



ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE



PRELIMINARY ECOLOGICAL APPRAISAL
2 HOLT LODGE COTTAGE, HUGMORE LANE

Project name: 2 Holt Lodge Cottage, Hugmore Lane, Llan y Pwll, Wrexham, LL13 9YD

Grid Reference: SJ37875139

Date: 21/10/2020

Prepared by: Phillipa Stirling MSc GradCIEEM

Reviewed by: William Prestwood BSc Director

Requested by: Roger Parry and Partners



ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE

Lower Betton Farm, Cross Houses, Shrewsbury, Shropshire, SY5 6JD

Contents

1	INTRODUCTION	2
1.1	BACKGROUND TO DEVELOPMENT.....	2
1.2	SCOPE OF SURVEY	2
1.3	KEY PRINCIPLES	2
2	SITE DESCRIPTION	3
2.1	LOCATION, LANDSCAPE, AND BACKGROUND.....	3
3	SURVEY METHODOLOGY	3
3.1	DESK STUDY.....	3
3.2	SITE SURVEY	3
3.3	PERSONNEL	4
3.4	CONSTRAINTS.....	4
4	SURVEY RESULTS.....	5
4.1	DESK STUDY.....	5
4.2	HABITATS ON SITE.....	5
4.3	ADJACENT HABITATS.....	6
4.4	PROTECTED SPECIES.....	6
5	POTENTIAL ECOLOGICAL IMPACT	8
5.1	HABITAT ASSESSMENT	8
5.2	PROTECTED SPECIES ASSESSMENT	8
6	AVOIDANCE, MITIGATION AND ENHANCEMENT	10
6.1	HABITAT MITIGATION	10
6.2	PROTECTED SPECIES MITIGATION	10
6.3	ECOLOGICAL ENHANCEMENT	11
7	SUMMARY.....	12
8	REFERENCES.....	13
	FIGURE 1 LOCATION. 1:50,000.....	14
	FIGURE 2 AERIAL PHOTOGRAPH	15
	FIGURE 3 EXISTING SITE PLAN	16
	FIGURE 4 PONDS WITHIN 250M.....	17
	APPENDIX 1 PHOTOGRAPHS	18

1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Planning permission will be sought for the construction of a residential dwelling on land adjacent to 2 Holt Lodge Cottage on Hugmore Lane, 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

Holt Lodge Cottages are located on Hugmore Lane on the eastern edge of Wrexham (Figure 1). The surrounding landscape is primarily agricultural land-use with residential properties interspersed (Figure 2). A relatively recent addition to the landscape is a dual-carriageway linking the industrial estate to the south with the A534 to the north.

The proposals will include the removal of several timber sheds, clearance of a small section of native species hedgerow to widen the access point and construction of a new residential dwelling with associated outdoor space to the south of 2 Holt Lodge Cottage.

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 07/10/2020. 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:

- Bats
- Breeding birds
- Great Crested Newts

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

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 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: assistant ecologist.

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 there are no designated sites within 1km of the site.

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
Common pipistrelle	1km	European Protected Species, Wildlife and Countryside Act 1981.
Brown long-eared	1km	European Protected Species, Wildlife and Countryside Act 1981.
Great crested newt	0.5km	European Protected Species, Wildlife and Countryside Act 1981.
Redwing	0.7km	Wildlife and Countryside Act 1981.
Fieldfare	0.7km	Wildlife and Countryside Act 1981.

4.2 HABITATS ON SITE

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

Buildings

There are three structures on site: one timber framed and clad storage shed with a flat roof covered with roofing felt, one small garden shed and a timber framed and clad car port with a corrugated tin roof.

Amenity

There is an area of amenity grassland to the north of the site with species including white clover, perennial ryegrass and creeping buttercup.

A short length of hedgerow, comprising Cotoneaster species and honeysuckle, lies to the east of the sheds and separates them from the amenity grassland.

An area of the garden contains raised beds and a greenhouse, edged with paving slabs and gravel.

Hardstanding

The existing driveway at the west boundary of the site is gravelled and there are several areas of concrete around the existing residential property and gardens.

Hedgerow

A mixed hedgerow runs along the south boundary of the site with frequent gaps and a range of species. Hawthorn, Cotoneaster sp, Buddleia sp and Leyland cypress are present as hedging plants. There is a young copper beech tree adjacent to the carport at the south boundary and a young silver birch and an ornamental pine present at the south east corner of the site. There is also a mature common lime at the west boundary entrance point.

A native species hedgerow is present at the west boundary along the roadside. Species include hawthorn, blackthorn, sycamore and bramble. There is a young oak present within the hedgerow. The hedge is thin with gaps at the base.

4.3 ADJACENT HABITATS

Residential

There are a number of residential properties present within the immediate vicinity, including their associated outdoor spaces.

Hardstanding

Hugmore Lane sits at the west boundary of the site.

Grassland

An agricultural grassland field sits at the east boundary of the site.

4.4 PROTECTED SPECIES

Bats

The storage shed on site is timber framed and timber clad with a flat, felted roof. The structure does not provide any potential roosting features and holds 'negligible' potential as a roosting site.

The garden shed provides 'negligible' potential as a roosting site.

The carport is timber framed and timber clad with a covered canopy to the west. The roof is corrugated tin and the structure as a whole does not provide any potential roosting features. The structure holds 'negligible' potential as a roosting site.

From a ground-level inspection, the trees on site do not possess any potential roosting features.

No further survey work with regard to bat species is necessary or recommended.

Breeding birds

There was no evidence of nesting birds present in relation to the structures on site or the hedgerows/vegetation.

It is possible that the hedgerow at the south boundary could be used by breeding birds.

Great Crested Newt

There are three ponds within 250m of the site. Pond 1 is a small ornamental goldfish pond within the front garden of 2 Holt Lodge Cottage. The pond is lined, with concrete slabs around the edges and a vertical drop into the water. The pond is surrounded by amenity grassland and the emergent plants present include iris, water lily, soft rush and duckweed. The HSI score indicates that the pond provides 'poor' breeding habitat to GCN.

Pond 2 is a field pond 200m to the north. There is no emergent vegetation present and the margins are shaded all around. The pond is surrounded by amenity grassland with a small patch of scrub to the south. The pond dries sometimes and the water quality is poor. The HSI score indicates that the pond provides 'below average' breeding habitat to GCN.

Pond 3 is a large balancing pond approximately 220m to the south west. This pond is separated from the site by Hugmore Lane and the Industrial Estate dual carriageway, presenting major barriers to dispersal. This pond was therefore not considered further with regard to this project.

GCN HSI Calculator			
	Pond Name	Pond 1	Pond 2
	Position	SJ37875138	SJ37795158
SI No	SI Description		
1	Geographic location	1	1
2	Pond area	0.05	0.4
3	Pond permanence	0.9	0.5
4	Water quality	0.67	0.33
5	Shade	0.6	0.4
6	Water fowl effect	0.01	0.67
7	Fish presence	0.33	1
8	Pond Density	0.8	0.8
9	Terrestrial habitat	0.33	0.67
10	Macrophyte cover	0.8	0.3
HSI Score		0.32	0.56
Pond suitability (see below)		<i>Poor</i>	<i>Below average</i>

5 POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

The proposed development will result in the loss of a very small area of amenity grassland, timber storage structures and raised vegetable beds. The loss of these habitat types will be of negligible ecological consequence.

Approximately 4m of native species hedgerow will also be lost from the west boundary to increase the access point from Hugmore Lane. The hedgerow is thin in places and does not provide particularly high quality habitat. Replacement hedgerow will be planted to mitigate for this loss therefore the overall impact of this removal will be negligible.

The proposals will have no impact on any nearby habitats and the overall impact of the development is expected to be very low at a local, short-term level.

5.2 PROTECTED SPECIES ASSESSMENT

Bats

The structures on site to be removed provide 'negligible' potential as a bat roost and no further survey work is necessary in order for them to be removed.

The new dwelling on site will inevitably result in an increase in lighting on site. The hedgerow/tree line at the south boundary may be in use by commuting/foraging bats and illumination of this feature may cause abandonment of commuting routes or isolation of individual bats within the landscape.

Breeding birds

No evidence of breeding birds was found during the site visit and the structures do not provide suitable opportunities for nest-building.

The hedgerow at the west boundary is unlikely to provide nesting sites to breeding birds given its gappy and thin appearance and its removal is unlikely to have any impact on breeding birds.

The hedgerow at the south boundary may provide opportunities for breeding birds and construction work within the vicinity has the potential to disturb nesting.

Great crested newt

Pond 1, 10m away, provides 'poor' suitability as a breeding pond and Pond 2, 200m away, provides 'below average' suitability as a breeding site for GCN. There are records of GCN

from within 1km of the site, the most recent being an individual GCN in 2002 approximately 500m to the south east.

The proposed development will impact a maximum of 140m² in terms of ground disturbance and removal of materials/topsoil. The two ponds within 250m of the proposed development are unlikely to provide breeding sites to GCN and therefore it is unlikely that the species is present within the vicinity.

Using the Rapid Risk Assessment tool contained within Natural England's GCN licencing process, the proposed development is thought to be 'highly unlikely' to cause an offence under the relevant legislation and therefore a development licence is not required. As shown below, assuming that there is a breeding pond within 100m of the site, the proposals are still highly unlikely to have any impact on the species.

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)	0.001 - 0.01 ha lost or damaged	0.05
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
Maximum:		0.05
Rapid risk assessment result:		GREEN: OFFENCE HIGHLY UNLIKELY

No further survey work with regard to GCN is necessary and the proposals will have no impact.

6 AVOIDANCE, MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

Approximately 4m of hedgerow will be removed from the west boundary of the site to create a larger entrance to the site. This hedgerow should be replaced elsewhere on site and maintained until established. The replacement hedgerow should be made up of native species hedgerow plants such as: hawthorn, hazel, holly, blackthorn and Guelder rose.

6.2 PROTECTED SPECIES MITIGATION

Bats

Any artificial lighting should be designed with nocturnal wildlife in mind. The following recommendations are made:

- Hedgerows and key habitat features including mature trees on the site should 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 should be set on motion sensors with short timers (<1 minute) and should be LED lighting.
- External lights should be hooded and directed toward the ground to reduce upward light spill.
- A warm white spectrum should be adopted throughout the scheme to reduce blue light component (<2700Kelvin).
- Internal luminaires should 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 should always be mounted horizontally with an upward light ratio of 0%.

Breeding birds

The hedgerow to be removed at the west boundary for access improvement should be done outside of the breeding season between September and February, as a precaution.

A thorough ground and internal 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 proposed development is very unlikely to have any impact on GCN but in order to remove any residual risk to the species, and other small animals which may be present, the following measures will be adopted throughout construction:

- 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.
- If a great crested newt is discovered at any stage then all work must immediately halt and an appropriately qualified and experienced ecologist and Natural England (0300 060 3900) should be contacted for advice.

6.3 ECOLOGICAL ENHANCEMENT

In order to provide opportunities for wildlife on site, we recommend the following wildlife features are incorporated into the final design:

- Two Woodcrete general purpose bat boxes, suitable for crevice-dwelling species should be installed into mature trees within the boundary treeline. No lighting should be installed in the vicinity of the boxes. They should be at least 3m from the ground and face south or south west.
- Two Woodcrete cavity nesting bird boxes with 28mm or 32mm access holes. These should be positioned within mature trees on the boundary of the site and the access should face away from the prevailing wind.

7 SUMMARY

Planning permission will be sought for the construction of a residential dwelling within land adjacent to 2 Holt Lodge Cottage on Hugmore Lane, 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 proposals will include the removal of several timber sheds, clearance of a small section of native species hedgerow to widen the access point and construction of a new residential dwelling with associated outdoor space to the south of 2 Holt Lodge Cottage. The proposed development will result in the loss of a very small area of amenity grassland, timber storage structures and raised vegetable beds. The loss of these habitat types will be of negligible ecological consequence.

Approximately 4m of native species hedgerow will also be lost from the west boundary to increase the access point from Hugmore Lane. Replacement hedgerow will be planted to mitigate for this loss therefore the overall impact of this removal will be negligible.

The structures on site to be removed provide 'negligible' potential as a bat roost and no further survey work is necessary in order for them to be removed. A Wildlife Sensitive Lighting Plan will be adopted to ensure that the proposed development does not cause illumination of valuable habitat features within the vicinity of the site.

No evidence of breeding birds was found during the site visit and the structures do not provide suitable opportunities for nest-building. The hedgerow at the south boundary may provide opportunities for breeding birds and construction work within the vicinity has the potential to disturb nesting.

The hedgerow to be removed at the west boundary for access improvement should be done outside of the breeding season between September and February, as a precaution. A thorough ground and internal 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.

The proposed development is thought to be 'highly unlikely' to cause an offence under the relevant legislation and therefore a development licence is not required. The proposed development is very unlikely to have any impact on GCN but in order to remove any residual risk to the species, and other small animals which may be present, a set of Reasonable Avoidance Measures will be adopted throughout construction.

In order to enhance the local environment, the following ecological measures are recommended:

- Two general purpose bird boxes,
- Two general purpose bat boxes.

8 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.

CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

Collins, J. (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

Hundt L (2012) Bat Surveys: Good Practice Guidelines, 2nd edition, Bat Conservation Trust.

JNCC (2010) Handbook for Phase 1 habitat survey - a technique for environmental audit, ISBN 0 86139 636 7.

Mitchell-Jones, T. (2004) Bat mitigation guidelines. External Relations Team, English Nature.

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.

FIGURE 2 AERIAL PHOTOGRAPH



ARBOR VITAE
ECOLOGY • FORESTRY • LAND USE

FIGURE 3 EXISTING SITE PLAN

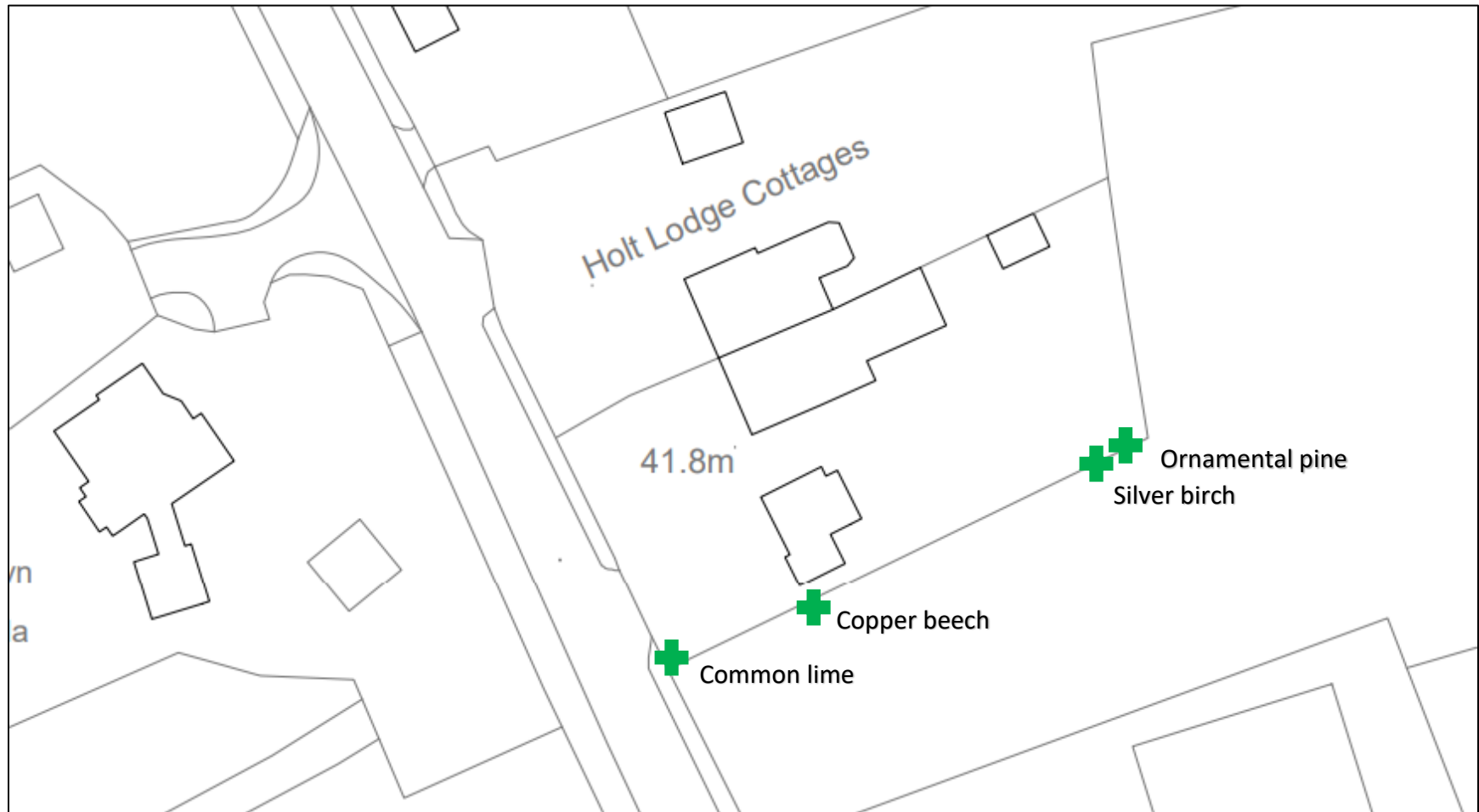
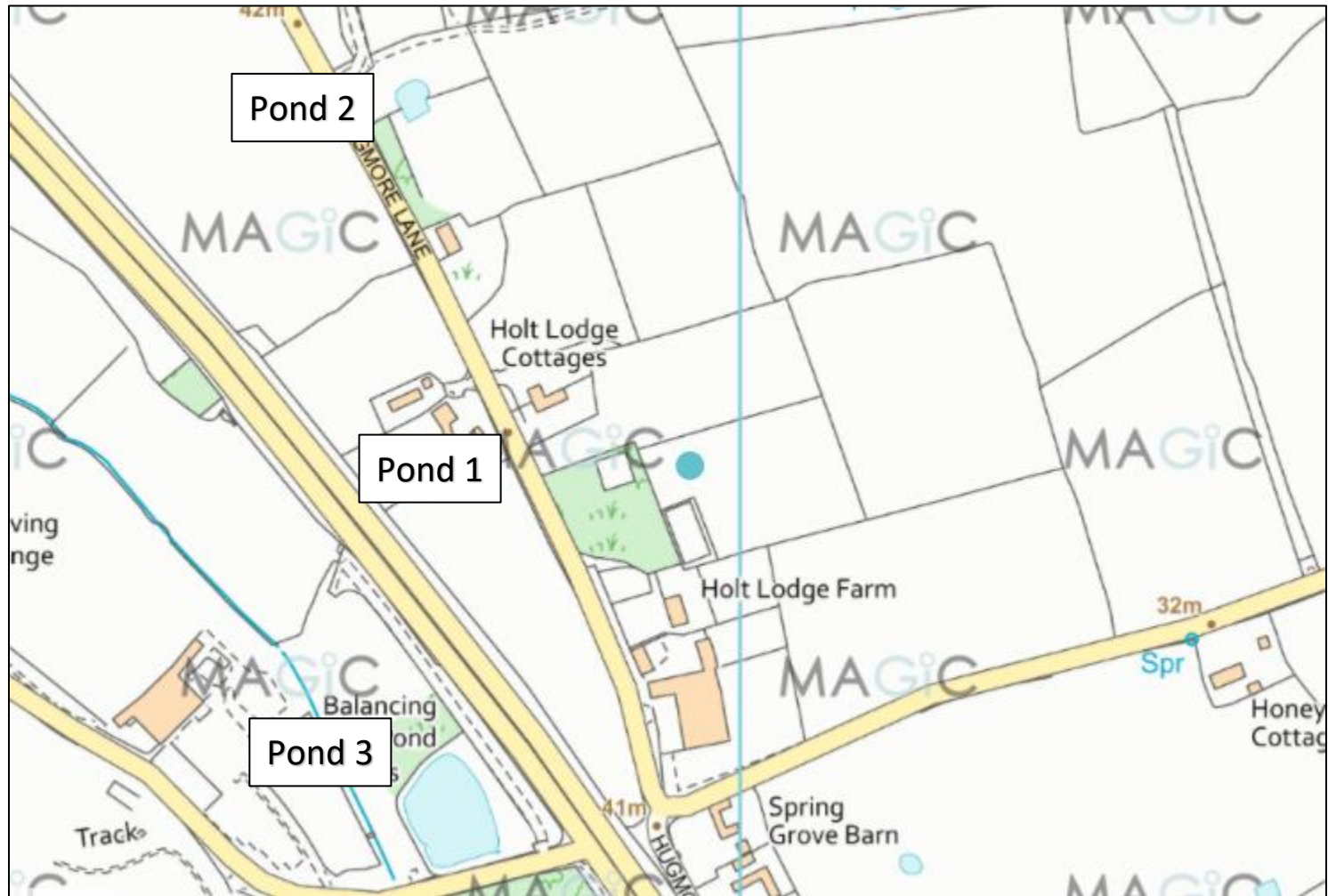


FIGURE 4 PONDS WITHIN 250M



APPENDIX 1 PHOTOGRAPHS

	The site looking west
	Existing sheds on site to be removed
	Area of hedgerow to be removed to widen the access



ARBOR VITAE
ECOLOGY • FORESTRY • LAND USE

	Area of patio and raised beds within the site
	Pond 1
	Pond 2



ARBOR VITAE
ECOLOGY • FORESTRY • LAND USE