BRITISH STANDARD 5837 TREE SURVEYS ARBORICULTURAL IMPLICATION STUDIES TPO/PLANNIG ADVICE/ PROJECT MANAGEMENT
TREE INVENTORIES AND RISK ASSESSMENTS WOODLAND MANAGEMENT PLANS TREE PLANTING SCHEMES TPO RE-SURVEY






Lower Rackery Farm Barns, Dark Lane, Rossett

Bat Scoping Assessment

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1 Introduction

1.1 Background

Kingdom Ecology have carried out an Ecological Walkover Survey and Bat Scoping Assessment of a set of three disused brick barns located at Lower Rackery Farm, Dark Lane, Rossett, Wrexham, LL12 0AG (National Grid Reference SJ 3270 5754).

The assessment has been carried out to identify any ecological constraints which should be considered during proposed works to redevelop the site. The development proposals are to convert the farm buildings to provide new dwellings.

Surveys were led by Richard Roe (BSc, MSc, MIEEM, CEnv). Richard has extensive experience of undertaking habitat and protected species surveys as a professional ecological consultant with over twenty years' experience. Richard is also a licensed bat worker.

1.2 Purpose of Report

This report provides the findings of field surveys undertaken at the site.

The field surveys examined habitats present with a focus on the buildings' suitability to support roosting bats, nesting birds and barn owl. Survey comprised of a daytime assessment examining the interior and exterior of the buildings and the surrounding land.

Following a description of the survey findings and an evaluation of habitats at the site, the report goes on to make recommendations for further works, mitigation and ecological enhancement measures where relevant.

1.3 Protected Species Legislation

1.3.1 Bats

All British bat species are fully protected under the Wildlife and Countryside Act 1981 (as amended) and through their inclusion in Schedule II of the Habitats Regulations 2010 which transpose Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora ("EC Habitats Directive") which defines European protected species of animals.

British bats species are afforded further protection by the Countryside and Rights of Way Act 2000; and the Natural Environment and Rural Communities Act 2006.

Taken together, this legislation makes it an offence to:

- Intentionally or deliberately kill, injure or capture bats.
- Deliberately disturb bats, whether at roost or not.
- Damage, destroy or obstruct access to bat roosts.
- Possess or transport bats, unless acquired legally.
- Sell, barter or exchange bats.

A bat roost is interpreted as "any structure or place, which any wild bat uses for shelter or protection." (Bat Conservation Trust 2023[1]). A bat roost is protected whether or not bats are present at the time.

All species of British bat are considered a European Protected Species (EPS). The Conservation of Habitat and Species Regulations (2010) provide derogation against certain offences which could potentially affect an EPS through the EPS Licensing system.

1.3.2 Birds

All wild birds in England and Wales are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird, or take, damage or destroy the nest (whilst being built or in use) or its eggs.

The barn owl (*Tyto alba*) is afforded special protection on Schedule 1 of the Wildlife and Countryside Act 1981 from intentional or reckless actions that may cause disturbance in the breeding season.

[1] Bat Conservation Trust (2023) 'Bat Surveys: Good Practice Guidelines 4th Edition'

2 Field Survey Methods

2.1 Survey Aims and Objectives

Field survey comprised of a site visit and an initial inspection of the buildings and surrounding grounds. The survey aim was to assess the site as to its suitability to support roosting bats and to identify suitable habitats for any other protected or notable species including breeding birds.

Survey also aimed to identify opportunities for ecological enhancement and to inform potential mitigation measures if required to ameliorate any negative impacts attributable to the proposed works.

2.2 Survey Methods

2.2.1 Daytime Bat Inspection

The buildings were assessed as to their suitability to support bats following standard methodologies prescribed in English Nature's *Bat Mitigation Guidelines* (Mitchell-Jones 2004)[2] and the Bat Conservation Trust's *Bat Surveys: Good Practice Guidelines* 4th Edition (BCT 2023)[3].

Survey, comprising of an inspection of the interior and exterior of the dwelling, was undertaken during daylight conditions using binoculars and a high-powered torch. The survey was undertaken during daylight hours on the 15th January 2024.

In addition to searching for evidence of an actual bat roost the survey also aimed to assess the suitability of the building to support bats and consequently the likelihood of a bat roost being present but with no obvious field signs.

Survey assessed each building's roost suitability by examining structural features and the surrounding habitat. Structural features that will influence the suitability of a building to support roosting bats include the presence of a roof void; access points into a building including gaps beneath barge boards, gaps under lead flashing, gaps within masonry, loose tiles etc, complexity of any roof void, daytime light levels in roof void etc.

[2] Mitchell-Jones, A.J. 2004. Bat Mitigation Guidelines. English Nature, Peterborough.

[3] Bat Conservation Trust (2023) 'Bat Surveys: Good Practice Guidelines 4th Edition'

Important habitat features surrounding the structures which could influence roost potential include: whether the structure is in a semi-rural or parkland location, proximity to a significant linear feature (e.g. watercourse, mature hedgerow, wooded lane) or an area of woodland etc.

Taking account of these architectural and habitat features, each building was assigned a level of roost suitability. This assessment considered roost suitability criteria as summarised in Table 1 below and taken from the Bat Conservation Trust's Bat Surveys: Good Practice Guidelines 3rd Edition

Table 1- Bat Roost Suitability Criteria

Suitability	***Description of Potential Roosting Habitats***
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e., a complete absence of crevices/suitable shelter at all ground/underground levels.
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion. Structure has Negligible habitat features likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger number of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground of features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, condition and surrounding habitat but unlikely to support a roost of high conservation status.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

3 Survey Results

3.1 Site Description and Habitats

The study site comprises of a range of three brick, traditional, farm outbuildings located at Lower Rackery Farm, Dark Lane, Rossett.

Historic aerial imagery of the site shows the farm to have last been in active use around 2011. After this date, the land around the farm buildings appears to be unmanaged and largely disused.

Historically, there were an additional two farm buildings present at the site along with areas of hardstanding farmyard. There is a previous ecology report for the site (dating from 2011). This previous report recorded the two removed farm buildings as comprising of a modern cattle shed and a modern Dutch barn.

The 2024 survey identified that the additional two farm buildings and the areas of hardstanding farmyard have been removed.

Some construction/earth works are currently underway at the site. Habitat around the buildings now comprised largely of areas of bare ground (Target Note 3 on Figure 2) with areas of compacted ground, spoil heaps and stored construction materials.

There are some patches of sparse pioneer vegetation which has developed on areas of recently cleared land (Target Note 2) and within the interiors of some of the farm buildings. This includes sparse patches of grass including Yorkshire fog, perennial rye-grass and cock's foot with patches of nettle, spear thistle, broad leaved-dock and ivy.

There is a public footpath running along the northwest boundary of the site (Target Note 1). There is a post and rail fence running along the north-west boundary along with scattered mature oak trees. None of these trees would be affected by future development proposals.

A new length of hedgerow has been very recently planted along the site's Northeast boundary with Dark Lane (Target Note 4). The hedgerow comprises of young hedge whips.

Wider habitats are agricultural in character comprising principally of improved grassland with associated hedges and scattered oak tree standards. There is a small lake located approximately 120 m to the south-west of the site. The lake measures approximately 8000 m² in area and is enclosed within a fringe of broadleaved trees.

The study site's location, site layout and recorded habitats are shown on Figures 1 and 2 in the Appendix. Photographs of the site are also provided in the Appendix.

3.2 Protected Species

3.2.1 Previous Bat Survey Findings

A bat scoping assessment of all the buildings at the site was previously carried out in 2011 by David Bennett of Clwydian Ecology.

This previous site assessment recorded no evidence of roosting bats and identified the outbuildings as being "*not a very suitable building for bats although it could perhaps be useful as a feeding area. There is a lack of suitable roosting areas (particularly dark space or secure crevices), high levels of light, fluctuations in temperature and humidity with damp.*"

As previously described, a modern cattle shed and a modern Dutch barn have been recently removed from the site. The 2011 report recorded the cattle shed and the Dutch barn as being unsuitable for bats owing to the open nature and high levels of light.

No further bat surveys were undertaken at the site.

3.2.2 2024 Bat Scoping Survey

The site currently comprises of three traditional brick barns. Each building is two-storey and is likely to be of 19th/early 20th century origin. The buildings are all disused and have had their roofs and upper floors removed along with most hayloft windows and doors.

The building locations are shown on Figure 2 in the Appendix along with identified potential bat roosting features. Building descriptions are provided below.

Building 1

This is a derelict, traditional brick outbuilding. The structure is two-storey. The roof and roof trusses have been removed with only two Purlins remaining. This building is divided into three rooms which measure approximately 7 m, 5 m and 5 m in length respectively. Each room is approximately 6 m in width.

The upper floor of the barns have been removed. The structure has open doorways and open windows at its west face and open windows at its east and south face. Consequently, the building interior is very bright and exposed. There is some light ivy growth at the North facing gable which could offer suitable bird nesting habitat.

The external masonry is largely well pointed and intact. However, there are some intermittent areas where mortar has decayed providing shallow crevices between external brickwork. There are also occasional gaps in brickwork within post holes where the floor joists have been removed. There are also crevices around latticed ventilation holes at the building's west and south faces. These features all offer suitable crevice roosting habitat.

Building assessed as offering a **moderate** bats roosting potential.

Building 2

This is also a derelict, traditional brick outbuilding. The structure is two-storey. This section of the building is divided into three rooms which measure approximately 9 m, 4.5 m and 4.5 m in length respectively. Each room is approximately 6 m in width. Some repair/refurbishment works have been commenced at the western end of this building with sections of wall constructed of cinderblock.

This building also lacks a roof and supports no roofing trusses. The building has open windows at its each of its four faces. The building has crumbling ventilation panels at its north and south faces providing suitable roosting crevices. There are also post holes internally where floor joists have been removed and occasional gaps in internal brickwork. These features all offer suitable crevice roosting habitat.

Building assessed as offering a **moderate** bats roosting potential.

Building 3

This is a further two storey, brick outbuilding. The roof has been removed however, plastic sheeting has been fitted over the roof trusses and has been fixed in place with roofing battens. The roof sheeting is opaque so the interior of the building is bright. There are missing doors and windows and so the interior of the building is draughty.

Externally there are intermittent crevices where mortar has decayed between brickwork. There is some light ivy growth at the North facing gable which could offer suitable bird nesting habitat.

Internally roofing trusses are largely present however the upper floor has mostly been removed. There are some sheets of ply board still present near the northern end building. This location offers some limited suitable habitat for nesting swallows.

Internally the walls have mostly been whitewashed, however the southern half of the building comprises of exposed brick with intermittent post holes and crevices in brickwork offering suitable roosting habitat.

Building assessed as offering a **moderate** bats roosting potential.

4 Summary & Recommendations

4.1 Summary

4.1.1 Habitats

An Ecological Walkover Survey and Bat Scoping Assessment has been completed of a set of brick outbuilding is located at Lower Rackery Farm.

Habitats around buildings currently comprise of areas of bare ground with some short, pioneer vegetation. None of these habitats are considered to be of any significant biodiversity value.

There are scattered mature oak trees located along the sites north-western boundary. The trees will be retained as part of future development proposals.

In order to enhance habitats at the site, it is recommended that a new length of species-rich hedgerow is planted along the existing fence line on the site's north-western boundary. It is also recommended that a 10 m wide band of wildflower grassland habitat is created in this location and is managed to promote its biodiversity value. The wildflower grassland should run the full length of the site boundary. Further detail on the recommended wildflower grassland is provided in Section 4.2.

4.1.2 Bats

The daytime bat scoping inspection examined the site with regards to its suitability to support roosting bats.

The site comprises of three traditional brick barns. Each building is two-storey and is likely to be of 19th/early 20th century origin. The buildings are all disused and have had all of the roofs and upper floors removed along with all hayloft windows and doors.

Taken as a whole, the buildings offer suitable bats roosting habitat within multiple crevice features within internal and external masonry associated with areas of missing mortar, post holes where roof and floor trusses have been removed and where there are cracks in the masonry.

The identified crevice features are suitable for individual or low numbers of non-breeding bats. The buildings do not support any suitable features for a significant bats roost with the interior of each building being bright and draughty.

No confirmed evidence of roosting bats was identified with no bat droppings found internally or externally.

Taking account of the potential bat roosting features identified and the site location, the outbuildings were assessed as offering '**moderate**' bat roosting suitability.

4.1.3 Further Bat Survey

In order to further assess the identified potential bat roosting features, it is recommended that at least two dusk/dawn bat activity surveys are carried out during the active bat survey season (May-September inclusive with at least one survey completed between early June and the end of August).

The surveys should use at least six bat surveyors so that identified potential bat roosting features can be fully assessed. The surveys would aim to confirm the presence or otherwise of any bat roosts associated with the outbuildings.

If any roosting bats are encountered, further nocturnal surveys may be required and any future development of the site may need to be carried out following a European Protected Species License.

Pending the findings of the further nocturnal bat surveys, further recommendations regarding bat roost mitigation measures and compensation habitat should be provided by an appropriately qualified ecologist.

Even if no evidence of roosting bats is found during further surveys, it is recommended that additional bat roosting habitat is provided at the site. This could comprise of bat slates, bat boxes and bat bricks which can be built into the converted outbuildings. The design and location of new bats roosting features should be determined by an appropriately qualified ecologist.

4.1.4 Breeding Birds

No evidence of barn owl activity was identified at the site. Buildings do not support suitable habitat for breeding barn owl.

The buildings are largely considered to be of limited suitability for nesting swallow as they do not support any significant roof structures. Building three offers some limited suitable swallow nesting habitat at its northern end beneath a short section of plyboard roof.

Further potential bird nesting habitat is offered within sections of ivy growth at the North facing gables of Buildings 1 and 3. Further potential roosting habitat is offered within cavities in brick ventilation holes and also in exposed post holes within the building interiors.

No significant vegetation would be affected by further works. The mature trees located on the north-west boundary of the site would be retained.

All wild birds in England and Wales are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird, or take, damage or destroy the nest (whilst being built or in use) or its eggs.

Works to the buildings which could affect suitable breeding bird habitat should be timed to avoid the breeding season (March-August inclusive).

Where this is not possible, a check for breeding birds should be carried out by an appropriately qualified ecologist no more than 48 hours prior to the start of building works. If any nesting birds are found to be present at any time, destruction of the nesting site will need to wait until the ecologist can confirm that all young birds have fledged.

4.1.5 Other Protected Species

No other protected species are considered likely to be present at the site

4.2 Ecological Enhancements

It is recommended that opportunities to enhance the ecological value of the development area are taken.

4.2.1 Bat and Bird Boxes

The proposed development should include provision for roosting bats and breeding birds. This can be achieved through the installation of bat boxes, bat bricks and sparrow nest boxes into the proposed building conversions.

The bat and bird boxes can be built into the brick walls of the proposed converted buildings so as to remain visually unobtrusive and to be retained permanently in place. Further bird boxes for common garden bird species can be installed on retained oak trees located on the site boundary.

The precise location, model and number of bat and bird boxes should be determined by an appropriately qualified ecologist.

4.2.2 New Hedgerow Planting

it is recommended that a new length of species-rich hedgerow is planted along the site's north-western boundary. The boundary feature in this location currently comprises of post and rail fencing only. The new hedgerow would extend to approximately 90 m in length.

The additional hedgerow planting should comprise of:

- 60% Hawthorn
- 20 % Blackthorn
- 10% Hazel
- 5% Dog rose
- 5 % Holly

This mix will provide a hedgerow which offers foraging and refuge habitat for various local wildlife. The native hedge planting should be planted in a double staggered row at 6 specimens per metre.

4.2.3 Wildflower Grassland

In addition, it is recommended that a new 10 m wide band of wildflower Grassland is also created along the north-western boundary of the site following the line of the hedgerow. As for the hedgerow, this band of grassland will extend to approximately 90 m in length.

A public footpath is also located in this area and so this should be marked with gravel or wood chippings to prevent pedestrian encroachment into the areas of wildflower grassland.

The grassland should be suitably prepared and sown with an appropriate wildflower seed mix (e.g. Emorsgate EM2 General Purpose Seed Mix).

The grassland should then be managed to promote floral diversity with a hay cut taken in late summer and all clippings should be removed to avoid putting nutrients back into the soil. A further cut can be taken again in late Autumn/Winter.

An appropriate habitat management plan should be produced for all proposed areas of wildflower grassland to ensure that the grassland is appropriately created and managed going forward. The habitat management plan would need to be enacted for a 30-year period.

5 Appendix

PHOTOGRAPHS

Photograph 1- View of outbuildings looking south



Photograph 2 – View of outbuildings looking west



Photograph 3 – View of building exterior showing typical crevices



Photograph 4 – View of building interior showing typical crevices



Photograph 5 – Internal view of Building 3



Photograph 6 – View of habitats at southern half of site



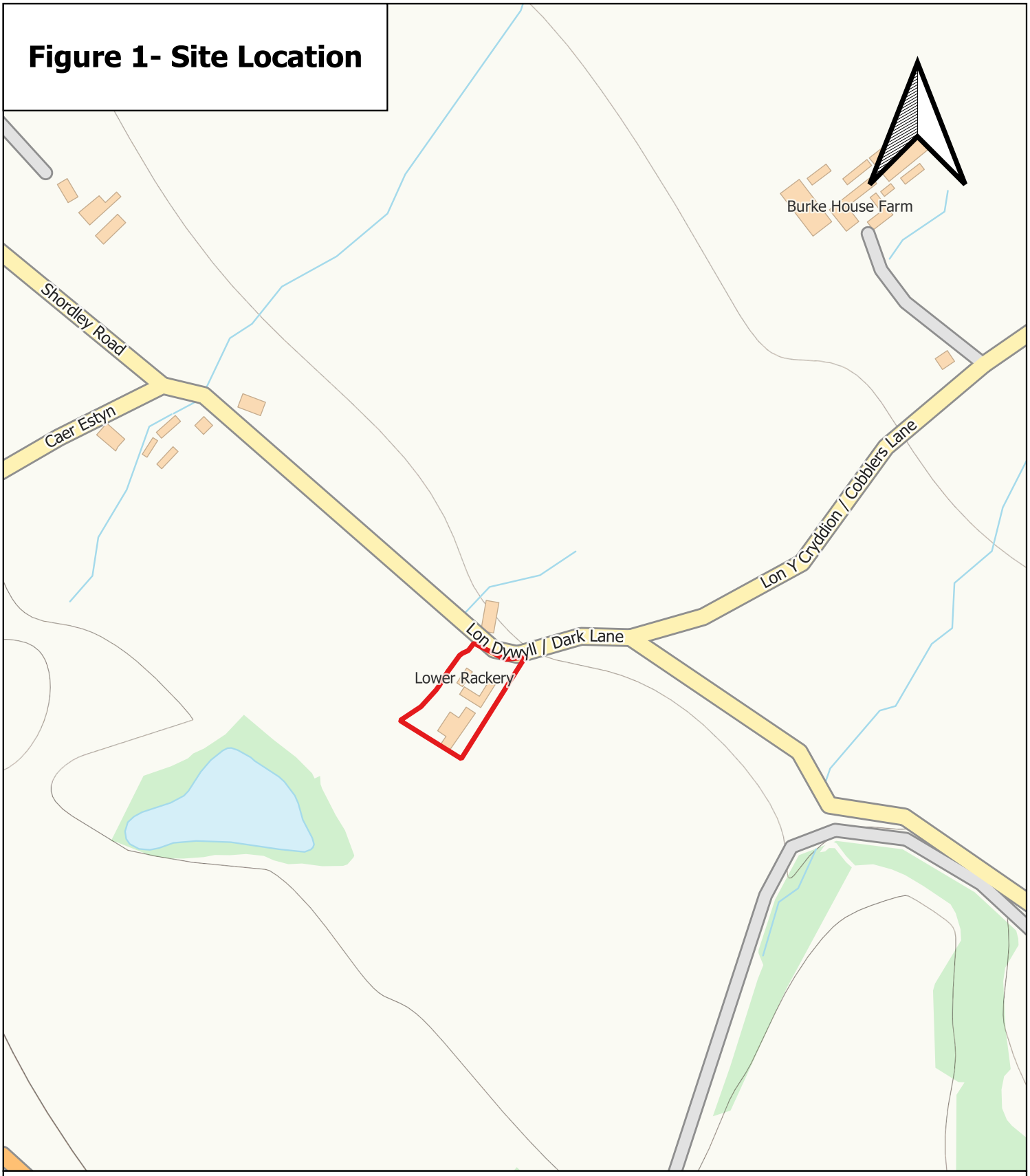
Photograph 7 – Trees on northwest boundary at Target Note 1



Photograph 8 – Lake at south west of site



Figure 1- Site Location



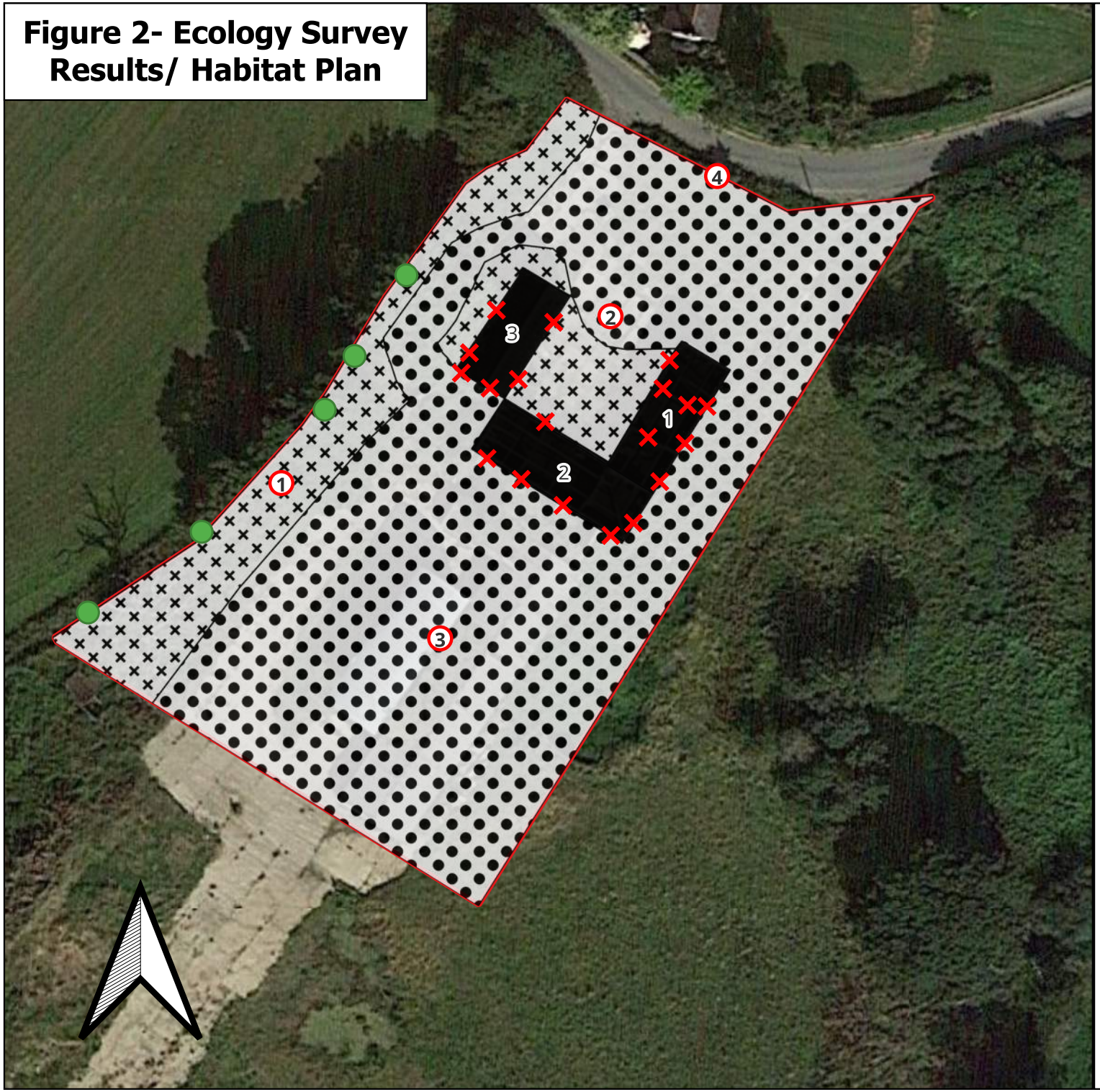
Key

0 50 100 150 200 250 m

Study Site

Ordnance Survey data © Crown copyright and database right 2023

Figure 2- Ecology Survey Results/ Habitat Plan



KEY

- Red Line
- Target Note
- Potential Bat Roosting Feature
- Tree
- Disturbed land - short perennial
- Buildings
- Bare ground

0 10 20 30 40 m

Map data ©2024 Google