

Greenscape Environmental Ltd

MR AND MRS WOODHEAD

**PHASE 1 & 2
ENVIRONMENTAL SURVEY**

**TYBROUGHTON HALL
WHITCHURCH
SHROPSHIRE
SY13 3BB**

**SEPTEMBER 2015
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1448 002R

Report by Ben Jones MSc

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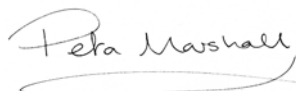
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1 Summary

1.1 Purpose of Report

Greenscape Environmental Ltd was commissioned by Mr and Mrs Woodhead to conduct a survey to determine the presence of protected species and potential for the damage or destruction of habitats of ecological value as part of the planning application for the development of redundant agricultural units at Tybroughton Hall, Whitchurch.

This document outlines the potential impacts as ascertained from the preliminary ecological assessment, and recommends measures to avoid, reduce or manage negative effects

The project involves the renovation and conversion of two barns within the hardstanding of the farm. The project will involve works to the roof and walls, and internal alterations.

1.2 Methodology

The appraisal of the site included a desktop survey of the area, review of other surveys conducted in the area by Greenscape Environmental, a phase 1 survey, and phase 2 surveys for bats and great crested newts.

The phase 1 ecological appraisal was undertaken at the site, OS grid reference SJ 467 429 on 2nd April 2015, by P. J. Roberts, with the assistance of B Jones. Phase 2 newt surveys were conducted by G. Castle. Phase 2 bat surveys were conducted by P. J. Roberts, B. Jones and J. Molesworth on the 28th May 2015, and the 11th and 24th June 2015.

1.3 Key Issues

No designated sites notified under Section 28 of the Wildlife and Countryside Act 1981 were found within the vicinity of the site. The nearest SSSI is a woodland area approximately 1.3km northwest. There would be no impact expected from this development.

Records of protected species within 2km include, common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bats (*Plecotus auritus*), noctule (*Nyctalus noctula*), Daubenton's bat (*M. daubentonii*), water vole (*Arvicola amphibius*), otter (*Lutra lutra*), great crested newt (*Triturus cristatus*) and Barn owl, (*Tyto alba*).

The site is comprised almost entirely of hardstanding, and is therefore considered to be of low ecological value.

A deceased great crested newt was found within one of the buildings to be developed and ponds within 500m were found to support breeding populations of GCN.

Phase II bat surveys revealed that low numbers of bats were using both buildings as a roost.

Evidence of birds nesting was found within the southern building. No other protected species were recorded in the vicinity of the site.

1.4 Conclusions

It is considered the development cannot proceed without the loss of habitat of significant value and without the loss of favourable conservation status of the protected species present on site. Work will need to be conducted under European Protected Species Licence from Natural Resources Wales for bats.

Due to the proximity of the development to ponds supporting a low population of breeding GCN a reasonable avoidance method statement will need to be followed to ensure the following does not occur: Intentionally killing or injuring individual GCN.

The works must be scheduled in such a way as to minimise the impacts on fauna currently inhabiting the barns, a method statement will be provided, advising on all aspects of this matter.

2 Introduction

Greenscape Environmental Ltd was commissioned by Mr and Mrs Woodhead to conduct a survey to determine the presence of protected species and potential for the damage or destruction of habitats of ecological value as part of the planning application for the development of disused agricultural units at Tybroughton Hall, Whitchurch.

2.1 Purpose of the Report

The aim of this type of survey is to locate and describe, as far as reasonably practicable, evidence of use or scope for wildlife including all protected species and BAP species and the potential for suitable habitats which may be disturbed or lost in the event of development

The purpose of the report is to:-

1. Identify the key ecological constraints to the proposed development
2. To inform planning to allow significant ecological effects to be minimised or avoided wherever possible

2.2 Planning Policy and Legislation

The relevant planning policy and legislation is:-

The Wildlife and Countryside Act 1981(as amended) – as listed in:

- Schedule 1. Birds protected by special penalties at all times
- Schedule 5. Protected animals
- Schedule 8. Protected plants

The Conservation of Habitats and Species (Amendment) Regulations 2010 – as listed in:

- Schedule 2. European protected species of animals
- Schedule 4. European protected species of plants

Countryside and Rights of Way Act (2000)

Hedgerow Regulations 1997

The Protection of Badgers Act 1992.

Natural Environment and Rural Communities Act 2006 (NERC 2006)

TAN 5

Of particular concern at this site was the potential for the barns to support nesting birds and roosting bat species. Concern was also raised by the discovery of a dead great crested newt on site, there being ponds within 500m of the site.

2.3 Project Background

The project involves the renovation of two of the redundant agricultural units on site. They are both constructed of red brick, with unlined timber framed roofs. Both units are two storeys high. The whole site is located on concrete hardstanding and is surrounded by barns and other buildings associated with the farm. The works will primarily be internal, though it is possible that exterior works will be required, such as roof work and repointing of the brickwork.

The following satellite image from Magic Maps shows the proposed development site and its surroundings.



**Figure 1. A satellite view of the proposed development site (highlighted red).
Courtesy of Magic Maps**

Entrance to the site is gained from the existing track at the southernmost point of the group of buildings.

2.4 Site Context and Location

Tybroughton Hall is located approximately 1.5km northeast of the village of Three Fingers, near Whitchurch. It is set in a rural environment, surrounded by other farms and arable land. There is a small road running southeast – northwest to the south of the site, it is uncurbed and not very busy. There is moderate connectivity to the surrounding countryside via the hedgerows between fields.



Figure 2. Showing the proposed development sites (highlighted) with an OS map overlay, map courtesy of Magic Maps

3 Survey Type - Methodology

3.1 Details of Surveyors

Name	Membership of associations/ experience	Licenses
Peta Marshall BSc(hons)MA	MCIEEM AIEMA 9 years' experience surveying for protected species	Holder of survey licences for bats and newts in England and Wales
Ben Jones BSc(hons) MSc	1 years' experience	
Paul Roberts U Cert	4 years' experience	Holder of survey licences for bats and in England and Wales
Gill Castle BSc(hons)	20 years' experience	Holder of survey licences for newts in England and Wales
Jon Molesworth BSc(hons)	Trainee	

3.2 Desktop Survey

The appraisal of the site included a desktop survey of the area and a review of other surveys conducted in the area by Greenscape Environmental and from a search on Multi Agency Geographic Information for the Countryside for designated areas (App A). Greenscape Environmental have conducted surveys at Iscoyd, Tallarn Green, Higher Wych and Kiln Green, Horseman's Green, Hanmer, Bronington and Agden.

3.3 Field Survey

3.3.1 Location and Date of Survey

The detailed environmental survey was undertaken at the site, OS grid reference SJ 467 429 on 2nd April 2015, by P. J. Roberts (UCert), an experienced surveyor with the assistance of B. Jones BSc(hons) MSc. Phase 2 newt surveys were conducted by G. Castle. Phase 2 bat surveys were conducted by P. J. Roberts, B. Jones and J. Molesworth on the 28th May 2015, and the 11th and 24th June 2015.

The site and surroundings were subject to a thorough ecological appraisal. Evidence was recorded of use, scope for habitats and any signs of protected species.

3.3.2 Condition on Survey Dates

Date	Time	Temp °C	Sunset / Sunrise	Condition
02/04/15	16:30	6	n/a	Overcast, cool, slight breeze
23/04/15		10-7		Light cloud, light breeze
29/04/15		9-5		Patch cloud, no rain, light breeze
04/05/15		10-6		Overcast showery, nil breeze
07/05/15		8-6		Overcast, damp, nil breeze
11/05/15		12-10		Light cloud, slight breeze
15/05/15		13-12		Overcast, drizzle
28/05/15	20:55	12	21:22	60% cloud down to 30% by the end, no wind, dry
11/06/15	02:40	6	04:46	20% thin cloud, slight wind
24/06/15	21:35	17	21:41	80% cloud, no breeze, dry underfoot

3.4 Habitats

An assessment of habitats is conducted using guidance from the JNCC Handbook for Phase 1 Surveys 2010. Target notes were used to identify potential for protected or notable species or habitats, and to give more detailed site descriptions

3.5 Species

3.5.1 Bats

Trees, hedgerows and structures are assessed for potential for bat roosts, foraging and commuting. Bat species may leave little evidence of their presence. Daytime surveys are conducted with the aid of a borescope, torches and binoculars. Evidence for the presence of bats includes:

- Holes, cracks and rot holes used as roosts, marked by streaks of urine and faeces.
- Smoothed, darkened edges where bats have rubbed and left natural body oils when entering and exiting a space.
- Scratches on wooden beams and joints indicating where certain species of bat may have clung to the wood.
- Faeces under a roof access point, a well-used feeding point or a resting spot.
- Feeding signs such as discarded insect wings under a feeding point.
- Lack of cobwebs around eaves, roof spaces, beams or ceilings where routes are kept clear by bats.
- Presence of roosting or dead bats in or behind any object.

Phase II activity surveys are conducted to reinforce the findings using heterodyne and frequency division bat detectors, (Anabat SD1 and 2, Echo Meter Touch and Bat box duet). Activity surveys were conducted to establish the presence of bats within a structure, what species they are, approximately how many are present and if possible where they are exiting a roost. Methodology used is in accordance with recommendations by BCT, Good Practice Guidelines Hundt (2012)

3.5.2 Badgers

Daytime surveys for badgers involve looking for

- Scrapings where badgers have dug for food or used as latrines.
- Signs of a sett, including signs of use such as presence of badger hair
- Tracks and prints.

3.5.3 Birds

Nesting birds

Evidence of nesting birds, including barn owls using a building, hedge or tree involves looking for

- Presence of nests
- Collections of droppings and/or feathers
- Highly distinctive droppings or splats under roosting points.
- Presence of owl pellets/feathers

3.5.4 Amphibians and Reptiles

The assessment of aquatic habitat is based on the Habitat Suitability Index (HSI). The HSI for great crested newts was developed by Oldham *et al.* (2000) and is applied according to guidance set out by the National Amphibian and Reptile Recording Scheme (NARRS 2007) superseded by ARG 2010.

A refugia search is conducted for amphibians and reptiles looking under any logs, large stones and other debris.

Four surveys are conducted for GCN and if the presence of GCN recorded, 2 further surveys are conducted to estimate the population size. At least three methods are used on each occasion, egg searching, netting, torching and bottle trapping.

Other features, such as basking sites, hibernation sites are recorded to give a preliminary indication of habitat quality for grass snake (*Natrix natrix*), adder (*Vipera berus*), and other herptiles

3.6 Constraints of the Survey

All areas were accessible for this survey. It was conducted at an optimal time of the year for the assessment of flora and fauna. Standard techniques were followed.

4 Site Description

4.1 Desktop Survey

4.1.1 Designated Sites

The map from Natural England presented in Appendix A indicates that the site is not in the vicinity of a designated area. There is a SSSI approximately 1.3km to the northwest – the Well Rough and Long Plantation. This is a site protected due to its woodland species, namely wet ash (*Fraxinus excelsior*) and field maple (*Acer campestre*). Considering the type of development being proposed and the reason for this SSSI designation, no effect is expected from the development.

4.1.2 Open Water

Scrutiny of the OS map (Appendix A) and a walk around the locality showed there are 4 ponds in the vicinity of Tybroughton Hall. The ponds were analysed using the Habitat Suitability Index and phase 2 surveys conducted.

4.1.3 Records

Records of protected species within 2km include, common pipistrelle, soprano pipistrelle, brown long-eared bats, noctule, Daubenton's bat, water vole, otter, great crested newt and barn owl.

4.2 Phase 1 Description and Observations

A detailed environmental survey was undertaken at the site, OS grid reference SJ 467 429 on 2nd April 2015, by P. J. Roberts UCert with the assistance of B Jones BSc(hons) MSc.

The site is an old farm; there is an occupied farm house, and approximately 6 agricultural units. Several of these units are disused, however some are currently supporting pigs. Most of the buildings are constructed of red brick or breeze block, though the larger barns are metal with spaced wooden cladding in some areas.

The site is located on concrete hardstanding, and is surrounded by arable or grazed fields. There are two buildings to be developed, one to the north, and the other to the south. These are known hereafter as the 'north building' and the 'south building'

The habitats on and around the site can be summarised as follows:

- Buildings – J3.6
- Amenity grassland – J1.2
- Poor semi-improved grazed grassland – B6
- Standing Water – G1
- Scattered Trees – A3.3
- Hardstanding – J4

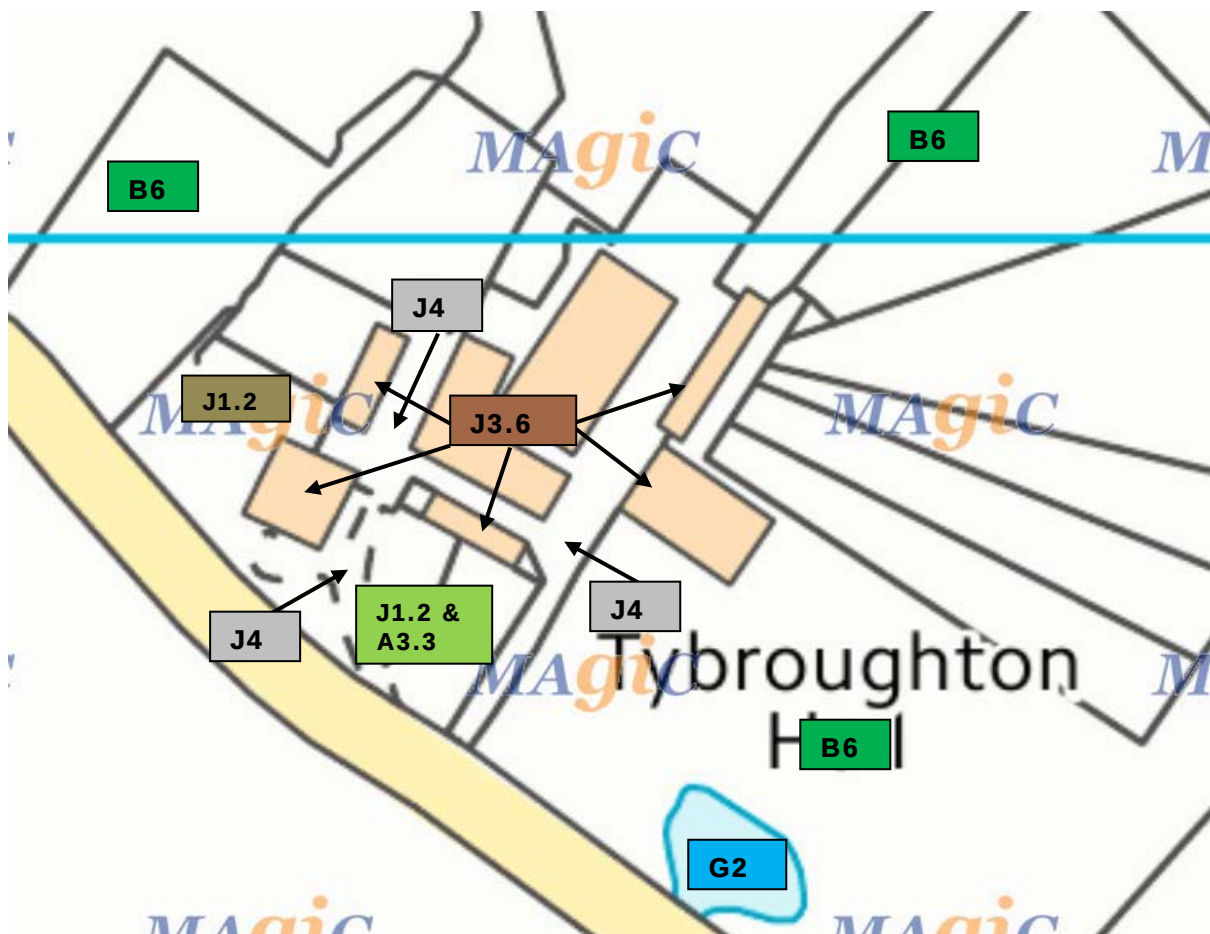


Figure 3. Showing the JNCC phase 1 habitat classification codes for the site

4.2.1 Northern Building

This is a double storey building split into two separate sections, the northernmost of these is a small single storey building, currently used as pig pens and showing signs of use by some swifts or swallows. The majority of the north building is a series of barn sections, all in a state of disrepair. There is an abundance of mortar gaps in the walls and an unlined slate roof.

These offer some limited potential for bats, though it is considered this building would be used as a feeding area rather than a roost. There is evidence of rats and birds inside all sections of the north building.

It should be noted that the upper floor of the southernmost end of the building was not deemed safe, and so was not closely examined. Examination with a torch as closely as possible did not reveal any bat droppings.



Figure 4. Looking north at the north building. The small building to the right of the image is the pig pen



Figure 5. Showing the upper floor of the north building, showing the unlined timber roof and general damage to the brickwork



Figure 6. Representative example of the interior of the ground floor of the north building

4.2.2 Southern Building

The south building is a two storey brick built building with an unlined slate roof. The easternmost half of the building is a single full height room, currently used as storage. There was evidence of bird and lots of rat use. One swallow nest was recorded. It was considered to hold potential for a bat feeding site, but not as a roost. The floor was concrete and brick in places.

There was a deceased great crested newt with open wounds found inside the doorway. It was unclear how it got there, but from the damage on it is considered it was transported by a predator.

The western end of the building is semi-disused, with evidence of occasional amenity use. Two bat droppings were found inside on the first floor.



Figure 7. Looking west, showing the south building (pictured on the left)



Figure 9. Showing the interior of the eastern end of the south building.



Figure 8. Showing the deceased great crested newt found in the south building



Figure 10. Showing bat droppings located in the south building, from both the eastern (left picture) and western (right picture) ends of the building.

4.2.3 Surrounds

The site is surrounded on all sides by arable and grazed fields. These fields are separated by hedges, stock proof post and wire fencing, and a small brook to the north.

4.2.4 Open Water



Figure 11. Showing the location of the ponds within the 250m zone of influence

Pond	OS Grid reference Locations of the ponds:	Distance from proposed development site (m)
1	SJ 467 431	100
2	SJ 465 429	100
3	SJ 467 428	165
4&5	SJ 469 431	218
6	SJ469427	280

Ponds 4 & 5 appear on this map, however they are not present, or were not holding any water at the time of the survey.

The remaining three ponds and the drain were assessed using the Habitat Suitability Index (HSI) detailed by Oldham *et al.*, (2000). The HSI is a quantitative method of assessing the potential quality of a body of water in terms of its ability to sustain a population of great crested newts.

The results from the HSI calculations and justifications for each value can be seen in the following tables.

Pond 1 SJ467431		
Geographic Location	1	Shropshire is part of zone A according to Oldham <i>et al.</i> , (2000)
Pond Area	1	This pond was approximately 1170m ²
Permanence	0.9	The pond was estimated to dry out, but only very rarely
Water Quality	0.67	A moderate population of invertebrates was recorded
Shade	1	There was ~80% shade of the area within 1m of the perimeter
Waterfowl	0.67	Ducks were observed on the pond. The pond was turbid, obscuring detailed analysis however, there appeared to few undamaged plants
Fish	0.67	None were observed, but it is assumed some small fish are likely be present
Pond Count	1	There were 43 ponds aside from this one within a 1km radius
Terrestrial Habitat	1	The surrounding land is rough, tussocky grassland showing signs of past grazing
Macrophytes	0.4	There was very little emergent or floating vegetation or submerged plants reaching the surface. Macrophyte cover was deemed 10%
HSI Score	0.5 – Below Average	



Figure 12. Showing pond 1

Pond 2 SJ465429		
Geographic Location	1	Shropshire is part of zone A according to Oldham <i>et al.</i> , (2000)
Pond Area	0.99	This pond was approximately 785m ²
Permanence	1	The pond was estimated to dry out, but only very rarely
Water Quality	0.33	Support a low diversity population of invertebrates
Shade	0.4	There was ~90% shade of the area within 1m of the perimeter
Waterfowl	0.01	Ducks were observed on the pond. The pond was turbid, obscuring detailed analysis however, there appeared to be few undamaged plants
Fish	0.33	None were observed, but it is assumed some small fish would be present
Pond Count	1	There were 45 ponds aside from this one within a 1km radius
Terrestrial Habitat	1	The immediate surrounding land is rough, tussocky grassland, but this makes up less than 25% of the area of interest.
Macrophytes	0.4	There was very little emergent or floating vegetation or submerged plants reaching the surface. Macrophyte cover was deemed 10%
HSI Score	0.38 – Poor	



Figure 13. Showing Pond 2

This pond was being cleared and stocked with trout throughout the survey season.

Pond 3 SJ467428		
Geographic Location	1	Shropshire is part of zone A according to Oldham <i>et al.</i> , (2000)
Pond Area	1	This pond was approximately 500m ²
Permanence	0.9	The pond was estimated to never dry out
Water Quality	0.67	Highly diverse invertebrate population
Shade	1	There was ~40% shade of the area within 1m of the perimeter
Waterfowl	0.67	Evidence around the pond suggested that there was a moderate quantity of waterfowl utilising this pond
Fish	1	Observations suggested that no fish would be present
Pond Count	1	There were 47 ponds aside from this one within a 1km radius
Terrestrial Habitat	0.33	There is damage to the pond-side caused by grazing animals, the surrounding land is grazed grassland
Macrophytes	0.35	There was very little emergent or floating vegetation or submerged plants reaching the surface. Macrophyte cover was deemed <10%
HSI Score	0.77	Good



Figure 14. Showing Pond 3

The drain to the north of the site was considered for its potential to support newts. However, the flow was deemed too fast and it was too overgrown with plant life to offer any harbour. It was considered that this drain would act as a significant barrier to newts. There were small bridges over the drain that could potentially allow a newt passage, but the chances were regarded too insignificant to investigate further.



Figure 15. Showing the drain (left) and an example of the bridges crossing it (right)

4.3 Phase 2 Surveys for Bats

Surveys were conducted throughout May and June, 2015. The first survey was a dusk survey on 28th May 2015, followed by a dawn on 11th June 2015, followed by a final dusk on 24th June 2015.

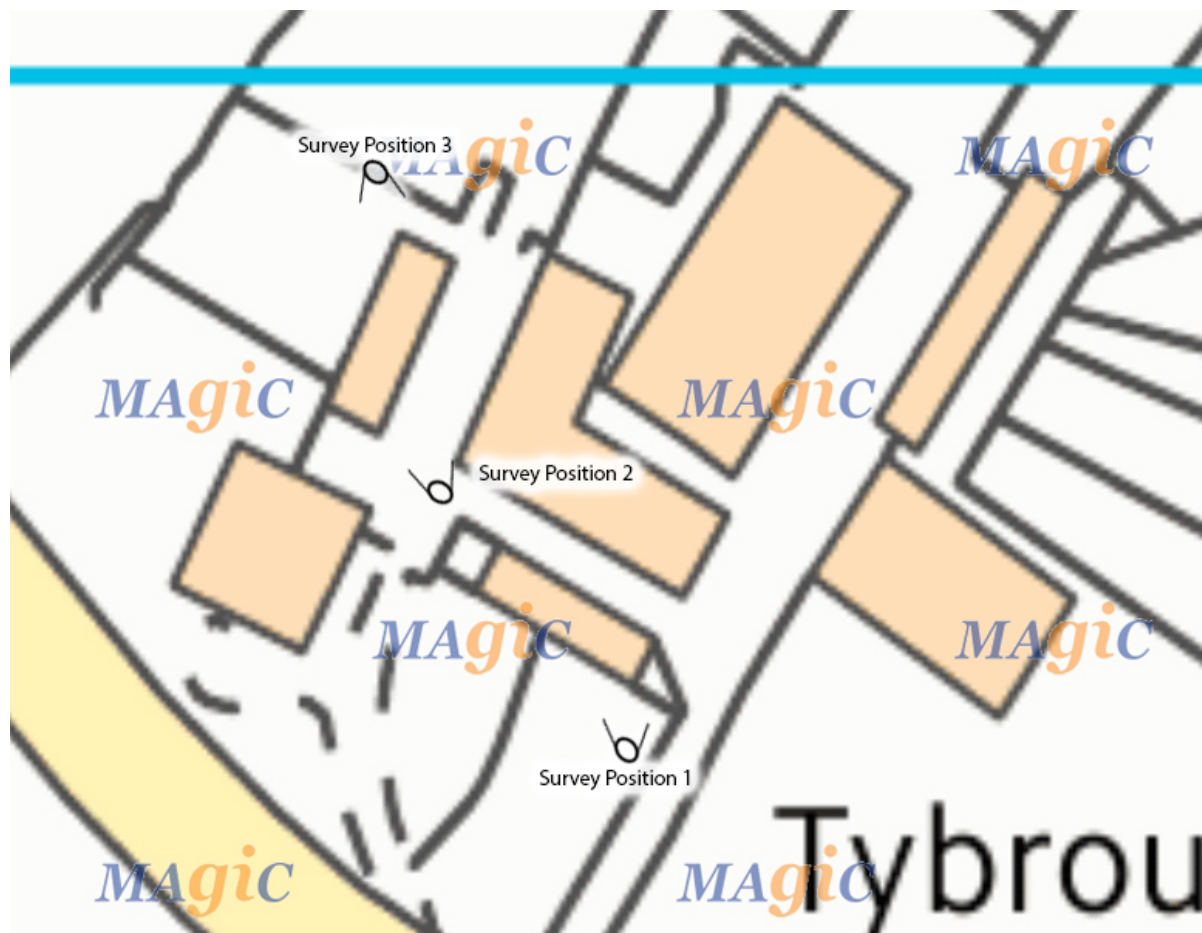


Figure 16. Showing the location of the surveyors during the bat surveys

4.3.1 1st Activity Survey – 28/05/15

Surveyors were located in Survey Positions 1 and 2, according to Figure 16, watching both the south and north buildings.

The first bat recorded was a Soprano Pipistrelle (*Pipistrellus pygmaeus*) at 21.41, approximately 19 minutes after sunset.

Southern Building

Bats were observed foraging over the amenity grassland, vegetable plot and driveway to the south of the southern building, these included both common and soprano pipistrelles and a *Myotis* sp bat (likely to be Whiskered or Brandt's).

A bat emerged at 21.58 from an open window on the southeast corner of the southern building and proceeded to fly around the garden, however it did not echo-locate. From its appearance it was considered to be a brown long eared bat. After this bat left at 22.02, the surveyor looked inside the barn unit and observed two brown long-eared (BLE) bats conducting a pre-emergence warm-up flight inside. Later, at 22.16, another of the BLEs emerged from the same window as the first.

Northern Building

The surveyor observed up to 5 foraging bats, between the farmhouse and the southern end of the northern building, and over the courtyard immediately to the east of the northern building. These foraging bats included both common and soprano pipistrelles, a *Myotis* sp bat (likely to be Whiskered or Brandt's) and at least one brown long-eared bat.

Common pipistrelles were observed emerging from the farmhouse throughout the evening, the farmhouse is not the building being surveyed for the application.

A brown long-eared bat and a common pipistrelle were seen emerging from the northern building, out of a window on the small southern end of the building. At 22.02 the surveyor looked inside the upper floor in the northern 1/3 of the northern building (as the rest of the upper floors were not safe to access) and observed one brown long-eared bat conducting a pre-emergence flight. This bat emerged a few minutes later at 22.05 and proceeded to forage the courtyard to the east of the building.

4.3.2 2nd Activity Survey – 11/06/15

Surveyors were again located in Survey Positions 1 and 2, according to Figure 16, watching both the south and north buildings.

The first bat recorded was a Brown Long-Eared bat at 02.55, approximately 2hrs minutes before sunrise.

At least 5 bats were seen foraging between the farmhouse and the northern building, these were all common pipistrelles. However, all of these swarmed and re-entered the farmhouse between approximately 03.26 – 03.30.

This was a very quiet survey, and no other entry was recorded.

Southern Building

In keeping with the first survey, there were pipistrelles foraging around the grassland to the south of the building.

Only one re-entry was observed. This began with a brown long-eared bat foraging the grassland at 03.38 (when it was recorded). The bat then re-entered silently at 03.50 through the same window on the southeast corner that they were seen emerging from in the first survey.

Northern Building

No re-entries were observed into the northern building.

4.3.3 3rd Activity Survey – 24/06/15

Surveyors were this time located in Survey Positions 2 and 3, according to Figure 16, watching only the north building.

The first bat recorded was a Common pipistrelle (*Pipistrellus pipistrellus*) at 21.46, approximately 5 minutes after sunset.

At least 5 bats were seen foraging around the northern building. Many of these emerged from the farmhouse and proceeded to forage, 17 bats were observed emerging from the farmhouse. The foraging bats included both common and soprano pipistrelles, a *Myotis* bat (likely to be Whiskered or Brandt's) and at least one brown long-eared bat.

Northern building

At 22.16 a surveyor entered the northern section of the northern building (as did the surveyor in the first activity survey) and observed 2 brown long-eared bats conducting a pre-emergence flight. Additionally, a pipistrelle was observed inside. Approximately 4 minutes later, two silent emergences were observed through a missing window pane on the south-eastern side of the building. These were the two brown long-eared bats observed minutes before.

From survey position 3, the surveyor located an open / broken window on the northern end of the building. From this window at least 3 emergences were confirmed; two common pipistrelles and one *Myotis* species (Whiskered or Brandt's). There were 3 confirmed emergences from the open window.

No emergence was observed from the southern building.

4.3.4 Summary

Bats Observed or Recorded	
From the northern building	Around Site
Brown Long-Eared (<i>P. auritus</i>) (5)	Brown Long-Eared (<i>P. auritus</i>)
Common pipistrelle (<i>P. pipistrellus</i>) (2)	<i>Myotis</i> sp (<i>M. mystacinus</i> or <i>M. brandtii</i>)
	Common pipistrelle (<i>P. pipistrellus</i>)
From the southern building	Soprano pipistrelle (<i>P. pygmaeus</i>)
Brown long eared bat (1)	Noctule (<i>N. noctula</i>)

4.4 Phase 2 Surveys for Newts

Phase 2 surveys for newts were considered necessary as a dead newt was found within one of the buildings.

4.4.1 Pond 1

Visit No	Date	GCN Results							SN		PN		CF	CT
		Torch			Bottle trap			Egg						
		M	F	J	M	F	J				M	F		
1	23-24/04/15	0	0	0	1	2	0	N	2					
2	29-30/04/15	0	0	0	0	3	0	Y	1					
3	04-05/05/15	0	0	0	0	0	0	Y	0					
4	07-08/05/15	0	0	0	0	1	0	Y	1					
5	11-12/05/15	0	0	0	0	2	0	Y	1					
6	15-16/05/15	0	0	0	0	1	0	Y	0					
Bottles	35													
Turbidity/5														
Veg cover/5	Water reasonably clear (some turbidity), 30% obscured by vegetation at margins													

4.4.2 Pond 3

Visit No	Date	GCN Results							SN		PN		CF	CT
		Torch			Bottle trap			Egg						
		M	F	J	M	F	J		M	F	M	F		
1	23-24/04/15	0	0	0	0	1	0	N	1					
2	29-30/04/15	0	0	0	0	0	0	N	1					
3	04-05/05/15	0	0	0	1	0	0	N	3					
4	07-08/05/15	0	0	0	0	1	0	N	0					
5	11-12/05/15	0	0	0	1	1	0	Y	0				1	
6	15-16/05/15	0	0	0	1	0	0	Y	0					
Bottles	20													
Turbidity/5														
Veg cover/5	Water obscured by vegetation at margins - only a small area suitable for torching or accessible to trap													

Key

GCN	Great crested newt
SN	Smooth newt
PN	Palmate newt
CF	Common frog
CT	Common toad
T	Tadpoles

4.4.3 Summary

The maximum count of GCN in the ponds was on the 29th-30th April with 3 newts in one pond and 1 in the other. A total of 4 in the area.

5 Evaluation of Results

5.1 Potential Impacts on Habitats

5.1.1 Designated Sites

The nearest SSSI is approximately 1.6km to the northwest. This is Well Rough and Long Plantation, a wooded area – one of the few in the area that has not been modified by conifer planting. It is renowned for its wet ash (*Fraxinus excelsior*) and field maple (*Acer campestre*), regarded as the best site for them in the county. However, given the type of works planned, and the distance to site, no effect is expected on this SSSI.

5.1.2 Habitats on site

Habitat Type	Consideration/ is the habitat capable of supporting protected species	Impact
Hard Standing	No ecological value	Nil
Fields	SI & grazed grassland	Not of notable condition
Hedgerows	Few around site – mostly fencing	Nil
Trees	No trees of interest to be affected	Nil
Ditches	Ditch ~200m north	Not of notable condition

5.2 Ecologically Important Species

Species	Consideration	Impact
Mammals		
Bats; - Brown long eared bat	Small roost in each building identified	Low impact- none maternity
Bats: - common pipistrelles	Small roost identified	Low impact-non maternity
Badgers	No evidence found on site	Nil
Water vole	No suitable habitat on site	Nil
Hazel Dormouse	No suitable habitat on site	Nil
Otter	No suitable habitat on site	Nil
Birds		
Barn Owl	No evidence on site	Nil
Nesting birds	Lots of evidence (faecal and nests) in the south building	Low, Works to be carried out outside of the nesting season (Feb-Aug inclusive)
Herpetofauna		
Reptiles	No evidence on site	Nil
Great Crested Newts	One deceased individual found within a building to be developed. Small population recorded in the area	Low impact

5.3 Consideration of Individual Species / Habitats

5.3.1 Bats

All bat species are protected under the Conservation of Habitats and Species (Amendment) Regulations 2012 which implements the EC Directive 92/43/EEC in the United Kingdom. It is an offence, with certain exceptions, to:

- deliberately capture or kill any wild animal of a EPS;
- deliberately disturb any such animal;
- deliberately take or destroy eggs of any such wild animal;
- damage or destroy a breeding site or resting place of such a wild animal;
- deliberately pick, collect, cut, uproot or destroy a wild plant of a EPS;
- keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal or plant of a EPS, or any part of, or anything derived from such a wild animal or plant.

A person found guilty of an offence is liable on summary conviction to imprisonment for a term not exceeding six months or to a fine not exceeding level 5 (currently £5,000 per offence) on the standard scale, or to both.

A roost of 3 brown long-eared bats was identified in the southern building.

A roost of 5 brown long-eared bats and 1 pipistrelle was identified in the northern building.

Neither brown long eared or pipistrelle bats are locally rare or regionally rare. A maternity roost of pipistrelle bats was identified in the farm house, so the lone bat recorded in the barn is likely to be a lone male or non-breeding female. The roost sized of the brown long eared bats is considered unlikely to be a maternity roost. Both are considered to be summer roosts of low numbers.

Without mitigation there is potential for loss of the roost space which would constitute an offence and the risk of death or damage to individual bats.

The works is likely to cause disturbance from noise and dust. Work will therefore need to be conducted under European Protected Species Licence from Natural Resources Wales.

5.3.2 Barn Owls & Other Birds

All birds, their nests and eggs are protected by law under Part 1 of the Wildlife and Countryside Act 1981 (as amended). Barn owls are listed on Schedule 1 which gives them special protection.

It is an offence to:

- Intentionally kill, injure or handle any wild barn owl.
- Intentionally take, damage or destroy any wild barn owl nest whilst in use or being 'built'.
- Intentionally take or destroy a wild barn owl egg.
- Have in one's possession or control a wild barn owl (dead or alive) or egg (unless one can show it was obtained legally)
- Intentionally or recklessly disturb any wild barn owl whilst 'building' a nest or whilst in, on or near a nest containing young.
- Intentionally or recklessly disturb any dependent young of wild barn owls.

No evidence of barn owl was recorded, but one swallow nest was. The birds will need to be excluded before work commences and compensation for the loss of nesting sites made.

5.3.3 Newt Species

All species of amphibians receive a measure of protection under legislation.

The Wildlife and Countryside Act 1981 has been amended by the Countryside and Rights of Way Act (CroW) 2000. This applies to England and Wales only. The key relevant fact is:

- Section 9(4) is amended to create an additional offence of reckless damage to, destruction of, or obstruction of access to, any structure or place used for shelter or protection; and reckless disturbance while occupying such a structure or place.

This means that any application for planning permission has to offer mitigation to the planners to alleviate any potential damage (i.e. provide reasonable avoidance).

GCN are protected under the Conservation of Habitats and Species Regulations 2010 (as amended) which implements the EC Directive 92/43/EEC in the United Kingdom. It is an offence, with certain exceptions, to:

- deliberately capture or kill any wild animal of a EPS;
- deliberately disturb any such animal;
- deliberately take or destroy eggs of any such wild animal;
- damage or destroy a breeding site or resting place of such a wild animal;
- deliberately pick, collect, cut, uproot or destroy a wild plant of a EPS;
- keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal or plant of a EPS, or any part of, or anything derived from such a wild animal or plant.

A person found guilty of an offence is liable on summary conviction to imprisonment for a term not exceeding six months or to a fine not exceeding level 5 (currently £5,000 per offence) on the standard scale, or to both.

A dead newt was found in one of the buildings. It would appear this had been predated by an animal or bird and is not likely to have crossed into the building on its own volition.

Phase 2 surveys for newts were conducted on the ponds within the vicinity of the site. A small population of newts were recorded.

Neither of these ponds will be affected by the development so there is no risk to the aquatic phase for newts in the area.

The development is on hard standing which is considered poor terrestrial habitat for newts. It is therefore considered unlikely that newts would naturally be in this area during the development and demolition of buildings. An offence is considered highly unlikely.

It will therefore be recommended that work follows a reasonable avoidance method statement.

6 Recommendations

6.1 Landscaping

1. It is recommended that the landscaping around the new buildings will include some hedging and tree planting to enhance the area for biodiversity.
2. Plants to use for landscaping will include locally sourced native species.

Plant	Latin name
Blackthorn	<i>Prunus spinosa</i>
Crab Apple	<i>Malus sylvestris</i>
Field Rose	<i>Rosa arvensis</i>
Field Maple	<i>Acer campestre</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Spindle	<i>Euonymus europaeus</i>
Wild Cherry	<i>Prunus avium</i>
Wild pear	<i>Pyrus communis</i>
Wild Service Tree	<i>Sorbus torminalis</i>

3. Trees to be used should be from the list below.

Common Name	Latin Name
English Oak	<i>Quercus robur</i>
Sessile Oak	<i>Quercus petraea</i>
Lime	<i>Tilia cordata</i>
Rowan	<i>Sorbus aucuparia</i>
Silver Birch	<i>Betula pendula</i>
Wych Elm	<i>Ulmus glabra</i>
Yew	<i>Taxus baccata</i>
Scots Pine	<i>Pinus sylvestris</i>

6.2 Bats

Work on converting the barns will commence once an EPS licence for bats has been obtained.

The licence cannot be applied for until full planning permission has been granted.

Plans will show provision for brown long eared bats in a bat loft in building B. This will be at least 1.8m high, 4m wide and 5m long.

6.2.1 Bat Mitigation - Summary

1. The known populations of bats will be maintained and enhanced by the following mitigation strategy.
2. The conversion will commence once the licence has been obtained and the bats have left the area- so re-roofing will occur between September and end of March when bats are least likely to be present.
3. The bats will be excluded throughout the process of the conversion.

Bats will be protected from harm during the works by:

4. In order to protect the bats population they will be given alternative roosting opportunities in the area by the erection of a Schwegler 1FF bat box and 1FS.
5. These will be erected at a height of no less than 4m and on a south facing aspect. This will ensure bats are never without a roost and will enhance the area for bats.
6. It will be ensured that they are positioned away from windows or any other source of incidental lighting. The box will be left permanently to enhance the area.
7. The licensed consultant will be employed as an Ecological Clerk of Works (ECW) to assist with work in bat sensitive areas.
8. A pre-commencement inspection of the site will be conducted by the ECW using a strong torch and borescope where appropriate.
9. The builder and contractors will be made aware that there is a possibility that bats may be found during works and will be advised to work in a way to ensure bats are not harmed during the building process. They will be provided with a simple emergency procedure to follow if bats are found at any stage of the works on site. It will be ensured that the method statement remains on site.
10. The ECW will supervise works in any area sensitive to bat activity such as the ensuring no bats are entombed when the wall of the barn is altered where the brown long eared bats are roosting.
11. The ECW will be available to give advice by phone and/or email and to attend should a bat, dead or alive be found.
12. Should bats be found they will either be allowed to disperse naturally with work stopping in that area, or, if necessary removed by hand by the ECW and placed in a bat box. The appropriate care will be given to the bat, dependant on the condition, state and weather conditions.

13. Bats will be excluded using one way methodology until the bat provision is complete. Strong lighting may be used inside the building. This is to reduce the chance of needing to handle them by net or hand.
14. External lighting will be on a short timer directed away from bat roost access points and foraging areas.

E.1 Capture and Exclusion

15. The ecologist will be employed as Environmental Clerk of Works to oversee work in areas sensitive to bats.
16. ECW will provide a toolbox talk for works on site where there is the potential to find bats.
17. The builder and contractors will be made aware that there is a possibility that bats may be found during works and will be advised to work in a way to ensure bats are not harmed during the building process. They will be provided with a simple emergency procedure to follow if bats are found at any stage of the work on site. Contractors are advised not to handle bats at any time.
18. The ECW will ensure the method statement is on site and a record is kept of site visits. There will be a sheet to indicate audit visits by the ecologist and to log any bats found on site.
19. The ECW will oversee the erection of the Schwegler bat boxes on site prior to work commencing.
20. A pre-commencement inspection of the site will be conducted by the ECW using a strong torch and borescope.
21. The ECW will conduct a survey on site immediately prior to the wall being sealed. Crevices where accessible will be examined using a borescope.
22. The builder will be informed of areas where it might be possible to entomb bats.
23. Bats will be excluded from the work area using methodology based on Cresswell (a one way gate over any roost entrance found to be active). All windows and doors will be kept closed at night or fitted with heavy duty polythene throughout the project to ensure bats do not re-enter the work area.

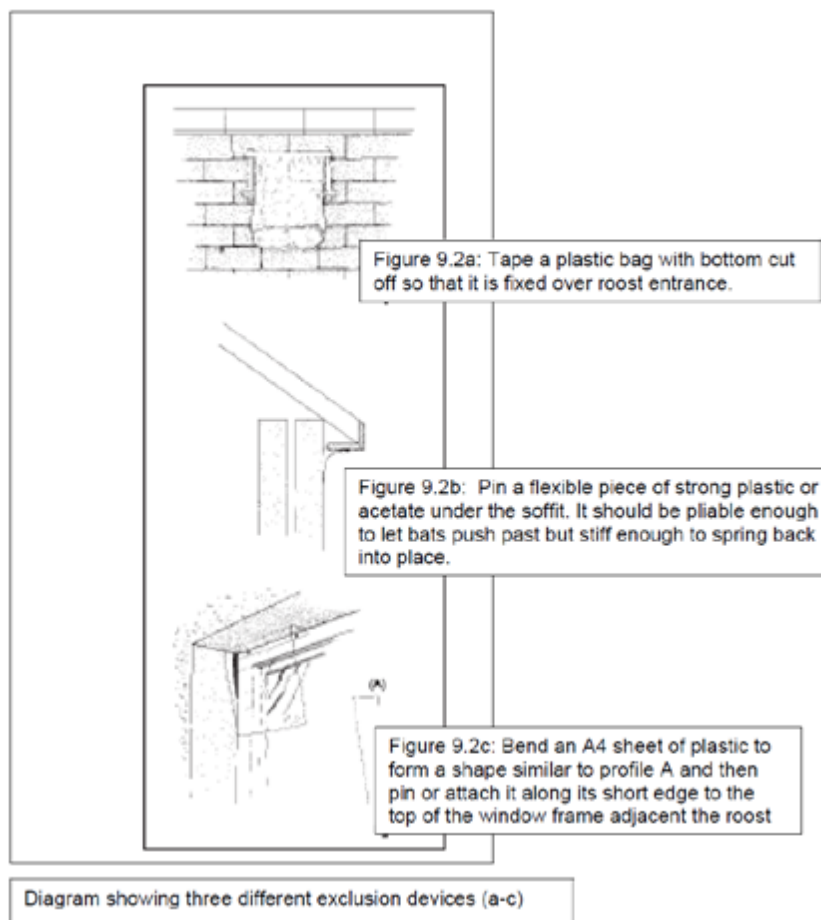


Figure 17: Choice of exclusion technique.

24. If the exclusion has had to be erected to exclude a bat already roosting in the area then the exclusion will be checked for three nights before work in the area is allowed to resume. Lighting will be erected to encourage bats to leave the area
25. If a bat is found it will be placed into a Schwegler 1FS bat box.
26. The consultant will check the bat provision during and after works to see it complies with the method statement.

E.2 New roost creation (including bat houses and bat boxes)

1. A Schwegler 1FF bat box and 1FS will be erected on the site.
2. A bat loft will be prepared in the gable end of building B.
3. The roof will be lined with traditional bitumen hessian lining with the Breathable membrane being removed.
4. The void accessible to bats will be 1.8m from the central ridge, 5.6m wide and 6.4m long.
5. Access to this will be provided using a modified slate with slit access.

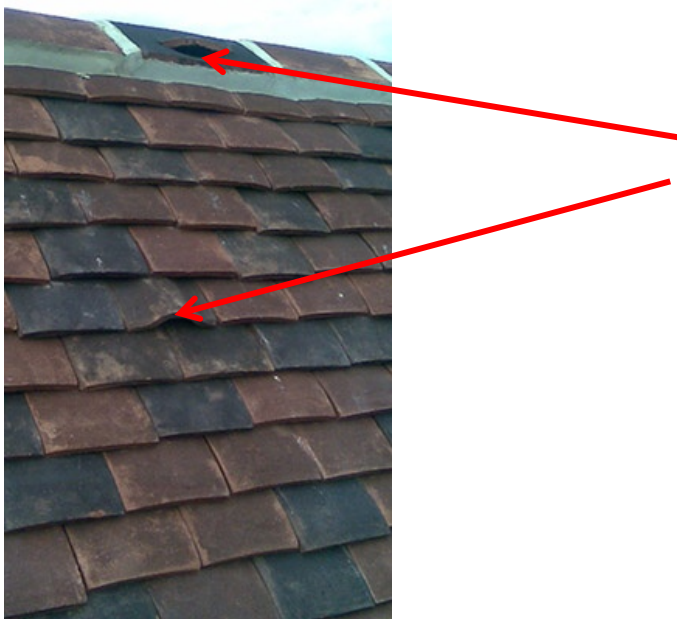


Figure 18: Bat access slate and Kent bat box

6. Access into the bat loft will be provided by creating a slit in the membrane. This will be checked by the ECW.
7. Internal crevice opportunities will be provided by adding untreated timber to rafters and leaving 15mm gaps. This can be in the style of the Kent bat box.

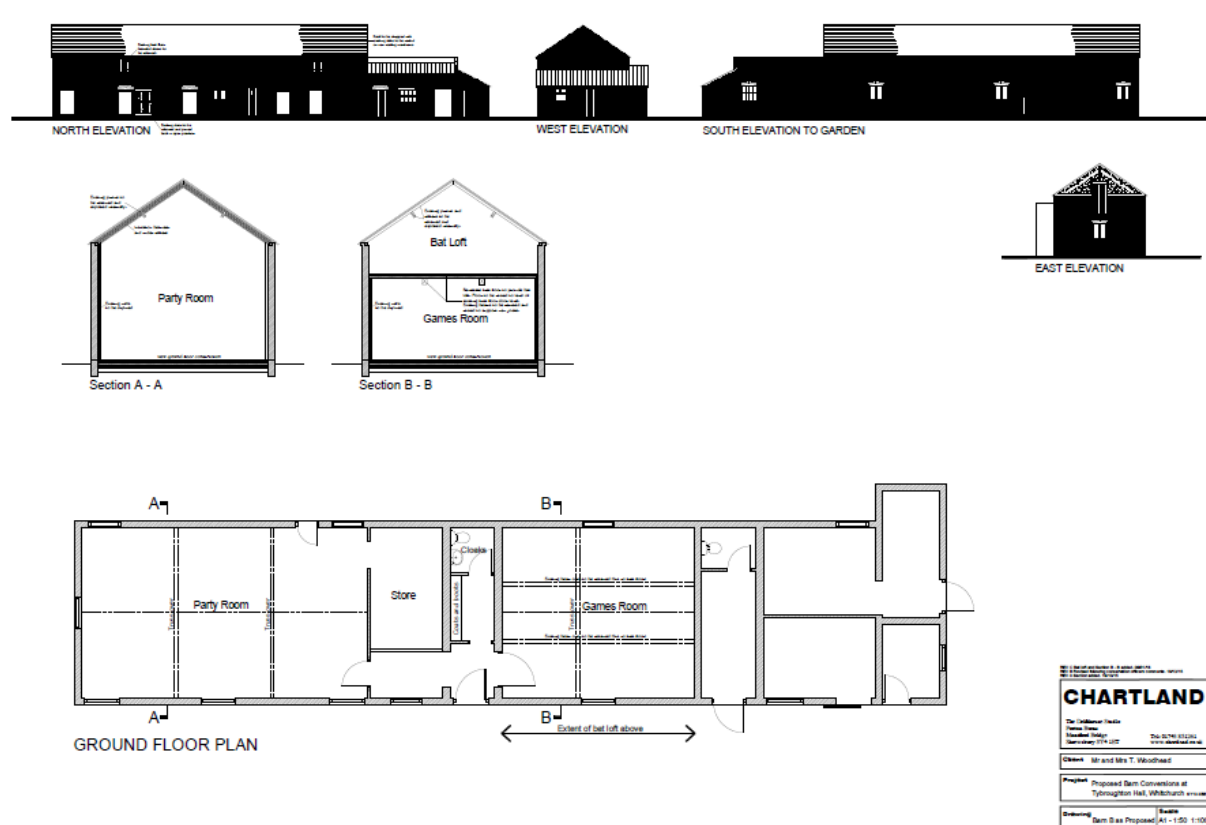


Figure 19: Showing the position of the bat loft in building b

6.2.2 Lighting

1. A lighting scheme will need to be drawn up. The following factors will be considered and implemented:

Type of lamp (light source)

The impact on bats can be minimised by the use of low pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics.

Luminaire and light spill accessories

Lighting should be directed to where it is needed and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only. Planting can also be used as a barrier or manmade features that are required within the build can be positioned so as to form a barrier.

Lighting column

The height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill. For pedestrian lighting this can take the form of low level lighting that is as directional as possible and below 3 lux at ground level. The acceptable level of lighting may vary dependent upon the surroundings and on the species of bat affected.

Predicting where the light cone and light spill will occur

There are lighting design computer programs that are widely in use which produce an image of the site in question, showing how the area will be affected by light spill when all the factors of the lighting components listed above are taken into consideration.

From BCT (2009) Bats and Lighting in the UK.

Timetable of works - bats

Time	Notes	Action
Prior to works	ECW to conduct Bat box erection on building A.	Erection of Schwegler box.
During works once license has been received	Bat loft to be constructed in building B	
Once licence is in situ	Builder to be given tool box talk. Exclusion conducted if necessary ECW present when roof of the buildings are to be removed carefully by hand Potential of disturbance by dust and noise.	Removal of the buildings roof in sections so some is always available for bats. The Conversion of the interior of the buildings. Monitoring by ECW, exclusion if necessary.
After the works are undertaken	Work should be complete	Monitoring check and audits every 3 months

6.3 Birds

1. Work on the buildings will commence out of the bird nesting season, February to August inclusive or a suitably experienced ecologist will conduct a check to ensure no nesting birds will be affected.
2. Access to swallows will be limited by excluding them out of the nesting season.
3. All nesting birds will be left undisturbed until young have fledged. A 4m buffer will be left.
4. It is recommended that a range of artificial woodcrete boxes are erected around the site to provide an enhancement for passerine birds. A selection of the following nest boxes is recommended.



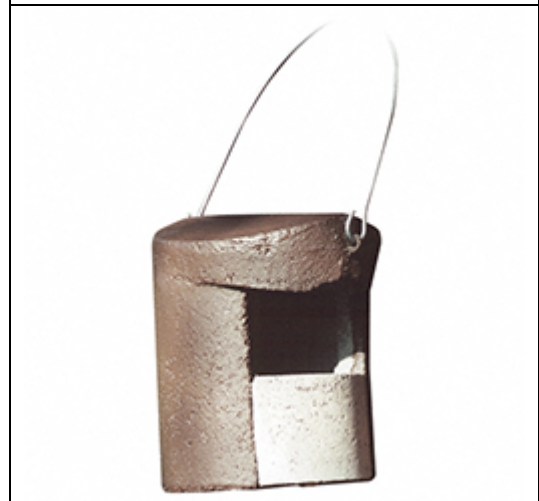
Cedarwood Sparrow terrace



Schwegler 1b bird box



Schwegler Roundhouse wren box
1ZA



Schwegler 2H Open Fronted Robin
Box

6.4 Newts

6.4.1 Reasonable avoidance measures

As the works are all to take place on hardstanding, deemed unfavourable for newts, there is unlikely to be any newts present around the areas of work. However, should a newt be found – the following must apply:

1. A consultant will be employed as the Ecological Clerk of Works to provide advice on the work in areas sensitive to GCN on site. This person will need to be licensed and an experienced surveyor for GCN.
2. A fingertip search will be undertaken on all areas of the buildings prior to work commencing. The ECW will determine the likely areas to support the species. This will include internal and external inspections and the removal of loose materials to avoid the creation of potential refugia.
3. The ECW will provide contractors with a toolbox talk for works on site where there is the potential to find GCN.
4. Contractors are advised NOT to handle newts at any time.
5. All work will be conducted during daylight hours as newts are least likely to move during this time.
6. Any heavy machinery will be stored on an area of hard standing.
7. Stored material will be raised on pallets to reduce the potential they might act as a temporary resting place.
8. All waste will be placed straight into skips to reduce the potential of creating refugia.
9. Although none are planned, if some are required, trenches will be dug and filled in on the day created or will be covered over and checked the following morning.
10. If a newt is found then work WILL stop immediately and the ECW contacted for advice.
11. GCN will not be handled or moved without expressed permission from NRW as this would constitute an offence.

7 Concluding Remarks

In the opinion of the surveyor, this development cannot proceed as planned without damage to, or loss of habitat for bat species and nesting birds. As small bat roosts have been observed in both buildings. A European Protected Species Licence for bats is required before work can commence. This licence will allow workers to enter the roost space currently occupied by the bats and will operate in conjunction with a method statement, and under the watch of an ecological clerk of works.

The development will have no effect on the small local newt populations, and can proceed without a European Protected Species Licence for newts. Instead, the method statement found in section 6.5 will be understood and followed by workers.

8 Other

- This report may not be reproduced other than in full and without prior permission from Greenscape Environmental. The report should be read in its entirety.
- Questions arising from the survey report should be directed to the author of this report, who will be pleased to clarify any technical issues raised.
- Whilst the surveyors make every reasonable effort, Greenscape Environmental Ltd cannot guarantee that all protected species have been identified and survey results are definitive.
- Reports are considered valid for 2 years after which time further survey information may be required.
- Greenscape Environmental Ltd can provide advice and support for recommendations and planning conditions.

Appendices

A Ordnance Survey Map Abstract

Sheet(s): 1

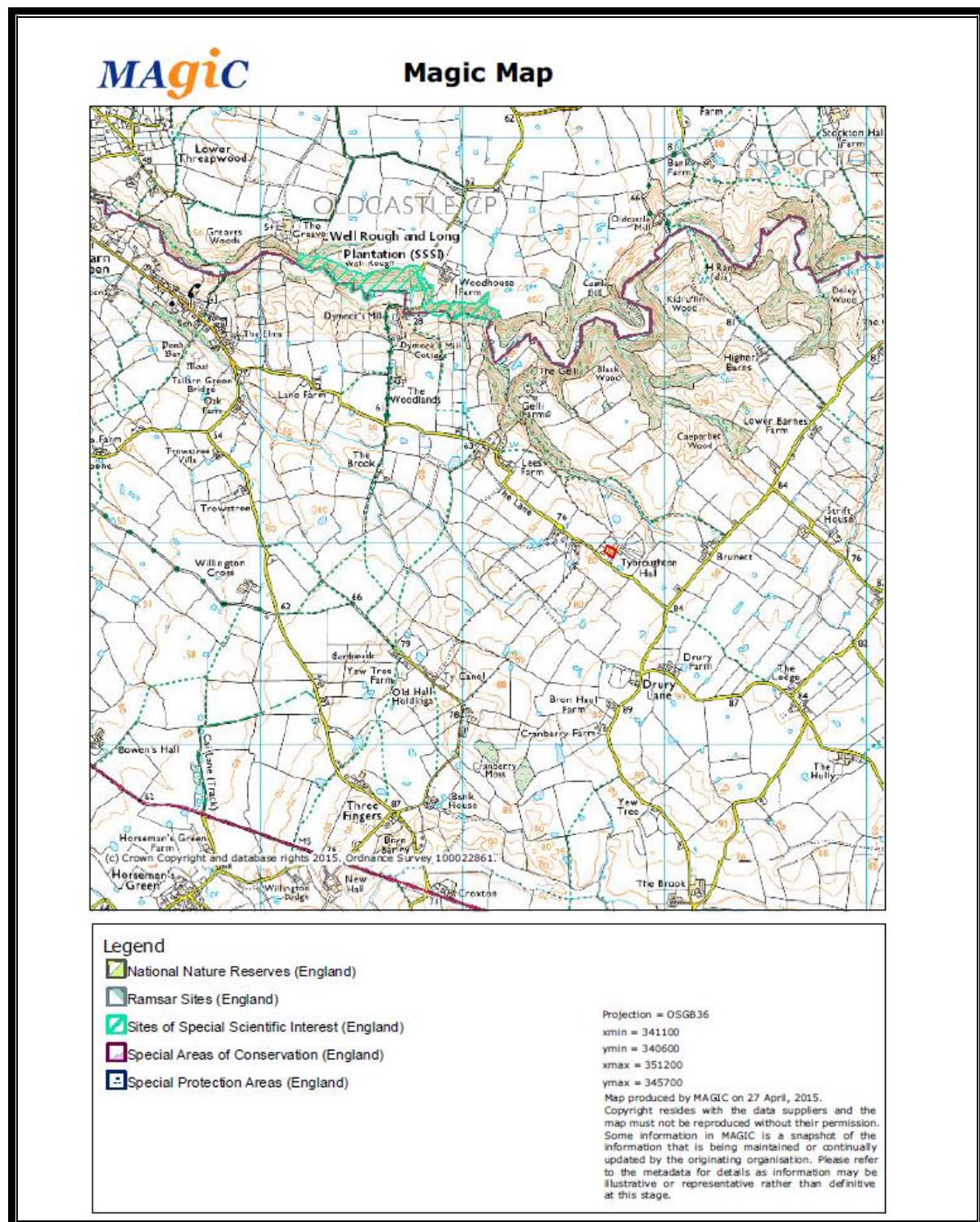
B Site Plan

Sheet(s): 1

C Bibliography

Sheet(s): 1

A Environmental Map

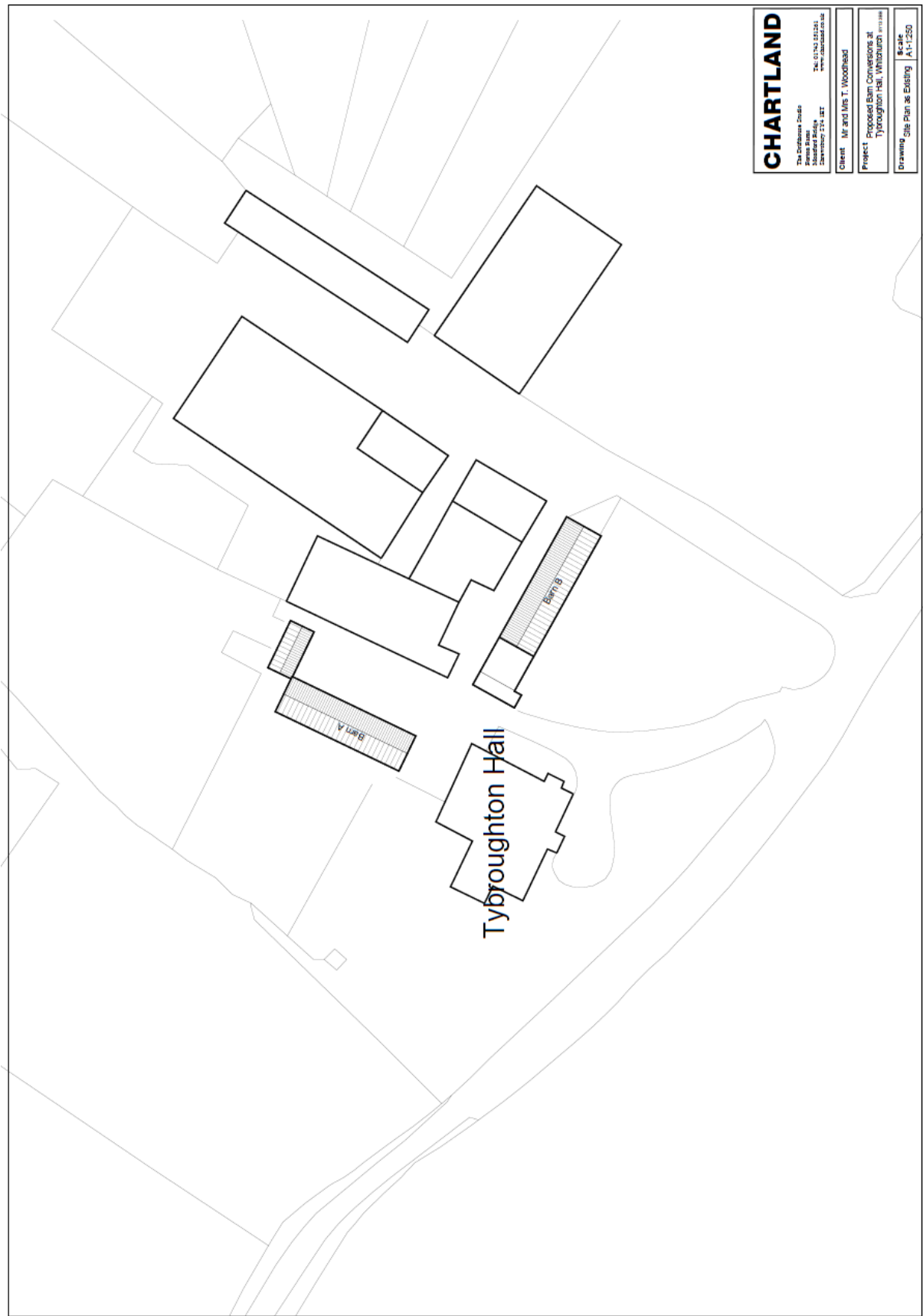


An Environmental map for Tybroughton Hall, taken from Nature on the Map- Magic Maps

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This shows that the site is not in the vicinity of a designated site as notified under Section 28 of the Wildlife and Countryside Act 1981. Land to the northwest is a SSSI.

B Site Plans



C Bibliography

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