



ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE



PRELIMINARY ECOLOGICAL APPRAISAL

MILL BROOK CLOSE

Project name: Land at Mill Brook Close, Wrexham Road,
Rossett, Wrexham, LL12 0DW

Grid Reference: SJ37325843

Date: 15/06/2021

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Requested by: Roger Parry and Partners

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1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Planning permission will be sought for the construction of up to eight residential dwellings on a piece of land off Chester Road 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 located near to the English/Welsh border, just north of Lavister and west of the A483 (Figure 1). The surrounding landscape is a mixture of arable land, agricultural grassland and plantation woodland with small villages to the north and south (Figure 2).

The proposals will include up to eight residential homes and all associated work. Existing access to the site exists from the development on adjacent land to the south.

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 Lle geoportal, 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:

- Badger
- Bats
- Breeding birds
- Great Crested Newt
- Otter
- White clawed crayfish

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).

Otter

Any water courses within the area and appropriate terrestrial land were searched for the following field signs:

- Spraint,
- Footprints,
- Feeding remains.

White clawed crayfish

The water course was assessed based on the following habitat specifications:

- Fast-flowing, shallow watercourse,
- Presence of natural or artificial refuges,
- Fully submerged refuges,
- Aerated conditions,
- Stable and resistant to high water.

3.3 PERSONNEL

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

3.4 CONSTRAINTS

There were no constraints to the survey.

4 SURVEY RESULTS

4.1 DESK STUDY

There are no designated sites within 1km of the site's boundary. The search included Ramsar, SSSI, SAC, SPA, 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
Otter	0.6km	European Protected Species, Wildlife and Countryside Act 1981.
Common pipistrelle	0.5km	European Protected Species, Wildlife and Countryside Act 1981.
West European hedgehog*	0.6km	S41 NERC
Brambling	0.3km	Schedule 1 Wildlife and Countryside Act 1981.
Redwing	0.5km	Schedule 1 Wildlife and Countryside Act 1981.
Fieldfare	0.4km	Schedule 1 Wildlife and Countryside Act 1981.
*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 field site is approximately 0.64ha of improved grassland. The sward height was at approximately 0.3m at the time of the survey and is subject to intermittent cutting.

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.

Species recorded within the field during the survey were: meadow foxtail, cock's foot, perennial ryegrass, common bent, dandelion, broadleaved dock, curled dock, creeping buttercup, garlic mustard, white clover and ribwort plantain.

Stone wall

A stone wall is present at the west boundary of the site. The stones are cemented in place and the wall sits at around 1m in height.

4.3 ADJACENT HABITATS

Running water

Mill Brook runs along the east boundary of the site and sits within a steep sided channel. The flow of water is slow-moderate but during the winter can be fast-flowing and carries a large volume of water. The brook is well vegetated with fool's water cress, lesser celandine, curled dock, garlic mustard and common nettle along its banks.

Hardstanding

An existing loose-stone access track exists at the south boundary of the site with a turning head in place at the south east point of the site.

Arable

Land use to the immediate east is arable with the wider landscape dominated by this habitat type.

Buildings

The land to the west and south of the site is occupied by residential properties and their associated outdoor space including amenity grassland and hardstanding.

A large sewage works plant is present 200m east of the site.

Broadleaved woodland

The sewage plant has been screened using broadleaved tree planting which now forms a small block and corridor of woodland.

Standing water

A total of six waterbodies are mapped within 500m of the site. Of these, three ponds exist on the ground.

4.4 PROTECTED SPECIES

Badgers

No field signs were found on site during the survey and there are no records of badger within 1km of the site.

Bats

The site does not provide roosting opportunities for bat species and is isolated within the landscape. There is no tree cover or other linear features which would be suitable for use by bat species. The site provides negligible opportunities for bat species.

Breeding birds

The site offers limited opportunities for breeding birds and the proximity to residential properties and the main B5445 with eventual height (>0.5m) of the vegetation make it an unsuitable site for ground nesting bird species.

Great Crested Newt

Pond 1 is an area which is dry and vegetated. The vegetation consists of reedmace and soft rush but is becoming colonised by grass species including cock's foot and common bent. The periphery of the area has been planted with silver birch and goat willow and there is no open water present.

Pond 2 does not appear to exist on the ground, on Magic Map or on aerial imagery. The pond appears on older versions of OS maps but the survey confirmed that there is no pond present in this location.

Pond 3 has limited areas of open water and is very shallow, representing more of a boggy/marshy habitat than pond. The pond holds stagnant water with very poor water quality and evident eutrophication. The pond is over 2000m² and therefore this indices was removed from the HSI calculation. eDNA analysis of this pond was carried out in relation to a separate project and the result was negative.

Pond 4 does not hold any water and has become dry and vegetated. Goat willow, crack willow and alder now dominate the area with common nettle, garlic mustard and broadleaved dock growing at ground level.

Pond 5 is an ornamental waterbody, created within the nearby hotel grounds. The margins are entirely shaded by weeping willows and the land surrounding the pond is very shortly mown amenity grassland. Carp are known to be present and waterfowl use the pond regularly.

Pond 6 is a set of ornamental ponds which form part of a sensory garden at the nearby hotel. The ponds are surrounded by gravel and flagstones with dense populations of carp. A grey heron was observed 'fishing' during the survey.

Pond 3			Pond 5			Pond 6		
Grid Ref SJ37685795			Position SJ37355861			SJ37365872		
SI No	SI Description		SI No	SI Description				
1	Geographic location	1	1	Geographic location	1			1
3	Pond permanence	0.9	2	Pond area	1			0.01
4	Water quality	0.33	3	Pond permanence	0.9			0.9
5	Shade	0.2	4	Water quality	0.67			0.67
6	Water fowl effect	0.33	5	Shade	0.2			1
7	Fish presence	0.67	6	Water fowl effect	0.33			1
8	Pond Density	0.7	7	Fish presence	0.01			1
9	Terrestrial habitat	1	8	Pond Density	0.9			0.7
10	Macrophyte cover	0.3	9	Terrestrial habitat	0.33			0.33
			10	Macrophyte cover	0.3			0.3
HSI Score		0.55	HSI Score		0.36	0.46		
Pond suitability (see below)		<i>Below average</i>	Pond suitability (see below)		<i>Poor</i>	<i>Poor</i>		

Otter

There were no field signs of otter found on or adjacent to the site during the survey. Otter has been recorded at 0.6km from the site, using the more established watercourse, Pullford Brook.

White clawed crayfish

Mill Brook does not provide suitable habitat for white clawed crayfish given that the watercourse is prone to high water levels and does not provide any natural or artificial refugia. There are no records of this species within 1km of the site.

5 POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

The habitat to be impacted by this development will be improved grassland which is of little ecological value.

Mill Brook at the east boundary of the site is an established watercourse, although small in size. The development, if located within close proximity of the brook, has the potential to result in pollution via domestic run-off (vehicles, motorised equipment) and disturbance of the corridor including the release of non-native plant species into the brook. Appropriate buffers will be implemented.

5.2 PROTECTED SPECIES ASSESSMENT

Badger

There is no evidence to suggest that badgers are using the site and the proposals will have no impact upon this species.

Bats

The site offers limited opportunities for bat species and there are no potential roosting features present on site. The nearest woodland is 175m east of the site with connectivity between the site and woodland limited to an open track. It is unlikely that bats use the site and the proposals will have no impact upon this group.

Breeding birds

The grassland on site does not provide suitable nesting sites for ground nesting birds and there are no other features on site which might be used by wild nesting birds. The proposals will have no impact upon this group.

Great crested newt

Pond 5 and 6 provide unsuitable aquatic habitat for GCN and are both separated from the site by two major terrestrial barriers- the fast flowing Pulford Brook and the main B5445 road.

Pond 3 sits at 480m to the south east and eDNA analysis of this pond in relation to a separate project revealed a negative result. The waterbody is unsuitable for GCN with densely shaded margins and anaerobic water conditions.

There are no publicly available records of GCN within 1km of the site and ponds 1, 2 and 4 do not exist on the ground.

There are no ponds within the vicinity of the site and therefore dispersal of individual GCN from other ponds in the landscape would not result in their arrival on site. The habitat to be lost on site is improved grassland which sits between residential properties, intensively farmed arable land and a main road, making it very unlikely that GCN would reach the site or be present within the vicinity.

The proposed development will have no impact upon GCN and no further survey work is required.

Otter

There was no evidence to suggest that otters are using Mill Brook and it is unlikely to provide feeding opportunities for this species. The channel might be used occasionally for commuting individuals and should therefore remain free from disturbance including direct interference and illumination.

White clawed crayfish

This stretch of the brook adjacent to the site does not provide suitable habitat for this species and the proposals will have no impact.

6 AVOIDANCE, MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

A buffer between the development and Mill Brook of at least 15m will be implemented. This includes during the construction phase and post-construction. The brook will be fenced off from the site to prevent disturbance to this channel using post and rail. The fencing will be erected before works begin on site.

To further improve the buffer between the brook and the development site, a native species tree corridor will be planted along the fence line outside of the development zone. The tree corridor will be 2m in depth and will include: goat willow, hazel, silver birch, alder and field maple. All trees will be fitted with spiral guards until established.

6.2 PROTECTED SPECIES MITIGATION

Bats and otter

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

- The east boundary of the site and Mill Brook will not be illuminated pre or post construction in order to retain dark movement corridors for nocturnal wildlife. Illuminance along these features will be below 0.2 lux on the horizontal plane, and 0.4 lux on the vertical plane.
- Any security lighting for each property will be set on motion sensors with short timers (<1 minute) and should be LED lighting.
- External lighting 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).

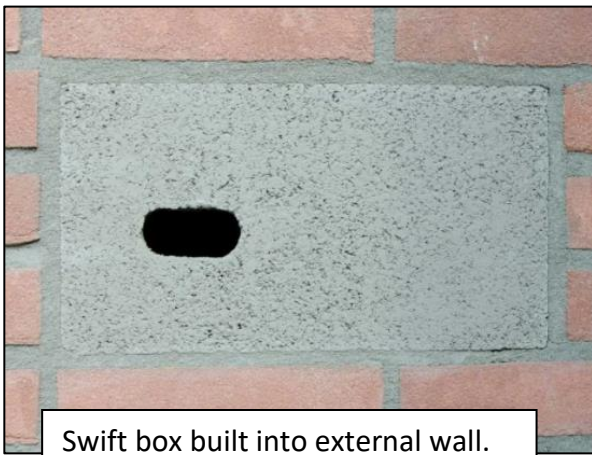
- Internal luminaires will be recessed where installed in proximity to windows to reduce glare and light spill. LED luminaires should be used internally where possible due to their sharp cut-off, lower intensity, and dimming capability.
- Luminaires will always be mounted horizontally with an upward light ratio of 0%.

6.3 ECOLOGICAL ENHANCEMENT

Each property on site will include built-in wildlife features, as follows:

Where there is an exposed gable end, two Woodcrete swift boxes will be built into the external wall beneath the roof line. These will be installed in at least four properties.

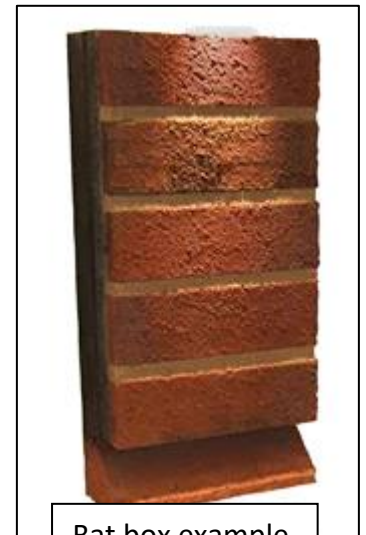
Four Woodcrete built-in bat boxes will be installed into the external wall of four properties on site. These will be on the east facing elevation and lighting will not be installed within the vicinity.



Swift box built into external wall.



Bat box built into external wall.



Bat box example.

7 SUMMARY

Planning permission will be sought for the construction of up to eight residential dwellings on a piece of land off Chester Road 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.

The habitat to be impacted by this development will be improved grassland which is of little ecological value. Mill Brook at the east boundary of the site is an established watercourse, although small in size. The development, if located within close proximity of the brook, has the potential to result in pollution via domestic run-off and disturbance of the corridor including the release of non-native plant species into the brook.

A buffer between the development and Mill Brook of at least 15m will be implemented. This includes during the construction phase and post-construction. The brook will be fenced off from the site to prevent disturbance to this channel using post and rail as seen on adjacent land. The fencing will be erected before works begin on site.

To further improve the buffer between the brook and the developments site, a native species tree corridor will be planted along the fence line outside of the development zone. The tree corridor will be 2m in depth and will include: goat willow, hazel, silver birch, alder and field maple.

A Wildlife Sensitive Lighting Plan will be adopted to ensure that Mill Brook remains free from illumination and is maintained as a dark movement corridor for wildlife.

In order to provide Net Biodiversity Benefit, each property to be built on site will incorporate Woodcrete wildlife features to be built into the external walls. Boxes for swifts and bat species will be used.

8 REFERENCES

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FIGURE 1 LOCATION. 1:50,000

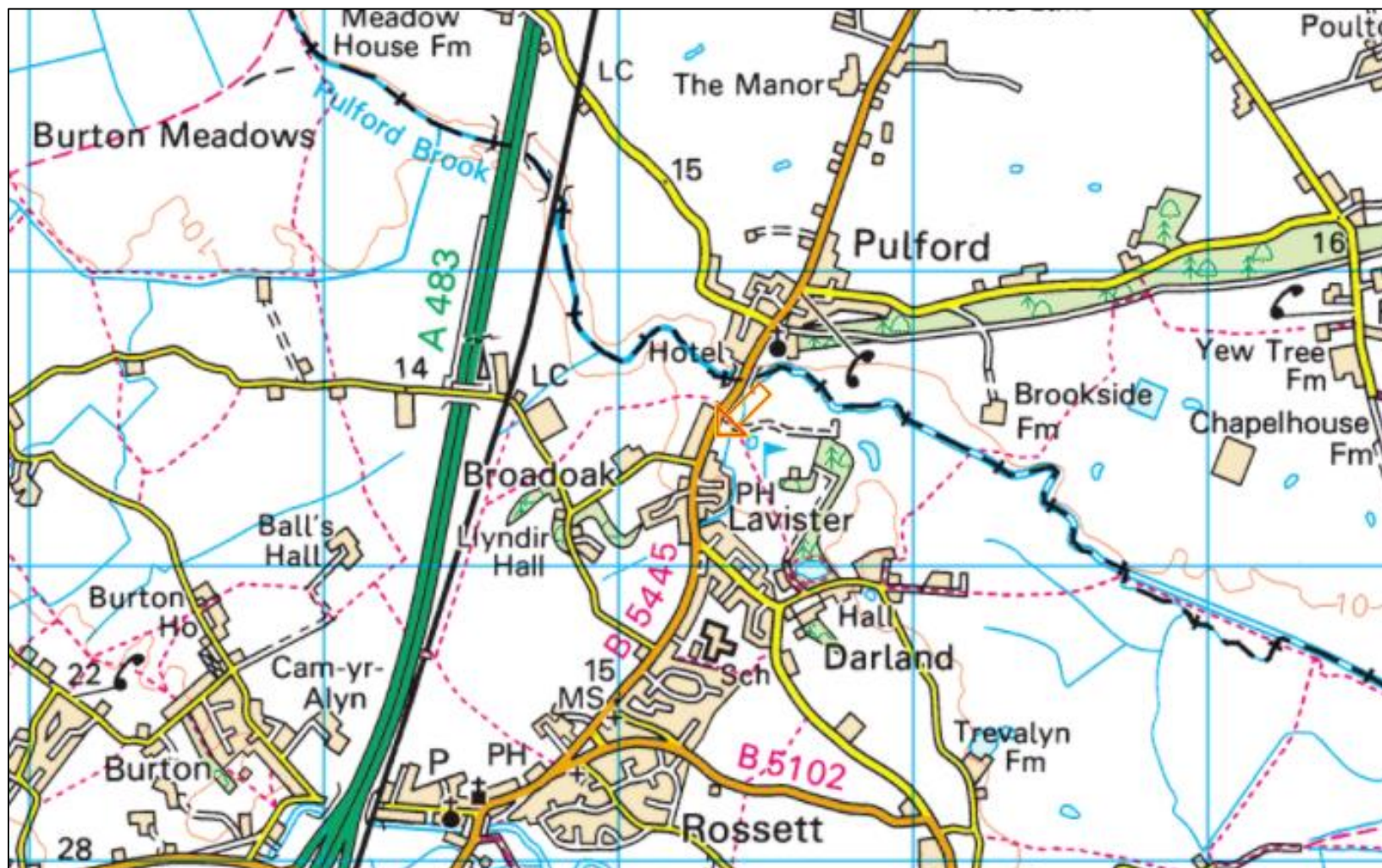


FIGURE 2 AERIAL PHOTOGRAPH



FIGURE 3 PONDS WITHIN 500M

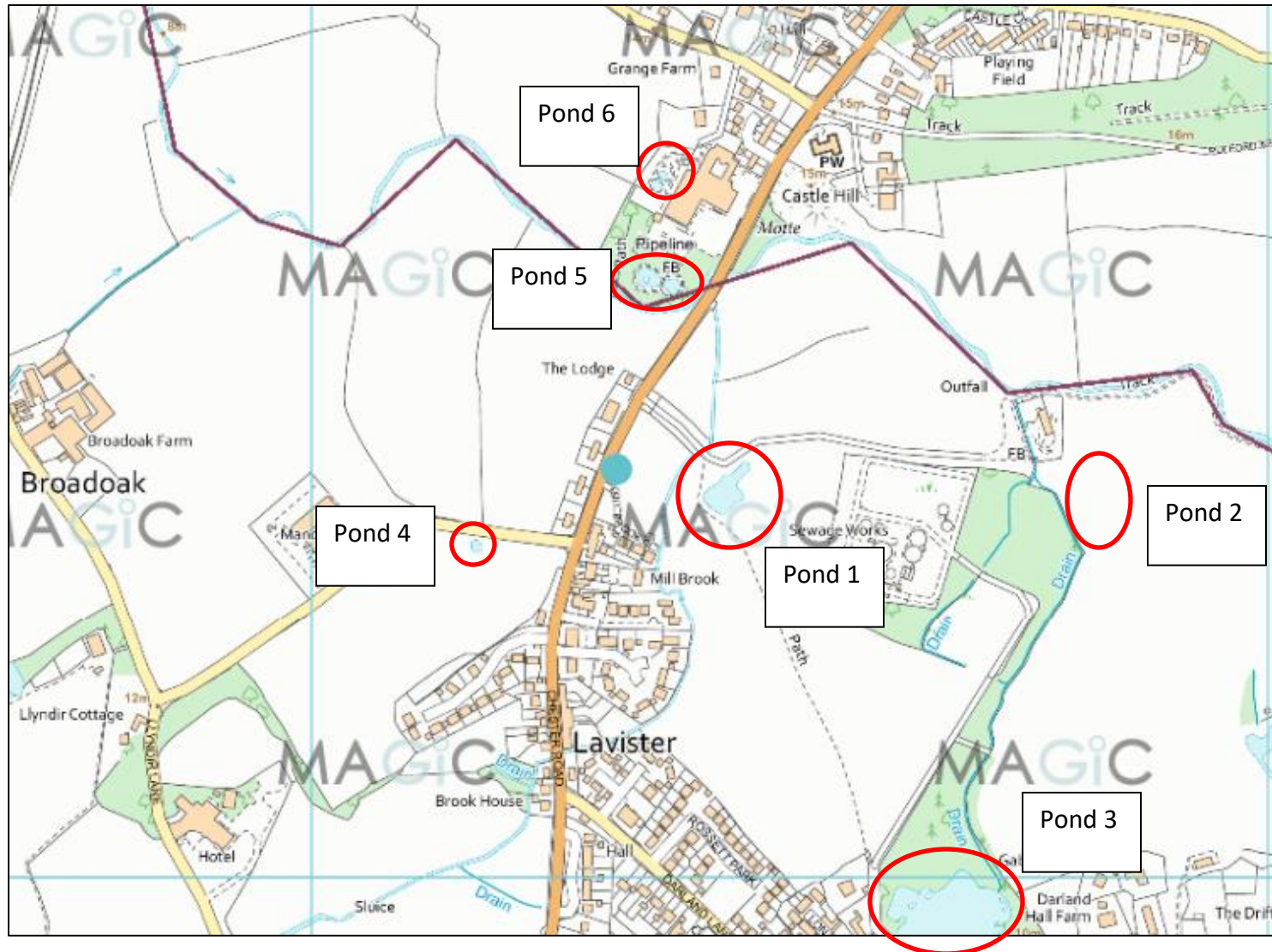


FIGURE 4 SITE BOUNDARY



APPENDIX 1 PHOTOGRAPHS

	The site. Looking south east from north west corner.
	Existing turning head at south east boundary of the site.
	Pond 1

	Pond 3
	Pond 4
	Pond 5



Pond 6



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