Home Farm, Bradgate Hill, Groby, Leicestershire
ECOLOGY SURVEY

Ref: RD/ES/SCA/9002/50/72

DEVELOPMENT SERVICES
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27th May 2009

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B INTRODUCTION

B1 Background to Activity

Wildlife Consultants Limited were commissioned by Stephen Clarke Associates to conduct a Ecological Survey of; Home Farm, Bradgate Hill, Groby, Leicestershire, and its grounds, in particular one oak tree, for the presence of Protected Species (namely bats and birds and/or active avian nest sites) prior to the submission a Planning application to convert the farmhouse and the farm buildings in to several dwellings and garages.

The area, to which this survey relates, comprises the proposed buildings for conversion, the immediate grounds, the highlighted oak tree, and will be referred to from here on within this report as 'the site'.

For the purpose of this report the buildings were split into numbered sections, which also relate to their status on the developers plan.

The survey was conducted by qualified and experienced ecologists employed by Wildlife Consultants Limited, and were completed to the standards expected by Natural England and in line with industry best practice as specified by the Institute of Ecological and Environmental Management.

B2 Full details of proposed works on site to be covered by this survey

The ecological survey was conducted to establish whether the site is either; not in current use, in current use, or has recently been used, by any Protected Species, namely; bats (any species), Great crested newts, and birds (any species) and/or avian nest sites.

The presence and location of these species, where identified, are confirmed within this report.

Any likely impact resulting from the proposed development and operation of the site upon these species are identified within this report.

The client should be aware that any Protected Species identified during this survey could potentially be subject to further review regarding their mitigation and/or compensatory measures.

This would result in either additional inspections and/or surveys being undertaken. Any further mitigation measures required would be developed into a solution that is deemed acceptable to Natural England (Licensing body) and the Local Planning Authority.

Wildlife Consultants Ltd will, if commissioned by the client, undertake further survey work, as necessary, subject to agreement on the additional charges that will be incurred.

Any licenses that are deemed necessary for the development and operation of the site will be identified.

C SURVEY INTRODUCTION

To identify any Protected Species protected under the Wildlife and Countryside Act 1981 & the Conservation (Natural Habitats & c) Regulations 1994, (as amended) and the Protection of Badgers Act 1992 present on the site.

C1 Pre-existing Information on Species of Concern on Site

Pre-existing information on the Protected Species concerned with this survey was gleaned from local sources and other ecological data held by the local records office and/or other appropriate bodies.
A desk study established the Protected Species that have been recorded within the immediate area.

C2 Status of Species of Concern in the Local Area

The status of the Protected Species concerned with this survey site, and in the wider local area of the site, was gleaned from local and national conservation bodies in the pre-survey desk based search.

C3 Objective of this Survey

The objective of the survey was to carry out an initial survey for the presence or absence of bats, birds and active avian nest sites within the constraints of both the deadlines set by the client and the timing of the survey.
The survey was undertaken in accordance with the Bat Mitigation Guidelines: (*English Nature 2004),* Bat Surveys Good Practice Guidelines: (*Bat Conservation Trust 2007),* Bat Workers Manual: (*Joint Nature Conservation Committee 2004),* Bird Survey Techniques: (*British Trust for Ornithology 2001*) and industry best practise.

C4 Field Survey

C4i Methodology

This initial survey involved several different techniques to determine the presence or absence of bats, birds and active avian nest sites within the site.

The ecologist surveyed the following during this survey:

1. External buildings survey:

All the buildings at the site were surveyed for any signs of bats, birds and active avian nest sites. When surveying for bats, the ecologists endeavour to determine why there may be bats on the site, for example; roosting during the day, feeding roost at night, maternity roost (summer) or hibernacula (winter), etc.

- Holes in walls, pipes, gaps behind window frames, lintels and doorways.
- Cracks and crevices in stonework and brickwork.
- Gaps between roof tiles.
- Gaps behind eaves, soffit boards and outside walls.
- Suitable entry and exit points.
- Active avian nests.
- Presence of birds within.
- Bat droppings on the ground, ledges and windowsills.
- Urine and/or grease staining of the outside surfaces.

2. Internal survey

This entailed much the same as the external survey apart from the ecologist surveyed the inside of the buildings namely the section to be converted with the additional techniques of:

- Locating any live bats.
- Locating any corpses or skeletons.
- Locating Bat droppings, usually found in heaps on the floor or roof beams.
- Locating feeding remains: insect wings or wing cases etc.
- Observing clean location, i.e. no cobwebs, clean worn holes and crevices in the brickwork.
- Detecting odours and any other evidence.
- Active avian nests.
- Presence of birds within.

2. Emergence Survey

The area was surveyed for the emergence of bats from any of the buildings from one hour prior to sunset and two hours following sunset. The surveyors positioned themselves at strategic points around the site to allow them to survey all possible angles. (See appendix: fig: 1)

The ecologists used bat detectors for this part of the survey. Bat detectors distinguish the ultra-sonic sounds (clicks and squeaks) bats emit when echo-locating their way around the site. This enables ecologists to pinpoint both the location, the flight path and establish the species of the bats being tracked.

During the emergence survey the ecologists used included two split frequency bat detectors: (Batbox Duet).

The emergence survey was conducted under good weather conditions.

C4ii Timing

The entire survey; external search, internal search and emergence survey was completed within 1 day (27th May 2009)

The survey also included a desk-based search for local data of any ecological information deemed necessary. This was completed prior to the site survey being performed.

C4iii Constraints / Weather Conditions

No surveys were conducted in wet or adverse weather.

C4iv Personnel

Personnel conducting the survey were established, qualified and experienced ecologists employed by Wildlife Consultants Limited.

The visiting ecologist's conduct on site conformed at all times with industry best practice guidelines.

D RESULTS

Bats & Birds

Bats, Birds and Active Avian Nests are protected under the Wildlife and Countryside Act 1981 & the Conservation (Natural Habitats & c) Regulations 1994 (as amended).

The External & Internal Survey of the site encompassed the entire house outside and the section to be converted internally and the grounds, and for the purpose of the detailed survey was split in to two zones:

1. Farmhouse, farm buildings
2. Grounds and oak tree

Zone 1 was split in to sections to correspond with the developer's plans, i.e. the proposed conversion.

Great Crested Newts

Great crested newts are protected under the Wildlife and Countryside Act 1981 & the Conservation (Natural Habitats & c) Regulations 1994 (as amended).

Although not strictly within the commissioned survey site two ponds were observed nearby and thus these were surveyed as a matter of course for the presence or likely absence of great crested newts.

Please see appendix for the results of the Natural England Habitat Suitability Index (HSI).

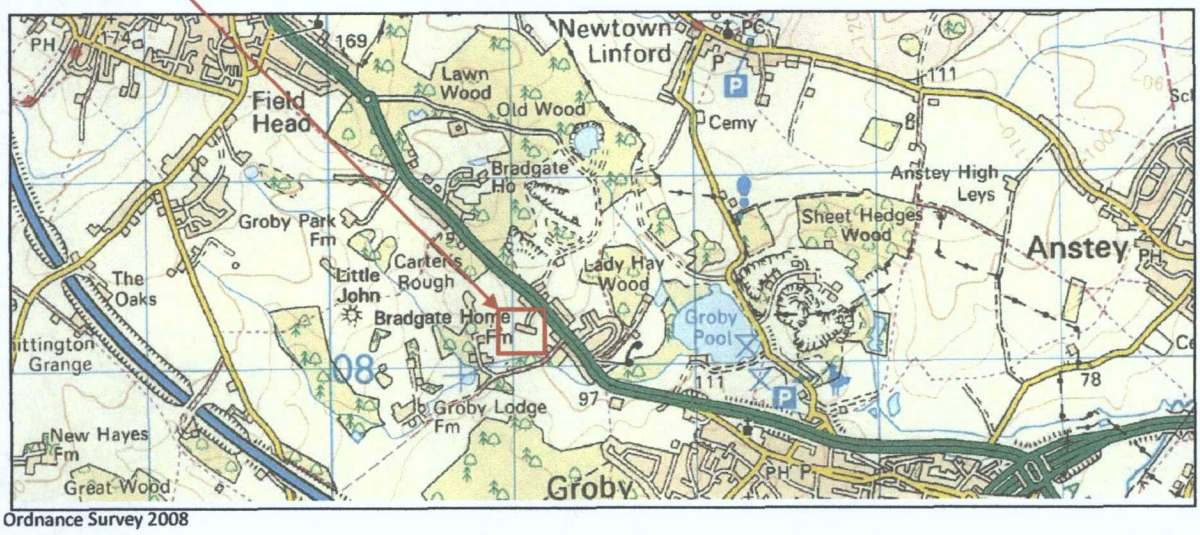
Badgers

Badgers are protected under the Protection of Badgers Act 1992.

The survey of the site encompassed the whole site and the surrounding area including hedgerows for any signs of badger setts or the site being used by badgers for foraging or access to their territory.

Fig: 1.

Map of: Home Farm, Bradgate Hill Groby, within the wider area.



Ordnance Survey 2008

Fig: 2.

The Survey Site: Showing buildings and oak tree marked for the purpose of the survey



Google Earth 2009

Position of oak tree in relation to the buildings

The results of the survey are:

- Desk-based Search (May 2009)
  The pre survey desk search confirmed records of Brown Long Eared *Plectus auritus*, Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus pygmaeus* and Noctule *Nyctalus noctula* bats all being recorded in the Groby area within recent years.

- External and Internal survey (27/05/2009)
  The site consists of a substantial farmhouse, farm buildings, grounds and an oak tree.

Section 2: farm buildings immediately adjacent to the farmhouse.

Section 2 is of a brick and stone construction with a slate roof.

All external walls, floors and other surfaces were thoroughly searched and inspected for signs of bat entry/exit, staining etc and for the presence of birds and/or active avian nests.

All the external surfaces revealed no evidence of any bat species currently using the site or having done so in the recent past.

There was no evidence of birds or active avian nests currently using the site, however, there was plenty of evidence to suggest that various bird species have used the site for nesting in the past and probably will do again in the coming nesting season.

All internal surface of the attic space were thoroughly searched. It revealed slate laid on to timber battens with holes in the roof open to the weather.

Spaces between plaster ceiling and roof slates were full of cobwebs with no evidence of bats. However one robins nest and one Blackbirds nest were found within but were unused at the time. There was one feral doves nest in the gable end which proved to be occupied.

Photo 1: The roof section 2



Photo 2: Cob webs, a sure sign of no bat activity



Sections: 3 & 4 the farmhouse and all its components

Section 3 and 4 are of a stone construction and slate roof and form part of the main farmhouse.

All external walls, floors and other surfaces were thoroughly searched and inspected for signs of bat entry/exit, staining etc and for the presence of birds and/or active avian nests.

All the external surfaces revealed no evidence of any bat species currently using the site or having done so in the recent past.

There was no evidence of birds or active avian nests currently using the site, however, there was plenty of evidence to suggest that various bird species have used the site for nesting in the past and probably will do again in the coming nesting season.

The internal survey concentrated on the attic rooms in the house. The actual roof space could not be accessed.

All internal surface of the attic space were thoroughly searched, however despite a broken window in one room the rooms provided no evidence to suggest the presence of bats or active avian nest sites.

Section 1: cattle stalls

Section 1 is of a brick and stone construction and slate roof and is used for housing cattle. The roof is mostly missing and is open to the weather in most part.

All external and internal walls, floors and other surfaces were thoroughly searched and inspected for signs of bat entry/exit, staining etc and for the presence of birds and/or active avian nests.

This search revealed no evidence of any bat species currently using the site or having done so in the recent past.

However, there was evidence of birds and active avian nests currently being using within the building; 3 occupied swallows nests and one in construction, 1 Wren's nest with eggs, 5 feral dove nests with sitting parents and 1 Starling's nest with chicks.

Photo 3: section 1 external



Photo 4: section 1 internal



Sections: 9 and 10 animal stalls and attic spaces

Section 9 and 10 are of a stone construction and slate roof and is used to house cattle, sheep, straw, machinery etc.

The roof at the north end is in bad repair with large holes open to the weather. However at the south end of the building the opposite is true. The roof is tight and the attic spaces hot and stuff with a lack of air.

All external walls, floors and other surfaces were thoroughly searched and inspected for signs of bat entry/exit, staining etc and for the presence of birds and/or active avian nests.

All the external surfaces revealed no evidence of any bat species currently using the site or having done so in the recent past.

The internal search within the attic rooms proved no evidence of bats.

There was no evidence of active avian nests currently using the external part of the building, however, there was plenty of evidence to suggest that various bird species have used the site for nesting in the past and probably will do again in the coming nesting season.

However, the internal search revealed that there was evidence of birds and active avian nests currently being using within the building; 1 occupied swallows nests and 2 in construction, 3 feral dove nests with sitting parents.

Photo 5: section 9 and 10 facing north



Photo 6: section 9 and 10 facing south



Photo 7: Swallow nest within section 9



Sections: 7 and 8 animal stalls

Section 9 and 10 are of a stone and brick construction and slate roof and is used to house cattle, sheep, straw, etc.

The roof is in bad repair with large holes open to the weather.

All external walls, floors and other surfaces were thoroughly searched and inspected for signs of bat entry/exit, staining etc and for the presence of birds and/or active avian nests.

The external surfaces revealed no evidence of any bat or bird species currently using the site or having done so in the recent past.

The internal search proved no evidence of bats and no evidence of birds or active avian nests currently using the internal part of the building, however, there was plenty of evidence to suggest that various bird species have used the site for nesting in the past and probably will do again in the coming nesting season.

Photo 8: section 7 and 8 from the yard



Photo 9: section 7 and 8 from the back.



The proposed garage section

The proposed garage section is of a stone and brick construction with a slate and asbestos roof and is used to house cattle.

The roof is in bad repair with large holes open to the weather.

All external walls, floors and other surfaces were thoroughly searched and inspected for signs of bat entry/exit, staining etc and for the presence of birds and/or active avian nests.

All the external surfaces revealed no evidence of any bat or bird species currently using the site or having done so in the recent past.

The internal search proved no evidence of bats and no evidence of birds or active avian nests currently using the internal part of the building, however, there was plenty of evidence to suggest that various bird species have used the site for nesting in the past and probably will do again in the coming nesting season.

Photo 10: The proposed garage section



Section 5 and 6: cattle stalls

Section 5 and 6 are to be totally demolished and the materials from this building to be used in the construction elsewhere on the site. Section 5 and 6 are of a stone and brick construction with a slate roof and are used to house cattle.

The roof is in bad repair with large holes open to the weather.

All external walls, floors and other surfaces were thoroughly searched and inspected for signs of bat entry/exit, staining etc and for the presence of birds and/or active avian nests.

All the external surfaces revealed no evidence of any bat or bird species currently using the site or having done so in the recent past.

The internal search proved no evidence of bats and no evidence of birds or active avian nests currently using the internal part of the building, however, there was plenty of evidence to suggest that various bird species have used the site for nesting in the past and probably will do again in the coming nesting season.

The Dutch barn

The Dutch barn is of a traditional style, open on two sides with farm buildings neighbouring it on the other two. It is of a metal construction with a breeze-block wall reaching approximately one metre high on one side. The Dutch barn has a corrugated tin roof.

All external walls, floors and other surfaces were thoroughly searched and inspected for signs of bat entry/exit, staining etc and for the presence of birds and/or active avian nests.

All the external surfaces revealed no evidence of bats however there was evidence of active avian nests in the roof; 4 feral dove nest with sitting parent.

There was also other evidence to suggest that various bird species have used the site for nesting in the past and probably will do again in the coming nesting season.

The grounds

The grounds are mostly typical farmyard with areas to the south and west of the farmhouse that were obviously once formal lawns and are kept as short grass areas.

The site is surrounded by mature trees and hedges containing trees and shrubs of both native and non-native species.

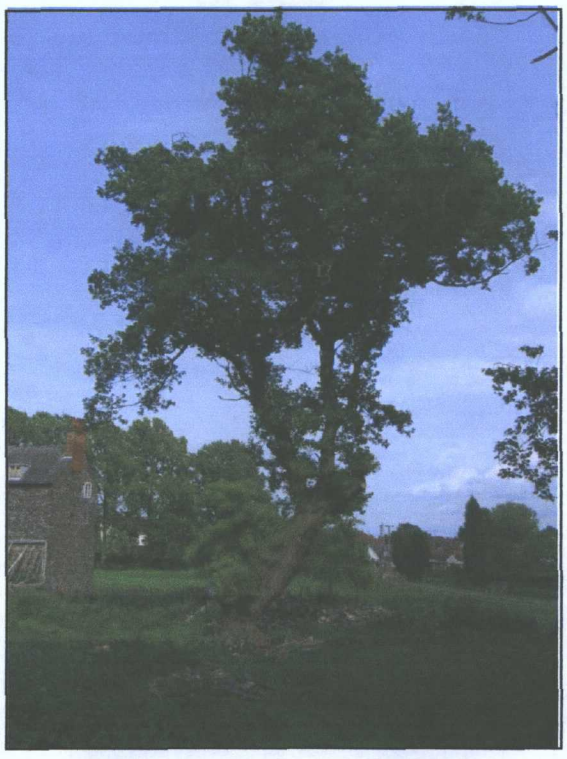
The local area has grass fields with mature specimen trees, hedges and gardens, and woodland beyond.

The grounds have within them one particular oak tree which was commissioned for special attention as part of the survey and this report.

The Oak tree:

The tree is an English Oak, *Quercus robur*, and is approximately 100 – 150 years old.
At its highest point it is approximately 22m high.
At its thickest point, the trunk is 3m 70cm.
It has 55° lean at the base, which straightens to almost vertical approximately 3m from ground level.
The tree has an estimated root circumference of 9m in accordance to its age, size and condition.
The tree was subject to some work approximately 3 years ago and had three good sized limbs taken from it.
There is a little natural scaring but in no way is this tree to be considered a 'veteran tree'.
There were no obvious natural cracks or holes observed.
The survey of this tree revealed no evidence of any bat or bird species currently using the tree for harbourage or having done so in the recent past.

Photo 11: The oak tree



The Ponds

There are two ponds within close vicinity of the site and a small watercourse that runs from a trough though the garden.

These were all surveyed for the presence or absence of Great Crested Newts as a matter of course, and a Natural England HSI score was completed to determine their habitat suitability for great crested newts in regard to the future development of the site. Please see appendix.

- Emergence survey

No evidence of any bat species exiting (or entering) the farmhouse was either observed or detected over the period of the survey. However, whilst no bats were detected exiting, entering or using the farmhouse or the farm buildings, bats were detected flying within the area.

This was notably observed at several points, especially over the mature trees to east and south of the site, and over the grass field to the east.

The bats recorded were Common Pipistrelle, which were thoroughly and diligently tracked throughout the duration of the dusk survey.

The bats were detected first entering the site at approximately 21:44, flying predominantly over the mature trees and shrubs 21:44 – 22:47. The bats finally disappeared from detection at the site at approximately 22:47. No bats were detected after 22:47.

NB:

Although no other species apart from Common Pipistrelle were confirmed, both ecologists detected an unconfirmed species of bat, independently of each other, crossing fields to the north of the farmhouse and the east of the farm buildings.

Although this detection was for a short time only and well away from the site, the ecologist thought it worth acknowledging because of the frequency that this species was detected between 80 – 90 KHz.

Summary

Wildlife Consultants Limited were commissioned by Stephen Clarke Associates to conduct an Ecological Survey, of Home Farm, Bradgate Hill, Groby, the grounds and the oak tree, for the presence or absence of Protected Species (namely bats, birds and/or active avian nest sites with the addition of the watercourse and pond survey to determine the presence or absence of great crested newts) at the site.

The survey was undertaken on 27th May 2009 and consisted of a comprehensive desk study of local bat, bird and other species records for the site prior to the survey.
The survey included an external survey, an internal survey and an emergence survey of the site plus this report.
All the survey works undertaken were conducted by a qualified and experienced ecologist to the standards expected and required by Natural England and in line with industry best practice.

The findings of the surveyed were as follows:

- **The farmhouse and farm buildings:** External and internal survey of the site revealed **NO** signs of bats, however several active avian nest were found.
- **The farmhouse and buildings:** Emergence survey of the site revealed **NO** signs of bats.
- **The grounds: including the oak tree:** Survey of the site revealed **NO** signs of bats or active avian nest sites
- **The grounds: including the ponds:** Survey of the site revealed **NO** signs of Great crested newts.
- The Natural England **HSI** score was 0.33 (POOR) for the quarry pond. 0.21 (POOR) for the field pond re: great crested newts. Please see appendix
- There is evidence of breeding birds within the farm buildings and the site will afford suitable breeding sites for other avian species.
- The survey of the site revealed **NO** evidence of the site being used by badgers

F Conclusion & Recommendations

Conclusion:

It is the conclusion of this report, that the proposed development planned for this location will have no adverse affect on the Favourable Conservation Status of any bat species, great crested newts and/or bird species (Birds: dependant on the time of year of the works) considered likely to be present for this report within **the farmhouse, farm buildings, grounds or oak tree.**

We therefore conclude that work to convert the site and construction of other buildings within the site would not impact on the Favourable Conservation Status of the species using the site.

We also conclude that the requirement of licences from Natural England (*licensing* authority) is not necessary at the site at this moment in time.

Although there were active avian nests observed during the survey within parts of the buildings to be affected by the development, an inspection must be made immediately prior to the works commencing to ensure avian nests are inactive at that time or new ones have not been establish in the lapsed time period between this survey and the works commencing.
Again, it is our opinion that if the correct measures are implemented in the future this will save lengthy delays and/or the need for licence applications in the breeding season.

Guidance from Natural England stipulates that the bird breeding/nesting season generally falls between March and June, but can begin earlier and extend beyond August.

Recommendations:

1) If significant delays (in excess of 12 months) occur to the commencement of the works the client is advised to undertake a further survey to confirm the continued absence of the Protected Species to ensure the continued compliance with the current legislation.

G Appendix

Fig 1:

Survey Plan of site



KEY

1 / G2 — Buildings proposed for development

Position of ecologists during the emergence survey

Common Pipistrelle: Typical general flight path during the survey, showing the typical entry to and exit from the site each time.

Flight path of an unconfirmed species of bat

Significant trees and shrubs within survey site

Fig 2: Bat Survey Recording Form: RD1

Survey Type:	EMERGENCE / TRANSECT / TREE / DAWN / DUSK / ROOST / OTHER		
Date: 27/05/2009	**Visit N°** 1	**Observer/surveyor code:** RD	**Climate:** Temp: 15°C Wind: 01 Cloud: 01

Site address:
Home Farm
Bradgate Hill
Groby
Leicestershire
Grid ref: SK511 083 **Tele:**

Time:	Species:	N°	Activity:	Habitat:
21:50-21:53	Common Pip	1	Flying/foraging	Mature trees
21:55-21:57	Common Pips	2	" "	" "
22:02-22:08	Common Pips	2	" "	" "
22:11-22:12	Unconfirmed species	1	Flying	" "
22:16-22:17	Common Pips	2	Flying/foraging	
22:24-22:31	Common Pip	1	" "	" "
22:40-22:41	Common Pip	1	" "	" "

Notes:
Bats foraging around the trees and away in to fields beyond.
No bats observed or detected around the buildings.
Unconfirmed species of bat detected at between 80 – 90 KHz
Survey completed at 23:00

Fig 3: Bat Recording Form 2: DB 1

Survey Type:	EMERGENCE / TRANSECT / TREE / DAWN / DUSK / ROOST / OTHER		
Date: 27/05/2009	**Visit No** 1	**Observer/surveyor code:** DB	**Climate:** Temp: 15°c Wind: 01 Cloud: 01

Site address:
Home Farm
Bradgate Hill
Groby
Leicestershire
Grid ref: SK511 083 **Tele:**

Time:	Species:	No	Activity:	Habitat:
21:44-21:50	Common Pip	2	Flying/foraging	Mature trees
21:53-21:59	Common Pips	2	" "	" "
22:02-22:13	Common Pips	2	" "	" "
22:14-22:20	Common Pip	1	" "	" "
22:28-22:37	Common Pips	2	" "	
22:40-22:41	Common Pip	1	" "	" "
22:41	Unconfirmed species	1	Flying	Over grass field
22:43-22:45	Common Pip	1	Flying/foraging	Mature tree
22:47	Common Pip	1	" "	" "

Notes:
Bats foraging around the hedges and trees. Flying away from the site, over the fields towards the woodland beyond.
No bats observed or detected emerging from the buildings.
Unconfirmed species of bat detected at approx 90 KHz in fields north west of the site.
Survey completed at 23:00

Fig 4: Timetable of events:

DATE	TIME	SURVEY METHOD	RESULT
27/05/2009	EXTERNAL – 14.00 hrs to 16.00 hrs	SEARCH OF THE EXTERIOR OF THE BUILDING	NO BATS OR SIGNS OF BATS OBSERVED
27/05/2009	INTERNAL – 16.00 hrs to 20.00 hrs	SEARCH OF THE INTERIOR OF THE BUILDING	NO BATS OR SIGNS OF BATS OBSERVED
27/05/2009	EMERGENCE – 20.30 hrs to 23.00 hrs	EMERGENCE	No bats observed emerging from the building. Several bats observed flying around site perimeter, over mature trees and shrubs.

Fig 5: Position of ponds in relation to the site and Great Crested Newts



Fig 6: Natural England's 'Do I need a licence'

Template for Method Statement to support application for licence under Regulation 44(2)(e) in respect of great crested newts *Triturus cristatus*. ***Form WML-A14-2 (Version 28 January 2008)***

Application tools: (1) "Do I need a licence?" - rapid risk assessment

Caveats and limitations

This risk assessment tool has been developed as a general guide only, and it is inevitably rather simplistic. It has been generated by examining where impacts occurred in past mitigation projects, alongside recent research on newt ecology. It is not a substitute for a site-specific risk assessment informed by survey. In particular, the following factors are not included for sake of simplicity, though they will often have an important role in determining whether an offence would occur: population size, terrestrial habitat quality, presence of dispersal barriers, timing and duration of works, detailed layout of development in relation to newt resting and dispersal. The following factors could increase the risk of committing an offence: large population size, high pond density, good terrestrial habitat, low pre-existing habitat fragmentation, large development footprint, long construction period. The following factors could decrease the risk: small population size, low pond density, poor terrestrial habitat, substantial pre-existing dispersal barriers, small development footprint, short construction period. You should bear these mitigating and aggravating factors in mind when considering risk.

Home Farm, Groby, Leicestershire ---- 1st June 2009

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
	Maximum:	0
Rapid risk assessment result:	GREEN: OFFENCE HIGHLY UNLIKELY	

Guidance on risk assessment result categories

"Green: *offence highly unlikely*" indicates that the development activities are of such a type, scale and location that it is highly unlikely any offence would be committed should the development proceed. Therefore, no licence would be required. However, bearing in mind that this is a generic assessment, you should carefully examine your specific plans to ensure this is a sound conclusion, and take precautions (see **Non-licensed avoidance measures** tool) to avoid offences if appropriate. It is likely that any residual offences would have negligible impact on conservation status, and enforcement of such breaches is unlikely to be in the public interest.

Fig 7: Habitat Suitability Index

Template for Method Statement to support application for licence under Regulation 44(2)(e) in respect of great crested newts *Triturus cristatus*. ***Form WML-A14-2 (Version 28 January 2008)***

Habitat Suitability Index

C3.5 Waterbodies: quantitative assessment.

A Habitat Suitability Index (HSI) score has been calculated for each waterbody that may be subject to activities likely to result in adverse impacts on the local great crested newt population. See guidance in the Instructions section (Survey data and HSI tabs). It is not required for waterbodies subject to low impacts, though can be entered if you wish; this may be useful, for example, to provide objective evidence that the population affected is likely to be small.

The spreadsheet will automatically calculate the HSI.

Home Farm, Groby, Leicestershire ------- 1st June 2009

Pond ref	Quarry	Field
SI1 - Location	1	1
SI2 - Pond area	0.3	0.2
SI3 - Pond drying	0.9	0.1
SI4 - Water quality	0.33	0.1
SI4 - Shade	0.2	0.1
SI6 - Fowl	0.01	0.01
SI7 - Fish	0.33	1
SI8 - Ponds	0.9	0.9
SI9 - Terr'l habitat	1	0.33
SI10 - Macrophytes	0.3	0.3
HSI	0.33	0.21

Categorisation of HSI scores

A system for using HSI scores to define pond suitability for great crested newts on a categorical scale:

HSI Pond suitability
<0.5 = poor
0.5 – 0.59 = below average
0.6 – 0.69 = average
0.7 – 0.79 = good
> 0.8 = excellent

H References

Bat Mitigation Guidelines:	*English Nature 2004*
Bat Surveys Good Practice Guidelines:	*Bat Conservation Trust 2007*
Bat Workers Manual:	*Joint Nature Conservation Committee 2004*
Local bat information:	http://www.bats.org.uk *2008*
Local bat information:	http://www.lrbatgroup.org.uk *2009*
Local bat information:	*Bat Conservation Trust 2008*
Bird Survey Techniques:	*British Trust for Ornithology 2001*
Mammal Society:	http://www.abdn.ac.uk/mammal 2008
Great Crested Newt Mitigation Guidelines:	*English Nature* 2001
Great Crested Newt Conservation Handbook:	*Froglife* 2001
Leicestershire & Rutland Wildlife Trust:	http://www.lrwt.org.uk 2009
The British Herpetological Society:	http://www.bhs.org.uk 2009
NE HSI table:	http://www.naturalengland.org.uk 2009
NE 'Do I need a licence' table:	http://www.naturalengland.org.uk 2009

Please note: All photographs & maps remain the property of Wildlife Consultants Limited.

Prepared: DB. Checked: RD. 14/06/09
END
15TH June 2009