ARBOR VITAE

Preliminary Ecological Appraisal

Date prepared:	26-11-2025
Site name:	Land West of Garden House,
Site address:	Wrexham, LL13 0DL
Grid reference:	SJ35384152
Local authority:	Wrexham County Borough Council
Client:	Harmin Agricultural Ltd
Prepared by:	Phillipa Stirling MSc ACIEEM
Reviewed by:	Will Prestwood BSc

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1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Planning permission will be sought for the extension of an existing agricultural shed on Land West of Garden House, Erbistock.

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 along an unnamed lane at Erbistock village. A former plant nursery occupies the land to the east of the site, and the remaining surrounding landscape is mostly dominated by agricultural grassland and residential properties.

The River Dee lies 300m south of the site, with extensive native woodlands beyond (Llan-y-cefn Wood).

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 04/11/2025. 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

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 objective of the survey was to find and record any signs of use by bats, for example:

- Droppings, sometimes in concentrations below roost sites
- Feeding signs such as butterfly and moth wings
- Staining of timber, brickwork around access points

The general structure of the building was assessed for its potential to provide bats with roosting opportunities.

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.

3.3 PERSONNEL

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

Natural Resources Wales bat licence number: S094220-1 and GCN licence number: S090921/1.

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 & IMPACT ASSESSMENT

4.1 DESK STUDY

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

Name	Designation	Distance from site
River Dee	SSSI SAC	300m
Llan-y-cefn and Blakes Wood	Ancient Woodland	400m
Manley Wood	Ancient Woodland	500m
Morris Wood	Ancient Woodland	570m
Min-yr-afon Wood	Ancient Woodland	850m
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
Mammals		
Otter	100m	European Protected Species, Wildlife and Countryside Act 1981.
Common pipistrelle Soprano pipistrelle Brown long-eared	100-700m	European Protected Species, Wildlife and Countryside Act 1981.
Birds		
Redwing Fieldfare	200-500m	Wildlife and Countryside Act 1981.

[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.

4.2 HABITATS ON SITE

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

Habitat type & description	Predicted Impact	Proposed mitigation measures
Modified grassland The area of land which will be occupied by the building extension is modified grassland used for grazing and silage/hay. Species are limited to palatable, commercially sown grasses and forbs such as perennial ryegrass, creeping red fescue, cock's foot, Yorkshire fog, dandelion, white clover, creeping buttercup, and common nettle.	Plans for the site would result in a loss of 100m2 of modified grassland to accommodate the extension. The loss of this species-poor grassland is of no wider ecological consequence given its low botanical diversity.	No specific mitigation is required.
Native hedgerow A native hedge runs along the north and west boundary of the site, consisting of hawthorn, holly, and hazel.	The plans will not result in the loss or damage of any hedgerow on-site.	Hedge protection measures are recommended to remove any residual risk (Appendix 3).

4.3 PROTECTED SPECIES

Protected species	Predicted Impact	Proposed mitigation measures
Badger	There are no historical records of badger at the site, and no field signs were found within the search area. The site itself does not provide typically suitable habitat for badgers given that it is enclosed, with limited vegetative cover. Plans for the site are not expected to have any impact upon badger.	Reasonable Avoidance Measures will be adopted on site to remove any residual risk to

		wildlife (Appendix 1).
Bats	The existing building on site which will be extended is a modern, steel framed structure, with pre-cast concrete walls, box profile cladding to three sides and vertical timber cladding to the west facing gable. All timber is tightly fitted, and the modern materials do not provide any suitable roosting features. The building has 'negligible' potential as a bat roost and no evidence of bats was found during the inspection. The plans are unlikely to have any impact upon bat species but given the rural setting, artificial lighting has the potential to disturb foraging routes.	A Wildlife Sensitive Lighting Plan will be adopted on site (Appendix 2).
Breeding birds	The building nor the grassland on site provide suitable nesting opportunities for breeding birds and no evidence of nesting was recorded in association with either. The adjacent hedges offer suitable habitat for generalist nesters and the proposed hedgerow protection measures will ensure that all hedges remain undisturbed by the works.	Appendix 3.
Great crested newt	There is one pond mapped within 250m of the site. The pond lies within the former plant nursery grounds and was accessed via the public footpath which runs through the site. At the time of the survey, the pond was completely overgrown at the banks and margins, with *Typha* dominating the little water which was present. Water quality is compromised due to the leaf litter within the pond, increasing nutrient levels and resulting in some algal growth. The pond scores 'below average' according to the Habitat Suitability Index and there are no records of GCN within 1km of the site. Pond density in the surrounding landscape is low, and the pond is ornamental in nature. The site itself provides poor quality terrestrial habitat for GCN, and the pond lies some 140m away. 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).	Reasonable Avoidance Measures will be adopted on site to remove any residual risk to wildlife (Appendix 1).

	It is unlikely that GCN are present locally and the proposals are not expected to have any impact upon GCN.	
Otter	During the survey, no evidence of otter was found on or adjacent to the site. The site does not provide suitable terrestrial opportunities for otter and is at a sufficient distance that the plans will have no impact upon the watercourse or riparian corridor.	None required.

GCN HSI Calculator

	Pond Name	Pond 1
	Grid Ref	SJ35464139
SI No	SI Description	
1	Geographic location	1
2	Pond area	1
3	Pond permanence	0.5
4	Water quality	0.33
5	Shade	0.2
6	Water fowl effect	0.67
7	Fish presence	0.67
8	Pond Density	0.6
9	Terrestrial habitat	0.67
10	Macropyhyte cover	0.8
HSI Score		**0.59**
Pond suitability (see below)		*Below average*

5 ENHANCEMENTS

5.1 ECOLOGICAL ENHANCEMENT

Wildlife features will be included as follows:

1x Woodcrete nestbox with 28mm opening. The box/es will be positioned on a mature tree or nearby building, at a height of no less than 2.5m from ground level. The opening of the box/es will face away from the prevailing wind.

2x Woodcrete multi-chamber bat box. The box/es will be positioned within a mature tree or on a nearby building, at a height of no less than 3m from ground level. Artificial lighting will not be installed within 5m of the box.

6 SUMMARY

Planning permission will be sought for the extension of an existing agricultural shed on Land West of Garden House, Erbistock. 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.

Plans for the site would result in a loss of 100m2 of modified grassland to accommodate the extension. The loss of this species-poor grassland is of no wider ecological consequence given its low botanical diversity.

The plans will not result in the loss or damage of any hedgerow on-site. Hedge protection measures are recommended to remove any residual risk (Appendix 3).

The plans are not expected to have any impact upon protected or priority species, provided the following methodologies are adopted:

- Reasonable Avoidance Measures Method Statement
- Wildlife Sensitive Lighting Plan
- Hedge protection measures

Ecological enhancement at the site will include:

- 1x Woodcrete nestbox with 28mm opening,
- 2x Woodcrete multi-chamber bat box.

7 REFERENCES

ARG UK (2010). ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. Amphibian and Reptile Groups of the United Kingdom

Bat Conservation Trust (2018) Bats and artificial lighting in the UK. *Bats and the Built Environment series,* Guidance Note 08/18. Institution of Lighting Professionals.

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Jehle, Robert. (2000). The terrestrial summer habitat of radio-tracked great crested newts (Triturus cristatus) and marbled newts (T. marmoratus). Herpetological Journal. 10. 137-142.

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Natural England (2002) Badgers and Development. 1st ed. Peterborough: Natural England, pp.2- 12.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus). Herpetological Journal 10(4), 143-155.

8 APPENDICES

Appendix 1. Reasonable Avoidance Measures Method Statement

A set of Reasonable Avoidance Measures will be adopted on site during all pre-construction, during, and post-construction phases. The following applies:

1. The site owner/site manager will ensure that anyone (including sub-contractors) undertaking construction, demolition and landscaping (both creation and management), is made aware of the potential for the site to support protected species, where to expect them, their protected status and the procedure to follow in the unlikely event that protected species are discovered during works. A copy of this Precautionary Method of Working will be always kept on site and available for inspection.
2. Should any hedgehogs or other protected species (i.e. common toads, reptiles, birds) be discovered during construction or other works on site, which are likely to be affected by the development, works will cease immediately. The owner/ site manager will then seek the advice of a suitably qualified and experienced ecologist and works will only proceed in accordance with the advice they provide.
3. Any vegetation clearance (i.e. removal of trees, scrub, hedgerows) or works to buildings shall not commence until a careful check for nesting birds has been completed, particularly during the main breeding season (months of March to August). If bird nests are found, then works in the area must stop until the chicks have fledged the nest.
4. All clearance works (i.e. clearance of log piles, debris, rough grass etc.) will be undertaken when hedgehog are likely to be fully active i.e. during the April to September period.
5. Clearance of dry-stone walls, logs, brash, stones, rocks or piles of similar debris will be undertaken carefully and by hand.
6. Clearance of tall vegetation will be undertaken using a strimmer or brush cutter with all cuttings raked and removed the same day. Cutting will only be undertaken in a phased way which may either include: Cutting vegetation to a height of no less than 30mm, clearing no more than one third of the site in any one day or; Cutting vegetation over three consecutive days to a height of no less than 150mm at the first cut, 75mm at the second cut and 30mm at the third cut;
7. Following removal of tall vegetation, remaining vegetation will be maintained at a height of 30mm through regular mowing or strimming to discourage common reptiles and amphibians from returning.

8. Ground clearance of any remaining low vegetation (if required) and any ground works will only be undertaken following the works in point 5) above.
9. Any trenches left overnight will be covered or provided with ramps to prevent animals falling into the trenches and being trapped. Excavations left overnight should be checked prior to filling. Any open pipes left overnight will be covered.

Appendix 2. Wildlife Sensitive Lighting Plan

The following measures will be incorporated into site-wide lighting design:

- 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.
- Any exterior security or decorative lights to be installed on the development site will be less than 3 m from the ground and fitted with hoods to direct the light below the horizontal plane, at an angle of less than seventy degrees from vertical, and shall not be fixed to, or directed at, bat boxes or gables or eaves.
- Security lighting will be set on motion sensors with short timers (<1 minute) and will be LED with a passive infrared trigger.
- Lighting must be less than 3 lux at ground level and there shall be no light splay exceeding 1 lux along buildings, eaves or roof or adjacent hedgerows or trees.
- 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 will 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%.

Bat Conservation Trust (2023) Bats and artificial lighting at night. *Bats and the Built Environment series,* Guidance Note 08/18. Institution of Lighting Professionals.

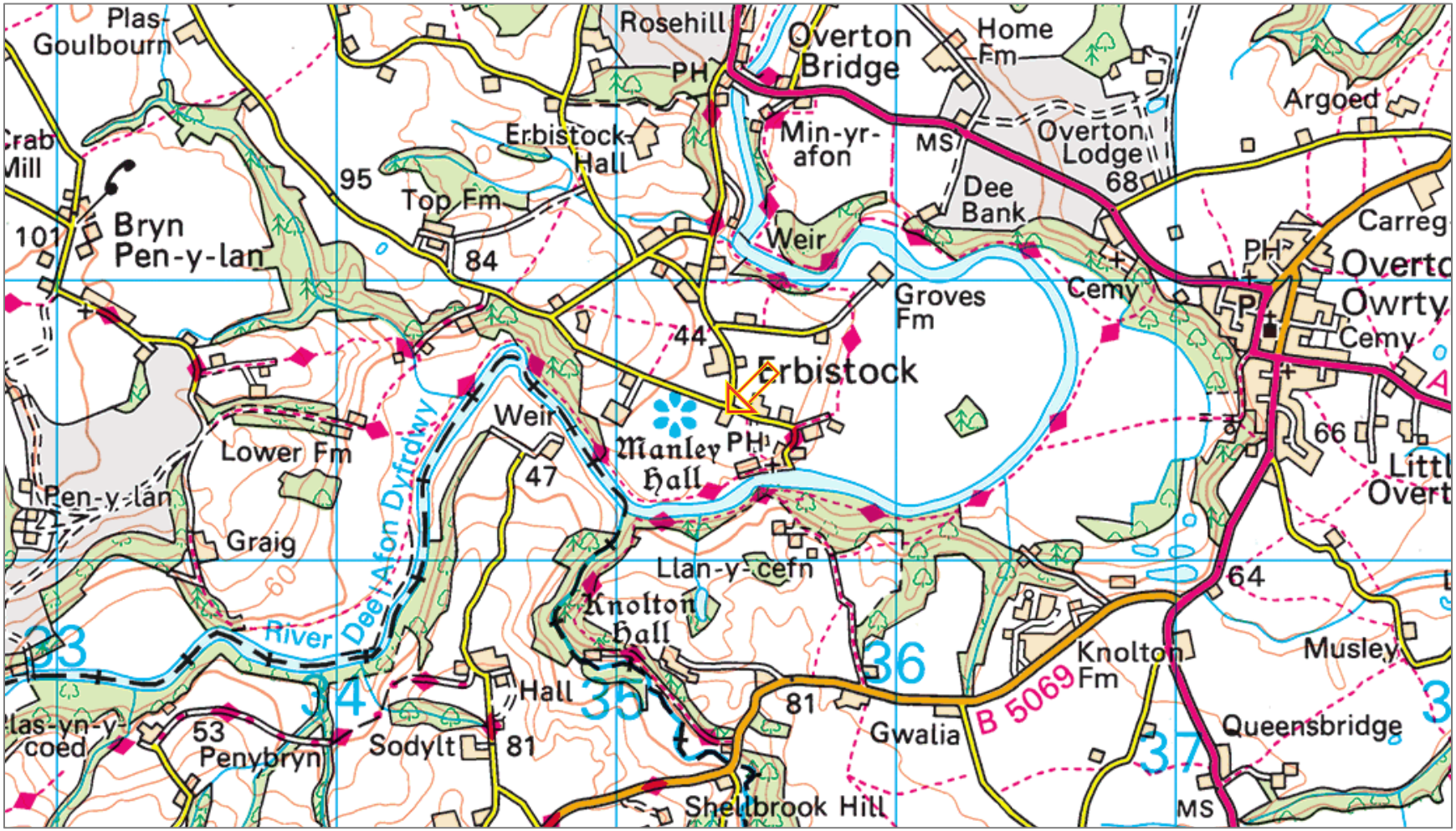
Appendix 3. Hedge protection measures

A gap of 2m will be left between any hedgerow on site and proposed construction work. During works, a protective barrier fence will be installed to protect the hedgerow and its root zone. Iron rods and netted fencing will be positioned approximately 1m from the spready of the hedge and retained throughout development.

As per section 7.4.2 of BS5837:2010 the following will be implemented when designing and constructing buildings within proximity to any hedge feature:

- The design should not require excavation into the soil, including through lowering of levels and/or scraping, other than the removal, using hand tools, of any turf layer or surface vegetation.
- The structure of the hard surface should be designed to avoid localised compaction by evenly distributing the loading over hard surfaces.
- New permanent hard surfacing should not exceed 20% of any existing unsurfaced ground within 2m of a hedge.

FIGURE 1 LOCATION



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FIGURE 2 AERIAL PHOTOGRAPH



FIGURE 3 PONDS WITHIN 250M

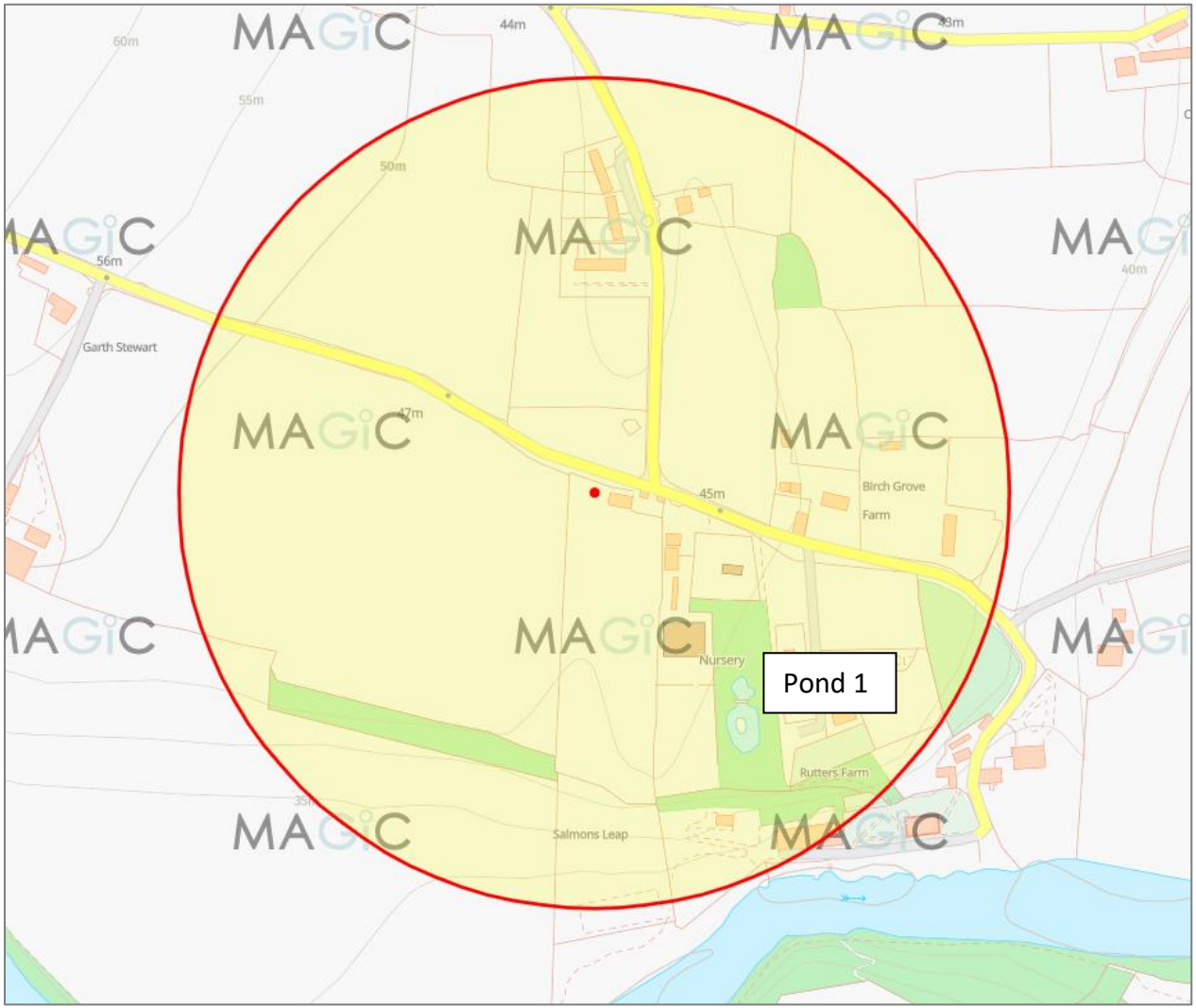


FIGURE 4 PRPOSED SITE PLAN



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APPENDIX 1 PHOTOGRAPHS

	
Building to be extended	Building to be extended
	
Modified grassland	Pond 1