

Greenscape Environmental Ltd

CAS ESTATES LTD

**PHASE 1 & 2
ENVIRONMENTAL SURVEY**

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OCTOBER 2014

1343 002R

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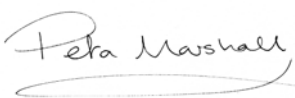
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	Name	Signature	Date
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Table of Contents

EXECUTIVE SUMMARY	4
POTENTIAL IMPACTS	4
1 INSTRUCTION	5
1.1 DETAILS OF SURVEYORS	5
1.2 PROJECT BACKGROUND	5
2 OBJECTIVES	6
3 SURVEY TYPE - METHODOLOGY	7
3.1 MAMMALS	7
3.2 BIRDS	7
3.3 AMPHIBIANS AND REPTILES	7
4 SITE DESCRIPTION	8
4.1 LOCATION	8
4.2 DESK TOP SURVEY	8
4.2.1 Designated Sites	8
4.2.2 Records	8
4.3 CONDITION ON SURVEY DATES	9
4.4 PHASE 1 DESCRIPTION AND OBSERVATIONS	9
4.4.1 Building 1	9
4.4.2 Surrounds	13
4.5 PHASE 2 SURVEYS FOR BATS	13
4.6 CONSTRAINTS OF THE SURVEY	15
5 EVALUATION OF RESULTS	16
5.1 ECOLOGICALLY IMPORTANT SPECIES	16
5.2 CONSIDERATION OF INDIVIDUAL SPECIES/HABITATS	16
5.2.1 Bats	16
5.2.2 Barn Owls	17
5.2.3 Birds	18
5.3 CONCLUDING REMARKS	18
6 RECOMMENDATIONS	19
6.1 BATS- METHOD STATEMENT	19
6.2 BIRDS	27
6.3 LANDSCAPING	27
7 OTHER	28
APPENDICES	29
A ORDNANCE SURVEY MAP ABSTRACT	
B SITE PLAN	
C BIBLIOGRAPHY	

Executive Summary

Greenscape Environmental Ltd was commissioned by CAS Estates Ltd, to conduct a survey to determine the presence or absence of protected species and potential for the damage or destruction of habitats of ecological value, prior to an alteration of the planning permission for the development of a range of barns at Kiln Green.

Planning consent was received for the development, P/2008/0265 in 2008 by Wrexham Borough Council.

The ecological survey conducted at this site in 2008 by Ecotech did not reveal any evidence of bat activity. This however was conducted out of the active season for bats. The condition of the buildings was a lot worse then, and has subsequently been re-roofed to maintain the integrity of the buildings.

The application is for a change in the plans for units 1A -1C. An update of the survey was requested by Wrexham Borough Council. During the survey by Peta Marshall in 2014 a maternity roost of brown long eared bats and soprano pipistrelle bats was identified in the building. A small roost of common pipistrelles was also identified in a building already being converted.

The phase 1 ecological appraisal was undertaken at the site, OS grid reference SJ4955 4253 on 2nd September 2014, by P Marshall, an experienced biologist. Phase 2 bat activity surveys were conducted on the 9th September with the assistance of Holly Farrington.

No designated sites notified under Section 28 of the Wildlife and Countryside Act 1981 were found within the vicinity of the site, thus there would be no impact expected from this development.

Previous surveys in the area conducted by Peta Marshall have revealed a maternity roost of soprano pipistrelle bats at Iscoyd Park. Common pipistrelle (*Pipistrellus pipistrellus*), brown long-eared bats (*Plecotus auritus*), noctule (*Nyctalus noctula*), whiskered bats (*Myotis mystacinus*), Natterer's bat (*M. nattereri*) were also recorded. Barn owl have been recorded nesting at Iscoyd Park and are known to be in the area.

The building is a traditional redundant agricultural building in an L shape. Some of it is 2 storey, most single storey. Evidence a large number of nesting swallows was recorded. 2 bat roosts were also recorded. No barn owls were observed, but nesting stock dove (*Columba oenas*) were recorded. The bat survey was conducted at the end of the season to establish maternity roosts. Further surveys will need to be conducted in May-June 2015 to establish an approximate population size. This is in line with the recommendations by the County Planning Ecologist. A bat roost was identified in an adjacent building which is undergoing conversion. Work was stopped immediately in the area where the bats were observed and an EPS license applied for.

No other protected species were recorded in the vicinity of the site.

Potential Impacts

The conservation status of brown long eared bats and soprano pipistrelles will be affected by the development of units 1A-1C. Work will need to be conducted under derogation licence and this will need to be supported with further survey work in May – June 2015. Like for like replacement will be provided as a minimum and no destruction of the former roost will occur until the replacement is completed. Compensation for the loss of nesting opportunities for swallows will be made and enhancements for barn owl offered.

1 Instruction

Greenscape Environmental Ltd was commissioned by CAS Estates Ltd, to conduct a survey to determine the presence or absence of protected species and potential for the damage or destruction of habitats of ecological value, prior to an alteration of the planning permission for the development of a range of barns at Kiln Green.

The phase 1 ecological appraisal was undertaken at the site, OS grid reference SJ4955 4253 on 2nd September 2014, by P Marshall BSc(hons) MCIEEM AIEMA, an experienced biologist. Phase 2 bat activity surveys were conducted on the 9th September with the assistance of Holly Farrington.

1.1 Details of surveyors

Name	Membership of associations/ experience	Licenses
Peta Marshall BSc(hons)	MCIEEM AIEMA 8 years experience surveying for protected species	NE CLS01255 (bats) NRW 42240:OTH:CSAB:2012 CLS01255 (GCN) NE 20131377 (box trap) NRW 44978:OTH:SA:2013 NE 20131376 (barn owl). NRW 42239:OTH:DBE:2012
Holly Farrington BSc(hons)	trainee	

1.2 Project Background

It is understood that the application is for a variation in the planning with a different number of units to be created in building 1.

Work will involve internal alterations as well as fenestration. The building has already been re-roofed.

2 Objectives

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.

This is in accordance with:

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)

Summary recommendations have been made outlining reasonable avoidance measures and the associated habitat creation/management required to offset any impacts associated with the proposed development.

3 Survey Type - Methodology

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.

3.1 Mammals

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 and Bat box duet), night scope binoculars. Anabats are left within the buildings to reinforce findings. Dusk activity surveys are 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 (2012)

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.

3.2 Birds

Nesting birds

Evidence of 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

3.3 Amphibians and reptiles

The assessment of aquatic habitat is based on the Habitat Suitability Index (Oldham *et al* 2000).

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

4 Site Description

4.1 Location

The buildings are set in a rural area of the county with few other buildings close to the site.

Land around the farm is agricultural with pasture and arable land use. There is a brook and woodland to the west which will provide excellent foraging opportunities for bats.

Land around the buildings has been cleared and Dutch barns removed.

4.2 Desk top Survey

4.2.1 Designated Sites

There are no statutory sites (SSSIs or SACs) notified for the bat species within 1km of the site.

SITE NAME	DESIGNATION	REASON FOR DESIGNATION	DISTANCE FROM SITE AND DIRECTION
Whixall Fenn	SSSI RAMSAR	Part of the Meres and Mosses.	4km South
Hanmer Mere	SSSI	Part of the Meres and Mosses	5km SW
Bar Mere	SSSI	Important breeding site for Lesser Horseshoe Bats	6km NE
Brown Moss	SSSI	Part of the Meres and Mosses. Known to support GCN	7km SE
Bickley Moss	SSSI	Part of the Meres and Mosses	8km NE
River Dee	SSSI	Riparian Habitat known to support otter and water vole	8km NW

Table 1: Designated sites within 10km of Kil Green

The nearest designated site is located 4km south of the site. This is not designated for bat species.

Scrutiny of the OS map (Appendix A) and a walk around the locality showed there are not any significant areas of still water in the vicinity of the buildings. No survey with respect to great crested newts is considered necessary.

4.2.2 Records

Previous surveys in the area conducted by Peta Marshall have revealed a maternity roost of soprano pipistrelle bats at Iscoyd Park. Common pipistrelle (*Pipistrellus pipistrellus*), brown long-eared bats (*Plecotus auritus*), noctule (*Nyctalus noctula*), whiskered bats (*Myotis mystacinus*), Natterer's bat (*M. nattereri*) were also recorded at Higher Wych.

Barn owl have been recorded nesting at Iscoyd Park and are likely to use the area for foraging as well as potentially resting place.

4.3 Condition on survey dates

Date	Time	Temp °C	Sunset / rise	Condition
02/09/14	Day	17		F1-2 Breeze, sunny
09/09/14	19:00-21:00	16.4-12.1	19:42	Clear sky, cooling off quickly. <F1 breeze

4.4 Phase 1 Description and Observations

4.4.1 Building 1

The L shaped barn is constructed from brick with a lined tiled and slated roof. The building has been re-roofed within the last 5 years as it was in poor condition. The roof has been lined with modern breathable membrane. The remedial works maintained the integrity of the building.



Figure 1: Building 1

Currently parts of the building are being used for storage of building material for the conversion of the adjacent barns.

A thorough internal and external examination was conducted using a strong torch.

Nine active swallow nests were observed in the building.



Figure 2: Active swallow nests.

The western end of the L shaped building is 2 storey. A small section of this is clad with weather board. Bricks are in a poor condition in this area leaving potential roost areas for bats.



Figure 3: End with weather boarding

The interior of this section was examined. A lot of bird guano was observed and a pair of stock dove were seen roosting. No evidence of barn owl was observed.



Figure 4: First floor of building

The timbers in this section are considered not to offer good potential for bat roosts as they are braced with metal straps and consequently the joints are all well fitted.

Most of one of the aspects of the L shaped building comprises open fronted units (cart shed style). Some of these sections are open to the roof whilst others have a small roof void.



Figure 5: Open cart shed sections

The corner room between the L shapes has dividing internal walls. Some bat droppings consistent with long eared bats were recorded under the central ridge in this area.



Figure 6: Bat droppings under central ridge

Feeding remains were seen at the base of the dividing wall. These were of the yellow underwing moth, a moth frequently predated by brown long eared bats.



Figure 7: Feeding remains

It is considered that bat(s) are using the wall plate of the dividing wall for roosting. Swallow nests were also observed in this building.

4.4.2 Surrounds

The adjacent barn (2) is already being converted and has also undergone maintenance and re-roofing.

4.5 Phase 2 surveys for bats

A dusk survey was conducted with surveyors positioned to view building 1. An anabat was left in the corner room to assist in the recording of the bat species in that area.

An internal inspection of building 2 was conducted as an Anabat detector had been left within the building.

Emergence of 2 soprano pipistrelles from a gable end of the building 1 was also observed at 20:01 and 20:09. These were identified from their sonogram. (Pip 50 recorded, assume soprano pipistrelle) The bats emerged from a corner of the gable end from a small gap under the new lining material.

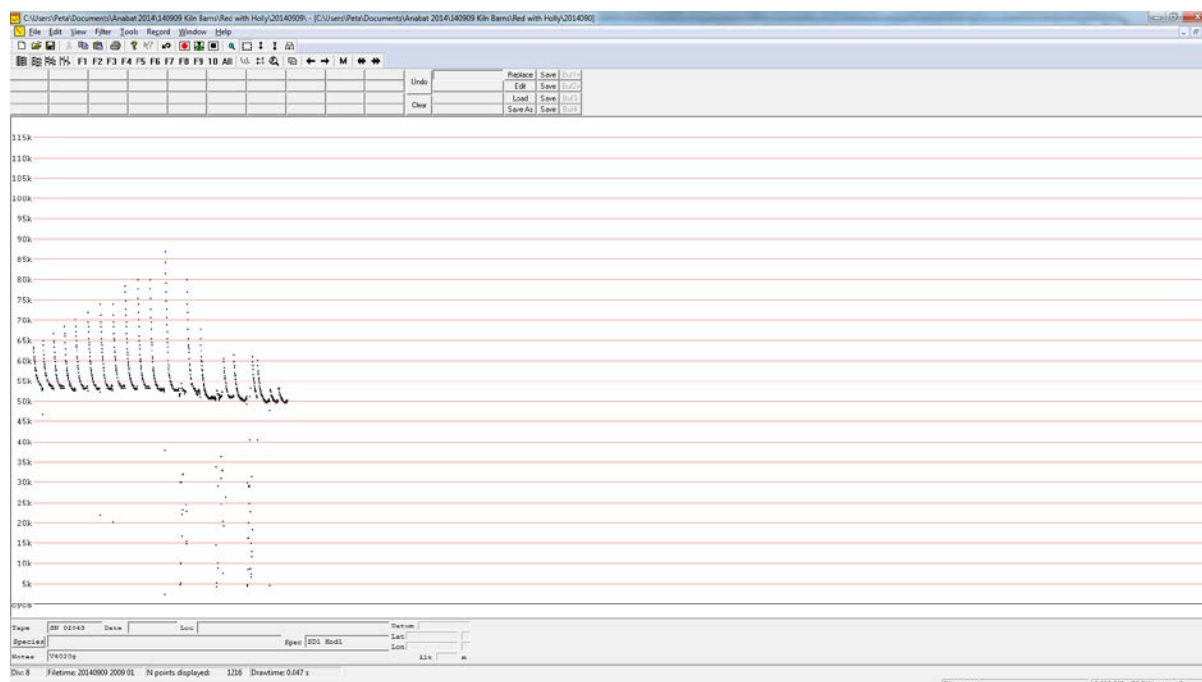


Figure 8: Soprano pipistrelle bat recorded emerging at 20:09.

The pipistrelles were recorded foraging around the courtyard between the 2 buildings for about 30min before leaving the area.

Three brown long eared bats were recorded in an enclosed section of the building B at 20:07. The lead surveyor entered the room to observe bat activity. According to the Anabat the first bat in this area was at 20:01. The bats were identified from their appearance when settled on a central ridge.

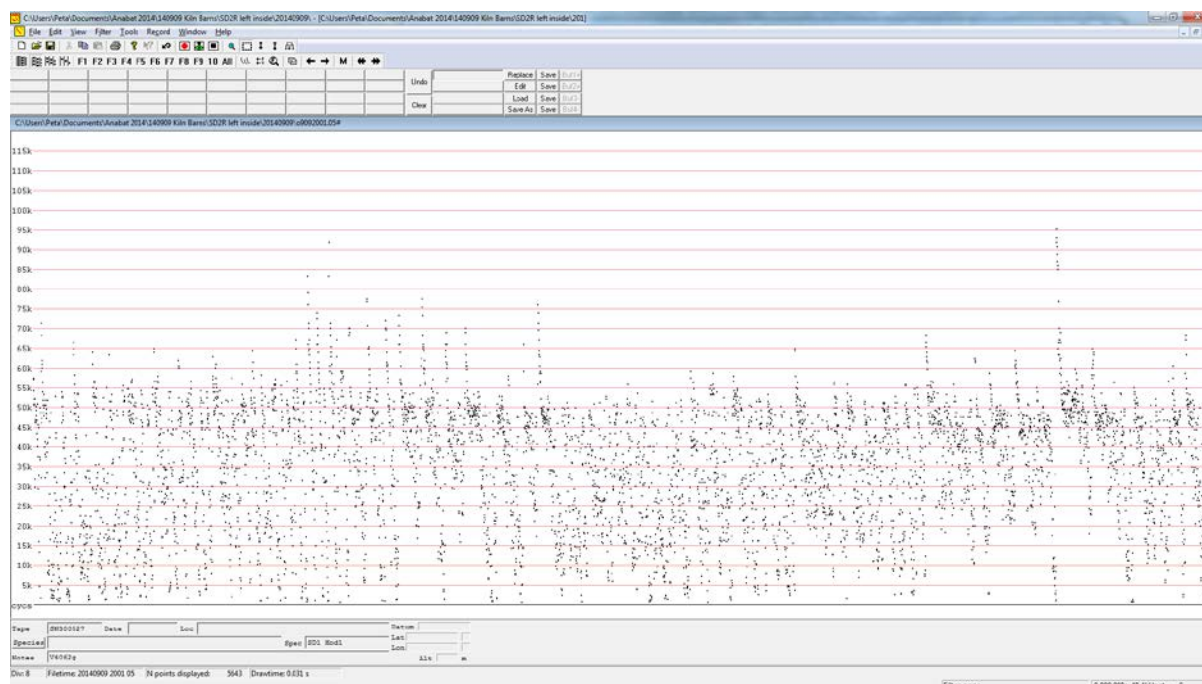


Figure 9: Bat recorded in corner room

Further surveys will be conducted on this building in 2015, and a licence to disturb bats will be recommended. Further survey data will be needed for the planning permission.

4.6 Constraints of the Survey

All areas were accessible for this survey. The survey was conducted late in the season for assessing maternity roosts. Further survey effort will be required in May-June 2015 in line with recommendations by the County Planning Ecologist.

5 Evaluation of Results

5.1 Ecologically Important Species

Species	Consideration	Impact
Mammals		
Bats	Small roost of soprano pipistrelles in gable end of building. Small maternity roost of brown long eared bats in corner room	Low Medium
Badgers	None 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 in buildings at time of survey	Nil
Nesting birds	Swallow nests observed	Low
Herpetofauna		
Reptiles	No suitable habitat on site	Nil
Great Crested Newts	No suitable habitat on site	Nil
Amphibian	No suitable habitat on site	Nil

5.2 Consideration of Individual Species / habitats

5.2.1 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.

There is a small roost of soprano pipistrelles in the gable end of the building. This was not considered to be a maternity roost. Soprano pipistrelles are not locally rare and the disturbance of a small non-maternity roost is considered to be low impact. Suitable alternative roost facilities will be provided.

A small maternity roost of brown long eared bats was identified in the corner room of the L shaped barn.

Predicted scale of impact

It is considered an offence would be committed if these bats were disturbed and the roost lost. Therefore work will need to be conducted under derogation licence from NRW.

Timing constraints will be necessary and like for like replacement provided. This will be in a new garage building on the site. This will need to be monitored for at least 2 years. (Bat Mitigation Guidelines 2004. P 39).

Brown long eared bats are not scarce on a regional or local level.

Short term impacts- disturbance

Short term impacts include the disturbance of bats by dust during construction.

Without the implementation of mitigation, short term impacts on bats by this development at a vulnerable time of the year will result in the damage and loss of roost, disturbance and probable direct harm to bats by crushing.

There will be an increase in traffic and people on site during works.

Long term impacts-roost modification

The roost for the pipistrelles will be able to be kept and the weather board at the end of the gable enhanced for bat access.

Long term impacts-roost loss

The roost of brown long eared bats will be lost. It will not be possible to place the loft in this section due to the low roof and design of the barn conversion.

Long term impacts-Fragmentation and isolation

No negative alterations to the surroundings are expected. The farm yard will be converted to gardens and car parking and this landscaping is likely to enhance the foraging and connectivity for bats,

Post development impacts

Lighting on site will need to be on a PIR and no roost entrances illuminated.

There is likely to be more traffic and people in the area once the buildings are occupied. However these species are frequently found close to habitation and so this may not be an adverse impact.

5.2.2 Barn Owls

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.

It is not an offence to:

Take a disabled wild barn owl solely for the purpose of tending it until fully recovered and then returning it to the wild.

Kill, injure, take or disturb barn owls if these were incidental results of a lawful operation and could not reasonably have been avoided.

Whilst no barn owl activity was recorded in the barn, they are known to nest at Iscoyd Park. It is recommended that a barn owl box is erected on or close to the site to assist the local population and that a check for barn owl made immediately before the building is secured for birds.

5.2.3 Birds

Birds, their nests and young are all protected from damage during the breeding season in particular, by the Wildlife and Countryside Act 1981 (as amended).

As nests have been observed in the buildings a check for nesting birds must be conducted before work commences if this occurs during the nesting season, February-August. The swallows will be excluded with polythene before they return to nest.

Swallows are on the amber list due to population declines across Europe.

Compensation will be made for the loss of nesting opportunities for swallows will be prepared before the end of March 2015.

5.3 Concluding remarks

The conservation status of brown long eared bats and soprano pipistrelles will be affected by the development of units 1A-1C. Work will need to be conducted under derogation licence and this will need to be supported with further survey work in May – June 2015. Work will follow a strict method statement. Like for like replacement will be provided as a minimum and no destruction of the former roost will occur until the replacement is completed.

Compensation for the loss of nesting opportunities for swallows will be made and enhancements for barn owl offered.

6 Recommendations

6.1 Bats- Method statement

Summary

The known populations of bats will be maintained and enhanced by the following mitigation strategy.

The conversion will commence once the licence has been obtained and the bats have left the area. The work and compensation will be completed by the end of March 2016 when bats are expected to start returning to summer roost sites..

The bats will be excluded throughout the process of the conversion.

Bats will be protected from harm during the works by:

In order to protect the bats they will be given alternative roosting opportunities in the area by the erection of a Schwegler 1FF bat box and 1FS. There will already be a Schwegler 1WQ on site.

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.

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.

The licensed consultant will be employed as an Ecological Clerk of Works (ECW) to assist with work in bat sensitive areas.

A pre-commencement inspection of the site will be conducted by the ECW using a strong torch and borescope where appropriate.

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.

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.

The ECW will be available to give advice by phone and/or email and to attend should a bat, dead or alive be found.

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.

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.

External lighting will be on a short timer directed away from bat roost access points and foraging areas.

E.1 Capture and Exclusion

1. The ecologist will be employed as Environmental Clerk of Works to oversee work in areas sensitive to bats.
2. ECW will provide a toolbox talk for works on site where there is the potential to find bats.
3. 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.
4. 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.
5. The ECW will oversee the erection of the Schwegler bat boxes on site prior to work commencing.
6. A pre-commencement inspection of the site will be conducted by the ECW using a strong torch and borescope.
7. The ECW will conduct a survey on site immediately prior to the wall being sealed. Crevices where accessible will be examined using a borescope.
8. The builder will be informed of areas where it might be possible to entomb bats.
9. The work will be completed by end of March 2016.
10. 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.

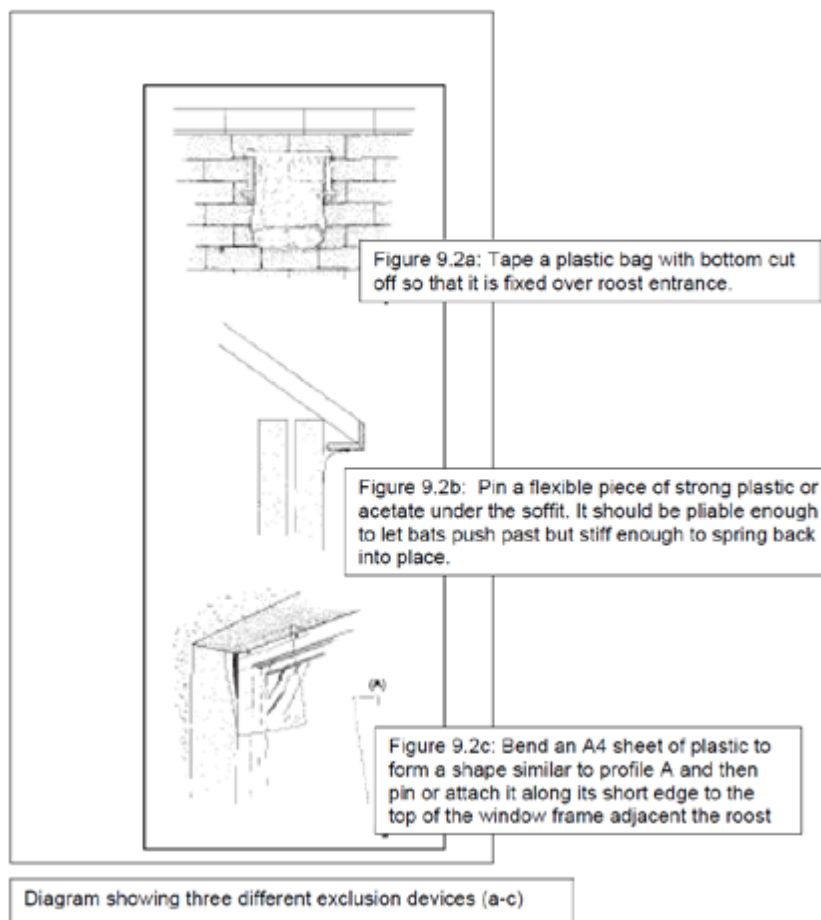


Figure 10: Choice of exclusion technique.

11. 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
12. If a bat is found it will be placed into a Schwegler 1FS bat box.
13. The consultant will check the bat provision during and after works to see it complies with the method statement.
14. The works will be audited by the ECW and by Mike Castle of North Wales Bat Services with the results sent to the Local Authority Planning Ecologist and COFNOD Records Centre.

E.2 Bat roosts and habitat

E.2.1 In-situ retention of roosts

1. The bat roost area on the gable end of the building will be retained by working carefully in that area.

E.2.2 Modification of existing roosts

1. The weather board at the gable end of the building will be carefully restored allowing bat access under it. A gap of 15mm will be provided.

E.2.3 New roost creation (including bat houses and bat boxes)

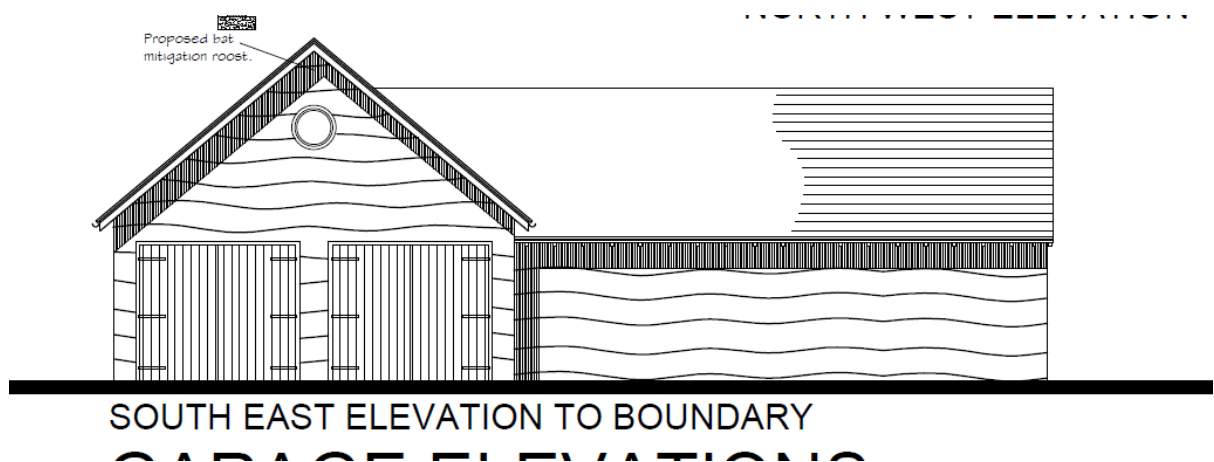
Schwegler bat boxes

1. A Schwegler box 1QW suitable for hibernating and summer roosts of bats will have been erected on an adjacent barn conversion before work commences.
2. A Schwegler 1FF bat box and 1FS will be erected on the site.
3. A bat loft will be prepared in a new garage on site.
4. The roof will be lined with traditional bitumen hessian lining.
5. The void accessible to bats will be 1.8m from the central ridge, 4m wide and 5m long.
6. Access to this will be provided using a modified slate with slit access.



Figure 11: Bat access slate and Kent bat box

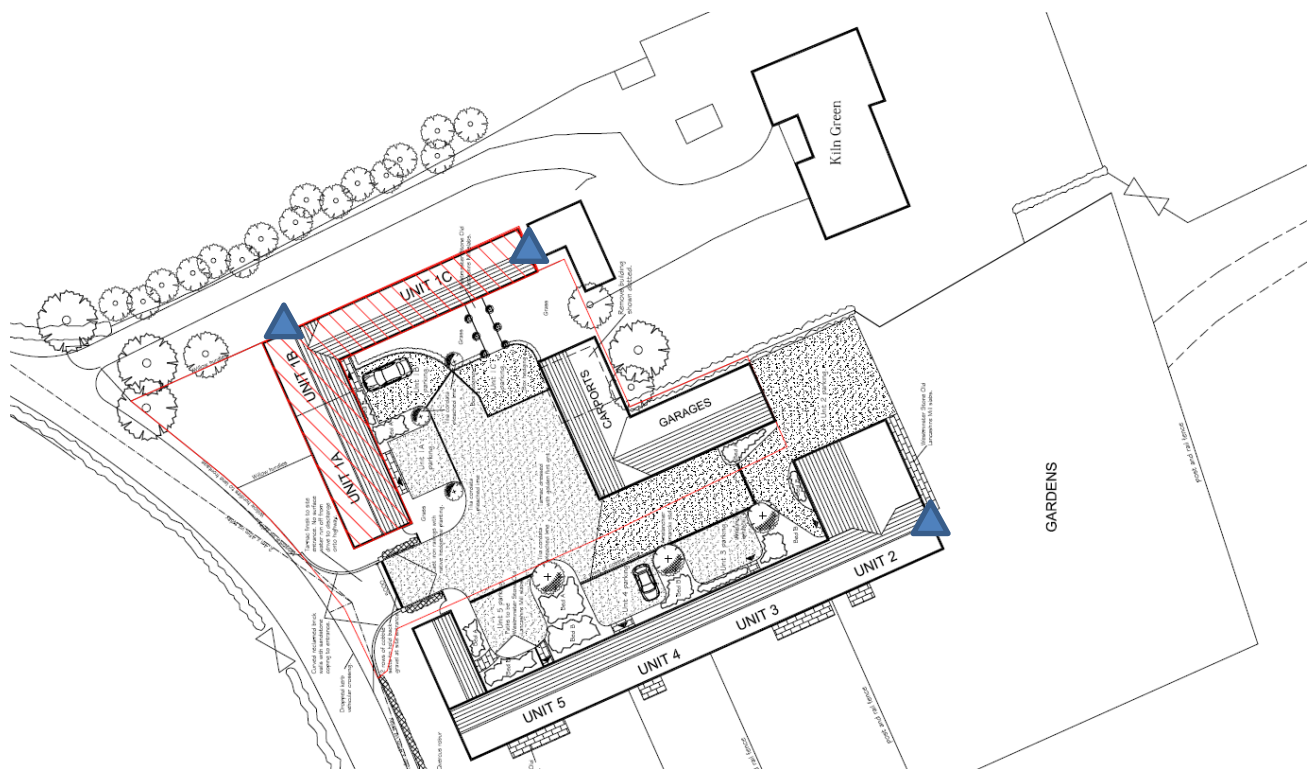
7. Internal crevice opportunities will be provided by adding untreated timber to rafters and leaving 15mm gaps. This can be in the style of the Kent bat box.



E.2.4 Maintenance &/or modification of new and existing habitat

1. The site once developed will be enhanced with garden planting which is likely to attract insects and support the bat local species.
2. Lighting around the site will be on a short timed pir and down lighting to avoid disturbing adjacent bat roost(s). No lighting will be directed toward the cool bat roost.

E.2.5 Scaled maps/plans



▲ Position of Schwegler bat box



Figure 12: Showing bat loft in garage

E.3 Mechanisms for ensuring delivery of mitigation and compensation measures

1. Compliance with the method statement will be checked by the ECW conducting monthly checks and another consultant auditing the process on a 3 monthly cycle. This will be Mike Castle of North Wales Bat Services.

E.4 Mitigation contingencies

1. If there are any alterations to the approved method statement then the ECW will be contacted and NRW will be consulted.

E.5 Biosecurity risk assessment

1. No non-native species such as Japanese knotweed were identified on the site. Should any be found then appropriate measures will be taken.
2. The ECW will wear protective gloves when handling bats to lessen the risk of infection to or from bats and the potential to pass on human pathogens.
3. All personnel associated with the Ecological Clerk of works who may come in contact with bats will be suitably protected with up to date rabies inoculations.

F. Post development safeguard

F.1 Habitat/site management and maintenance

1. When the buildings are sold, the purchasers must be made aware of the purpose of the bat provision and the appropriate legislation protecting the roost sites.

F.2 Population monitoring, roost usage

1. A program of monitoring conducted by the ECW will be needed for two years subsequent to the development being completed.
2. The cost for this should be considered as part of the development.
3. The monitoring will comprise a survey conducted in summer in the year following the completion of the development.
4. Results of the monitoring will be sent to the local records office, Cofnod, County planning ecologist and NRW.

F.3 Post development mitigation contingencies

1. If the bat roosts are not shown to use the area post development then the situation will be considered by the ECW.
2. It may be necessary to check environmental alterations such as lighting or erect more bat boxes around the site.

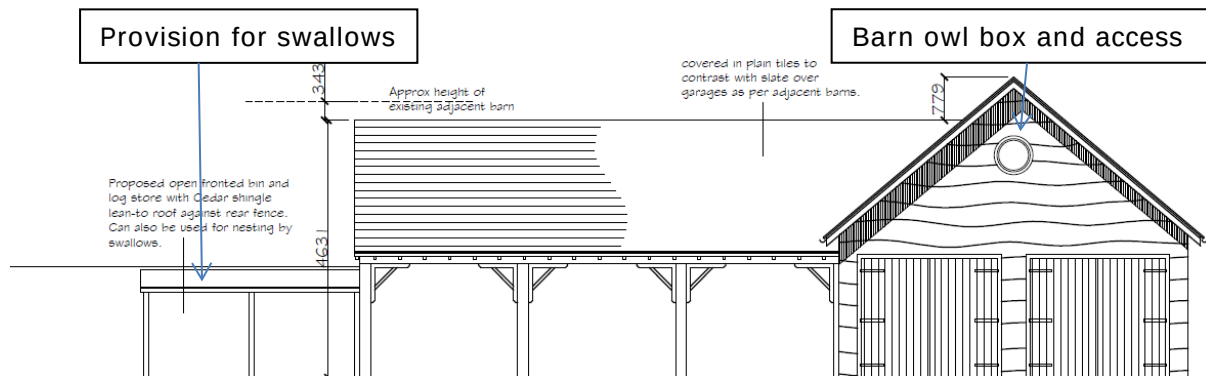
F.4 Mechanism for ensuring delivery of post development works

1. There is no section 106 agreement.

2. Should the building be sold, the purchasers must be made aware of the purpose of the bat provision and the appropriate legislation protecting the roost sites.
3. The licensee will agree and ensure monies are secured for the site monitoring for a period of up to 2 years.
4. The ECW will send all results to NRW, and Cofnod post monitoring.

6.2 Birds

1. The building will be sealed from bird so they cannot start nesting between February to August inclusive or a suitably experienced ecologist will conduct a check to ensure no nesting birds will be affected by plant removal.
2. All nesting birds will be left undisturbed until young have fledged. A 4m buffer will be left.
3. Provision for swallows will be made in a log store on site. A shelf will be erected in this to encourage nesting.
4. Access for barn owl will be constructed over the garage.
5. A 1m³ box will be prepared in this to ensure the safety of the birds.



6.3 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. Oak should particularly be encouraged as it is the dominant species in the vicinity.

Common Name	Latin Name
Ash	<i>Fraxinus excelsior</i>

English Oak	<i>Quercus robur</i>
Sessile Oak	<i>Quercus petrea</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>

7 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.

Appendices

A Ordnance Survey Map Abstract

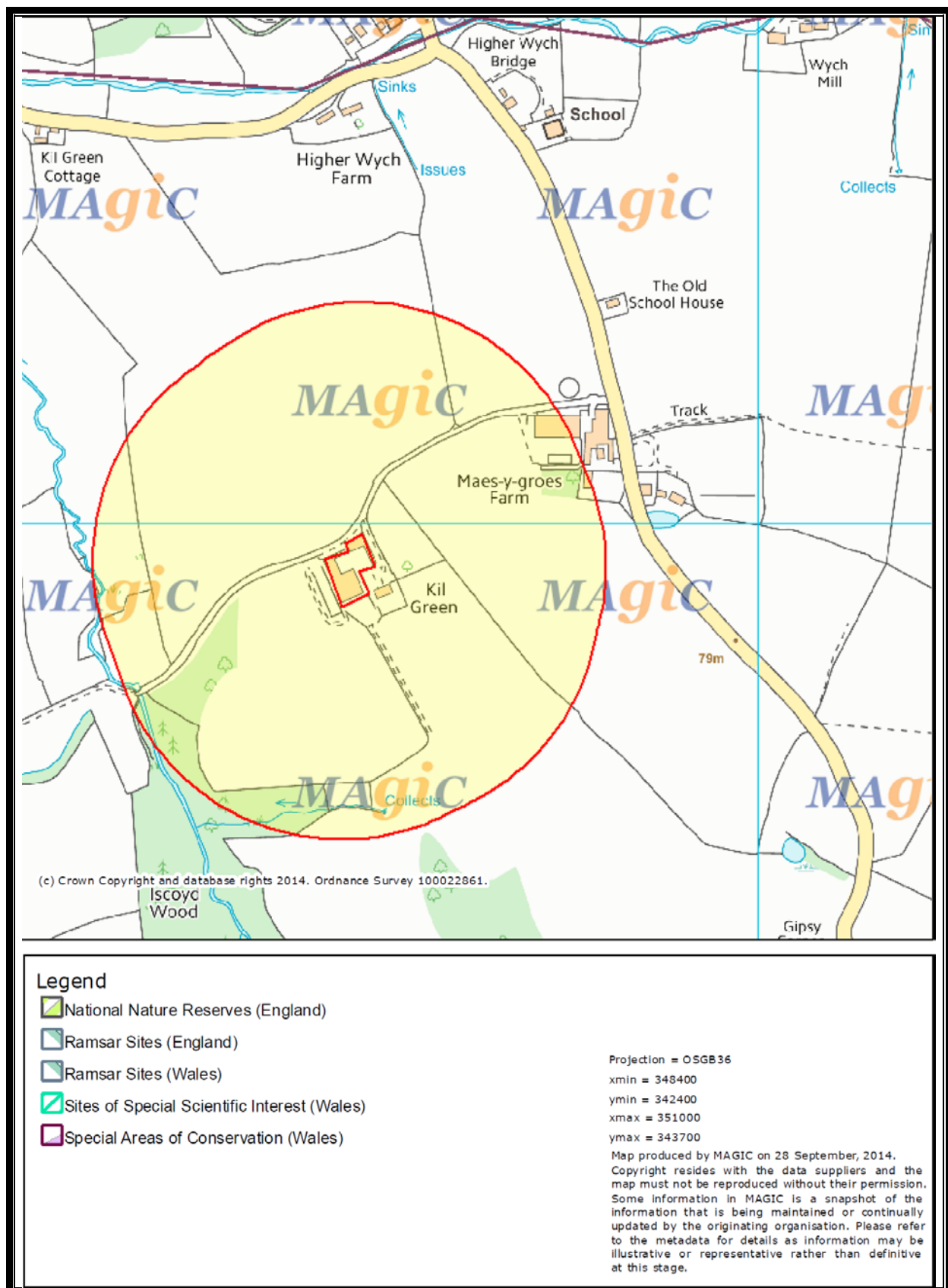
Sheet(s): 1

B Site Plan

Sheet(s): 1

C Bibliography

Sheet(s): 1

A Environmental Map

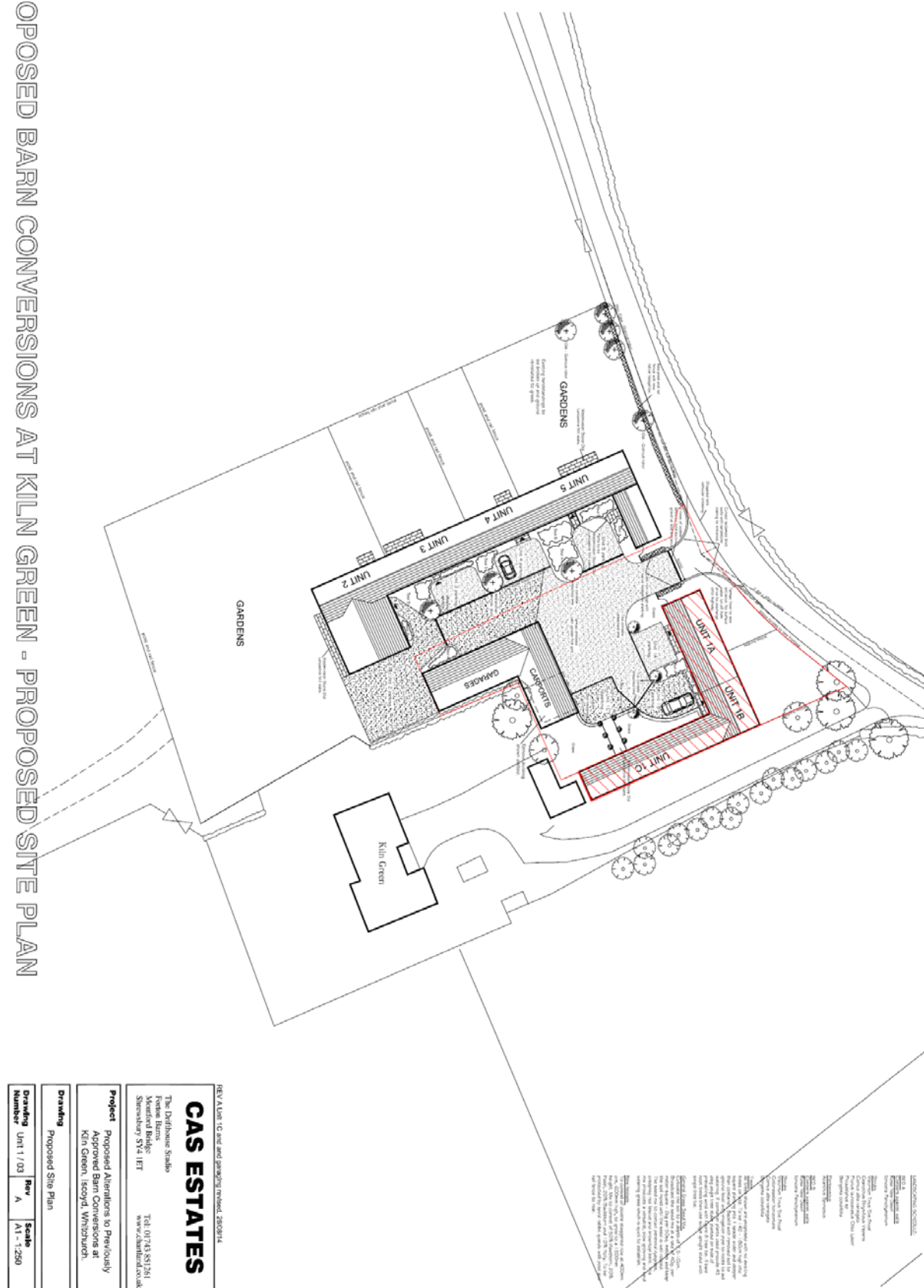
An Environmental map for Kil Green taken from - Nature on the Map- Magic Maps

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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.

B Site Plans

PROPOSED BARN CONVERSIONS AT KILN GREEN - PROPOSED SITE PLAN



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