



ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE



PRELIMINARY ECOLOGICAL APPRAISAL

DARLAND CROFT

Project name: Darland Croft, Rossett, Wrexham, LL12 0BB

Grid Reference: SJ37925801

Date: 12/05/2021

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1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Planning permission will be sought for construction of three residential dwellings on a plot of land known as Darland Croft in Rossett, Wrexham.

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 currently occupied by an agricultural structure, located at the end of an existing driveway just off Darland Lane, Rossett (Figure 1). The site is bounded by residential holdings at the west and south with arable land and agricultural grassland to the north (Figure 2). The wider landscape is a mixture of arable and agricultural grassland with Rossett and Lavister settlements nearby.

The proposals will utilise the existing access track which will require some improvement. There is a public footpath which runs along the track and round the south east boundary of the site.

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 and NBN Atlas.

3.2 SITE SURVEY

A site visit was made on 29/04/2021. 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:

- Badgers
- Bats
- Breeding birds
- Great Crested Newts

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 newts

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).

3.3 PERSONNEL

The survey was carried out by Phillipa Stirling MSc ACIEEM: Ecologist.

3.4 CONSTRAINTS

Pond 3 could not be accessed during the survey due to it being on private land.

4 SURVEY RESULTS

4.1 DESK STUDY

The desk study revealed that there are no designated sites or habitats within 1km of the development boundary. The search included Ramsar, SSSI, SAC, SPA, LNR, NNR and Ancient Woodland.

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
Otter	0.7km	European Protected Species, Wildlife and Countryside Act 1981.
Common pipistrelle	0.3km	European Protected Species, Wildlife and Countryside Act 1981.
West European hedgehog	0.4km	S41 NERC
The European hedgehog is a Species of Principal Importance under section 41 of the Natural Environment and Rural Communities Act 2006. Hedgehog are a priority species in the UK due to a decline in the amount of suitable habitat available to them through the development of land.		

4.2 HABITATS ON SITE

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

Improved grassland

The grassland habitats on site are agriculturally improved and species recorded include: Yorkshire fog, common bent, dandelion, broad leaved dock, red dead nettle, cow parsley, garlic mustard, white clover and ground ivy.

Hardstanding

There is an existing concrete pad on site which supports the steel framed structure.

Buildings

A steel framed and clad agricultural building currently occupies the south east portion of the site. The structure is modern and well-sealed with box profile cladding to the roof and elevations.

Hedgerow

There is a hawthorn hedge at the west boundary of the site which separates the land from the neighbouring property.

Shrubs

There is a single small fruit tree present on site at the south west boundary.

4.3 ADJACENT HABITATS

Arable

The field to the north is part of an arable rotation currently down to grass ley.

Hedgerow

There is an overgrown hedge at the south east boundary of the site which consists of a mixture of native species of varying height and condition. Species include: ash, oak, hawthorn and elder with nettle, dandelion, curled dock and cow parsley dominating the ground flora beneath.

Mature trees and hedgerow border the existing access track on either side, belonging to neighbouring properties. Species include beech, silver birch, hawthorn, elder and *Prunus* sp.

Amenity grassland

The land to the west and south east of the site is dominated by amenity grassland associated with residential properties.

4.4 PROTECTED SPECIES

Badgers

There are no historical records of badger at the site and the nearest area of woodland lies 175m to the west. There is a single badger trail passing through the site in a diagonal direction from north-west to south-east. There is no other evidence of badger activity on site.

Bats

The steel framed agricultural building on site does not provide any suitable roosting features for bat species and is very well-sealed. The building has 'negligible' potential as a bat roost and no further survey work is required.

The adjacent hedgerows and mature trees provide suitable foraging and commuting opportunities for bat species within the landscape.

Breeding birds

There was no evidence of breeding birds on site during the survey. The steel framed building and grassland provide very limited opportunities for nesting.

The hawthorn hedgerow at the west boundary provides some suitable opportunities for nesting.

Great Crested Newt

There are no records of GCN within 1km of the site. Pond 1, 2 and 4 all scored 'below average' in terms of their suitability to provide breeding sites to GCN.

Pond 1 and 4 had limited areas of open water and were very shallow, representing more of a boggy/marshy habitat than pond. Pond 4 held stagnant water with very poor water quality and evident eutrophication. Pond 2 had bare banks in places and no emergent vegetation.

GCN HSI Calculator

	Pond Name	Pond 1	Pond 2	Pond 4
	Position	SJ38015814	SJ37875790	SJ37685795
SI No	SI Description			
1	Geographic location	1	1	1
2	Pond area	0.85	1	0.9
3	Pond permanence	0.5	0.9	0.33
4	Water quality	0.33	0.33	0.2
5	Shade	0.2	0.2	0.33
6	Water fowl effect	0.67	0.67	0.67
7	Fish presence	0.67	0.33	0.7
8	Pond Density	0.7	0.7	1
9	Terrestrial habitat	0.67	0.33	0.3
10	Macrophyte cover	0.8	0.3	
HSI Score		0.59	0.50	0.55
Pond suitability (see below)		<i>Below average</i>	<i>Below average</i>	<i>Below average</i>

5 POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

The proposed development will result in the loss of 0.19ha of improved grassland and 0.04ha of concrete including the steel framed buildings footprint. The habitats to be lost are of little ecological significance and the overall impact of the development will be low.

5.2 PROTECTED SPECIES ASSESSMENT

Badger

There is no evidence to suggest that badgers use the site on a regular basis. It is likely that the trail on site is used occasionally and the proposed development is unlikely to have any impact upon this species. Precautionary measures will be implemented on site during the construction phase of the project to ensure any disruption arising from the development is minimised.

Bats

The site itself does not provide any potential roosting opportunities and the development will have no impact upon bat species. A Wildlife Sensitive Lighting Plan will be adopted on site to ensure that post-development impacts are reduced.

Breeding birds

The proposed development is unlikely to have any impact upon breeding birds as the site itself does not provide suitable nesting opportunities.

Adjacent hedgerow and trees could provide nesting sites and appropriate checks precautionary measures must be adopted on site during construction.

Great crested newt

The site provides a small area of terrestrial foraging opportunity for this species but does not provide suitable hibernation or breeding habitat. The arable land to the north limits the migratory potential of the adjacent landscape and with the nearest pond at 100m from the site and with 'below average' suitability as a breeding site, the likelihood of GCN being present is very low.

Given the distribution of GCN within this location further investigation in the form of eDNA analysis will be carried out on Pond 1, 2 and 4. Pond 3 is not accessible.

At the very least a Reasonable Avoidance Measures Method Statement will be adopted on site during construction in order to eradicate any residual risk to GCN. More detailed information will be provided once the results of the eDNA analysis are received.

Hedgehog

Hedgehogs have been recorded within 1km of the site could be using the site as the habitats available present suitable opportunities for this species. Mitigation to ensure that proposals have no impact upon this priority species will be needed.

6 AVOIDANCE, MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

The loss of a small amount improved grassland will be of little ecological consequence.

In order to ensure that there is no loss of biodiversity at the site, a native species planting scheme will be adopted within public spaces. At least three small groups of trees will be incorporated into the scheme and will include: rowan, silver birch and wild cherry.

6.2 PROTECTED SPECIES MITIGATION

Badger

Any excavations/ditches should be either; covered completely at night time, or an access ramp should be left within each separate excavation/ditch to allow badgers or other to escape should they fall in.

Any chemicals or harmful substances should be kept within a locked container, off the ground and ideally within a structure on site.

Bats

All on-site lighting will be designed with nocturnal wildlife in mind. The following measures will be incorporated into lighting plans for the site:

- Hedgerows and key habitat features including mature trees on the site will not be illuminated in order to retain dark movement corridors for nocturnal wildlife. Illuminance along these features should be below 0.2 lux on the horizontal plane, and 0.4 lux on the vertical plane.
- Security lighting will be set on motion sensors with short timers (<1 minute) and should be LED lighting.

- External lights will be hooded and directed toward the ground to reduce upward light spill.
- A warm white spectrum will be adopted throughout the scheme to reduce blue light component (<2700Kelvin).
- Internal luminaires will be recessed where installed in proximity to windows to reduce glare and light spill. LED luminaires should be used internally where possible due to their sharp cut-off, lower intensity, and dimming capability.
- Luminaires will always be mounted horizontally with an upward light ratio of 0%.

Breeding birds

A thorough ground inspection should be completed prior to works commencing on site if works start between 1st March and 31st August (inclusive) in any given year. If breeding birds are found, an exclusion zone of 5 metres should be implemented and maintained until breeding is complete and the fledglings have left the nest.

Great crested newt

The following precautionary measures will be adopted as a minimum. Further information will be provided following the results of eDNA analysis.

- If piles of rubble, logs, bricks, other loose materials or other potential refuges are to be disturbed, this should be done by hand and carried out during the active season (March to October) when the weather is warm to allow animals to disperse naturally.
- 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.

Hedgehog

The precautionary measures stated for badger and great crested newt will help to ensure that hedgehogs are also protected during development.

6.3 ECOLOGICAL ENHANCEMENT

The new north boundary of the site should be planted with a native species hedgerow to promote connectivity with the neighbouring land. Species should be native to the UK and the area, to include: hawthorn, hazel, holly, guelder rose, wild privet, dogrose and elder.

In order to provide opportunities for wildlife, we recommend that a nest box scheme is adopted as follows:

- Each property should incorporate at least one roosting feature suitable for bat species. Built-in bat roosts can be included within the final external elevation of a property. These features should be built into the north facing elevation with access to the open field behind.
- Two hedgehog domes should be installed into the base of the hedgerows at the periphery of the site with their entrances facing into the centre of the hedge.

7 SUMMARY

Planning permission will be sought for construction of three residential dwellings on a plot of land known as Darland Croft in Rossett, Wrexham. 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.

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In order to ensure that there is no loss of biodiversity at the site, a native species planting scheme will be adopted within public spaces. At least three small groups of trees will be incorporated into the scheme and will include: rowan, silver birch and wild cherry.

Precautionary measures will be implemented on site during the construction phase of the project to ensure any disruption to badgers arising from the development is minimised.

A Wildlife Sensitive Lighting Plan will be adopted on site to ensure that post-development impacts upon bat species and other nocturnal animals are reduced.

Given the distribution of GCN within this location further investigation in the form of eDNA analysis will be carried out on Pond 1, 2 and 4. Pond 3 is not accessible. At the very least a Reasonable Avoidance Measures Method Statement will be adopted on site during construction in order to eradicate any residual risk to GCN. More detailed information will be provided once the results of the eDNA analysis are received.

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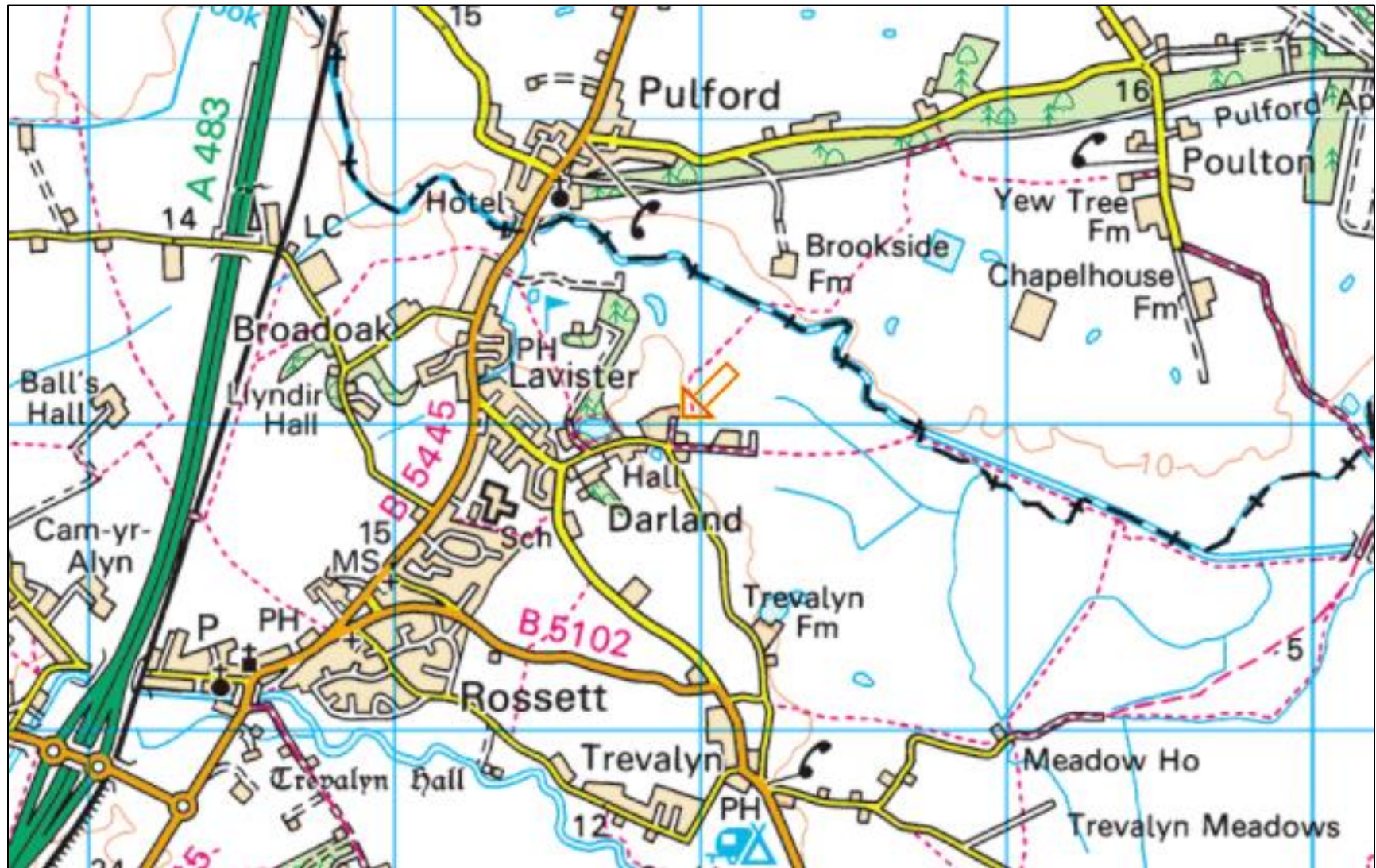
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FIGURE 1 LOCATION. 1:50,000



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FIGURE 2 AERIAL PHOTOGRAPH



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FIGURE 3 PONDS WITHIN 250M

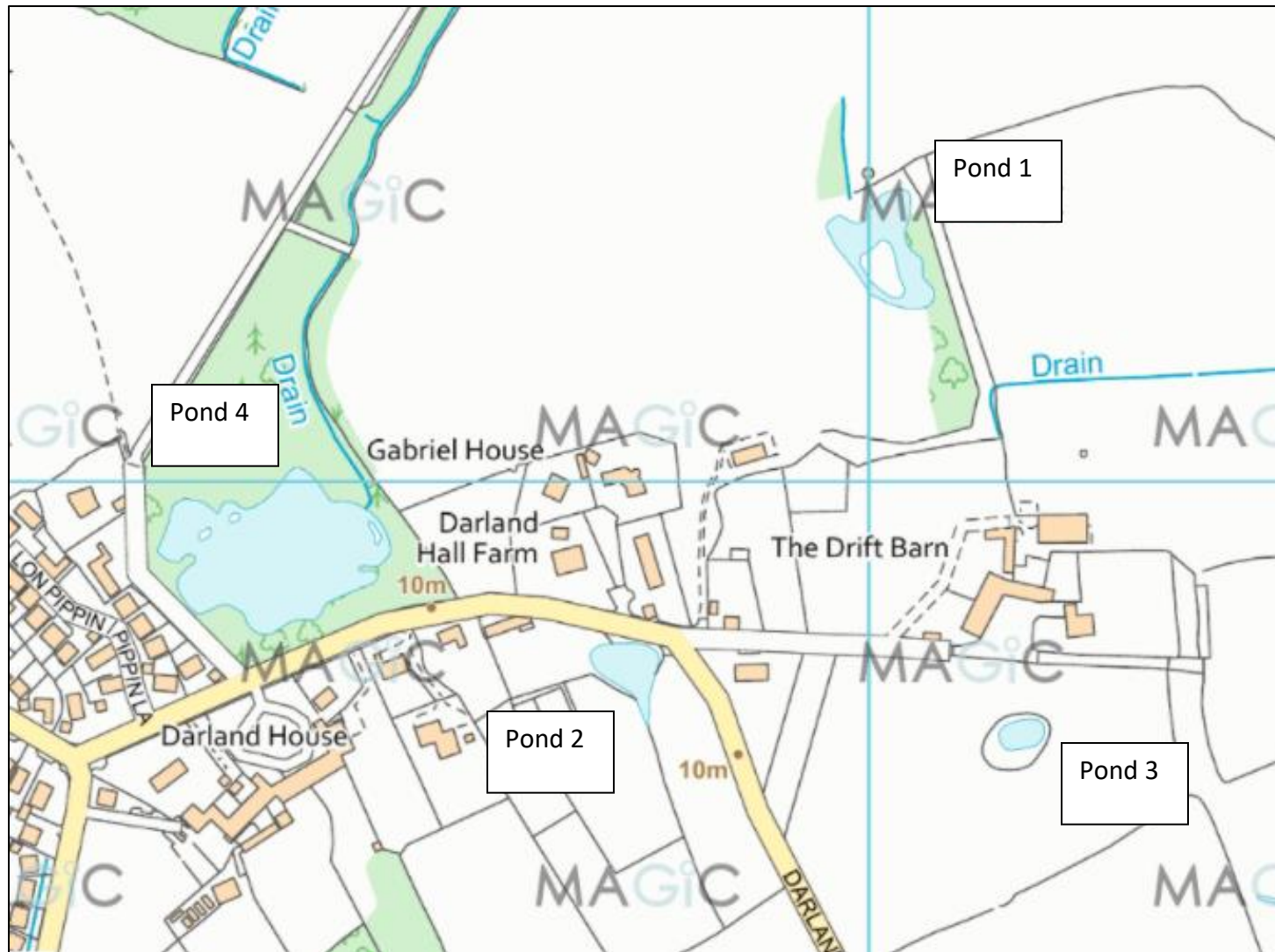


FIGURE 4 PROPOSED SITE PLAN



APPENDIX 1 PHOTOGRAPHS

	Existing access track
	West hedgerow
	Grassland and steel framed and clad agricultural building on site



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	Hedge and tree line at the south east boundary
	Pond 1
	Pond 2



Pond 4



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