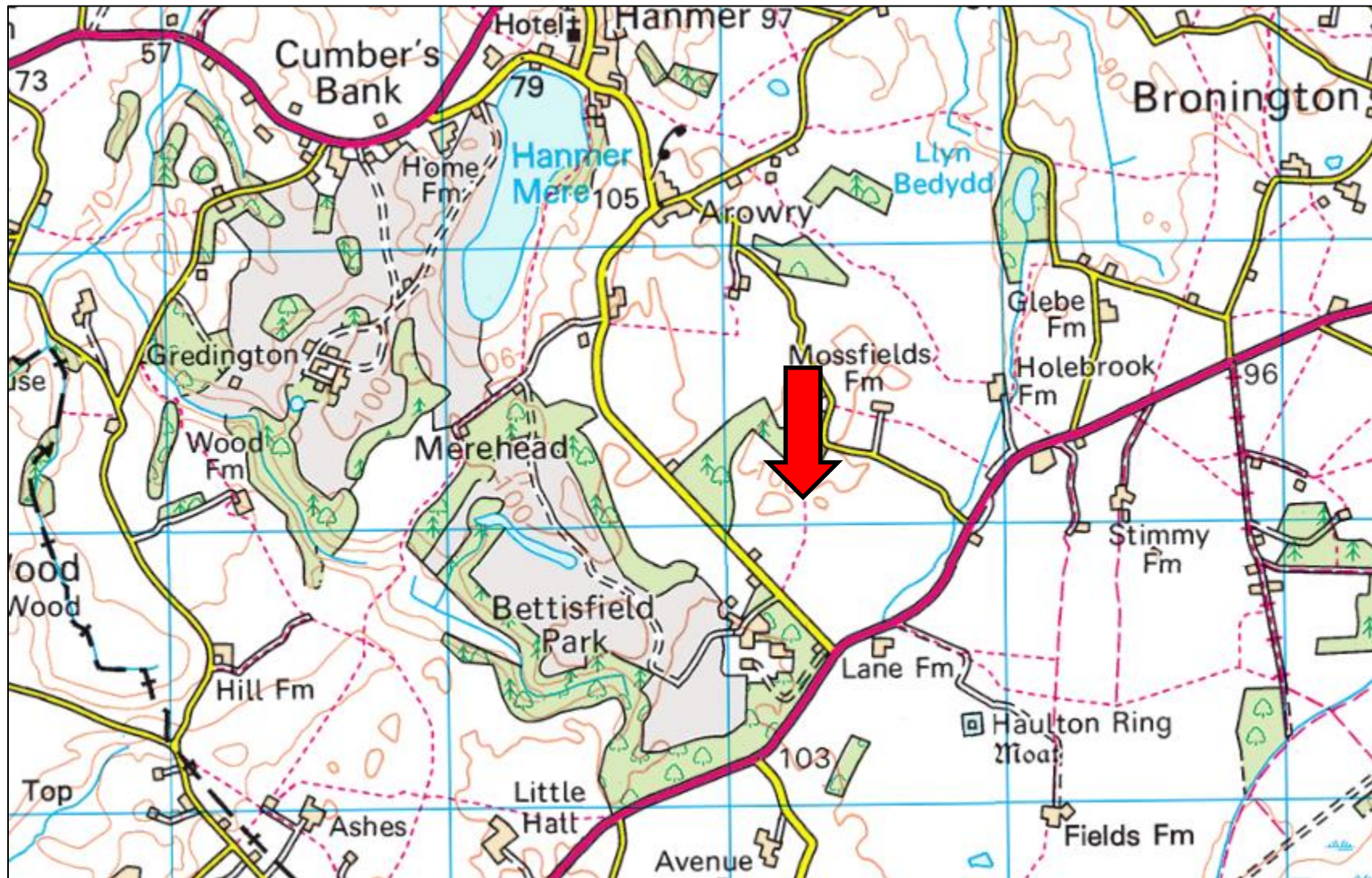
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FIGURE 1 LOCATION



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FIGURE 2 AERIAL PHOTOGRAPH



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FIGURE 3 PROPOSED SITE PLAN

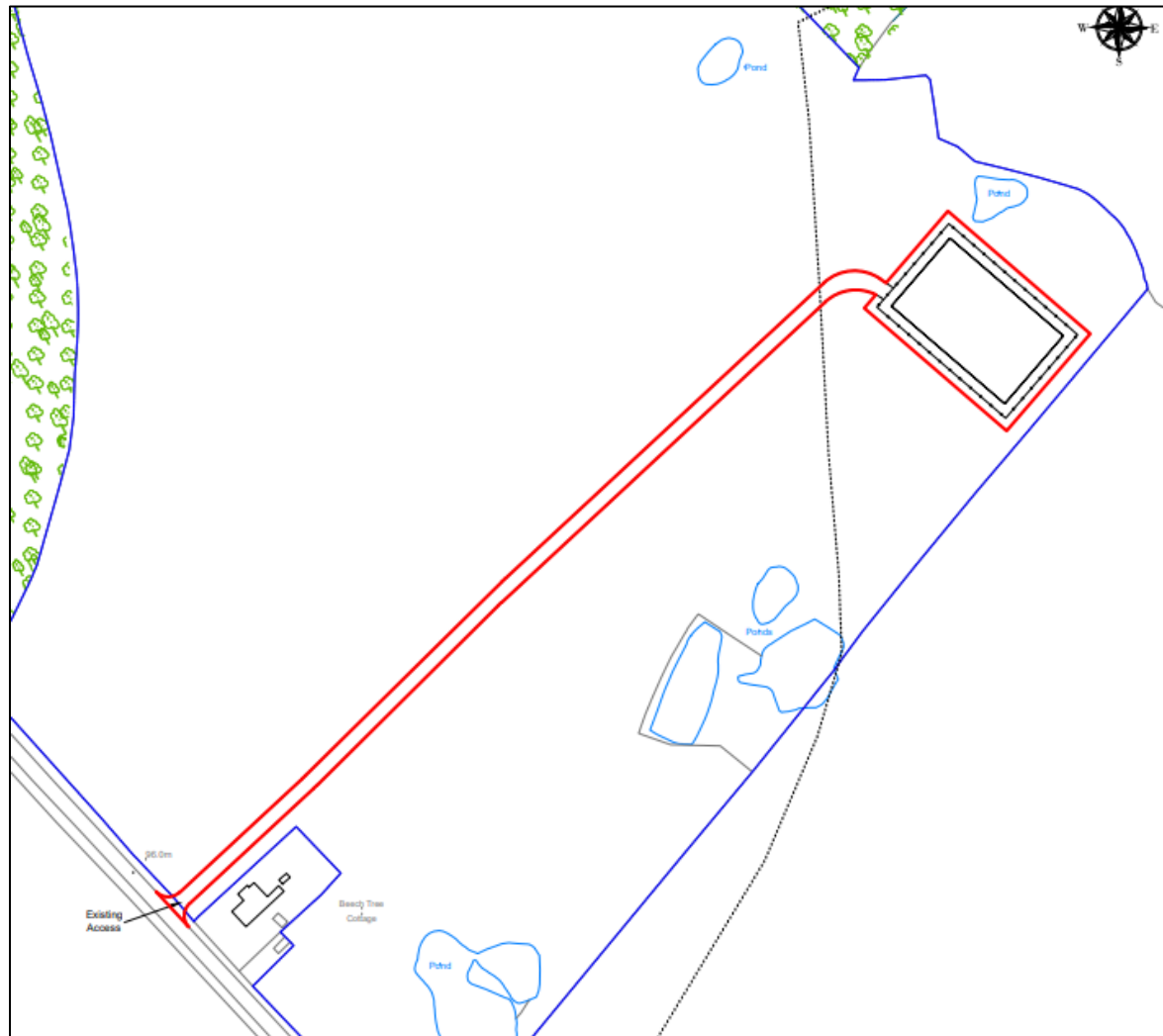
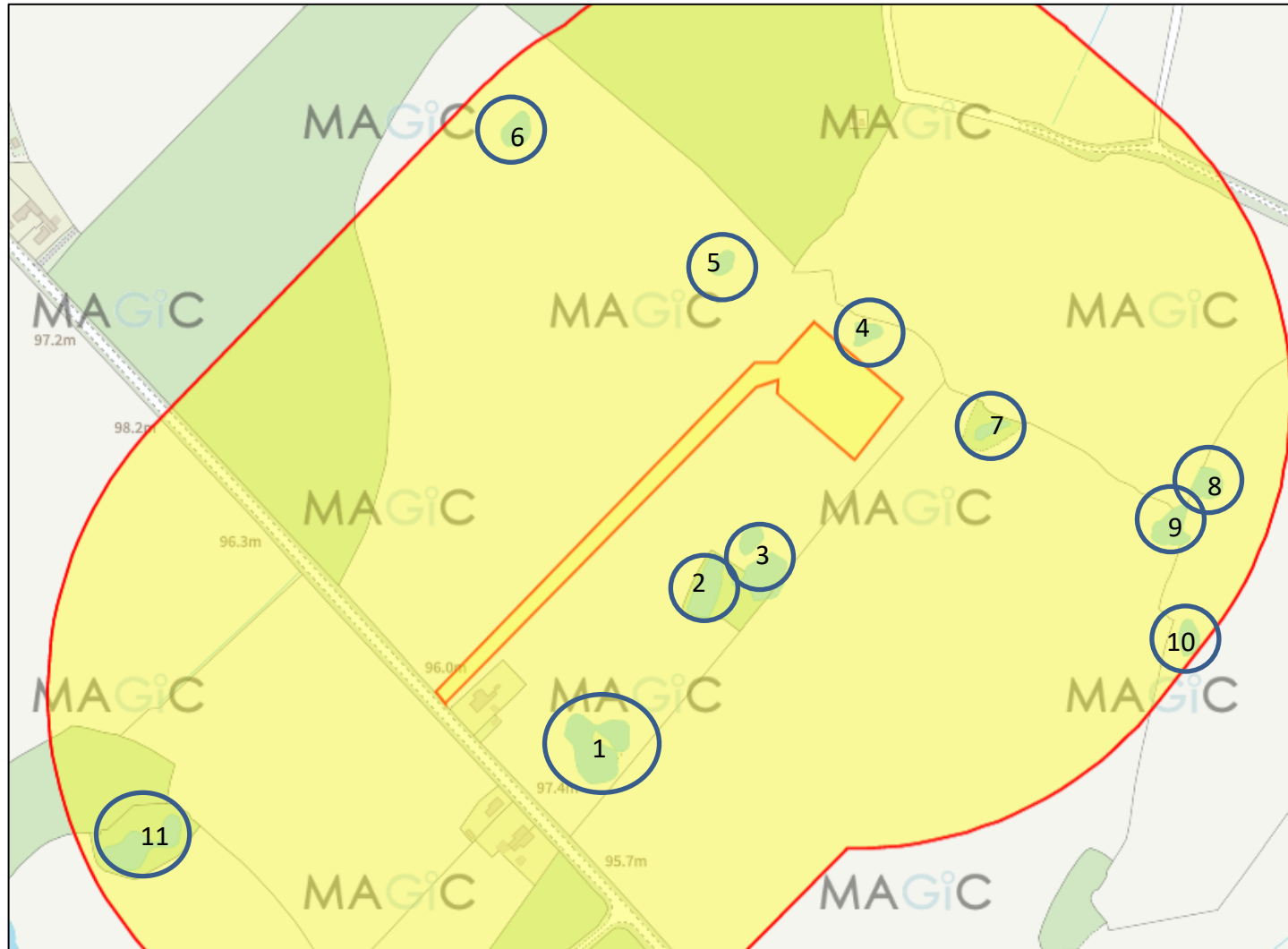


FIGURE 4 PONDS WITHIN 250M



APPENDIX 1 PHOTOGRAPHS



The site and east hedgerow to be enhanced.



Proposed track across field.



Existing field access from New Road.



Pond 2 & 3.



Pond 11.



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