

Protected Species Assessment
Land off Ruthin Road,
Wrexham
REVISION A

CONTENTS

	Page
1. INTRODUCTION.....	1
2. SITE DESCRIPTION.....	1
3. LEGAL PROTECTION	
3.1 Bats.....	3
3.2 Badger.....	3
3.3 Reptiles.....	3
4. BASELINE INFORMATION	
4.1 Methodology.....	4
4.2 Existing Records.....	4
4.3 Bat Species in Wrexham.....	6
4.4 Badgers in Wrexham.....	7
4.5 Reptiles in Wrexham.....	7
5. SURVEY AND SITE ASSESSMENT	
5.1 Bats.....	8
5.2 Badger.....	10
5.3 Reptiles.....	11
6. IMPACTS/MITIGATIONS	
6.1 Bats.....	16
6.2 Badger.....	17
6.3 Reptiles.....	18
7. SUMMARY.....	20

FIGURES

Figure 01: Aerial photo highlighting the site and surrounding land uses

Figure 02: External Building Assessment

APPENDIX: 01: External Building Assessment Target Notes

1. Introduction

Smeeden Foreman Ltd has been commissioned by Optimisation Developments Limited to undertake an ecological assessment of land off Ruthin Road in Wrexham (grid reference SJ 326 501), to determine the presence/absence of protected species including badger, reptiles and roosting bats. These surveys were recommended following an initial ecological assessment carried out on the site in August 2008. A desk-top study had previously been undertaken for the site and its surroundings.

The bat roost assessment was carried out at an unoccupied office building situated at the western section of the site. The reptile and badger survey was undertaken within the eastern section of the site, where semi-natural habitats, such as grassland and areas of scrub occur.

2. Site Description

The site is situated to the west of Wrexham centre, to the north of Ruthin Road (A525) and west of a railway line, running north to south. Wrexham Maelor Hospital is located adjacent to the north and areas of residential development and pastoral habitat is on the opposite side of the road to the south.

The site itself comprises industrial and office buildings with areas of hardstanding to the south-western section. This section also comprises areas of amenity grassland, which have become unmanaged, and immature tree planting. The northern and eastern section of the site comprises a dismantled railway line and junction (Croesnewydd West Junction). Areas of tall ruderal vegetation, dense scrub and broadleaved trees are also frequent within this section of the site.

Proposals include the development of a supermarket, with a petrol filling station and associated hardstanding and areas for car parking. The majority of the semi-natural habitat to the eastern section of the site is to be unaffected by the proposals. However, this area may be proposed for future development by the local authority (Wrexham County Borough Council).

Figure 01 Aerial photo highlighting the site and surrounding land uses



3. Legal Protection

3.1 Bats

All British bats are afforded full protection under both UK and European legislation.

The Conservation (Natural Habitats & c.) Regulations (amended 2007) transpose the Habitats Directive into UK law, making it an offence to:

- deliberately disturb a bat
- deliberately kill or capture a bat
- damage, destroy or obstruct access to a breeding site or resting place (note this applies to both deliberate and reckless actions).

The Wildlife and Countryside Act 1981 (as amended) (Schedule 5) made it an offence to:

- intentionally kill, injure or take a bat
- damage, destroy or obstruct a bat roost *
- disturb a bat at a roost *
- possess or control a bat or any part thereof
- sell, offer for sale, possess or transport for sale any bat or part thereof
- set traps for catching, killing or injuring bats
- possess articles for the purposes of committing offences against bats

[*= intentional and reckless offences covered]

Legal protection applies to both the animals and their breeding sites and resting places. This means that roosts are fully protected, whether they are in use at the time or not. Where roosts are identified, any works which may contravene the protection afforded to them require derogation from the provisions of the legislation in the form

of a protected species licence. Licences are only issued for actions (e.g. disturbance/destruction) where it can be demonstrated that:

1. There is no satisfactory alternative
2. The action will not be detrimental to the favourable conservation status of the species in their natural range, and
3. There are overriding reasons of public interest including those of a social or economic nature or of beneficial consequence for the environment

3.2 Badger

The badger and its habitats are protected under The Protection of Badgers Act 1992 and it is also included on Schedule 6 of the Wildlife and Countryside Act 1981, and Appendix III of the Bern Convention. The legislation affords badgers protection against deliberate harm or injury making it an offence to:

- Wilfully kill, injure, take, possess or cruelty ill-treat a badger (or attempt to do so);
- To interfere with a sett by damaging or destroying it;
- To obstruct access to, or entrance of, a badger sett;
- To disturb a badger whilst it is occupying a sett.

3.3 Reptiles

All native reptile species are protected by law. The two rarest species (sand lizard and smooth snake) have the greatest protection.

European protected species

- Sand lizard *Lacerta agilis*
- Smooth snake *Coronella austriaca*

These species are often termed 'fully protected', since all elements of Section 9 of the Wildlife and Countryside Act 1981 apply, as does Regulation 39 of the Habitats Regulations 1994. This legislation, taken together, prohibits the following on these species:

- deliberately or intentionally killing and capturing (taking) or intentional injury;
- deliberately disturbing;
- deliberately taking or destroying eggs;
- damaging or destroying a breeding site or resting place or intentionally damaging a place used for shelter and protection;
- intentionally obstructing access to a place used for shelter; and
- keeping, transporting, selling or exchanging; offering for sale or advertising.

Consequently not only are the animals themselves protected, but so is their habitat, and activities that damage the habitat or impede their use of certain parts of it are prohibited.

Protection against killing, injuring and sale etc. only

The other native species of reptiles are protected only by the Wildlife and Countryside Act 1981. Part of Section 9 (1) and all of Section 9 (5) apply. This means that they are protected against intentional killing and injuring (but not 'taking') and against sale, transporting for sale etc. These species are:

- Slow worm *Anguis fragilis*

- Common or viviparous lizard *Lacerta vivipara*
- Adder *Vipera berus*
- Grass snake *Natrix natrix*

These species received a greater level of protection following reviews of the schedules published in 1988 and 1991.

4. Baseline Information

4.1 Methodology

The ecological interest of the site has been investigated by a combination of desk study, consultation and field survey. Information was requested from the following sources:-

- Countryside Council for Wales
- Confod (North Wales Environmental Information Centre)

The following sources of information were also consulted:-

- www.magic.co.uk (government website for nature conservation and environmental information)
- National Biodiversity Network (NBN) Gateway (a web-based information network with biodiversity data)
- Ariel photos
- Local Biodiversity Action Plan

4.2 Existing Species Records

Consultation response from Confod and the Countryside Council for Wales provided records of protected species within the 2km search area. These include:

Table 1.0 Protected Species Records

Species	Grid reference/ location	Date	Comments	Approximate distance and direction from site
Bats				
Chiroptera	SJ 3250 (Estimated from map)	05/09/2002	Comments withheld	550 m west
Common pipistrelle	SJ 3249 (Estimated from map)	25/08/1999	Comments withheld	1.15 m south-west
Common Pipistrelle	SJ 3249 (Estimated from map)	16/07/1997	Comments withheld	1.15 m south-west
Chiroptera	SJ 3249 (Estimated from map)	12/07/1994	Comments withheld	1.15 m south-west
Common pipistrelle	SJ 3249 (Estimated from map)	26/06/2003	Comments withheld	1.15 m south-west
Chiroptera	SJ 3350 (Estimated from map)	12/07/1999	Comments withheld	450 m east
Chiroptera	SJ 3350 (Estimated from map)	03/10/1990	Comments withheld	450 m east
Chiroptera	SJ 3350 (Estimated from map)	01/10/1998	Comments withheld	450 m east

	from map)			
Common Pipistrelle	SJ 3251 (Estimated from map)	14/10/1999	Comments withheld	1.1 km north-west
Common pipistrelle	SJ 3349 (Estimated from map)	31/08/1999	Comments withheld	1.15 km south-east
Common pipistrelle	SJ 3248 (Estimated from map)	03/06/1993	Comments withheld	2.15 km south-west
Chiroptera	SJ 3248 (Estimated from map)	2 records on 31/05/1996 and 28/07/1999	Comments withheld	2.15 km south-west
Chiroptera	SJ 3349 (Estimated from map)	12/07/1982	Comments withheld	1.15 km south-east
Chiroptera	SJ 3348 (Estimated from map)	14/01/2002	Comments withheld	1.1 km south-east
Common pipistrelle	SJ 3148 (Estimated from map)	26/06/1989	Comments withheld	2.6 km south-west
Plecotus bat	SJ 313493	1987	None	1.45 km south-west
Brown long-eared bat	SJ 3149 (Estimated from map)	21/08/1987	Comments withheld	1.85 km south-west
Common pipistrelle	SJ 3151 (Estimated from map)	2 records, in 1988 and 24/05/1989	Comments withheld	1.75 km north-west
Chiroptera	SJ 3449 (Estimated from map)	14/08/1986	Comments withheld	1.75 km south-east
Brown long-eared bat	SJ 3150 (Estimated from map)	13/09/1999	Comments withheld	1.55 km west
Chiroptera	SJ 3449 (Estimated from map)	30/12/1999	Comments withheld	1.75 km south-east
Common pipistrelle	SJ 3248 (Estimated from map)	02/09/1987	Comments withheld	2.15 km south-west
Brown long-eared bat	SJ 3248 (Estimated from map)	30/12/1999	Comments withheld	2.15 km south-west
Common pipistrelle	SJ 3148 (Estimated from map)	20/07/1988	Comments withheld	2.6 km south-west
Common pipistrelle	SJ 3449 (Estimated from map)	12/07/1999	Comments withheld	1.75 km south-east
Chiroptera	SJ 3148 (Estimated from map)	03/07/1986	Comments withheld	2.6 km south-west
Chiroptera	SJ 3449 (Estimated from map)	04/07/1988	Comments withheld	1.75 km south-east
Plecotus bat	SJ 3149	1987	None	1.85 km south-west
Reptiles				
Common lizard	SJ 327502 Wrexham	2004	100+ on railway triangle site	Within site boundary
Slow-worm	SJ 324496 Railway track / Wrexham	2 records, both in 1990	None	450 m south
Slow-worm	SJ 326495 Cemetery, Wrexham	2 records, both in 1990	None	550 m south
Slow-worm	SJ 3349 Wrexham	1883 - 1903	None	1.15 km south-east
Common lizard	SJ 3349 Wrexham	1883 - 1903	None	1.15 km south-east
Grass snake	SJ 324496 Railway track, Wrexham	2 records, both in 1990	None	450 m south
Grass snake	SJ 326495 Cemetery, Wrexham	2 records, both in 1990	None	550 m south
Grass snake	SJ 325494 Felin Puleston	2 records, both in 1990	None	625 m south
Grass snake	SJ 324492 Felin Puleston	22/05/1995	None	900 m south
Amphibians				

Great crested newt	SJ 328483	Unknown	Record within Erddig Country Park	1.6km south
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Badger are also known to occur within the surrounding area.

The NBN Gateway 10km grid square SJ35, in which the site lies, contains post 1970s records for common lizards (*Zootoca vivipara*), grass snakes (*Natrix natrix*) and slow worms (*Anguis fragilis*). Evidence of pipistrelle bats (*Pipistrellus pipistrellus*), Daubenton's bats (*Myotis daubentonii*), whiskered (*Myotis mystacinus*) and brown long-eared bats (*Plecotus auritus*) have been recorded within 5 km of the site. Sightings of *Chiroptera* within this grid square are generally widespread. Natterer's bat (*myotis nattereri*) and have also been recorded within 7 km of the site using this database.

4.3 Bat Species in Wrexham

Nine species of bat are known to occur in the Wrexham area– soprano and common pipistrelle, noctule, Daubenton's, whiskered/Brandt's, Natterer's, lesser horseshoe and brown long-eared bats.

The JNCC's 'UK Mammals: Species Status and Population Trends' (Battersby 2005) provides an estimate of the population number, rarity and conservation status of bats for Wales and the rest of the UK. The rarity of each of the species potentially occurring on site is as follows:-

- Common species (Welsh population over 100,000) include: common pipistrelle, soprano pipistrelle, brown long-eared, Natterer's and Daubenton's bat.
- Rarer species (Welsh population between 10,000 – 100,000) include:, lesser horseshoe, whiskered, Brandt's, and noctule bat
- Rarest species (Welsh population less than 10,000) include: Nathusius' pipistrelle, Greater horseshoe, barbastelle, Bechstein's and serotine bat (none of these species have been recorded in the Wrexham area).

Common and soprano pipistrelle bats are the two most commonly occurring bat species in the UK. Both roost frequently in buildings, often in modern houses and typically in confined spaces such as between roof tiles and roof felt, behind barge boards and in cavity walls. Common pipistrelle bats have been recorded within the 2km search area around the proposals site.

Brown long-eared bats generally require large open roof spaces for pre-emergence flight within the roost, but they have been found roosting in tree holes and bat boxes in both summer and winter. Consultation response also provided records of brown long-eared bat within the 2km search area.

Noctule bats primarily roost in rot holes and crevices in large mature trees both in summer and winter but are also occasionally found using buildings and bat boxes.

Natterer's bats tend to roost in old stone buildings, wooden beams in barns, sometimes tree holes but most commonly in churches.

Daubenton's bats are often found roosting in bridges, tree holes, tunnels but sometimes stone buildings in the summer.

Whiskered and Brandt's bats are difficult to separate and are often grouped together. They have similar physical features, habitat preferences and roosting requirements, using houses, barns, churches and sometimes trees for summer roosting, and underground sites in the winter.

Lesser horseshoe bats have a species action plan prepared within the Wrexham Biodiversity Action Plan. This species requires a variety of roost types throughout the year with maternity roosts typically being located within older buildings, rural houses and outbuildings, within roof spaces or boiler rooms. These roosts are strongly associated with wooded river valleys. North east Wales roost sites are typical with a split between manor houses/halls and their satellite buildings and outlying smallholdings. Typical hibernation sites for this species include caves, tunnels, disused mines, icehouses and cellars. The known populations of lesser horseshoe in Wrexham County Borough are found within the Ceiriog and Clywedog valleys and represent the eastern limit of the range in Britain.

4.4 Badgers in Wrexham

The badger is found throughout most of Britain. Its decline was reversed in the late 1980s following protective legislation and better control of toxic chemicals such as sheep dip. The National Badger Survey (Creswell et al. 1990) estimated that there are 43,000 social groups for the total population of Great Britain. The UK population is of international importance since the badger is declining over much of its range throughout Europe.

Within the Wrexham area, Geoffrey Spencer's sett records for the Mammal Society showed a decline in the population during the 1970s. The Clwyd Badger Group's sett records have subsequently shown a general recovery in the population. However, local declines continue in some areas mainly due to illegal persecution.

Badger records were provided within the 2km search area by Confod.

4.5 Reptiles in Wrexham

Common Lizard – Has a widespread but patchy distribution across the whole of the British Isles. They are the only reptile to be found in Ireland.

Slow-worm – Widespread distribution across England, Scotland and Wales though the species is particularly common in southern and eastern England. It is not native to Ireland.

Grass Snake – Patchily distributed throughout England and Wales in a wide variety of damp habitats usually associated with ponds and lakes, marshes, streams and ditches. Absent from Ireland and most of Scotland but may occur around the borders.

Adder – Patchily distributed throughout England, Scotland and Wales in a wide variety of habitats. Absent from Ireland.

The distribution of the smooth snake is predominantly restricted to southern England and the sand lizard is, again primarily found to the south and the western coast. It is therefore considered that smooth snake and sand lizard will not be present within the application site and a license to carry out the survey is not required.

Consultation held with Confod provided records for slow worm, grass snake and common lizard within the 2km search area. Common Lizard have been recorded in 2004 within the disused railway junction which falls partly within the site and is adjacent to the east.

5. Survey and Site Assessment

5.1 Bats

Methodology

An external building assessment of office buildings to the western section of the site was undertaken on 26th August 2009 using close focussing binoculars and a 1- million candle-power torch to identify any roosting and access opportunities for bats and evidence of actual bat usage, such as droppings, fur staining, urine staining, scratch marks, distinctive smell, dead bats as well as roosting bats.

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 the 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.

Important habitat features surrounding the structure 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 based upon professional judgement.

From the external inspection it was considered that the office building to the north of the site, within the western section (see figure 02) had a low to moderate risk of supporting roosting bats, whilst the other two structures, within the western section were considered to have a negligible risk and no further survey was considered necessary. An internal survey of the northern office building was therefore undertaken to further assess its risk. This was carried out by using binoculars and an endoscope. The office building had no accessible roof void so survey focused on the upper floor rooms within the buildings and a set of garages and storage rooms on the lower floor.

The internal inspection searched for evidence of actual bat usage, such as droppings, fur staining, urine staining, scratch marks, distinctive smell, dead bats as well as roosting bats. The internal inspection was undertaken on the 2nd September 2009.

A dusk emergence survey and a dawn swarming survey were undertaken on the 31st August and 1st September 2009 respectively. Three surveyors were present for each survey so that all potential roosting locations and all aspects of the building could be adequately surveyed. Bat surveyors were equipped with Batbox Duet, Pettersson D230 and Pettersson D240x bat detectors. The emergence survey commenced fifteen

minutes before sunset and lasted for an hour and a half. The dawn survey commenced an hour and half before sunrise and lasted until fifteen minutes after sunrise.

Survey Results

External Assessment

Numerous potential roost access points were noted during the external inspection of the building. Potential access points included gaps where mortar had crumbled from between, brickwork, behind lifting weather boarding, within a damaged porch and within deep crevices between concrete beams in the undercroft area. These crevices below the undercroft were considered to offer the greatest roosting potential (Target Notes 3 on Figure 02).



No droppings or other bat field signs were found on external surfaces. Full descriptions of the external potential roosting features are shown on Figure 2 with target note descriptions in the Appendix 01.

A number of birds nests were noted on the building during the external building assessment including active pigeon nests.

Internal Assessment

The upper floor of the building is considered to be unsuitable for roosting bats. This floor comprises of office rooms with rendered walls (see photograph right) offering no roosting provisions for crevice dwelling bats. The offices are brightly lit by windows and sky lights. No access to any roof void could be found.



The lower floor of the building offered greater potential roosting provisions. There are two rooms at the eastern end of the building. The ceilings of these rooms comprise of rows of concrete beams (see photograph right). There are gaps of dimensions of approximately 20mm wide by 100mm deep and up to 400mm long between these concrete beams. The rooms can be accessed via a gap above a roller shutter door on the northern face of the building. There was evidence that pigeons had previously accessed the interior of the rooms therefore bats could also have potentially gained access. However, no bat droppings or other field signs were found internally. The floors and the surfaces of furniture in the rooms were free of any debris so any bat droppings would have been readily encountered.



Activity Survey

The evening emergence survey was conducted on the 31st August 2009 in dry, still warm conditions (temperature approximately 15°C). Sunset was recorded at 20.05.

A single common pipistrelle was recorded foraging over vegetation to the east of the office building. This bat was recorded at 20.46. No other bat contacts were made during survey.

The dawn survey was conducted on the 1st September 2009 in dry, still warm conditions (temperature approximately 11°C). Sunrise was recorded at 06.20.

No bats were recorded during the dawn survey.

Survey Conclusions

No evidence of bats was found during the internal or external inspection of the building. Furthermore only very limited bat activity was recorded during evening surveys with no bats recorded roosting in the building. It is therefore considered to be very unlikely that the building is currently or has previously been used as a significant roost by any species.

However a very low risk remains that the building may be used occasionally by individual or small numbers of bats as a night roost or for hibernation. Such low levels of bat activity would be unlikely to leave any field signs.

5.2 Badger

Methodology

This survey was concerned with establishing the presence/absence of badgers within the application site and surrounding area. The presence of badgers is usually determined from detecting setts, latrines, footprints and distinctive hairs (often found on fences and other rough wood). Suitable habitats in which setts or signs of foraging badger may be present were surveyed in September 2009. The survey was mainly concentrated within the disused railway junction, in which a section of the site is based, where areas of dense shrubs and trees occur and grassland habitat suitable for

foraging is present. Reference was made to the RSPCA publication Problems with Badgers? (1994) and the Mammal Society field aid A Guide to British Mammal Tracks and Signs (2001) to identify signs of the species and to determine the status of setts, if detected.

Survey Results

During the badger survey, no sign of the species was detected within or immediately outwith the site (within 30m) during the survey. The disused railway junction, although considered as potential habitat for the species, appears to be regularly disturbed, with informal footpaths observed and dog walkers seen using the site. This could potentially deter badgers from establishing setts within this area.

Survey Conclusions

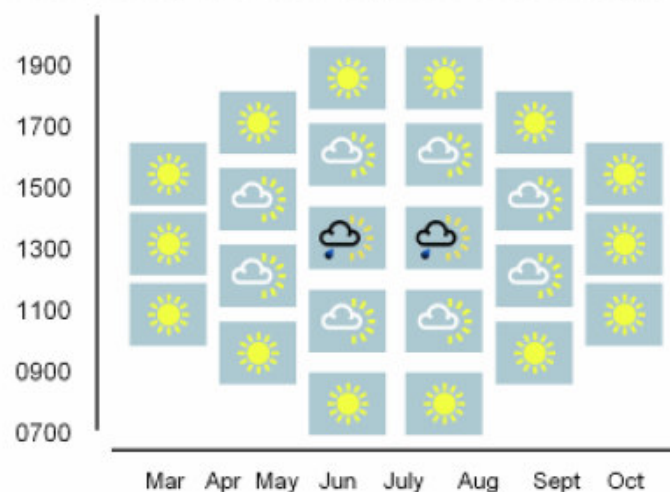
No evidence of badger was found within the site or within suitable habitat outwith the site (within 30m). No protected species licenses will therefore be required in regards to the proposed development for this species.

5.3 Reptiles

Methodology

The survey was carried out to methods advised within the Hepertofauna Worker Manual (1998), Froglife Advice Sheet 10 (Reptile Survey) and the NARRS Reptile Survey Pack. Visits were made to the site on seven separate occasions to assess the presence/absence of reptile species, with each method described below adopted during each visit. The survey was undertaken during September 2009 during suitable weather conditions for detecting basking reptiles. Surveys were therefore carried out when the air temperature was between 9 and 18°C, on bright sunny days from 9:00am and 6:00pm, as advised on the graph included within the NARRS survey pack (see below). Wet and windy days were avoided. Results of the surveys were recorded using a version of the NARRS National Reptile Survey Form (2008).

Best survey weather depends on timing...



Source: NARRS (2008)

Direct observation

Habitats favoured by reptiles tend to be sunny, open, undisturbed, well drained and often south-facing. Typical habitats include: grass and heathland, chalk downland, coppiced woodland, sand dunes, disused allotments, suburban wasteland, road/railway embankments/cuttings, golf course roughs, rough grassland, open woodland and woodland edge, immature forestry plantations, sea cliffs, moorland, disused quarries/chalk pits/sand pits/brick pits, unintensively managed farmland and wild gardens. In addition, grass snakes favour more damp habitats such as those associated with still and running water, grazing marshes, mires, etc.

When undertaking the survey using the direct observation method, the general aim was to look for basking animals, so sunny spots in areas of suitable habitat were located. Open vegetation was also searched, since reptiles will not always bask fully exposed. When searching, the surveyor walked slowly and scanned the area at least 3-4m in front with the sun behind them looking into the basking spots. Binoculars were also used to scan suitable habitat prior to reaching it, to avoid disturbance of basking animals.

Using refuges ("tinning")

Reptiles are often found under or on top of objects resting on the ground. These refuges can act as a place of shelter from predation and disturbance, and as an aid to absorbing heat. Artificial refuges can sometimes act as reptile "magnets", attracting animals from the immediate vicinity, and can be a useful aid to survey if placed on the site carefully. Squares of roofing felt approximately 0.5m² in size were therefore located within suitable areas of reptile habitat in sunny areas of the site. The number of refuges used was based on the recommendation made within the Froglife advice sheet of ten refuges per hectare of suitable habitat. Thirty refuges were put out and then left in place for two weeks prior to commencing the survey to allow reptiles, if present within the area to become familiar with these features.

During the visits to the site the refuges were lifted at one edge of the square to near vertical to check for reptile presence. Each refuge was approached slowly before checking so as not to disturb any reptiles that may be present beneath the tile. Other features, which could act as reptile refugia, that were present within the site prior to survey were also checked. These included rubber tires, bricks, broken concrete, rusty metal and wooden planks.

Reptile skins (sloughs)

All reptiles periodically shed the outer layer of their skin. Shed skins (sloughs) tend to be found next to rough vegetation, rocks or logs, which the animal has rubbed up against in order to help with sloughing. Adult grass snakes and adders generally slough twice per year (more frequently in young snakes), and it is easy to tell sloughs apart, especially as they remain more or less in one piece. Adder sloughs usually retain faint traces of the zigzag markings whilst grass snake sloughs are generally unmarked. Slow-worm sloughs often form scrunched up rings, and lack the enlarged belly scales which snakes possess. Common lizards usually shed their skins in many fragile pieces (on which markings are still discernible), but these degenerate rapidly.

During the general survey of the site using the direct observation method, signs of reptile presence, such as sloughs were also taken into account.

Survey Results

Visit 1

Date	16/09/09		Time spent surveying (mins)	80	
Start time	15:50		No. of artificial refugia checked	30	
Finish time	17:10		No. of pre-existing refugia checked	14	
Weather conditions (for reptiles survey)	Poor	Moderate	Good	V. good	Excellent
			18°C, Overcast with sun, light breeze, dry		

	Visual search				Artificial refugia			Existing refugia		
(Total number of each seen)	Adult (M/F)	Imm	Juv	Sloughs	Adult (M/F)	Imm	Juv	Adult (M/F)	Imm	Juv
Common lizard	0	0	0	0	0	0	0	0	0	0
Slow-worm	0	0	0	0	0	0	0	0	0	0
Grass snake	0	0	0	0	0	0	0	0	0	0
Adder	0	0	0	0	0	0	0	0	0	0
Other (specify)	0	0	0	0	0	0	0	0	0	0

Visit 2

Date	17/09/09	Time spent surveying (mins)	85		
Start time	09:50	No. of artificial refugia checked	30		
Finish time	11:15	No. of pre-existing refugia checked	12		
Weather conditions (for reptiles survey)	Poor	Moderate	Good	V. good	Excellent
		15 °C, Overcast, no wind.			

	Visual search				Artificial refugia			Existing refugia		
(Total number of each seen)	Adult (M/F)	Imm	Juv	Sloughs	Adult (M/F)	Imm	Juv	Adult (M/F)	Imm	Juv
Common lizard	0	0	0	0	0	0	0	0	0	0
Slow-worm	0	0	0	0	0	0	0	0	0	0
Grass snake	0	0	0	0	0	0	0	0	0	0
Adder	0	0	0	0	0	0	0	0	0	0
Other (specify)	0	0	0	0	0	0	0	0	0	0

Visit 3

Date	23/09/09	Time spent surveying (mins)	80		
Start time	14:20	No. of artificial refugia checked	30		
Finish time	15:40	No. of pre-existing refugia checked	10		
Weather conditions (for reptiles survey)	Poor	Moderate	Good	V. good	Excellent
			17°C, overcast with some sun, light breeze		

	Visual search				Artificial refugia			Existing refugia		
(Total number of each seen)	Adult (M/F)	Imm	Juv	Sloughs	Adult (M/F)	Imm	Juv	Adult (M/F)	Imm	Juv
Common lizard	0	0	0	0	0	0	0	0	0	0
Slow-worm	0	0	0	0	0	0	0	0	0	0
Grass snake	0	0	0	0	0	0	0	0	0	0
Adder	0	0	0	0	0	0	0	0	0	0
Other (specify)	0	0	0	0	0	0	0	0	0	0

Visit 4

Date	24/09/09	Time spent surveying (mins)	80		
Start time	10:10	No. of artificial refugia checked	30		
Finish time	11:30	No. of pre-existing refugia checked	11		
Weather conditions (for reptiles survey)	Poor	Moderate	Good	V. good	Excellent
				13.5 °C, sunny, light breeze	

	Visual search				Artificial refugia			Existing refugia		
(Total number of each seen)	Adult (M/F)	Imm	Juv	Sloughs	Adult (M/F)	Imm	Juv	Adult (M/F)	Imm	Juv
Common lizard	0	0	0	0	0	0	0	0	0	0
Slow-worm	0	0	0	0	0	0	0	0	0	0
Grass snake	0	0	0	0	0	0	0	0	0	0
Adder	0	0	0	0	0	0	0	0	0	0
Other (specify)	0	0	0	0	0	0	0	0	0	0

Visit 5

Date	29/09/2009	Time spent surveying (mins)	115		
Start time	14:20	No. of artificial refugia checked	30		
Finish time	16:15	No. of pre-existing refugia checked	5		
Weather conditions (for reptiles survey)	Poor	Moderate	Good	V. good	Excellent
				17°C, slightly overcast with some sunny spells, light breeze	

	Visual search				Artificial refugia			Existing refugia		
(Total number of each seen)	Adult (M/F)	Imm	Juv	Sloughs	Adult (M/F)	Imm	Juv	Adult (M/F)	Imm	Juv
Common lizard	0	0	0	0	0	0	0	0	0	0
Slow-worm	0	0	0	0	0	0	0	0	0	0
Grass snake	0	0	0	0	0	0	0	0	0	0
Adder	0	0	0	0	0	0	0	0	0	0
Other (specify)	0	0	0	0	0	0	0	0	0	0

Visit 6

Date	30/09/2009	Time spent surveying (mins)	90		
Start time	10:00	No. of artificial refugia checked	30		
Finish time	11:30	No. of pre-existing refugia checked	5		
Weather conditions (for reptiles survey)	Poor	Moderate	Good	V. good	Excellent
			14°C, slightly overcast but with sunny spells, no wind		

	Visual search				Artificial refugia			Existing refugia		
(Total number of each seen)	Adult (M/F)	Imm	Juv	Sloughs	Adult (M/F)	Imm	Juv	Adult (M/F)	Imm	Juv
Common lizard	0	0	0	0	0	0	0	0	0	0
Slow-worm	0	0	0	0	0	0	0	0	0	0
Grass snake	0	0	0	0	0	0	0	0	0	0
Adder	0	0	0	0	0	0	0	0	0	0
Other (specify)	0	0	0	0	0	0	0	0	0	0

Visit 7

Date	30/09/2009	Time spent surveying (mins)	90		
Start time	15:15	No. of artificial refugia checked	30		
Finish time	16:45	No. of pre-existing refugia checked	5		
Weather conditions (for reptiles survey)	Poor	Moderate	Good	V. good	Excellent
					15°C, very sunny for the majority of survey, light breeze

	Visual search				Artificial refugia			Existing refugia		
(Total number of each seen)	Adult (M/F)	Imm	Juv	Sloughs	Adult (M/F)	Imm	Juv	Adult (M/F)	Imm	Juv
Common lizard	0	0	0	0	0	0	0	0	0	0
Slow-worm	0	0	0	0	0	0	0	0	0	0
Grass snake	0	0	0	0	0	0	0	0	0	0
Adder	0	0	0	0	0	0	0	0	0	0
Other (specify)	0	0	0	0	0	0	0	0	0	0

Survey Conclusions

No reptiles were recorded during the seven visits undertaken. However due to the suitability of the disused railway junction to support reptiles, the fact that it is very difficult to prove absence of reptiles and the relatively recent records of common lizard on the junction, it is considered that a small number of reptiles have potential to occur within the site. Personal communication with on site users also indicates that “small lizards” have been seen on site. These are most likely to be common lizard, which have previously been recorded on site.

6. Impacts/Mitigation

6.1 Bats

Potential Impacts of Proposal

The building assessment found the office building to have a number of potential access points which could be utilised by roosting bats. However, no signs of bat use were found around the potential roosting features. The internal survey found no evidence of a current or past roost and also considered the building be unsuitable for roosting purposes internally with no crevices and the numerous windows and skylights of the building making the building very well-lit internally. Furthermore, during the activity surveys no bats were noted entering or emerging from the building and only very limited bat activity was recorded within the site.

The existing data from the 2km search area around the proposed development site shows records of common pipistrelle and brown-long-eared bats. The evening activity survey recorded a single common pipistrelle foraging over vegetation to the east of the site. This is unsurprising as the eastern section of the site currently holds a variety of habitats suitable for commuting and foraging bats.

Mitigation

Since there are no indications to suggest the presence of a bat roost in the office building within the application site, no formal mitigation measures are required although some precautionary and conservation enhancement measures are recommended:

- As the site has potential to support commuting and foraging bats along the tree-lined boundary to the north, it is recommended that these features should be retained where possible within the landscape proposals.
- In order to enhance the conservation value of the site in terms of bats, in line with Planning Policy Statement 9, landscape proposals for the site should include a variety of species and features to provide foraging interest, such as the native hedgerows recommended at the site boundaries. The hedgerow should include a range of flowering, and berry bearing shrubs which will be of value to invertebrates, and in turn for bats. These should preferably be sourced from seeds/plants of local provenance.
- Artificial lighting can cause disturbance to bats and other nocturnal wildlife. To avoid impacting on bats, temporary and permanent lighting should avoid illuminating areas highlighted as supporting foraging and commuting bats, for example the boundary trees and proposed hedgerows. The Bat Conservation Trust have published guidelines on the subject 'Bats and Lighting in the UK', a document which should be consulted for advice on the types of external lighting to be used.
- Bat boxes designed to support bats throughout their life cycle could also be erected on retained trees to the northern boundary in order to enhance the roosting opportunities for bats.
- In the unlikely event that bats are encountered during demolition, works must immediately stop and advice should be sought from an appropriately qualified ecologist.
- Building demolition should be undertaken outwith the breeding bird period (March to August inclusive) unless checks by an appropriately qualified ecologist have found nests to be absent immediately prior to works commence.

6.2 Badger

Potential Impacts of proposal

Although no signs of badger were detected within the site during the survey undertaken, the species is known to occur within the surrounding area with records of the species being provided by consultees. As habitats within the site provide suitable foraging opportunities and there is potential for badger to access the site, for example, along the adjacent railway line, there is a risk that badger could be harmed/killed during the proposed site works.

Mitigation

A precautionary approach is recommended during site works to avoid accidental harm or injury of this species. This will include covering any trenches at the end of each

working day, or include a means of escape for any animal falling in and any temporarily exposed open pipe systems should be capped in such a way as to prevent badgers gaining access.

6.3 Reptiles

Potential Impacts of proposal

Although no reptiles were recorded during the surveys, it is considered likely that the site has potential to support small numbers of reptiles, due to the sites suitable habitats and the difficulty to prove absence of such species. The desk study also revealed recent records of common lizard, within the disused railway junction. A precautionary approach prior to site clearance works and the creation of features to replace suitable reptile habitat is therefore recommended.

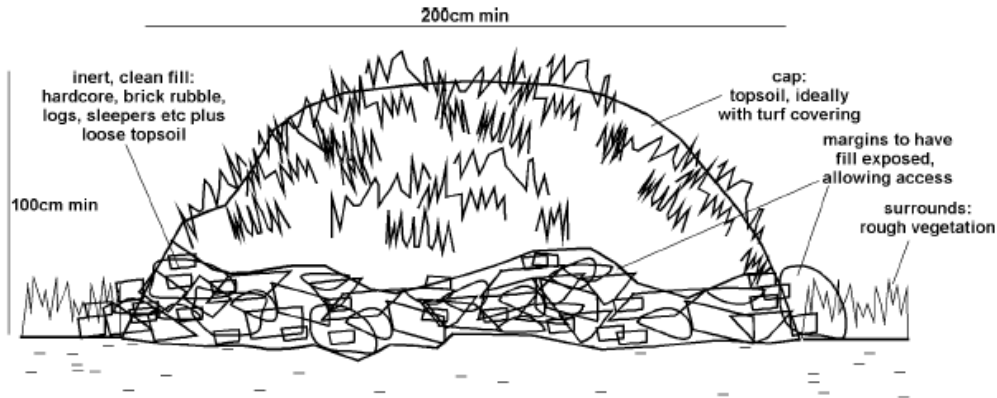
Rubble piles present within the site to the north-western section are considered to offer potential refugia and hibernation sites to reptiles. Prior to site clearance works commencing, these features will be destructively searched by an appropriately qualified ecologist to ensure no risk of harm to reptiles. Any reptiles found will be translocated to retained areas of habitat within the site or outwith the site. The rubble will then be taken off-site immediately after being destructively searched to avoid reptiles returning to the site. Searching will be undertaken outside the reptile hibernation period (November – March inclusive) to avoid harm to hibernating reptiles.

To ensure no harm to reptiles during site clearance, directional clearance methods will be adopted to allow any reptiles that may occur within the site to move to unaffected areas. This will involve clearing the vegetation in the direction of retained suitable habitat outwith the site to the east, where sections of the disused railway junction are to be unaffected by the proposed development. This will be undertaken outside of the reptile hibernation period (November – March inclusive) to avoid harm to hibernating reptiles.

Breeding birds will also have to be considered during the removal of dense scrub habitats. Vegetation clearance should be undertaken outwith the breeding bird season (March – August inclusive) unless checks by an appropriately qualified ecologist have found active nests to be absent immediately prior to works. However, to avoid vegetation clearance being restricted to the months of September and October to prevent harm/disturbance to both hibernating reptiles and breeding birds, vegetation could be taken down to just above ground level (approx 20cm) during the winter period. This will prevent breeding birds from nesting within areas of the site to be affected by development and will prevent harm to hibernating reptiles. Once reptiles are active following the hibernation period, remaining stems and stumps of vegetation can be removed without the risk of disturbing breeding birds.

To mitigate for the loss of suitable reptile habitat, it is recommended that sections to the north of the site are proposed as wildflower grassland, which is subject to unintensive management. This will offer suitable foraging habitat for reptile species and also provide cover. Wildflower grassland is recommended to be seeded on a strip adjacent to an access road to the north of the proposed supermarket and the strip which will run adjacent to a footpath proposed to the northern boundary. It is also suggested that within these recommended wildflower grassland areas that a reptile hibernacula/basking bank is created, which would facilitate basking and act as a hibernation site. This can consist of a pile of rubble, logs, old railway sleepers, etc. and

would be packed loosely with topsoil to create small gaps. The most extensive slope of the mound should be south to south-west facing to catch the most sun. The design of these hibernacula is similar to that recommended within the Natural England Great Crested Newt Mitigation Guidelines (2001[see figure below]).



Native hedgerows are also recommended to surround the majority of the site boundary. Such features will also provide hibernation opportunities for reptiles and additional cover.

As previously mentioned, habitats within the disused railway junction, which are to be unaffected by the proposed supermarket development may be lost to future development proposed by the local council. If the council development takes place over a year from when the reptile survey detailed within this report has been carried out, a further survey is recommended to assess the presence/absence of reptiles within the site. If the development is to take place within the year, an appropriately qualified ecologist should be consulted, with details of the development, to ensure reptile species, potentially occurring on site are considered and suitably mitigated for.

7. Summary

This report provides the findings from a bat roost assessment, and reptile and badger survey carried out on a site to the north of Ruthin Road in Wrexham undertaken within August and September 2009.

Bats

A data search of existing ecological information has been carried out, as well as an internal and external building assessment of an office building to the north-west of the proposed development site. In addition a dusk and dawn emergence/re-entry/activity survey was undertaken to determine the presence/absence of a roost within this building. The existing data shows records of at least two bat species in the 2 km search area.

The building assessment found the office building to have a number of potential bat roosting features externally, with missing mortar noted within brickwork in a number of places and gaps within the ceiling of an overhang to the eastern end of the building. Internally the building was considered to be sub-optimal for roosting bats, with few potential roosting spaces and crevices available and many windows and sky lights creating a very well-lit environment. The bat activity surveys undertaken found no bats emerging or entering the building and only minimal activity was recorded within the site, with a single common pipistrelle recorded foraging to the east of the site during the evening survey.

In conclusion, there was no evidence to suggest the presence of a bat roost in the office building and it is unlikely that a significant roost such as a maternity roost would be supported. The building can therefore be demolished without significant risk of impacting upon bats – and a European Protected Species license will not be required in order to undertake the works.

The following mitigation measures are recommended:

- As the site has potential to support commuting and foraging bats along the tree-lined boundary to the north, it is recommended that these features should be retained where possible within the landscape proposals.
- In order to enhance the conservation value of the site in terms of bats, in line with Planning Policy Statement 9, landscape proposals for the site should include a variety of species and features to provide foraging interest, such as the native hedgerows recommended at the site boundaries. These should include a range of flowering, and berry bearing shrubs which will be of value to invertebrates, and in turn for bats. These should preferably be sourced from seeds/plants of local provenance.
- Artificial lighting can cause disturbance to bats and other nocturnal wildlife. To avoid impacting on bats, temporary and permanent lighting should avoid illuminating areas highlighted as supporting foraging and commuting bats, for example the boundary trees proposed hedgerows. The Bat Conservation Trust have published guidelines on the subject 'Bats and Lighting in the UK', a document which should be consulted for advice on the types of external lighting to be used.
- Bat boxes designed to support bats throughout their life cycle could also be erected on retained trees to the northern boundary in order to enhance the roosting opportunities for bats.

- In the unlikely event that bats are encountered during demolition, works must immediately stop and advice should be sought from an appropriately qualified ecologist.
- Building demolition should be undertaken outwith the breeding bird period (March – August inclusive) unless checks by an appropriately qualified ecologist have found nests to be absent immediately prior to works commence.

Badger

A badger survey was undertaken of the semi-natural habitats present to the north and east of the site and habitats outwith the boundary to the east. This survey was recommended following badger records being provided within the 2km search area and the site providing potential badger habitat in terms of sett location and foraging suitability. The site is also well connected to the surrounding area, through the adjacent railway line.

No signs of badger were detected within the site, during surveys undertaken in September. No license will therefore be required for the proposed works on site in regards to this species. However, as there is a potential risk of badger utilising the site for foraging purposes, precautionary working methods are recommended to ensure the species is not harmed during works. This will include covering any trenches at the end of each working day, or include a means of escape for any animal falling in and any temporarily exposed open pipe systems should be capped in such a way as to prevent badgers gaining access

Reptiles

A reptile survey of grassland and scrub habitats present to the north and east of the site and adjacent to the eastern boundary was recommended following the initial ecological walkover survey. These areas were considered to provide suitable habitats to reptiles and also a recent record of common lizard was provided for the disused railway junction, part of which lies within the site. Seven visits were made to the site within September 2009 with refuge checking and direct observation methods used to detect any reptiles present within the site.

No reptiles were recorded during the surveys undertaken. However, due to the difficulty in detecting such species and common lizard having been previously recorded on the disused railway junction, it is considered that a small population of reptiles potentially may occur on site.

To ensure reptiles species are not harmed/killed during works and to mitigate for loss of suitable habitat the following recommendations have been made:

- Directional site clearance to areas of retained habitat outwith the site to the east. This should be undertaken outside of the reptile hibernation period (November – March inclusive).
- Destructive hand searching of the rubble piles within the site prior to clearance. Searching to be undertaken outwith the hibernation period (November – March inclusive).
- Creation of wildflower grassland and a reptile hibernacula/basing bank to the north of the site.
- Creation of native hedgerows to the boundaries of the site.

See section 6.3 of the report for further details regarding the mitigation recommended and avoiding potential conflicts with nesting birds.

Habitats of the disused railway junction, which are to be unaffected by the proposed supermarket development may be lost to future development proposed by the local council. If the council development takes place over a year from when the reptile survey detailed within this report has been carried out, a further survey is recommended to assess the presence/absence of reptiles within the site. If the development is to take place within the year, an appropriately qualified ecologist should be consulted, with details of the development, to ensure reptile species, potentially occurring on site are considered and suitably mitigated for.

FIGURES

FIGURE 02: External Building Assessment

APPENDIX 01: External Building Assessment - Target notes

Target Note	Description
1	Mortar missing in brickwork potentially leading to cavity walls
2	Two birds nests under overhanging canopy
3	Gaps in breezeblock supporting overhanging canopies. Suitable size for roosting bats (1 cm wide x 10cm long)
4	Gap between asphalt and weatherboarding around windows.
5	Birds nest
6	Gaps where wire work and pipe work protrude
7	Large hole in porch surrounding first-floor entrance leading into cavity of porch roof. Low risk feature due to probable temperature fluctuations of cavity.
8	Peeling weatherboarding above window
9	Hole in mortar in brickwork at wall top
10	Wasp nest
11	Mortar missing at wall top, potentially leading under roof covering
12	Gap between door frame and the external wall (un-cobwebbed)
13	Small hole around protruding pipe
14	Hole in brickwork where mortar is missing