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ECOLOGY • FORESTRY • LAND USE



PRELIMINARY ECOLOGICAL APPRAISAL

TORRIAD FARM

Arbor Vitae Environment Ltd, Lower Betton Farm, Cross Houses, Shrewsbury, Shropshire, SY5 6JD

Project name: **Torriad Farm, Wrexham, LL13 9RT**

Grid Reference: SJ40864917

Date: 02/04/2024

Prepared by: Phillipa Stirling MSc ACIEEM

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Requested by: Olivia Starkey

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1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Planning permission will be sought for construction of three agricultural sheds at Torriad Farm.

Arbor Vitae were commissioned by Olivia Starkey 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

Torriad Farm is located 1.5km east of Wrexham Business Park and 1km west of the River Dee (Figure 1). The landscape surrounding the farm is intensively managed for the most part with improved grassland and arable dominant (Figure 2).

The proposal will include the construction of two modern agricultural buildings to the south of the existing farm yard and an extension to an existing agricultural building to the north.

Previous planning applications at the site have included the construction of an agricultural building along the north boundary and the construction of an agricultural workers dwelling. The agricultural building was approved and is now in place, the dwelling is yet to be decided on. In support of these applications, an ecological appraisal and amphibian conservation strategy were both required. This application will also require both.

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, Data Map Wales and NBN Atlas.

3.2 SITE SURVEY

A site visit was made on 11/03/2024. 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 newts

A desk study and a ground search were conducted to search for any areas of open water within 500 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. NRW GCN survey licence no.: S090921/1.

3.4 CONSTRAINTS

Several ponds within a 500m radius of the site could not be surveyed due to being on private property.

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
River Dee	SSSI	0.5km

	SAC	
Suttongreen Fox Covert	Ancient Semi Natural Woodland	0.6km
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	0.8km	European Protected Species, Wildlife and Countryside Act 1981.
Kingfisher Mute swan Kestrel Brambling Redwing Fieldfare	0.4-0.9km	Schedule 1- Wildlife and Countryside Act 1981.

4.2 HABITATS ON SITE

Improved grassland

The proposed site is an area of improved grassland which has an uneven amount of 'undesirable' species such as broad-leaved dock, common nettle, spear thistle and creeping thistle. Otherwise, the vegetation is limited to ryegrass and clover. At the time of the survey the grassland provided some variation in the sward height but generally, the areas are grazed and/or cut.

There is a stone track through the middle of the site which leads from the sheds to the fields.

Developed land; sealed surface

The area for the building extension is an existing concrete yard which is currently used for machinery and goods storage.

[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.

4.3 ADJACENT HABITATS

Hedgerow

A roadside hedgerow sits along the north boundary of the site and consists of hawthorn and wild privet with large areas dominated by bramble and common nettle. Ground flora consists of 'undesirable' species, indicative of nutrient enrichment.

Buildings

The adjacent farmyard is made up of several modern steel framed agricultural buildings.

Hardstanding

The ground throughout the farmyard is concrete with some areas of stone chippings.

4.4 PROTECTED SPECIES

Badgers

[redacted]

Bats

The improved grassland on site does not provide any roosting opportunities for bat species nor do any of the adjacent habitats.

The peripheral hedgerows could provide foraging opportunities for individual bats in the landscape but flood lighting at the site would perturb bats from using these corridors.

Breeding birds

The grassland on site is not suitable for ground nesting birds given the management regime. The sward is grazed and cut, and patchy in places, and no evidence of wild nesting birds was recorded during the survey.

Adjacent hedgerows could provide nesting sites for breeding birds although areas adjacent to the yard are likely to be regularly disturbed by noise.

Great Crested Newt

There are several ponds located within 500m of the site. Of these, only 5 were accessible during the survey. Furthermore, Pond 5 is more of a seasonal wet patch which dries up annually.

Pond 1 is a small field pond which is fed by run-off from the farmyard. There is a buffer around the pond which consists of rough grassland. Emergent vegetation covers around 70% of the pond and includes: fools watercress, creeping buttercup, yellow iris, cursed crowfoot and water plantain. During the survey, an egg search was carried out amongst the emergent vegetation. No newt eggs were found during the inspection. Stickleback are known to be present in the pond. Overall, the pond scored 'good' in terms of its suitability to support breeding GCN. The pond sits approximately 40m from the proposed development site.

Pond 2 is the first is a series of three pools which all collect run-off from the farm yard and surrounding land. The pond is small and vegetation is restricted to *Phragmites sp.* 180m from the site.

Pond 3 is much the same as Pond 2. The water quality is poor and all three ponds are connected. 242m from the site.

Pond 4 has slightly better water quality as the two ponds before seem to filter the water as it works through. The pond has more shade surrounding the margins than the others but is more or less similar. 281m from the site.

GCN HSI Calculator

	Pond Name	Pond 1	Pond 2	Pond 3	Pond 4
	Grid Ref	SJ40884909	SJ41164906	SJ41224906	SJ41274906
SI No	SI Description				
1	Geographic location	0.5	0.5	0.5	0.5
2	Pond area	1	0.4	0.4	1
3	Pond permanence	0.9	0.9	0.9	0.9
4	Water quality	0.67	0.33	0.33	0.67
5	Shade	1	1	1	0.6
6	Water fowl effect	1	1	1	1
7	Fish presence	0.33	0.33	0.33	0.33
8	Pond Density	1	1	1	1
9	Terrestrial habitat	0.67	0.67	0.67	1
10	Macropyhyte cover	1	0.3	0.3	0.3
HSI Score		**0.76**	**0.57**	**0.57**	**0.67**
Pond suitability (see below)		*Good*	*Below average*	*Below average*	*Average*

5 POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

Improved grassland

The proposals will result in the loss of approximately 0.2ha of improved grassland. This habitat is entirely man-made and offers very little ecological value. The area in question is also dominated by ruderal species, indicative of nutrient enrichment concentration.

Developed land; sealed surface

The proposed extension of an existing agricultural shed will impact only 290m2 of existing concrete yard. The loss is of no ecological consequence.

Hedgerow

There are no plans to remove or alter the existing hedge along the north boundary of the site.

5.2 PROTECTED SPECIES ASSESSMENT

Badger

The survey revealed no signs of use by badger and there are no historic records of badger at the site. The proposals will have no impact on this species.

Bats

The proposed development will not result in the loss of any potential foraging or roosting habitat and therefore is unlikely to have any impact upon bat species.

The roadside hedgerow could be used occasionally by opportunistic individuals but given the light and noise levels at the site on a 24hr basis, it is unlikely that bats would frequent the hedges immediately adjacent to the farm.

Breeding birds

The site does not provide any suitable opportunities for breeding birds and no nesting activity was observed whilst carrying out the survey.

The adjacent hedgerow at the north boundary of the field could conceal wild nesting birds but there are no plans to alter this feature.

Great crested newt

The extension of an existing building onto an area of concrete is of negligible concern in relation to GCN.

The proposed site for two new sheds offers limited terrestrial habitat to GCN and it is unlikely that the species would be found on site. Given that Pond 1 is immediately

surrounded by rough grassland which links to hedgerow to the south, it is reasonable to assume that the species would favour these optimal habitat types over improved grassland with regular bare earth patches.

No newt eggs were found amongst the vegetation in Pond 1 during the inspection and the presence of stickleback may hinder the ability of GCN to colonise this waterbody.

Pond 2, 3, and 4 are located 180m and beyond from the site. The water quality is poor and there is no emergent vegetation which would be suitable for egg-laying.

The likelihood of an offence being committed is low but there are additional measures which will be adopted to reduce any residual risk. The proposed development site does not offer any brumation opportunities for GCN and therefore would not be disturbed by groundworks in the field.

Given the scale of the proposed agricultural sheds, it is recommended that an Amphibian Conservation Strategy is adopted. See separate report for further details.

6 AVOIDANCE, MITIGATION AND ENHANCEMENT

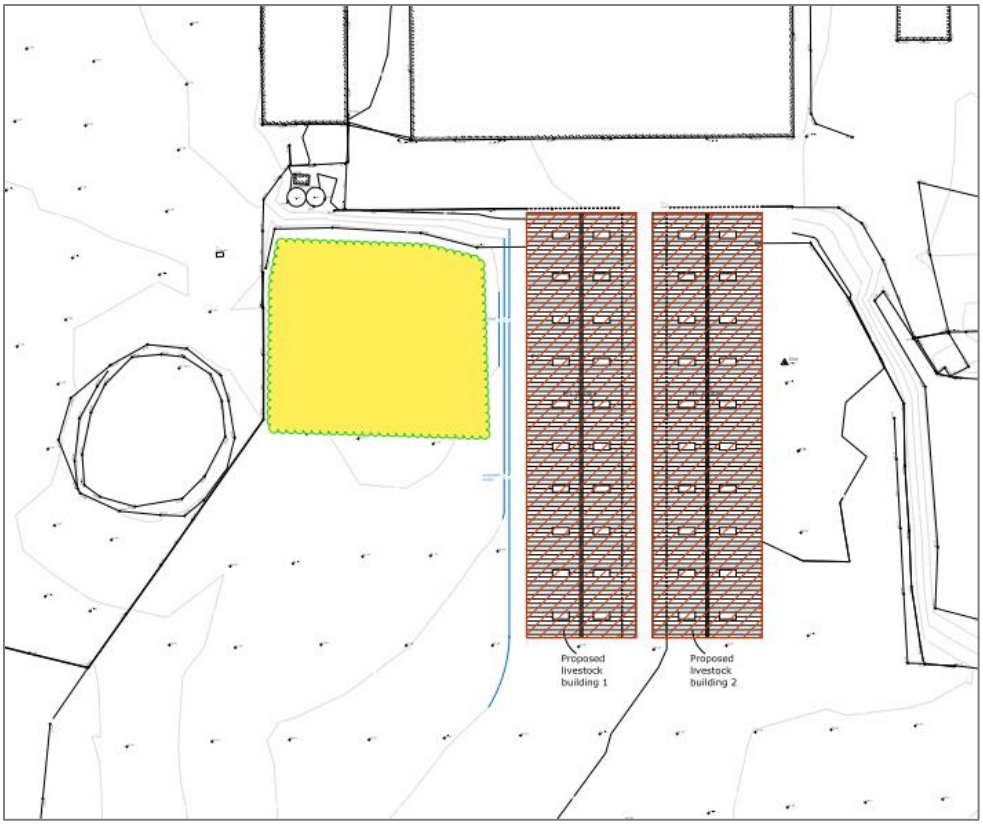
6.1 HABITAT MITIGATION

The proposals will result in the loss of around 0.2ha of improved grassland which is of very little ecological consequence. The habitat currently provides limited species diversity or opportunity for improvement.

It is recommended, in order to provide a net benefit for biodiversity, the area of land between the west elevation of proposed Building 1 and Pond 1 be overseeded upon completion of works with a species-rich mixture. This could include products suitable for agricultural applications e.g. herb and legume mixtures, wild bird seed, or nectar flower mix.

The area would cover roughly 0.1ha and in this location, would enhance the suitability of Pond 1 for use by GCN by providing opportunities for feeding, shelter, and commuting all within 50m of the pond itself.

An illustrative plan has been included on Page 10.



6.2 PROTECTED SPECIES MITIGATION

Bats

As a precaution, all artificial lighting will be designed with nocturnal wildlife in mind. The following measures will be incorporated into lighting plans for the site:

- The hedgerow to the north of the site will not be illuminated 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.
- 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%.

Great crested newt

See separate Amphibian Conservation Strategy.

6.3 ECOLOGICAL ENHANCEMENT

In order to enhance opportunities for wildlife on site, the following wildlife features will be installed onto the building following completion of construction:

- Two Woodcrete open-fronted nest boxes to be installed onto the north facing elevation of the proposed extension.

7 SUMMARY

Planning permission will be sought for construction of three agricultural sheds at Torriad Farm. Arbor Vitae were commissioned by Olivia Starkey to undertake a Preliminary Ecological Appraisal in order to assess the impact of the development on habitats and protected species. The proposal will include the construction of two modern agricultural buildings to the south of the existing farm yard and an extension to an existing agricultural building to the north.

The proposed extension of an existing agricultural shed will impact only 290m2 of existing concrete yard. The loss is of no ecological consequence.

The proposals will result in the loss of around 0.2ha of improved grassland which is of very little ecological consequence. The habitat currently provides limited species diversity or opportunity for improvement.

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The survey revealed no signs of use by badger and there are no historic records of badger at the site. The proposals will have no impact on this species.

The proposed development will not result in the loss of any potential foraging or roosting habitat and therefore is unlikely to have any impact upon bat species. The roadside hedgerow could be used occasionally by opportunistic individuals but given the light and noise levels at the site on a 24hr basis, it is unlikely that bats would frequent the hedges immediately adjacent to the farm.

The site does not provide any suitable opportunities for breeding birds and no nesting activity was observed whilst carrying out the survey. The adjacent hedgerow at the north boundary of the field could conceal wild nesting birds but there are no plans to alter this feature.

The proposed site for two new sheds offers limited terrestrial habitat to GCN and it is unlikely that the species would be found on site. Given that Pond 1 is immediately surrounded by rough grassland which links to hedgerow to the south, it is reasonable to assume that the species would favour these optimal habitat types over improved grassland with regular bare earth patches.

The likelihood of an offence being committed is low but there are additional measures which will be adopted to reduce any residual risk. Given the scale of the proposed agricultural sheds, it is recommended that an Amphibian Conservation Strategy is adopted. See separate report for further details.

Additional enhancement measures include the installation of two open-fronted Woodcrete nest boxes onto the extended agricultural building along the north boundary.

8 REFERENCES

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FIGURE 1 LOCATION. 1:50,000



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FIGURE 2 AERIAL PHOTOGRAPH



FIGURE 3 PONDS WITHIN 500M

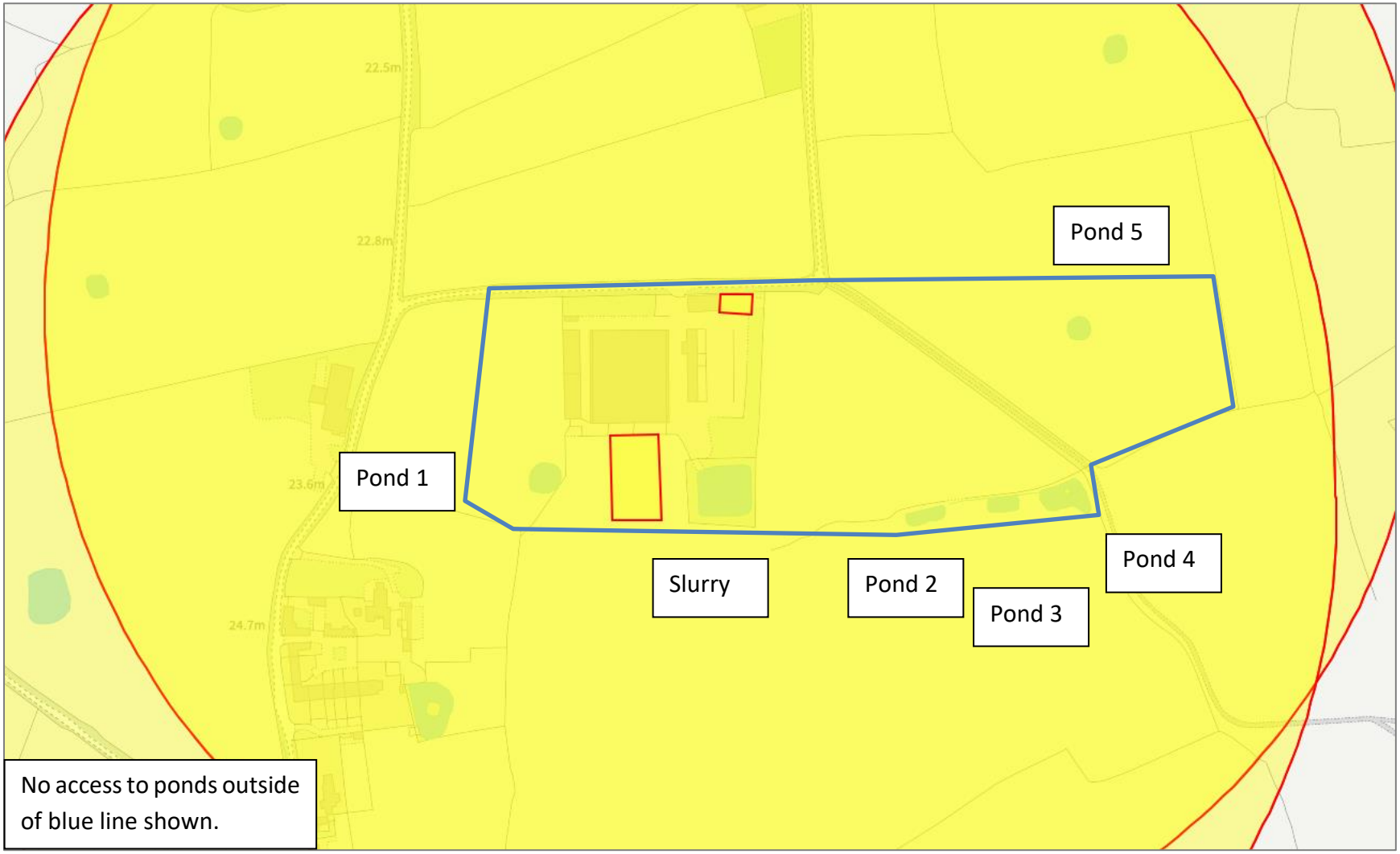


FIGURE 4 PROPOSED AGRICULTURAL SHEDS

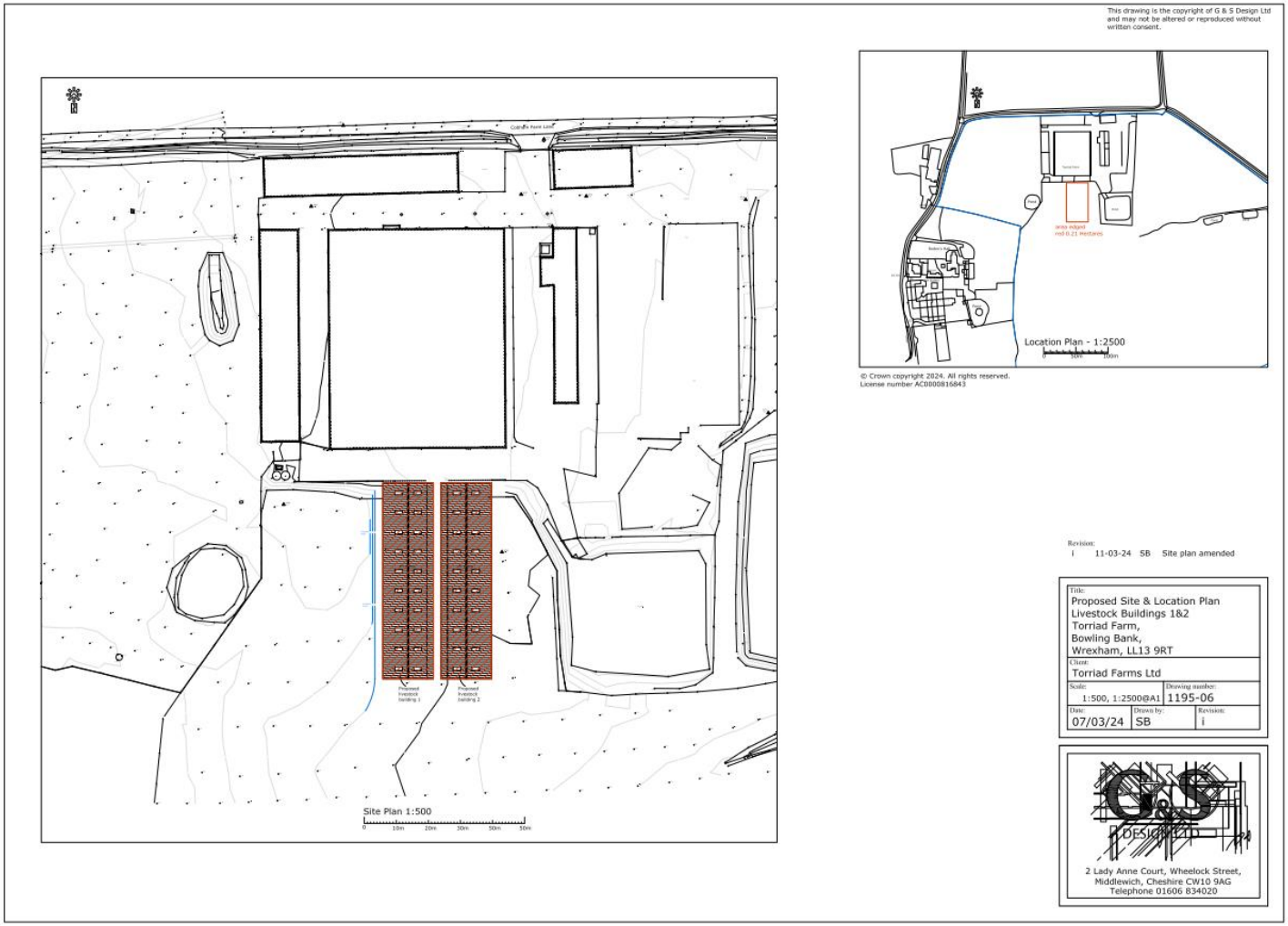
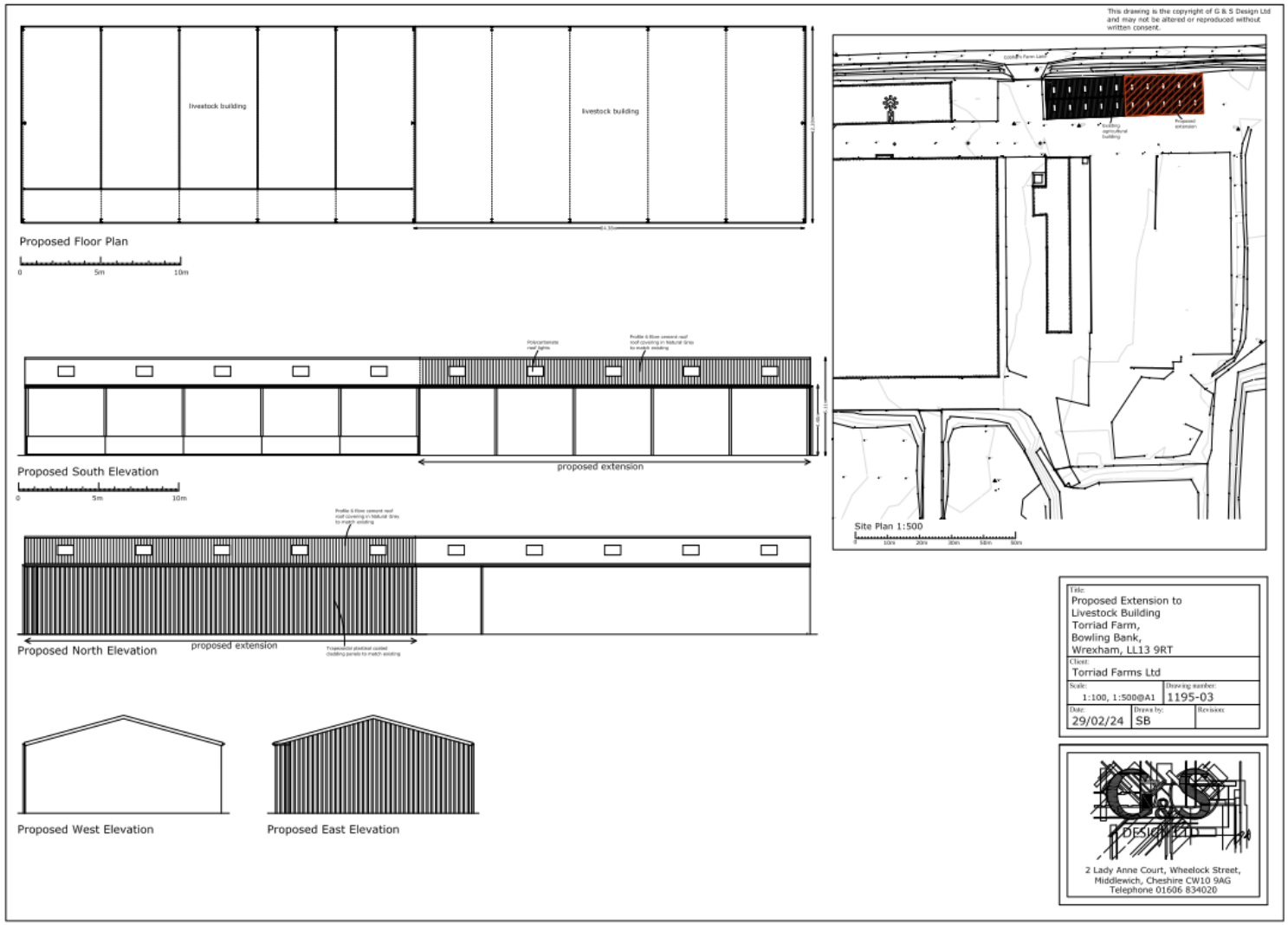


FIGURE 5 PROPOSED EXTENSION



APPENDIX 1 PHOTOGRAPHS



Site for 2x new shed



Pond 1



Stone track in proposed development area



Pond 2



Pond 3



Pond 4

	
Building to be extended onto hardstanding	Hedge along north boundary