



ARBOR VITAE

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PRELIMINARY ECOLOGICAL ASSESSMENT

LAND at RACKERY FARM, LLAY

Revision 'A' August 2021



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1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Arbor Vitae were commissioned to carry out a Preliminary Ecological Assessment of land belonging to Rackery Farm, Llay near Wrexham. This land will be the subject of a planning application for the construction of a farm shop and associated infrastructure.

Such operations have the potential to disturb protected species, if present, and therefore Arbor Vitae were commissioned by Bleazard and Galetta to undertake a Preliminary Ecological Appraisal.

This report presents the results of a field survey carried out on 23 October 2020.

*Planning consent has now been given and includes Condition 9 which relates to Ecology. An updated Ecological Appraisal has been requested, along with an Ecological Method Statement. This document, first produced in 2020, has been updated and revised accordingly, with all revisions highlighted in **italics**.*

1.2 DETAILS OF PROPOSED WORKS

The proposals include the construction of a new farm shop. Access will be gained via an existing field entrance point off the B5102 main road.

1.3 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.

1.4 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 proposed development site is located in an arable field approximately 900m east of the small town of Llay (Figure 1). The site lies at 77 metres AOD in a generally flat agricultural landscape. A major residential development has recently been located 600 metres to the south west of the site.

The agricultural land surrounding the development site is mainly down to arable. Former sand and gravel quarrying operations lie approximately 700 metres to the north west and also 700 metres to the south east of the site. The site is close to urban developments at Llay (0.9km) and Gresford (1.5 kms) to the south.

3 SURVEY METHODOLOGY

3.1 DESK STUDY

An initial desk study was carried out to gain background information regarding 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 23 October 2020. A further site visit has been carried out on 18 August 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 meters of the site was closely searched for the following signs of badger activity:

- Setts
- tracks and footprints
- latrines
- snuffle holes

Bats

Potential roosting features on site were noted and the site was assessed in terms of nearby connecting habitat and other features which could be of value to bats.

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 map and ground search were carried for any standing water bodies within 250 metres of the site. Any such bodies were assessed for their suitability to support great crested newts (GCN).

3.3 PERSONNEL

The survey was carried out by Will Prestwood BSc, an experienced ecologist.

3.4 CONSTRAINTS

There were no constraints on the survey being carried out according to accepted guidelines and standards.

4 SURVEY RESULTS

4.1 DESK STUDY

The desk study found that within 2km of the site there were two nationally designated sites:

- Chwarel Singret (SSSI) a geological site
- Marford Quarry (SSSI) disused quarry notified predominantly for its entomological interest

The search included Ramsar, SSSI, SAC, SPA, LWS and LNR.¹

Two Local Wildlife Sites lie within 500 metres:

- Ballswood Quarry – 500 metres to the east
- Burton Tower Lake – 600 metres to the north

Results from the desk study revealed that within a 1km radius of the proposed development site the following protected and key species have been recorded:

- Common pipistrelle bat
- Brown long-eared bat
- A wide range of amber and red-listed birds species including

¹ **SSSI**: Site of Special Scientific Interest, **SAC**: Special Area of Conservation, **SPA**: Special Protection Area, **LWS**: Local Wildlife Site **LNR**: Local Nature Reserve.

There are no records for amphibians or reptiles within 1 kilometre of the site. Several records of great crested newt exist for sites within a 2 km radius.

4.2 HABITATS ON SITE

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

The second field survey carried out in August 2021 confirmed that the site was unchanged from the first visit in 2020. All conclusions regarding habitats and species therefore remain the same.

Arable land

The proposed site for the new farm shop is situated on arable land.

Hedgerow

A mature, native, species-poor hedgerow forms the roadside boundary to the site. This comprised predominantly hawthorn with occasional blackthorn and dog rose.

Ground flora species are dominated by ruderal 'weed' species including nettle, cleavers and cow parsley.

A short length of hedgerow will be removed to create a visibility splay.

4.3 ADJACENT HABITATS

Standing water

A series of seven small ponds lie 110 metres to the west of the proposed new building. These are mainly interlinked by culverts. Several of them have been desilted in recent years. They all lie within the deep, shade of mature oaks and, in places, bankside willow scrub. The pond improvement works involved the clearance of undergrowth and scrub from the banks of the pools. This has improved light conditions and may lead to an increase in aquatic plant species which are currently lacking. There is no obvious source of water feeding the pools and no drainage of water from the pools. Some of the pools have very low water levels, despite a wet summer. Most are heavily inundated by leaf fall and, as a result, appear anaerobic.

4.4 PROTECTED AND PRIORITY SPECIES

Badgers

There were no field signs to suggest that badgers use the field and there are no historic records of badger within 1km of the site.

Bats

The mature oak trees 110 metres to the west of the site provide a small number of roosting opportunities for bats in the form of loose bark, small crevices and broken branch stubs. It is very likely that these trees provide foraging opportunities for bats. The surrounding landscape of arable land and heavily maintained hedgerows do not provide optimal habitat for bats and it is likely that the local population is restricted in species and numbers. One record for common pipistrelle bats exists for a location 600 metres to the south west of the site although this site has now been taken over by a residential development.

Breeding birds

The site itself provides very few opportunities for breeding birds. The roadside hedgerow borders a very busy road and the high levels of disturbance will deter nesting.

Great crested newts

An overall Habitat Suitability Index was calculated for the seven interlinked ponds on the site which share certain similarities in terms of size, shade, degree of aquatic vegetation etc.

The HSI score of 0.59 indicates that the pools are of low suitability as a breeding site for GCN. Although there is a small area of good terrestrial habitat around the pools themselves, they are otherwise surrounded by intensively farmed arable land which is a sub-optimal habitat.

5 EVALUATION OF RESULTS AND POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

Arable land

The construction of the shop and associated access track and car park will result in the loss of approximately 0.5 hectares of arable land. This is of negligible ecological significance.

Hedgerows

Hedgerows are considered to be Habitats of Principal Importance (NERC Act). The construction of a visibility splay for the access road will involve the removal of approximately 50 metres of hedgerow. The hedgerow is not species-rich and does not qualify as an 'Important' hedgerow within the definitions of the Hedgerow Regulations. However, its loss will result in a small loss of possible bird nest sites although the proximity of the main road severely reduces this potential.

The loss of the hedgerow will require compensatory planting of new native hedgerows.

5.2 PROTECTED SPECIES ASSESSMENT

Badger

No evidence of this species was found and no impact on this species is predicted.

Bats

Any increase in external illumination may have an impact on the behaviour of nocturnal wildlife including bats using nearby habitats, notably mature trees to the west. These may use the hedgerow network for foraging and the value of these habitats may be reduced if external lighting increases. It is recommended that a wildlife-friendly lighting plan is adopted.

Breeding birds

There may be some limited loss of nest sites in the roadside hedgerow, as discussed above. Habitat creation including tree and hedgerow planting will compensate for this loss.

Great crested newts

The small area of land taken up by the development is sub-optimal GCN habitat. Given that the nearby ponds have 'below average' potential to support breeding GCN and that the potential terrestrial habitat is sub-optimal, the risk to this species is considered as negligible. However, in order to remove any residual risk, it is recommended that a precautionary approach is adopted and that work is carried out using Reasonable Avoidance Measures (RAMS).

6 MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

No habitat of high ecological significance will be lost and no specific mitigation is required. However, the loss of hedgerow will require compensation planting to be undertaken.

6.2 PROTECTED SPECIES MITIGATION

Bats

External lighting will be designed to avoid illumination of potential roosts or foraging features including hedgerows and mature trees.

Breeding birds

Hedgerow removal will be carried out outside the nesting season and hedgerow will be replaced with species-rich native hedgerows containing shrubs which provide nesting cover and food resources for birds. Precautions to avoid disturbance to nesting birds will be included within the Reasonable Avoidance Measures.

6.3 ECOLOGICAL ENHANCEMENT

The scheme offers potential for enhancement of nearby habitats and the creation of new habitat features to benefit biodiversity. These will include:

- Planting of perimeter hedgerows along boundaries of the site.
- Planting of an area of native tree species to extend the area of mature trees to the west of the site.

- Planting of individual native specimen trees within the site to create parkland landscape.
- Sowing of grass and wildflower meadow.
- Erection of bat and bird boxes within woodland area near ponds.
- Adoption of Conservation and Environment Management Plan (CEMP) to implement, manage and monitor development of the ecological landscape.

Habitats – hedgerows

Approximately 150 metres of new native hedgerow will be planted on the perimeter of the development site to create additional wildlife habitat and corridor. Species will include hawthorn, blackthorn, hazel, field maple, dogwood, guelder rose, holly and wild privet. Trees will be included at approximately 10-15 metre intervals and will include oak and wild cherry.

Woodland planting

A new area of native woodland will be planted to the west of the site in order to extend the area of mature trees. This will improve screening and also create additional wildlife habitat. This will comprise locally native species including sessile oak, silver birch, rowan, wild cherry and hazel.

Specimen trees

These will be planted within the site, including on the edge of any car parking areas, to create a parkland landscape.

Wildflower meadow

Topsoil will be removed from approximately 0.5 ha of the field and a grass/wildflower mix will be sown in the poorer subsoil. This will be managed in accordance with a CEMP to optimise its botanical diversity.

Species – Bats

Roosting opportunities for bats will be improved by erecting six bat boxes in mature oak trees. These should be Schwegler Type 2FN boxes.

Species – Birds

Nesting opportunities will be improved for birds by erecting six bird nest boxes in mature oak trees. These should include six Seville Woodstone nest boxes.

7 ECOLOGICAL METHOD STATEMENT

The site is a bare arable field site with no potential to support features or species of ecological interest other than along the roadside boundary hedgerow. The Method Statement below specifies working methods for the hedge translocation. It also discusses methods for habitat creation as part of planned landscape improvements.

PROTECTED SPECIES

GREAT CRESTED NEWTS: REASONABLE AVOIDANCE MEASURES

The PEA report concluded that the presence of GCNs is highly unlikely. However, Reasonable Avoidance Measures were recommended, as below:

Induction of contractors

- *A toolbox talk will be given to all site personnel in order to make them aware of the possible presence of GCN, how to identify this species and the avoidance measures to be used on site.*
- *A paper copy of the avoidance measures will be retained on site together with the contact details of the GCN licensed ecologist.*

Timing & duration

- *Any ground works/excavations will only be undertaken between March and October when night time temperatures are above 5°C in order to avoid disturbing hibernating amphibians.*
- *Any work which will not disturb potential hibernation habitat (e.g. hedgerow base, tree roots, old walls, mammal burrows, rubble piles) may be carried out during the winter period, when GCN are rarely active above ground.*
- *All works will take place during daylight hours when GCN are unlikely to be moving around the area.*

Site compound

- *The site compound will be situated on an area of existing hard-standing to avoid creating GCN resting places beneath stored materials etc.*
- *All site materials will be stored on pallets or other raised objects to avoid creating resting places/refuges for GCN.*
- *Any toxic or poisonous materials will be safely stored within a locked container.*

Construction methods and special precautions

- *All excavations on site will be covered at night or ramps will be provided to allow amphibians to exit excavations. All excavations will be checked for amphibians each morning prior to the re-commencement of works.*
- *All exposed new pipework and drains will be capped at night so as to avoid trapping amphibians.*
- *All excavated materials/waste will be stored in skips or similar and not on the ground where it could be used as a refuge/resting area by amphibians. Alternatively, all waste will be removed from site daily.*
- *All stored building materials that might be used as temporary resting places by amphibians will be stored off the ground on pallets or similar.*

If GCN are found at any point during the development or activities outlined above, works must stop and an appropriately qualified ecologist will be contacted for advice, as well as Natural Resources Wales.

HEDGE TRANSLOCATION

The existing roadside hedge needs to be moved back to a new line to create a visibility splay. The work will be carried out in the period end August to end February i.e. outside the bird nesting season. Prior to translocation, the hedge will be cut back to approximately half its current height in order to maximise the chances of a reduced root system being able to support above-ground growth.

A trench will be created into which the hedge will be transplanted, along its new proposed line. An excavator bucket will then be used to drag sections of the hedge into its new position. As much soil as possible will be retained around the roots.

Soil will be replaced and firmed around the base of the hedge, ensuring that soil levels around the roots remain the same.

An ecologist will be present at all time in order to rescue common amphibians such as frogs and toads.

HABITAT CREATION

Native woodland: two areas of new native woodland will be planted to augment an existing area of mature trees to the west of the site.

Species will include:

<i>English oak</i>	<i>Quercus robur</i>	<i>40%</i>
<i>Small-leaved lime</i>	<i>Tilia cordata</i>	<i>15</i>
<i>Silver birch</i>	<i>Betula pendula</i>	<i>15</i>
<i>Wild cherry</i>	<i>Prunus avium</i>	<i>10</i>
<i>Rowan</i>	<i>Sorbus aucuparia</i>	<i>10</i>
<i>Hazel</i>	<i>Corylus avellana</i>	<i>4</i>
<i>Wild privet</i>	<i>Ligustrum vulgare</i>	<i>4</i>
<i>Holly</i>	<i>Ilex aquifolium</i>	<i>2</i>

Trees will be planted at 2 metre centres and protected against rodent damage using appropriate guards.

Maintenance of trees will continue for three years, maintaining weed-free conditions. Any tree losses will be replaced in the first 12 months following planting.

WILDFLOWER MEADOW

Two areas of species-rich grassland will be created. Top soil from these areas will be stripped as part of preparatory ground works. The subsoil will be lightly cultivated to create a seed bed. An appropriate wildflower/grass mix (e.g. Naturescape N1mix) will be drilled or broadcast and the area immediately rolled.

Maintenance will include mowing with removal of arisings. In the first year, mowing will be carried out every 2 months to reduce the burden of arable weeds. In the second year, grass will be left uncut until mid-July.

WILDLIFE BOXES

Six bat boxes (Schwegler 2FN) will be installed in mature trees to the west of the site.

Six Seville wood stone nest boxes will be installed in mature trees on the western edge of the site.

8 SUMMARY AND CONCLUSION

Planning permission is being sought for the construction of a new farm shop on arable land near Llay, Wrexham. Arbor Vitae were asked by the architects to undertake a Preliminary Ecological Assessment in order to evaluate the ecological interest of the site and examine any possible impact of the proposed development.

The survey found that the development will occupy an area of arable land of no ecological interest. The creation of a visibility splay will remove a length of species-poor hedgerow which will have a minor impact on birds and will require compensation planting.

There will be no impact of any sites of wildlife interest, three of which exist within 0.5 kilometres.

The site itself holds very little potential for protected species and no evidence was recorded. However, a number of interlinked ponds within an area of mature oak trees and lying 110 metres to the west was examined in respect of great crested newts. The ponds were judged to have 'below average' suitability to support breeding GCN. No GCN records exist within one kilometre and the development site itself provides sub-optimal terrestrial habitat.

The mature oaks support features which may be exploited by bats as roost sites and the tree canopy provides foraging opportunities.

The ecological impact on habitats and protected species is minimal and mitigation/compensation will remove any residual impact. Mitigation will include carrying out work using RAMS to protect GCN and breeding birds. Compensation for loss of habitat will involve replacement of the roadside hedge.

There are several opportunities for enhancing opportunities for wildlife and these will be enshrined in a Conservation and Environment Management Plan. Habitat creation measures will include hedgerow planting, tree and woodland establishment and wildflower meadow creation. Measures to improve opportunities for individual species will include erection of bat and bird boxes.

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FIGURE 1 LOCATION. 1:50,000

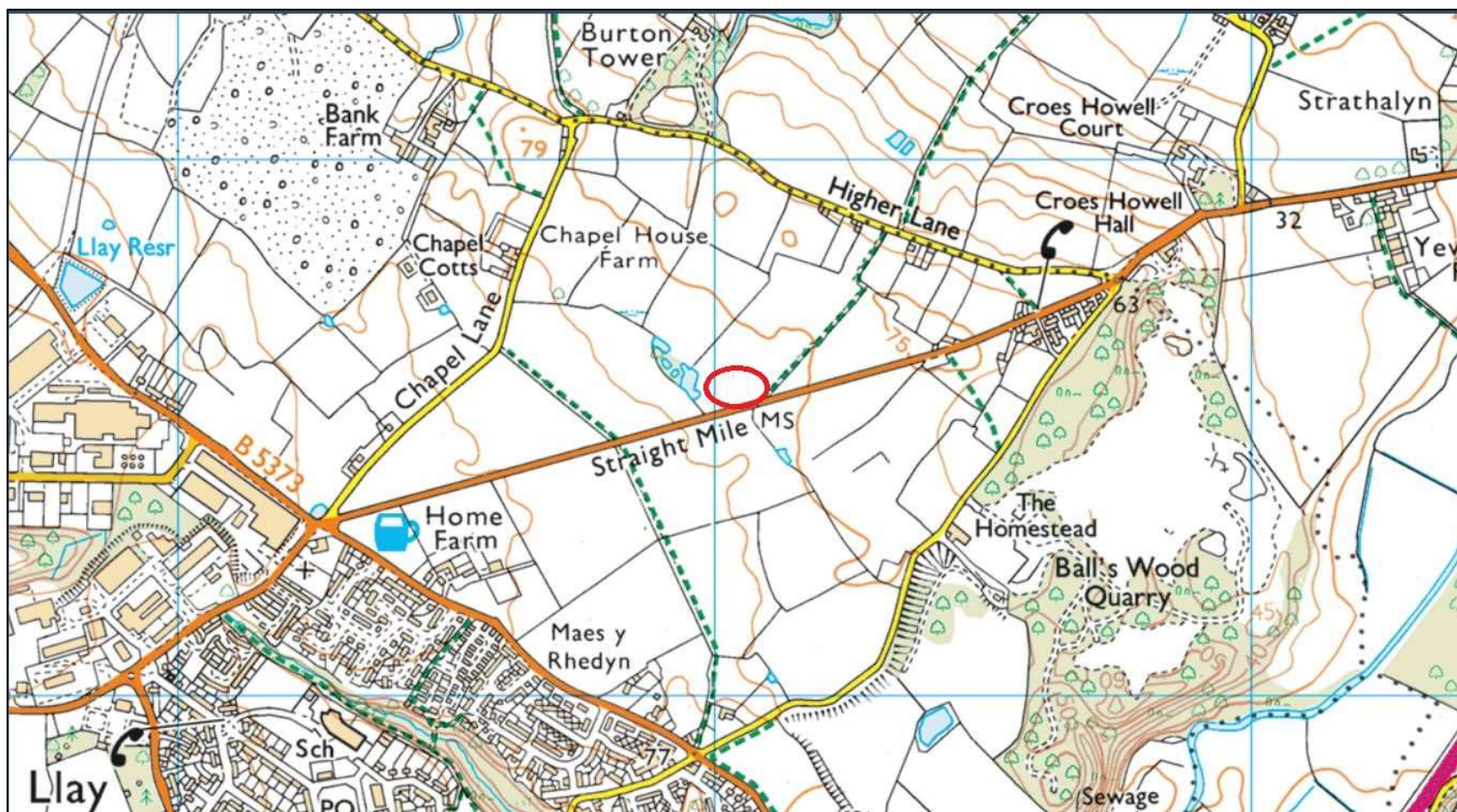
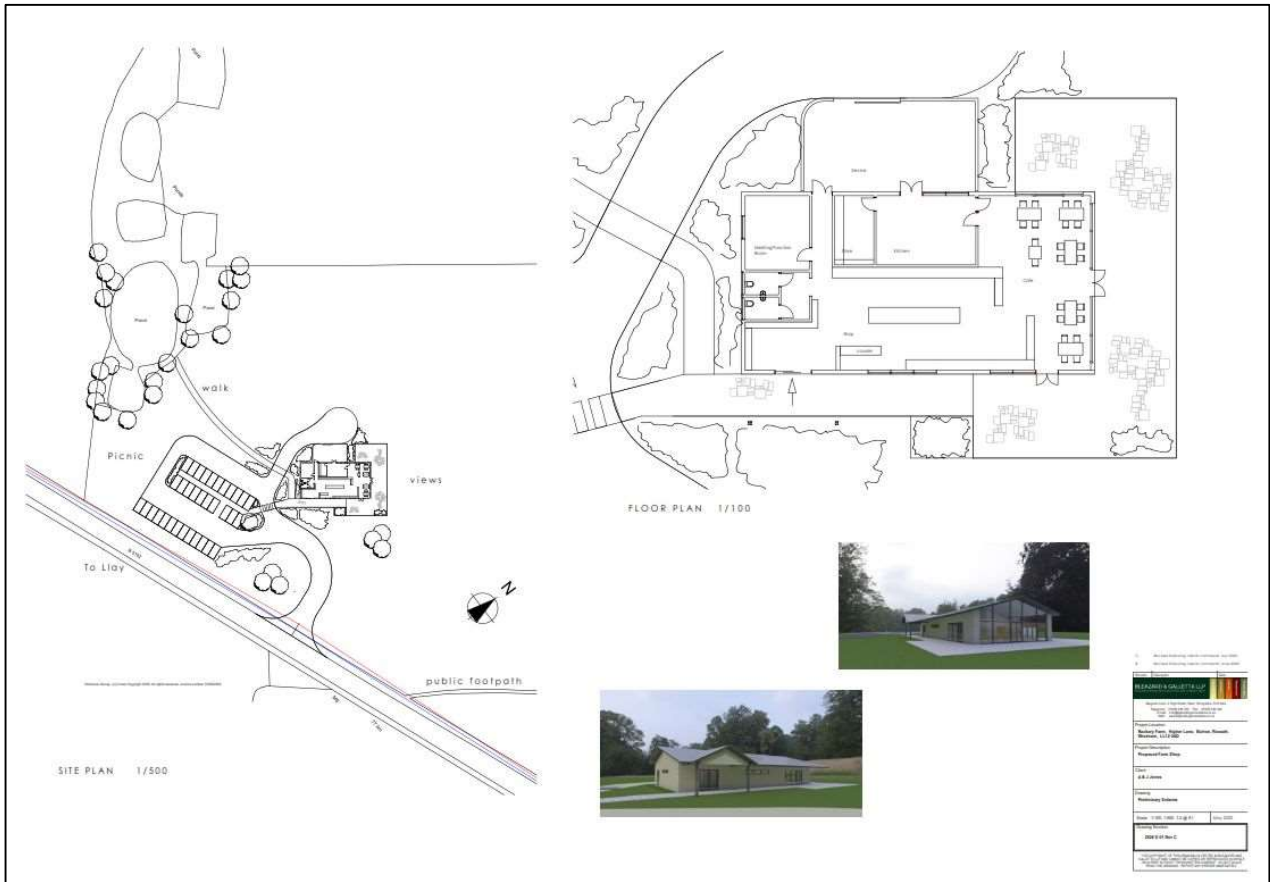


FIGURE 2 AERIAL PHOTOGRAPH



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FIGURE 3 SITE PLAN



APPENDIX 1 PHOTOGRAPHS

	Proposed entrance to new site and roadside hedge.
	Looking across proposed site eastwards towards group of mature trees and pond complex
	One of seven interlinked ponds



	Second of seven interlinked ponds
	Third of seven interlinked ponds
	Fourth of seven interlinked ponds



	Fifth of seven interlinked ponds
	Sixth of seven interlinked ponds
	Seventh of seven interlinked ponds

