ECOLOCATION

Protected Species Surveys for Development

The Old Dairy 25 Brookside Stretton-on-Dunsmore Rugby Warwickshire CV23 9NH 02476 541776 admin@gbae.co.uk

Bats & Breeding Birds Survey Report

(Rev. A)

at

Hall Farm, Higham-on-the-Hill, Nuneaton, Warwickshire

for

Savage Hayward

(1st June 2011)

ECOLOCATION is a trading style of George Burton ARCHITECTURE & ECOLOGY Ltd. Incorporated in England, Registered No. 6458127.

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1 Instructions

1.1 ECOLOCATION were appointed by Savage Hayward Architects of 19 Station Road, Hinckley, Leicestershire LE10 1AW to undertake a Bat and Breeding Birds Survey of certain barns at Hall Farm, Higham-on-the-Hill, Nuneaton, Warwickshire CV13 6AL

2 Purpose

2.1 The purpose of the survey and report was to accompany a future planning application for the demolition and conversion of barns at the above site and to ensure compliance with protected species legislation

3 Timing and Conditions

3.1 The site was visited on Monday 19th May 2008. Sunset was to be at approximately 20:56 hrs. The climatic conditions were 10% cloud cover and still, with the air temperature at commencement 9.4ºC and 7.8ºC upon completion

4 Site & Habitat Appraisal

4.1 The site was located at the far eastern extremity of Higham-on-the-Hill, 3 miles west of the town of Hinckley and less than 1 mile north-east of the A5 Watling Street trunk road. The site and another dwelling were separated from the remainder of the village by Stoke Lane which led to the north-east towards Stoke Golding and the site abutted open fields on the north-east and southern periphery. To the west stood a single dwelling (Fishers Acre) in grounds largely laid to lawn and with some mature trees. The farm dwelling associated with Hall Farm was a bungalow located to the south of the site. The site was accessed from Hinckley Lane approximately 65m from its junction with Stoke Lane.

4.2 The buildings, the subject of this survey, were the main, largely brick-built, structures indicated on Appendix A as Barns A, B & C. The remaining barns being of more modern construction (structurally framed and clad) were to be removed. Building A was a long narrow building of brick and plain tile construction the whole of the southern side of which was overgrown with ivy and yew however the northern part of the eastern and western boundaries were accessible. Building B being the main structure concerned comprised an 'L' shaped two-storey structure along the main east-west axis of this building together with a single-storey element running approximately north to south at the eastern end of the barn. The overall truncated 'u' shape of these barns were constructed in brickwork with largely plain tiled roofs and numerous structural openings comprising current and former windows and doors, some of which were closed in and some of which were open. Adjoining the single-storey element of this barn were lean-to structures on the eastern elevation which were overgrown low-level former pig sties and outbuildings, also in brick construction. Building C was of a more modern style with an asbestos-cement profiled sheet roof covering and brickwork walls apart from a single-storey lean-to element at the north-west corner of the building which was constructed of concrete blockwork with a profiled sheet shallow-pitched roof.



North elevation of Barn A



South side of Barn B, single-storey element in background



South west corner of Barn B



North Gable of Barn C

4.2 All of the barns were separated into various cells and rooms (see Appendix B for details of floor plans) and had become somewhat dilapidated through disuse

5 Pre-existing Data Search

5.1 Prior to visiting site a data search was carried out through Leicestershire Environmental Resources Centre of pre-existing protected species records. This covered a 1km radius of the site and showed evidence of indeterminate Vesper bats species *(Vespertilionidae),* European water vole *(Arvicola Terrestris),* European otter *(Lutra Lutra)*, badger *(Meles Meles)* these together with a number of sites of district and parish level wildlife conservation status together with two wildlife sites (See Appendix C)

5.2 An assessment of the search results on site concluded that there were no linking watercourses between the site and any previously known locations of water vole within 250m of the site. There was no suitable habitat for otter on site and as there were no great crested newt records within 500m of the site and, as no ponds existed within the site, a great crested newt survey was not undertaken

5.3 The search therefore was restricted to bats, badgers and breeding birds

6 Bat Habitat Analysis & General Walk-over

6.1 The most significant foraging opportunities for bats close-by were provided by the mosaic of gardens including mature trees within the village of Higham. Further afield the Ashby-de-la-Zouch Canal ran loosely north-south 0.5 miles east of the site and a small number of ponds existed within a 1 mile radius. The closest significant woodland was adjacent to Higham Grange ¾ mile south-east of the site with further woodland some 1.5–2 miles north-west beyond MIRA Motor Vehicle Research Establishment. In excess of 2.5 miles west of the site ran the River Anker together with a sewage works, Coventry Canal and Hartshill Hayes Country Park; all within commuting distance of bats

6.2 An initial walk-over survey of the site and buildings established that buildings A & B had potential for bat occupation in the medium to high category. Building C, given its profiled roof sheeting and associated lack of a stable 'micro-climate' within the building which would likely prevent roosting of bats being established and maintained, was considered to be of low potential for bats.

6.3 In terms of breeding birds all of the buildings had potential access and nesting locations for breeding birds.

6.4 The potential for badger presence was considered low given the extent of farm buildings and hard surfacing and indeed no evidence of badger setts was noted.

6.5 *Access potential for bats*

Buildings A and B both provided many opportunities for bat access including missing and slipped roof tiles, broken roof tiles, adequate gaps beneath ridge tiles, etc., unprotected structural openings, cracked brickwork, etc

7 Survey and Results

7.1 *Bats*

Intrusive surveying of the barns was undertaken with Petzl Headtorches, Nightsearcher 0.5million and 1million candle lamp and V-scope VOXX-10WW endoscope. A search for bats, carcasses, droppings, urine stains, polished surfaces, scratch marks, etc was employed. Approximately 30no. bat droppings, possibly reminiscent of *Myotis* or *Pipistrelle* spp., were noted in the south-western ground floor cell of barn B, located at each end of the internal face of the western elevation. The roost, which appeared perhaps to have been recently established from the age of droppings, was located between the first floor joist adjacent to the wall and the masonry, with droppings caught in spiders' webs, on the wall finish and on a plinth below

Immediately above this cell, at first floor level, 2 no. bat droppings reminiscent of brown long-eared bat *(Plecotus Auritus)* were identified on boxes and sheets stored on the floor

No other evidence was observed during the search

7.2 *Breeding birds*

Numerous nests, no longer in use, were located throughout the buildings but most particularly in barn B, these were likely former nests of thrush *(Turdidae)* species, swallows *(Hirundo Rustia)*, possible pied wagtail *(Motacilla Alba),* wood pigeon *(Columba Palumbus),* [note the latter is not however a protected species, being 'exempt'], etc

7.3 An active nest of wren *(Troglodytes Troglodytes)* was present in the central cell of barn A (being the 4th cell from the east). Also an active nest of robin *(Erithacus Rubecula)* was present in the central cell of the main east-west element of barn B at ground floor level

7.4 Various swallow's nests in the ground floor area of barn B were possibly active although only a single swallow was noted during the visit however it is likely that later in the season these would have been reoccupied following the migrants return to this country, if not at the time of the survey

7.5 Incidental bird sightings: Wren, robin, blackbird *(Turdus Merula)*, jackdaw *(Corvus Monedula)*, wood pigeon, swift *(Apus Apus)*, swallow, pied wagtail and duck *(Anas spp.)* at high level over, tawny owl *(Strix aluco)* heard calling

7.6 It was noted that an owl box was present in the open barn to the immediate east of barn B however there was no evidence to suggest that this box was in use with no pellets in any of the buildings the subject of this survey nor in the open barn itself under or near the box location

7.7 *Emergence surveying*

7.7.1 Emergence surveying commenced at 10 minutes before sunset at 20:46hrs using Pettersson D-230 heterodyne/frequency division bat detector set on heterodyne setting for use with headphones; a Pettersson D-240X remote detector in time expansion mode recording to an Edirol R-09 digital sound recording device in .wav format and Ultra Sound Advice Mini-3 heterodyne bat detector. The Pettersson D-230 detector was deployed adjacent to the south-western corner of the site area close to barns A & B. The Pettersson D-240X recorder was located at the entrance door to the room in which the bat droppings were discovered at ground floor level in barn B and the Mini-3 detector was deployed at the north-easternmost corner of barn B and with a roving brief to include barn C as appropriate.

7.7.2 The first bat activity was noted at 21:16 hrs when a common pipistrelle (*Pipistrellus pipistrellus)* commenced foraging in the open barn to the immediate east of barn B. The bat appeared to enter the site from the south.

7.7.3 At 21:17 hrs a single Common pipistrelle commuted south to north past the western elevation of barn B.

7.7.4 Common pipistrelle activity then centered around the open barns to the north and east of barn B but also extending at times to include foraging inside C and other barns in that locality such that foraging Common pipistrelles were evident during the period 21:16 – 22:00 hrs uninterrupted.

7.7.5 A total number of 18no. bat passes were noted in open barns to the north, east and south-east of the surveyed area (however continuous foraging within buildings was not noted as bat passes and these relate to bats passing between buildings or into and out of the site).

7.7.6 Adjacent to barns A & B 5no. bat passes were noted mostly in a south to north direction possibly commuting towards the northern most barn in the group.

7.7.7 Given that the first bat activity was almost exactly 20 minutes post-sunset it was likely that the bat roost was quite close to the site from which the common pipistrelles were emanating and perhaps in the farm bungalow itself. However this structure did not fall within the scope of the survey.

7.7.8 At no time were any bats detected emerging from any of the buildings the subject of this survey, i.e. Barns A, B or C.

7.7.9 The analysis of the recorded results of the Patterson D240x recorder at the entrance to the ground floor room of barn B was analyzed using 'Batsound' software but no additional bat activity was recorded

8 Survey Conclusions

8.1 The site was actively used by bats for commuting and, to the north, south and east, for foraging. There could possibly have been a roost at the farmhouse not forming part of this survey as the majority of bats entered the site from the south and given that the timing of the appearance of the pipistrelles was 20 minutes after sunset (which is exactly the accepted emergence time predicted for their appearance from a roost) this would seem a fair assumption however this falls outside the scope of the survey and is not relevant to the planning application proposed.

8.2 A roost which appeared perhaps to have been recently established from the age of droppings in barn B at ground floor level was present but no bats were seen to emerge during surveying and no recording of bats leaving the building at this location was received from the remote recording equipment. Similarly the upper room where 2 no. bat droppings were found did not produce any results during the emergence surveying however brown long-eared bats *(Plecotus Auritus)* are notoriously difficult to detect due to a lack of a strong echolocation call and late emergence time which often makes visual and ultrasound-based detection impossible. However a roost is present in the ground floor room and the first floor room may simply have been used by a brown long-eared bat to fly through this space at some time fairly recently however there is at this stage no evidence to suggest that a brown long-eared bat roost exists.

8.3 The barns the subject of this planning application are in use by various species of breeding birds with current live nests at the time of the survey of wren, robin and possibly swallow.

8.4 No evidence of any other European protected species was encountered during the course of the survey

9 Obligations and Recommendations

9.1 *Bats*

All species of British bat and their roosts (places of shelter or rest) are protected by law from intentional or reckless disturbance under the Wildlife Countryside Act 1981 (amended by the Countryside and Rights of Way Act 2000), and the Conservation (Natural Habitats, etc.) Regulations 1994 ['The Habitats Regs'], as amended 2007 to incorporate the European Habitats Directive

9.2 Following completion of the survey it is clear that *any* works resulting in the disturbance of the bat roost in barn B would be licensable, with a licence being required from Natural England post-grant of planning consent.

9.3 Bats are highly mobile and when not in hibernation can occupy a building in increased numbers overnight it is essential therefore that due vigilance be maintained before and during any works to ensure their protection. The lack of evidence of more significant roosting at this stage does not guarantee that this is not taking place intermittently or may not take place in the future.

9.4 *Breeding birds*

The majority of species of breeding birds are protected in Britain with a few exceptions such as woodpigeon. The presence of breeding birds in the barns the subject of this survey leads to an obligation to ensure that these are not disturbed at any time but, more specifically, during the course of any construction works. It is to be advised that the buildings should be carefully surveyed by a person competent to do so prior to the commencement of any construction works and should any be present, or birds commence breeding during construction works, measures should be taken to ensure that these are not disturbed until the young are fledged and the nests have been vacated. Further advice would be available from ECOLOCATION should this be required as to the exclusion of breeding birds at the appropriate time of year prior to breeding commencing. It should also be noted that a small number of species such as woodpigeon, collared dove (*Streptopelia decaocto*) and barn owl (*Tyto alba*) have been recorded nesting in all months of the year

10 Mitigation

10.1 At this stage and with the information available the mitigation for the probable pipistrelle species currently using the ground floor room of barn B for roosting purposes would be to provide a purpose made roost facility on the southern gable end of barn B at the south-western extremity of this structure. This could comprise standard bat boxes or a more permanent solution of proprietary access bricks allowing access to a concealed cavity or a form of weather boarding or tile hanging allowing access to the rear for bats on the external face of the building. We would suggest in the circumstances that the best solution would be to provide a weather-boarded solution in accordance with the proposed sketched mitigation at Appendix D

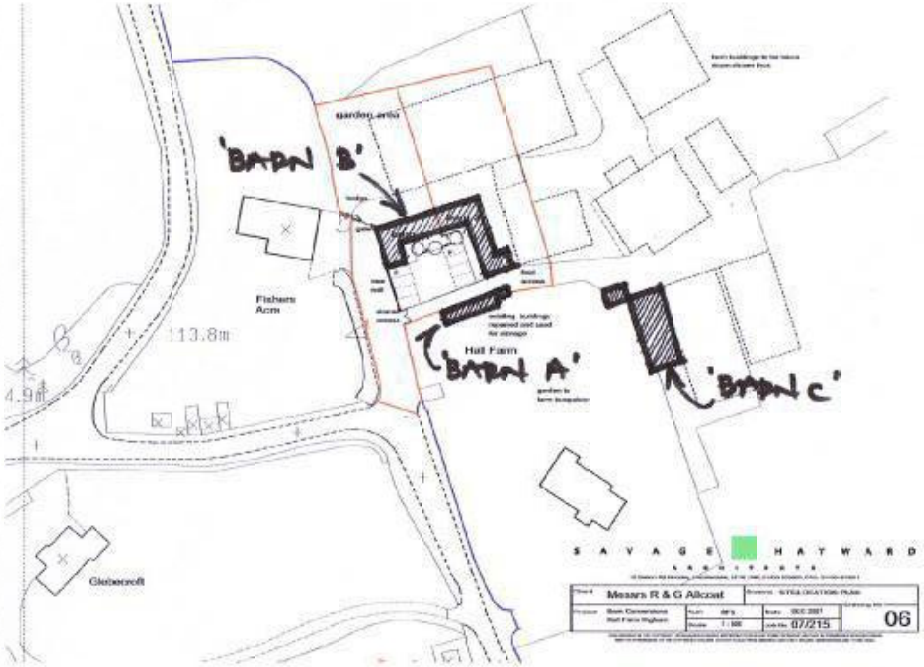
10.2 The above mitigation proposal would be fine-tuned prior to a license application to Natural England following further surveying at an appropriate time of year (ideally May to August). This would be carried out in accordance with the Bat Conservation Trust Bat Survey Guidelines 2007

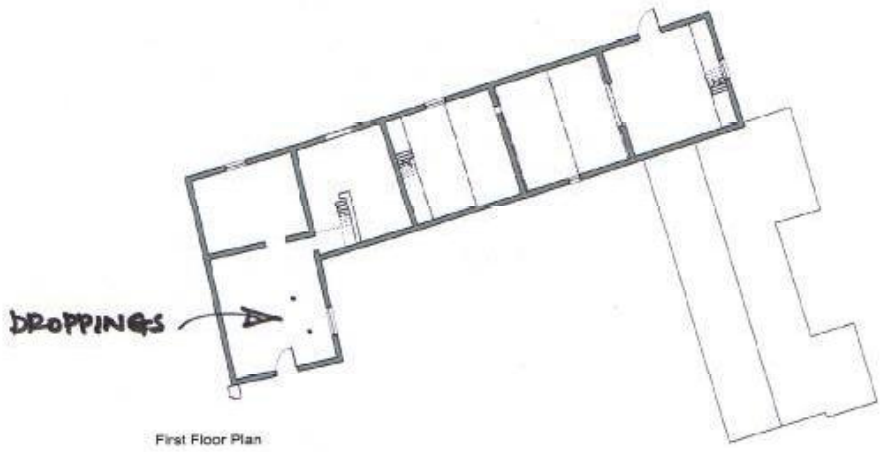
11 References

Bat Workers Manual, JNCC
Bat Survey Guidelines, Bat Conservation Trust 2007
A Guide to British Bats, FSC/AGAP
Bat Mitigation Guidelines, English Nature 2004
Which Bat is it?, The Mammal Society 2007
Collins Bird Guide, Collins
The Herpetofauna Workers Manual, JNCC

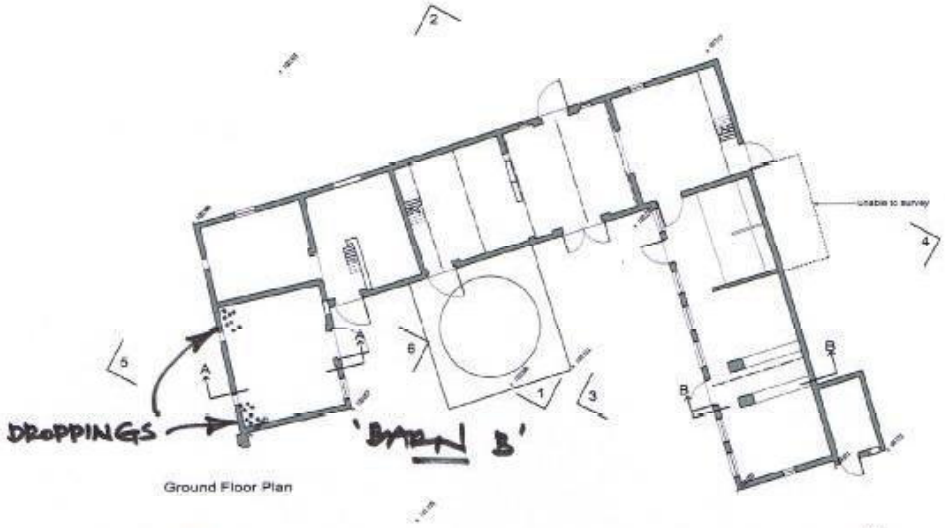
12 APPENDICES

Appendix A: Site Layout
Appendix B: Floor Plans as Existing
Appendix C: Data Search Results
Appendix D: Sketch Mitigation Proposals
Appendix E: Natural England timber treatment products suitable for use in bat roosts

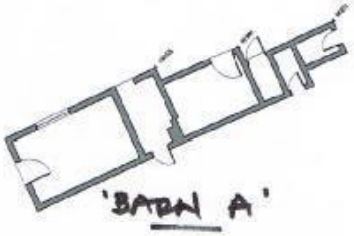

'BARN B'
garden area
Fishers Acre
13.8m
4.9m
Hall Farm
'BARN A'
'BARN C'
Glebecroft
SAVAGE HATWARD
Means R & G Allcoat
07/215
06



First Floor Plan



Ground Floor Plan



SAVAGE HAYWARD
ARCHITECTS

Client	MESSRS R & G ALLCOAT
Project	PROPOSED BARN CONVERSIONS, HALL FARM, HIGHAM
Drawing	SURVEY DRAWING - PLANS
Auth: JEH / LW	Date: FEB 2009
Scale: 1 : 100	Job No: 07 / 215
Drawing No	02

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Protected species search

Protected species

This map displays the distribution of Protected species. Last updated 07/Sep/2007. Please check the current lists in this report for more recent data.

Leicestershire County Council. Licence number LA 076724

Job: 7929

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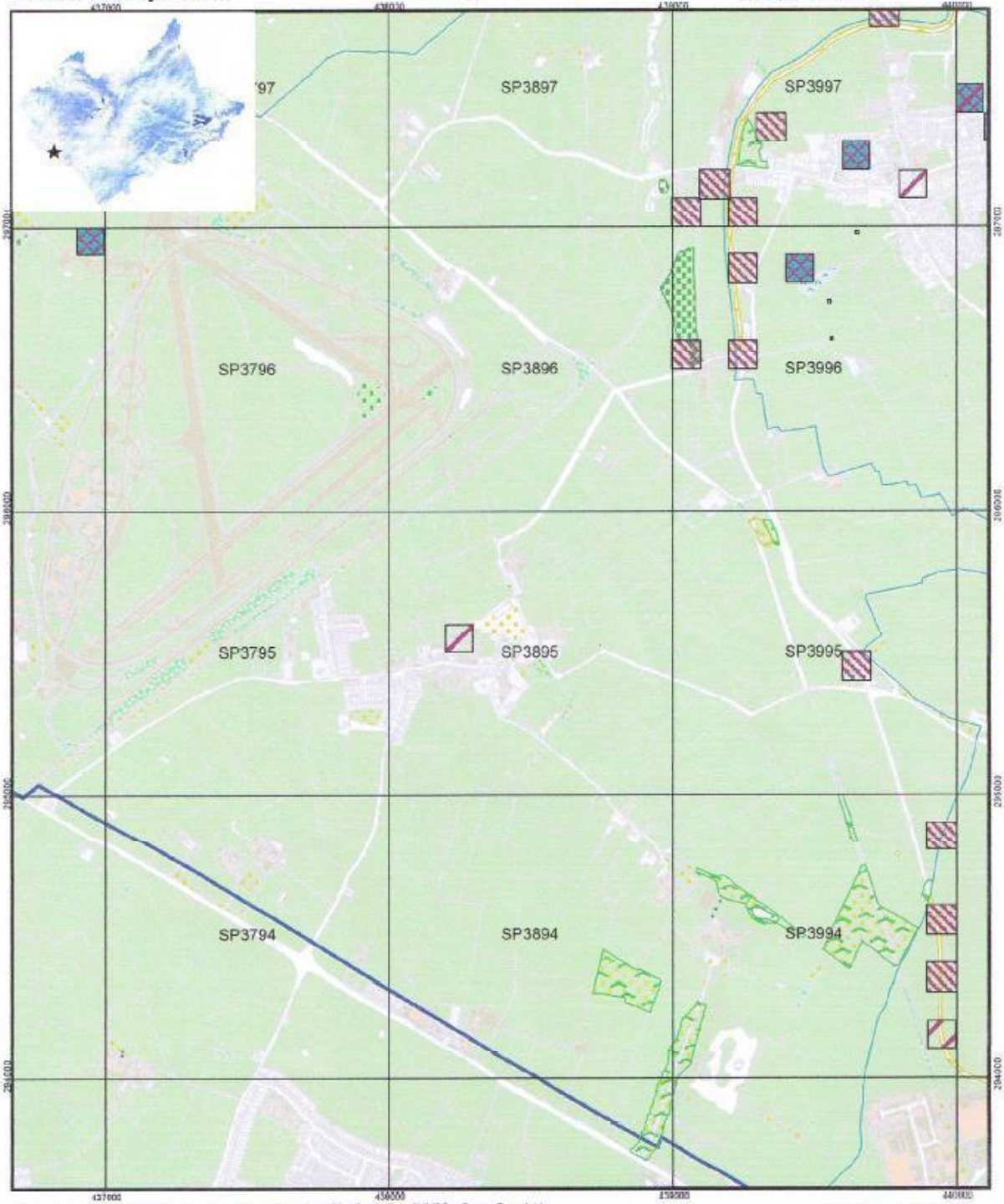

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Protected species

Selected Designated Species

Date	Location	Grid reference	Species		Recorder
01/01/1980 - 31/12/2000	Ashby Canal, Wykin, Bridge 23		Arvicola terrestris	European Water Vole	Individual Wildlife Trust -
24/07/1985			Vespertilionidae	Vespertilionidae	Unknown
08/09/1987	Ashby-de-la-Zouch Canal		Arvicola terrestris	European Water Vole	Steve Grover
08/09/1987	Ashby-de-la-Zouch Canal, surveyed from track bridge		Arvicola terrestris	European Water Vole	Greg Thurlow
01/01/1997 - 31/12/1997	Ashby Canal, Higham Grange		Arvicola terrestris	European Water Vole	Mags Bainbridge
01/01/1997 - 31/12/1997	Ashby Canal, Higham Grange		Arvicola terrestris	European Water Vole	Mags Bainbridge
01/01/1997 - 31/12/1997	Ashby Canal, Higham Grange		Arvicola terrestris	European Water Vole	Mags Bainbridge
01/01/1997 - 31/12/1997	Ashby Canal, Higham Grange		Arvicola terrestris	European Water Vole	Mags Bainbridge
28/04/1997	Ashby Canal, Hinckley, Bridges 19-20		Arvicola terrestris	European Water Vole	Individual Wildlife Trust -
18/06/1997	Ashby Canal, Hinckley, Nr Bridge 21		Arvicola terrestris	European Water Vole	Individual Wildlife Trust -
16/07/1997	Ashby Canal, Stoke Golding		Arvicola terrestris	European Water Vole	Mags Bainbridge
16/07/1997	Ashby Canal, Stoke Golding, rural Canal, Bridge 22		Arvicola terrestris	European Water Vole	Individual Wildlife Trust -
27/08/1997	Ashby Canal, Hinckley, Bridge 20-21		Arvicola terrestris	European Water Vole	Individual Wildlife Trust -
21/10/1997	Ashby Canal, Hinckley, Bridges 20-19		Arvicola terrestris	European Water Vole	Individual Wildlife Trust -
04/08/1998	Ashby Canal Between the A5 and Stoke Golding		Arvicola terrestris	European Water Vole	Mrs Beddows
07/04/2000	Otter location Higham on the Hill, Ashby de la Zouch		Lutra lutra	European Otter	EA Environment Agency
07/04/2000	Otter location Higham on the Hill, River Sence tributary		Lutra lutra	European Otter	EA Environment Agency
12/11/2002	Higham Lane Fisheries, Wykin Nr Hinckley		Arvicola terrestris	European Water Vole	Mags Bainbridge
19/06/2005	North of Millfield Farm Sett		Meles meles	Badger	Peter Mynott;Pam W. Mynott

Total number of observations =19

Confidential: This report contains sensitive information about the location of protected species and has been provided in confidence to assist you in your work. Because of this, OS Grid References must be withheld from documents destined for public consumption. Environmental Information Regulations Exception (12)(g).

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Key Species

Key species inventory: Leicestershire & Rutland (Leicestershire Biodiversity Action Plan)

Date	Location	Grid reference	Species		Recorder
24/03/1986	Higham on the Hill - Higham Thorns		Ricciocarpos natans	Fringed Heartwort	L.E. & M. Hall
24/03/1986	Higham on the Hill - Higham Thorns		Ricciocarpos natans	Fringed Heartwort	Msc Team

Total number of observations =2

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Map locations

1Km	Location name	Object	Grid ref	Status	Reference	Area (ha)
SP4093	Grasslands	00014160	SP408931	Parish (damaged)	1408.12.81.253	1.94
SP4093	Grasslands	00014165	SP409931	Parish (damaged)	1408.12.81.253	1.22
SP4093	Grasslands	00014170	SP409930	Parish (damaged)	1408.12.11.253	1.20
SP4093	Harrow Brook	00014180	SP405936	Parish level	1408.12.81.19	0.09
SP4093	Ashby Canal	00014185	SP407934	District level	1408.12.81.186,190,	4.27
SP3994	Pond	00026914	SP393945	Parish level	1407.12.10.107	0.29
SP3994	Broadleaved woodland	00026954	SP391946	Parish level	1407.12.10.105	0.77
SP3994	Mixed Woodland	00026959	SP393945	Parish level	1407.12.10.108	0.85
SP3994	Dismantled railway	00026964	SP396949	Parish level	1407.12.10.11	0.20
SP3994	Dismantled railway	00026969	SP396948	Parish level	1407.12.10.112	0.10
SP3994	Mixed woodland	00026974	SP396945	Parish level	1407.12.10.110/120	5.62
SP3994	Canal	00026979	SP398946	Parish level	1407.10.12.119	0.17
SP3994	Pond	00026984	SP397947	District level	1407.10.12.113	0.02
SP3893	Broadleaved woodland	00026989	SP389939	Parish level	1407.10.12.084, 130,	3.71
SP3894	Higham Gorse. Mixed woodland with ridge & furrow.	00026994	SP388943	Parish level	1407.12.10.127	2.71
SP4093	Brodick Road Flood Retention Area	00027004	SP407937	Wildlife Site	SP49/10 [25873]	2.13
SP3995	Lake, recently created	00035134	SP393959	Parish level	1407.12.10.052	0.21
SP3995	Marsh with brook	00035139	SP393959	District level	1407.12.10.054	0.42
SP3996	Meadow and Pond, Brook Farm - Meadow	00058976	SP390967	Wildlife Site	LRWT58178	2.82
SP3797	Heath Wood woodland	00068623	SP375970	Parish level	1407.12.10.079	1.37
SP3795	Pond	00068630	SP379955	Parish level	1407.12.10.009	0.02
SP3795	Grassland	00068636	SP379955	Parish level	1407.12.10.010	0.78
SP3795	Dismantled railway cutting	00068671	SP373954	Parish level	1407.12.10.14	2.79

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Data search

Ref.: Job no. 7929

Section: Higham on the Hill

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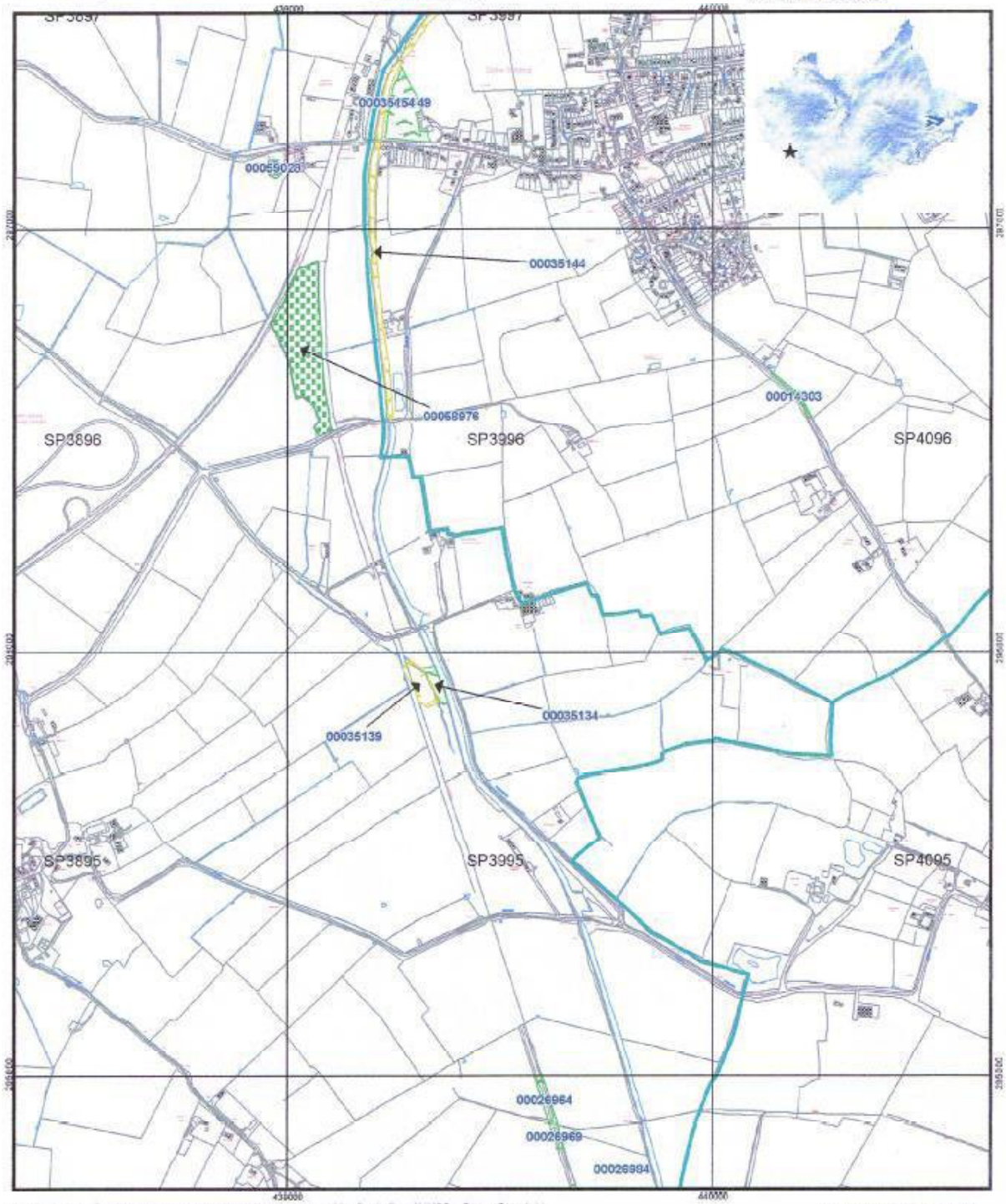

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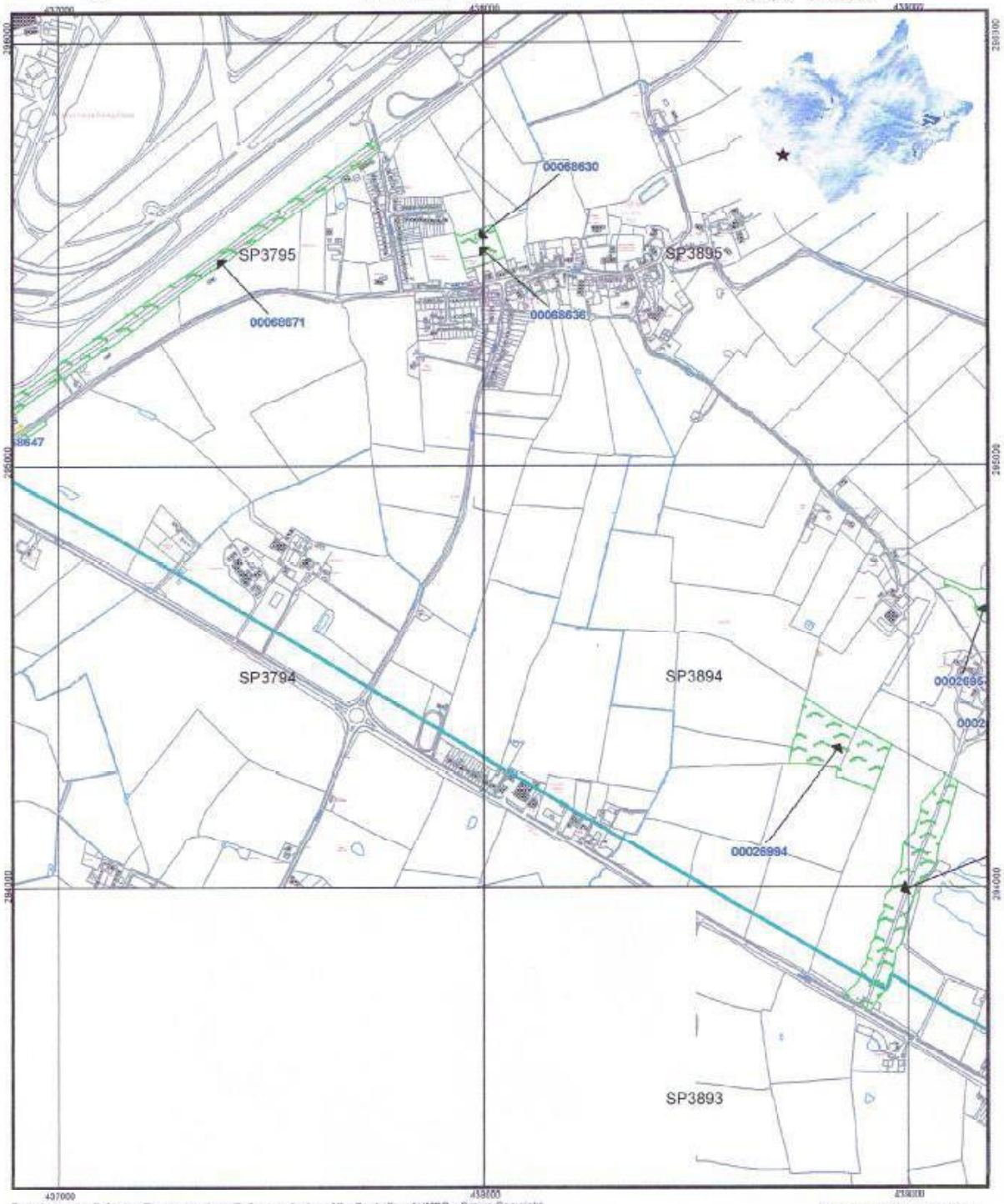

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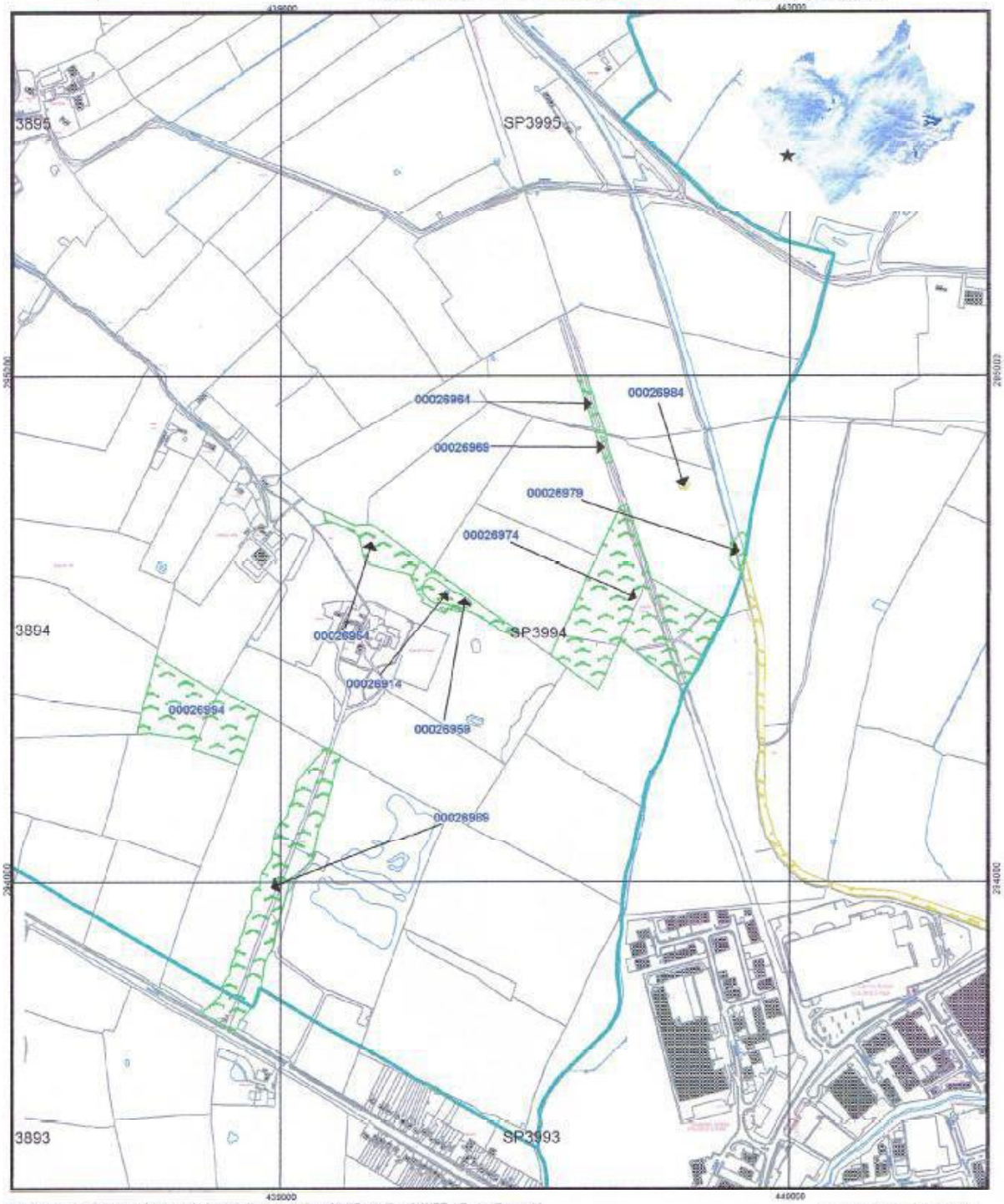

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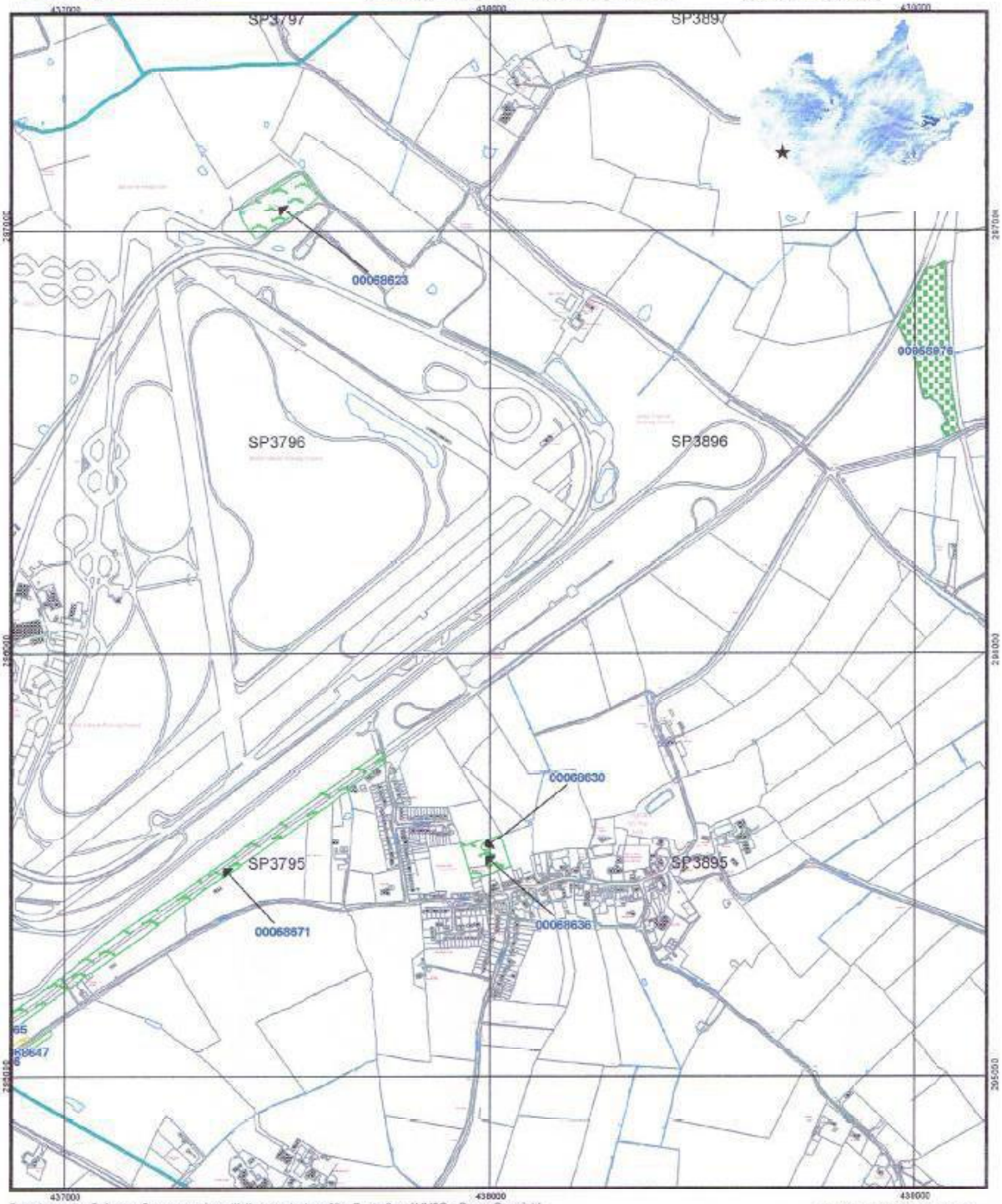

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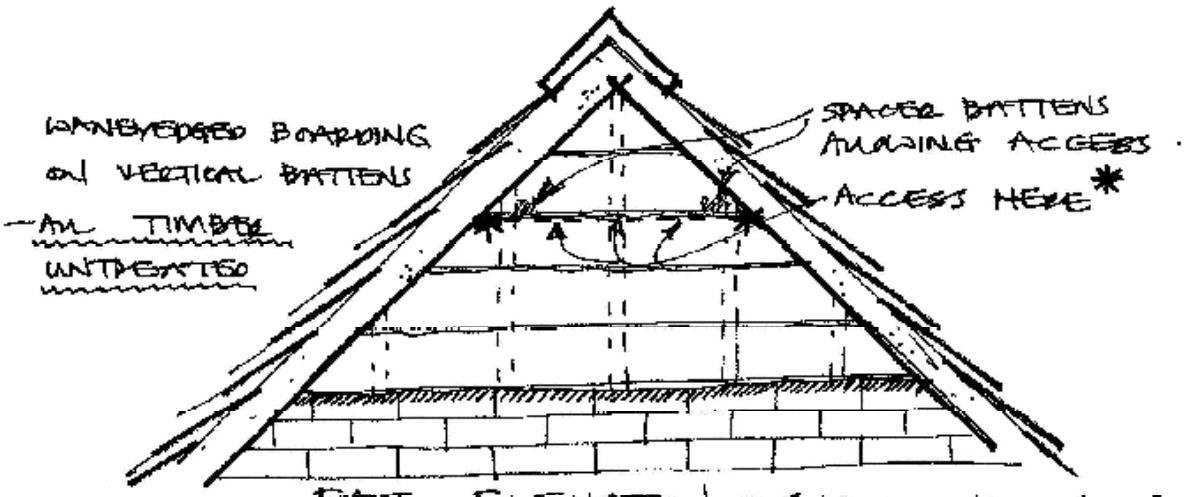
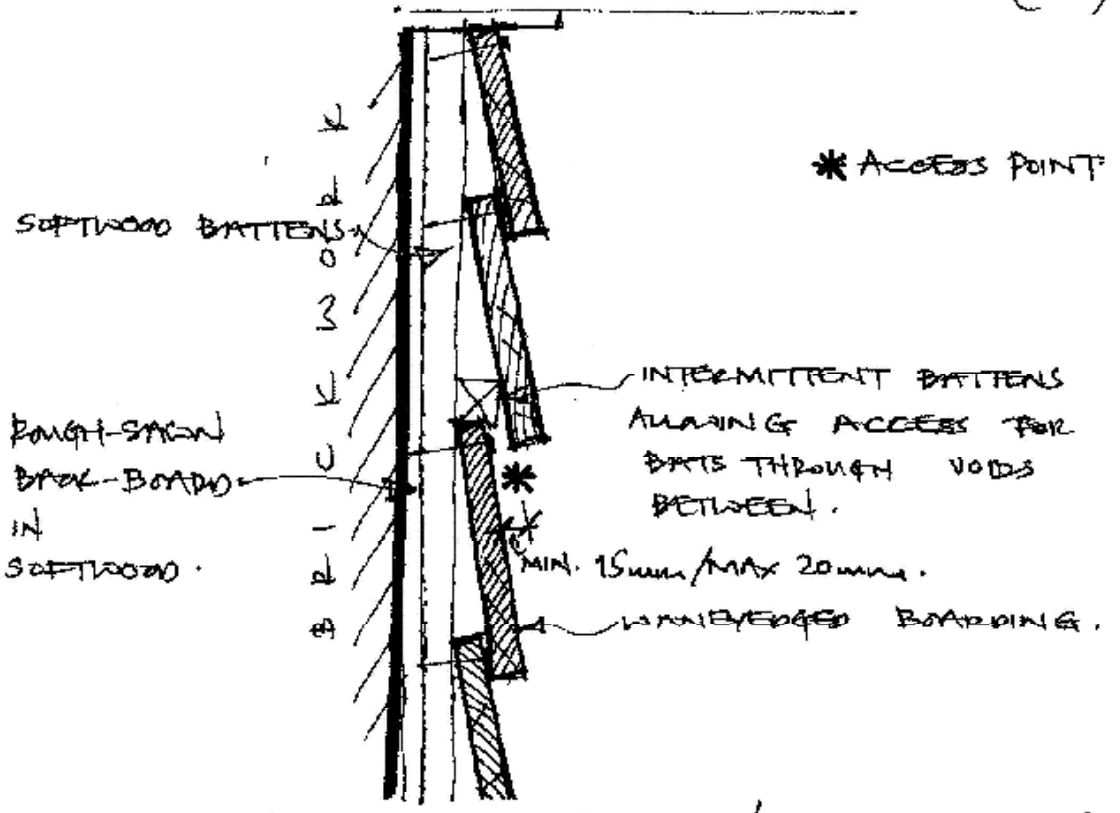


EAST ELEVATION - GABLE APEX (N.T.S)



CROSS-SECTION THRO' ROOST DETAIL (N.T.S)

ROOST DESIGN DETAILS.

Natural England
Evidence Team
Northminster House, Peterborough PE1 1UA
Telephone 01733 455000
Fax 01733 568834

06/08

Remedial timber treatment products suitable for use in bat roosts[1]

COMPANY & PRODUCT NAME	TYPE[2]	USE[3]	ACTIVE INGREDIENTS	HSE No.
ANTEL (UK) LTD				
Woodworm Killer P	E	P	Permethrin	4044
BIOKIL CROWN LTD				
Ultra-Tech 2000I Insecticide	M	P	Permethrin	7273
Ultra-Tech 2000D	M	P	Permethrin, Propiconazole	6304
Crown Micro Woodworm	M	P	Permethrin	6894
Crown Micro Dual Purpose	M	P	Permethrin, Tri (hexylene glycol) biborate	6895
Crown Timberpaste	P	P	Permethrin	5869
Brokil Boracol 10RH	S	P	Disodium octoborate, Benzalconium chloride	7271
Brokil Boracol 20	S	P	Disodium octoborate	7264
Brushable Boron Gel	P	P	Disodium octoborate	7255
Brand (CUPRINOL) LIMITED				
Wood Preserver (light/dark oak)	S	A	Acypetacs-zinc	4698
Low Odour Wood Preserver Green	S	A	Acypetacs-copper	5448
Decorative Preserver (5 colours)	S	A	Acypetacs-zinc, Dichlofluanid	6277
Decorative Preserver Red Cedar	S	A	Acypetacs-zinc, Dichlofluanid	6280
Low Odour 5 Star Wood Treatment	S	A	Acypetacs-zinc, Permethrin	5445
Low Odour Wet and Dry Rot Killer	S	A	Acypetacs-zinc	5446
Wood preserver clear (IP)	S	A	Propiconazole 0.4%, Iodo propynyl butylcarbamate 0.4%	7897
Wood preserver green (P)	S	A	Propiconazole 0.6%	8175
5 star complete wood treatment (FP)	S	A	Propiconazole 0.6%, Flufenoxuron 0.02%	7878
Woodworm killer	S	A	Flufenoxuron 0.02%	7877
Wood preserver (P)	S	A	Propiconazole 0.6%	7946
Trade low odour wood preserver clear (T)	S	A	Propiconazole 0.4%, Iodo propynyl butylcarbamate 0.4%	7899
Trade low odour wood preserver green (G)	S	A	Propiconazole 0.6%	8121
Trade low odour 5 star complete wood treatment	S	A	Propiconazole 0.6%, Flufenoxuron 0.02%	7879
Trade low odour woodworm killer (T)	S	A	Flufenoxuron 0.02%	7876
Trade wood preserver (T)	S	A	Propiconazole 0.6%	7947
Wood preserver clear (IP)	S	A	Propiconazole 0.4%, Iodo propynyl butylcarbamate 0.4%	7897
Wood preserver green (P)	S	A	Propiconazole 0.6%	8175
5 star complete wood treatment (FP)	S	A	Propiconazole 0.6%, Flufenoxuron 0.02%	7878
Woodworm killer (F)	S	A	Flufenoxuron 0.02%	7877
Wood preserver (P)	S	A	Propiconazole 0.6%	7946
Trade low odour wood preserver clear (T)	S	A	Propiconazole 0.4%, Iodo propynyl butylcarbamate 0.4%	7899
Trade low odour wood preserver green (TG)	S	A	Propiconazole 0.6%	8121

COMPANY & PRODUCT NAME	TYPE[2]	USE[3]	ACTIVE INGREDIENTS	HSE No.
Trade low odour 5 star complete wood treatment (T)	S	A	Propiconazole 0.6%, Flufenoxuron 0.02%	7879
Trade low odour woodworm killer (T)	S	A	Flufenoxuron 0.02%	7876
Trade wood preserver (T)	S	A	Propiconazole 0.6%	7947
IMPERIAL CHEM IND LTD				
Low Odour Woodworm Killer	S	A	Permethrin	5435
DEAL DIRECT LIMITED				
Dual 8	M	P	Permethrin, Tri (hexylene glycol) biborate	6255
Woodworm Treatment Concentrate	M	P	Permethrin	6249
KINGFISHER CHEMICALS LIMITED				
Ecology Fungicide/Insecticide Concentrate	E	P	Permethrin, Tri (hexylene glycol) biborate	5930
Insecticide/Fungicide	S	P	Permethrin, Tri (hexylene glycol) biborate	5933
KF-8 Insecticide Micro Emulsion Conc.	M	P	Permethrin	5786
KF8 Insecticide Microemulsion Conc.	M	P	Permethrin	6827
KF-8 Dual Purpose Microemulsion Conc.	M	P	Permethrin, Tri (hexylene glycol) biborate	6075
Timberpaste	P	P	Permethrin, Tri hexylalene biborate	6686
Wood Preservative (clear/brown)	S	P	Tri (hexylene glycol) biborate	4012
LAYBOND PRODUCTS LTD				
Timber Protector	S	A	Cypermethrin, 2-Phenylphenol	5369
Wood Preserver (3 colours)	S	A	2-Phenylphenol	5382
N-VIROL LTD				
Woodworm Killer	M	P	Permethrin	8570
Dual FI	M	P	Permethrin, IPBC, Propiconazole	8469
Timber Treatment Paste	P	P	Permethrin, IPBC	8488
Masonry Biocide	M	P	IPBC	8476
N-VIROBOR 10	A	P+A	Disodium Octoborate + Benzalkonium Chloride	8473
N-VIROBOR 20 Gel	P	P	Disodium Octoborate	8475
Algae & Moss Killer	E	P+A	Didecyldimethyl Ammonium Chloride	8669
PALACE CHEMICALS LIMITED				
Ecology Fungicide/Insecticide Concentrate	E	P	Cypermethrin, Tri (hexylene glycol) biborate	3792
Fungicide/Insecticide	S	A	Cypermethrin, Tri (hexylene glycol) biborate	3795
Microfine 8 Insecticide Concentrate	M	P	Permethrin	5809
PERMAGARD PRODUCTS LTD				
Microguard FI conc.	M	P	Permethrin, Boric acid	5854
Microguard Permethrin Conc.	M	P	Permethrin	5741
Microguard Woodworm	W	A	Permethrin	5103
Microguard Mouldicidal Wood Preserver	W	A	Benzalkonium chloride, Boric acid	5100
Permatreat Paste	P	P	Permethrin, Tri hexylene glycol/biborate	4075
PETER COX LIMITED				
Insecticide WSS	M	P	Permethrin	7528
Fungicide WSS	M	P	Propiconazole, IPBC	7516
Masonry Biocide WSS	M	P	IPBC	7509
Timber Gel Ready to Use	P	P	IPBC, Permethrin, Propiconazole	6840

COMPANY & PRODUCT NAME	TYPE[2]	USE[3]	ACTIVE INGREDIENTS	HSE No.
Timber Water Repellent	S	P	IPBC	6621
PROTIM SOLIGNUM LIMITED				
Protim B10	A	A	Disodium octoborate	4971
Protim Insecticidal AQ8	M	P	Permethrin	6526
Protim Universal AQ250	M	P	Permethrin, IPBC	5844
Solignum Green Preservative	S	A	Permethrin, Tri hexylene glycol biborate	7146
Solignum Woodworm Killer	S	A	Permethrin	5002
Solignum Insecticidal AQ8	M	P	Permethrin	6527
Osmose Endcoat	S	A	Tri hexylene glycol biborate	7049
Preservative Gel	P	P	Disodium octoborate + benzalkonium choride	6528
RENTOKIL INITIAL LIMITED				
Rentokil Woodworm Treatment	S	A	Permethrin	3911
Woodworm Treatment Spray	S	A	Permethrin	5619
Rentokil Woodworm Killer	A	A	Permethrin	4208
Control Fluid SB	A	P	Boric acid, disodium tetraborate	6018
Rentokil Control Paste SB	P	P	Boric acid, disodium tetraborate	6501
RESTORATION UK LIMITED				
Restor-8 Insecticide Conc.	E	P	Permethrin	5962
Restor-8 Dual Purpose Conc.	E	P	Permethrin, Tri hexylene glycol biborate	5963
Omega Biocide	E	P	IPBC	6381
Omega Plus	M	P	Permethrin, Trihexylene glycol biborate	6382
Omega	M	P	Permethrin	6379
SAFEGUARD CHEMICALS LIMITED				
Deepwood 8 Micro Emulsifiable bechzide Conc.	M	P	Permethrin	5664
ProBor 50 Paste	P	P	Disodium octoborate + Dialkyldimethyl ammonium chloride	5596
Safeguard Antiflame 4050 WD	A	P	Disodium octoborate	5656
Micron 8 dual purpose emulsion Conc.	M	P	Permethrin, Trihexylene glycol biborate	5851
Deepwood IV woodwork killer	S	P	Permethrin	3946
Deepwood III timber treatment	S	P	Permethrin, Trihexylene glycol biborate	3937
ProBor 10	A	P	Disodium octoborate + benzalkonium chloride	6595
ProBor DB	A	P	Disodium octoborate	6673
Probor 20 brushable gel	P	P	Disodium octoborate, (DDAC) Dialkyldimethyl ammonium chloride	6422
BASF PLC				
Devatern EC	E	P	Cypermethrin	3875
Devatern 0.5 L	S	A	Cypermethrin	3874
Devatern 1.0 L	S	P	Cypermethrin	3876
Devatern Wood Preserver	S	P	Cypermethrin + Trihexylene glycol biborate	4073
SOVEREIGN CHEMICALS LIMITED				
Sovereign Fungicide/Insecticide	S	P	Flufenoxuron, IPBC, Propiconazole	6828
Sovaq FLX I	M	P	Flufenoxuron	6510
Sovereign Sovaq FLX F/I	M	P	IPBC, Propiconazole + Flufenoxuron	6509
Sovereign Timbor Rod	R	P	Sodium octoborate	4627
Sovereign Deepkill Timber Paste	P	P	Permethrin, IPBC	6084
Sovereign Timber Preservative (Clear)	S	P	Boron ester	3807
Sovac F/I	S	P	IPBC, Propiconazole	6262

COMPANY & PRODUCT NAME	TYPE[2]	USE[3]	ACTIVE INGREDIENTS	HSE No.
Remtox MF8 Microemulsion	M	P	Flufenoxuron	6507
Remtox Micro Dual purpose F/1	K7(M)	P	IPBC, Propiconazole, Flufenoxuron	6871
Remtox Borocol 20 Wood Preservative	E	P	Disodium octoborate	4094
Remtox-Silexine B40 Paste Wood Preservative	P	P	Disodium octoborate	4161
TRITON CHEMICAL MANUFACTURING COMPANY				
Tritec 120	M	P	Permethrin	6539
Tritec 120 Plus	M	P	Permethrin, Propiconazole	6537
Tritec 121	M	P	Permethrin	6541
Tritec 121 Plus	M	P	Permethrin, Propiconazole	6538
Trisol 120	M	P	Propiconazole	6540
Tribor 20	S	P	Disodium octoborate	6242
Tribor Gel	S	P	Disodium octoborate	6099
Tribor Plus	P	P	Disodium octoborate, Permethrin	7549
Tripaste PB	P	P	Permethrin, Tri (hexylene glycol) biborate	6080
Trimethrin 20S	S	P	Permethrin	4621
Trimethrin OS plus	S	P	Permethrin, Tri hexylene glycol biborate	3521
WYKAMOL GROUP incorporating STANHOPE CHEMICAL PRODUCTS & LECTROS INTERNATIONAL LIMITED				
Aquatech Woodworm	M	P	Permethrin	7547
Aquatech Dual	M	P	Permethrin, IPBC, Propiconazole	7596
Brunosol Concentrate 6X	E	P	Sodium 2 phenyl phenoxide	7325
Lectros 8WW	M	P	Permethrin	6398
Lectros Micro 8FI	M	P	Permethrin, Propiconazole, IPBC	6584
Microtech Dual Purpose	M	P	Permethrin, Propiconazole	7338
Microtech WWK25	M	P	Permethrin	7326
Microtreat Insecticide 25X	M	P	Permethrin	6913
Microtreat Dual 12.5X	M	P	Permethrin, Propiconazole, IPBC	6917
Microtreat Insecticide II	M	P	Permethrin	7534
Microtreat Dual II	M	P	Permethrin, Propiconazole, IPBC	7533
Woodtreat Paste	P	P	Permethrin, IPBC	7362
Wykabor 10	A	P	Disodium Octaborate + Benzalkolium chloride	7324
Wykabor 20	S	P	Disodium Octaborate	7518
Wykabor 20 Gel	P	P	Disodium Octaborate	7517
Wykabor 40	P	P	Disodium Octaborate	7307
Wykamol Plus	S	P	Permethrin, IPBC	7303
Wykamol Boron Rods	R	A	Boric oxide	7405

Notes

1 Products on the list are those that have come to the attention of Natural England; other suitable products may also be available. Pre-treatment and decorative products are not included. The efficacy of particular products in particular situations is the responsibility of the manufacturer and no endorsement is given or implied.

2
- S Solvent-based product
- E Emulsifiable concentrate (solvent); to be diluted with water
- P Bodied paste
- A Aqueous solution
- M Microemulsion concentrate; to be diluted with water to form a microemulsion
- R Solid rod, for insertion into pre-drilled hole
- W Ready-for-use microemulsion

3
- P Cleared for professional use only
- A Cleared for professional and amateur use (a DIY product)

Natural England's bat advice helpline should be consulted before any known bat roost is treated with any product. The helpline numbers:

- **Cumbria - (Sally Phillips) 01768 776911**
- **East Midlands region - (Faulks Perry) 01509 672772**
- **London (Natural England) 0207 9322211**
- **Rest of England (Bat Conservation Trust) 0845 1300228**

Web:
http://www.naturalengland.org.uk/ourwork/regulation/wildlife/species/europeanprotectedspecies.aspx#12
Or contact our Enquiries Service (0845 600 3078 or enquiries@naturalengland.org.uk).

ADDRESSES

Antel (UK) Limited
25 Woolsbridge Industrial Park
Three Legged Cross
WIMBORNE
Dorset BH21 6SP — Tel: 01202 827186 — Fax: 01202 823974

Biokil Crown Ltd
7 Stadium Industrial Park
Springfield Avenue
Long Eaton
NOTTINGHAM NG10 2DD — Tel: 0115 9460060 — Fax: 0115 9469767

Cuprinol Limited
Adderwell
FROME
Somerset BA11 1NL — www.cuprinol.co.uk — Tel: 01373 475000 — Fax: 01373 475050

Deal Direct Ltd
Tel: 0800 731 0362

Kingfisher Chemicals Limited
Cooper Lane
Bardsea
ULVERSTON
Cumbria LA12 9RA — Tel: 01229 869100 — Fax: 01229 869101

Laybond Products Ltd
Riverside
Saltney
Chester
Cheshire CH4 8RS — Tel: 01244 674774 — Fax: 01244 682218

N-Virol Ltd.
Units 1-2 Riverside Business Park
Holme Lane,
Rawtenstall
Rossendale
Lancs. BB4 6JB — Tel: 01706 212030 — Fax: 01706 213737

Palace Chemicals Limited
Speke Hall Industrial Estate
Speke
LIVERPOOL L24 4AB — Tel: 0151 486 6101 — Fax: 0151 448 1982

Permagard Products Ltd.
Unit 3BAvonmouth Docks Estate
Chittening
Avonmouth
Bristol BS11 0YB — Tel: 0117 938 1596 — Fax: 0117 938 1584

Peter Cox Limited
Aniseed Park
Broadway Business Park
Chadderton
MANCHESTER
OL9 9XA — e-mail: marketing@petercox.com — www.petercox.com — Tel: 0845 222 0404 — Fax: 0161 684 6305

Protim Solignum Limited
Fieldhouse Lane
MARLOW
Bucks SL7 1LS
Tel: 01628 486644 Fax: 01628 476757

Rentokil Initial UK Limited
2 City Place
Beehive Ring Road
Gatwick Airport
West Sussex RH6 0HA
e-mail: propertycare@w90.rentokil.com www.rentokil-initial.com
Tel: 01293 858000 Fax: 01293 858300

Restoration UK Limited
Unit 2, Beaumont Court
Prince William Rd
Loughborough
Leics LE11 0GU
Tel: 01509 217750 Fax: 01509 262228

Safeguard Chemicals Limited
Redkiln Close
Redkiln Way
HORSHAM
West Sussex RH13 5QL
e-mail: sgrdchem@aol.com www.safeguardchem.com
Tel: 01403 210204 Fax: 01403 217529

Sorex Limited
Oldgate
St Michael's Industrial Estate
WIDNES
Cheshire WA8 8TJ
Tel: 0151 420 7151 Fax: 0151 495 1163

Sovereign Chemicals Limited
Park Road
BARROW IN FURNESS
Cumbria LA14 4QU
e-mail: sales@sovchem.co.uk www.sovchem.co.uk
Tel: 01229 870800 Fax: 01229 830857

Triton Chemical Manufacturing Co. Limited
Triton House, Lyndean Industrial Estate
129 Felixstowe Road
Abbey Wood
LONDON SE2 9SG
Tel: 0208 310 3929 Fax: 0208 312 0349

Wykamol Group incorporating Stanhope Chemical Products & Lectros International Limited
Units 1-3 Knowsley Road Industrial Estate
Knowsley Road
Haslingden
Rossendale
Lancashire
BB4 4RX
www.wykamol.net www.lectros.com
e-mail: wykamol@ukonline or sales@lectros.com
Tel : 01706 831223 Fax: 01706 214998

Use of the list

Because products on the market change frequently and all products for which a company holds an Approval may not be available, it is also possible to specify suitable products by listing their active ingredients. Thus, products which do not appear on the list of specific products above but contain only the active ingredients listed below (singly or in combination) may be considered suitable for use in bat roosts when used as directed.

Insecticides

Active ingredient	Concentration	Acceptable uses
Permethrin	0.2%	Any remedial use
Cypermethrin	0.1%	Any remedial use
Deltamethrin		
Boric acid, Disodium octoborate, Tri(hexylene glycol) biborate	5-20%	Any remedial use
Flufenoxuron (Flurox®)	0.025%	Any remedial use

Fungicides

Active ingredient	Concentration	Acceptable uses
Boric acid, Disodium octoborate or tetraborate Tri(hexylene glycol) biborate	3.5%	Any suitable application
Acypetacs copper, Copper naphthenate	2.3% Cu	Any suitable application.
Acypetacs zinc Zinc naphthenate, Zinc octoate, Zinc versatate	1-3% Zn	Any suitable application
Benzalkonium chloride		Any suitable application
Phenylphenol (+ sodium salts)	2-5%	Wall sterilant for dry rot
Dichlofluanid		Decorative stains and finishes
Quartenary ammonium compounds	3.0%	Any suitable application
3-iodo-2-propynyl-N-butyl carbamate (Polyphase/IPBC)	0.5%	Any suitable application
Propiconazole		Any suitable application
Dodecylamine salicylate or laurate		Any suitable application

This list does not cover the use of pre-treatment products. A wider range of active ingredients, some of them considered harmful to bats when used as remedial products, is used for the pre-treatment of structural timbers. There is no evidence that any pre-treatment of timbers is harmful to bats, probably because the method of application results in much lower concentrations of pesticides on the wood surface compare with remedial applications.

This list does not include decorative wood finishes, such as stains or wood preservatives, which may be used to treat external timbers, weatherboarding, shingles etc. Provided these are used only on external timbers, they present no significant hazard to bats. Most of these products contain one or more of the fungicides listed above.

Natural England
February 2009

13 Addendum

13.1 Purpose and Scope

13.1.1 The purpose of the survey and report was to update the bat and breeding bird assessment of barns A-C (as the previous bat survey report was conducted in 2008) to accompany a planning application for the site which included the demolition and conversion of barns at Hall Farm, Higham-on-the-Hill, Nuneaton, Warwickshire CV13 6AL.

13.1.2 The scope of the survey was to include barns A-C concentrating on the likelihood of bat and breeding bird presence but also considering potential for other protected species over the wider site. In addition to this, during the most recent site visit on 28th March 2011, Mr. Aucote (the applicant) indicated that barns D and E (see attached plan) would also be removed as part of the proposals. Consequently barns D and E were included within the scope of the survey and report.

13.2 Walk-over survey and analysis

13.2.1 *Barns A-C*

An initial walkover survey of the site indicated that the state of repair of barns A-C had largely remained unchanged since the May 2008 visit, albeit there was a minor element of further dilapidation. As described following the 19th May 2008 visit, barns A and B provided many opportunities for bat access including slipped and broken roof tiles, adequate gaps beneath ridge tiles, cracked brickwork and unprotected structural openings. All such opportunities for bat access remained, as illustrated in the photos below taken during the March 2011 visit. Internally, the potential for bat occupation within barns A and B remained, as per the May 2008 survey, in the medium-high category. Potential (summer and hibernation) bat roosting opportunities presented themselves in barn A at central ridge beams, at gaps where purlins entered the gable wall, between tiles and wooden sarking and within an unused chimney; in Barn B such (summer and hibernation) bat roosting opportunities included central ridge beams, between tiles and bituminous underfelt, at gaps where purlins entered the gable wall and at gaps between the first floor ceiling and wall. Barn C was considered of low potential for bats, given its profiled roof sheeting and associated lack of a stable micro-climate which would likely prevent roosting of bats being established and maintained. The structure of this building remained unchanged and it was additionally noted that roof lights within the barn would further reduce the already limited opportunities for roosting bats within barn C.

Barn A – external





North elevation and associated bat access



North elevation and associated bat access



West elevation







South elevation and associated bat access

Barn A – internal





Bat roosting opportunities



Bat roosting opportunities

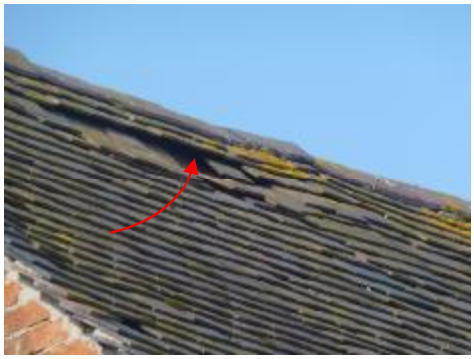
Barn B – external















South elevation with associated bat access




South elevation with associated bat access




West elevation and associated bat access






North elevation and associated bat access




East elevation and associated bat access

Barn B – internal









Bat roosting opportunities

Barn C – external



North elevation and associated bat access



West elevation and associated bat access







South elevation and associated bat access

Barn C – internal



Roof lights and steel frame of building minimised bat roosting opportunities

13.2.2 Barns D and E

Barns D and E were both of a modern construction (steel-framed and clad). Barn D was used for the storage of hay and was constructed as a Dutch barn. Barn E was largely enclosed with two cells at the eastern end of the building open on their southern elevation. The modern construction of barns D and E was similar in nature to barn C and as such the bat roosting potential of the modern barns is considered to be low.

Barn D











Barn E



South elevation



Cells at eastern end of the barn



Rear (north) elevation



Cell - internal



Main internal area

13.2.3 A brief walkover of the remainder of the site was also undertaken. All of the barns were located within a courtyard setting with an area of hardstanding between each building. The area immediately south of barn A supported overgrown species poor grassland with trees and shrubs and a dense covering of ivy which potentially restricted access to the building for bats and other species. Two strong mammal tracks were noted in this area. Immediately north of barn E was a long strip of bramble scrub with occasional shrubs including hawthorn and elder together with tall ruderal vegetation; additional mammal tracks were also recorded in this area. It was noted that a barn owl box had been relocated under the cover of the modern barn immediately east of barn D. However, no evidence of use by barn owls was noted during the visit.

13.2.4 There were a number of breeding bird opportunities within all buildings together with trees and shrubs within the site.

13.3 Survey and results

13.3.1 An intrusive investigation of the buildings was undertaken two experienced surveyors and led by George Burton, Natural England Bat Licence No. 20102342 using Petzl Pukka 2 headtorch, Clulite 'CB2' 0.5 and 1 million candle power lamp and 'SeeSnake' Micro Endoscope. Following advice in the "Bat Survey Guidelines", BCT 2007, no emergence survey was undertaken, the timing being beyond the maternity period.

13.3.2 Bats

A search for bats, carcasses, droppings, urine stains, polished surfaces, scratch marks etc. was employed.

Barns A, D and E

No evidence of bats was recorded in barns A, D or E.

Barn B

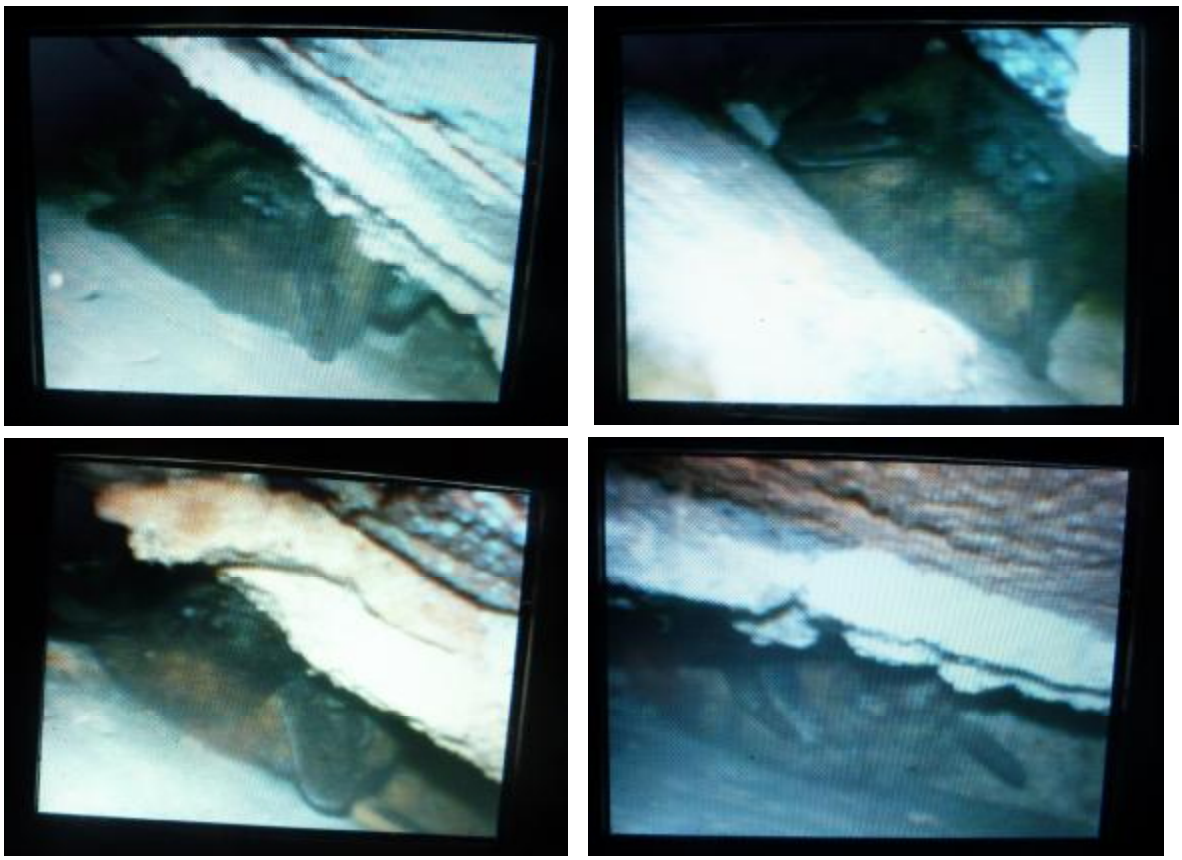
Approximately 25№ bat droppings reminiscent of Pipistrelle sp. were noted in the south-western ground floor cell of barn B, located at each end of the internal face of the western elevation. <10 of the droppings appeared fresh with the remainder appearing older, more grey in colour and beginning to disintegrate. Several of the aforementioned bat droppings were caught in spider's webs on the wall finish and on the trough below. The roost appeared to be located between the first floor joist adjacent to the wall and the masonry. Upon closer inspection with an endoscope, four hibernating bats were recorded roosting in this location at the time of survey (see survey results plan). Three of these bats were Pipistrelle sp. and the other bat was a brown long-eared (see photos below). The bat droppings recorded below the roosting bats were sent off for DNA analysis and were returned with a 'maximum likelihood' of Common Pipistrelle (see letter below). No further evidence of bats was recorded within barn B although it should be noted that there was no access gained to a room at the north-west corner of the upper storey.







Bat roosting location and droppings in barn B



Hibernating bats located between the first floor joist adjacent to the wall and masonry of the south-western ground floor cell of barn B

THE UNIVERSITY OF WARWICK

EcoWarwicker
Ecological Forensics

14th April 2011

Re: Bat Identification Results for George Burton, Ecolocation

Bat job number 005414 received 31st March 2011
Labelled: Hall Farm, Higham on the Hill, Barn B SW corner
PCR amplification successful. DNA sequence:
ATGACCAACATTCGAAAATCCCACCCCCTGATCAAAATCATCAATAACTCATTCATTG
ATCTACCCAGCTCCATCAAACATTTCAGCATGATGAAACTTTGGATCC
Phylogenetic analysis identification: *Pipistrellus pipistrellus*
Confirmed by maximum likelihood, maximum parsimony, bootstrap 100%

Bat job number 005414 received 31st March 2011
Labelled: Hall Farm, Higham on the Hill Barn B west corner below bats
PCR amplification successful. DNA sequence:
ATGACCAACATTCGAAAATCCCACCCCCTGATCAAAATCATCAATAACTCATTCATTG
ATCTACCCAGCTCCATCAAACATTTCAGCATGATGAAACTTTGGATCC
Phylogenetic analysis identification: *Pipistrellus pipistrellus*
Confirmed by maximum likelihood, maximum parsimony, bootstrap 100%

Best regards,

Robin Allaby
Associate Professor.

The results and conclusions in this report are based on an investigation of mtDNA sequence analysis. The results obtained have been reported with accuracy. The interpretation represents the most probable conclusion for the DNA sequence obtained rather than the sample provided given current levels of species data. It should be borne in mind that different circumstances might produce different results. Therefore, care must be taken with interpretation of the results especially if they are used as the basis for commercial recommendations.

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Barn C

Several moth wings were recorded on blockwork of an internal wall of barn C. No other bat evidence was recorded.

Birds

Numerous inactive bird nests were evident in barns A-E. Some of the nests appeared old and it was therefore difficult to assess the likely species, however others were likely former nests of thrush (*Turdidae*) species, swallow (*Hirundo rustia*), feral pigeon (*Columba livia*), starling (*Sturnus vulgaris*) and house sparrow (*Passer domesticus*).

Barn B







Barn E



Badgers

During the visit in March 2011 a general walkover of the site revealed evidence of mammal paths to the south of barn A and to the north of barn E. During the intrusive inspection of barn E, evidence of badgers was noted. This included evidence of a probable main badger sett towards the eastern end of barn E. 6№ badger holes were recorded within barn E with a further 3№ badger holes in the tall ruderal vegetation immediately north of barn E (see survey results plan). In addition to this 3№ badger latrines were recorded in the tall ruderal vegetation immediately north of barn E.

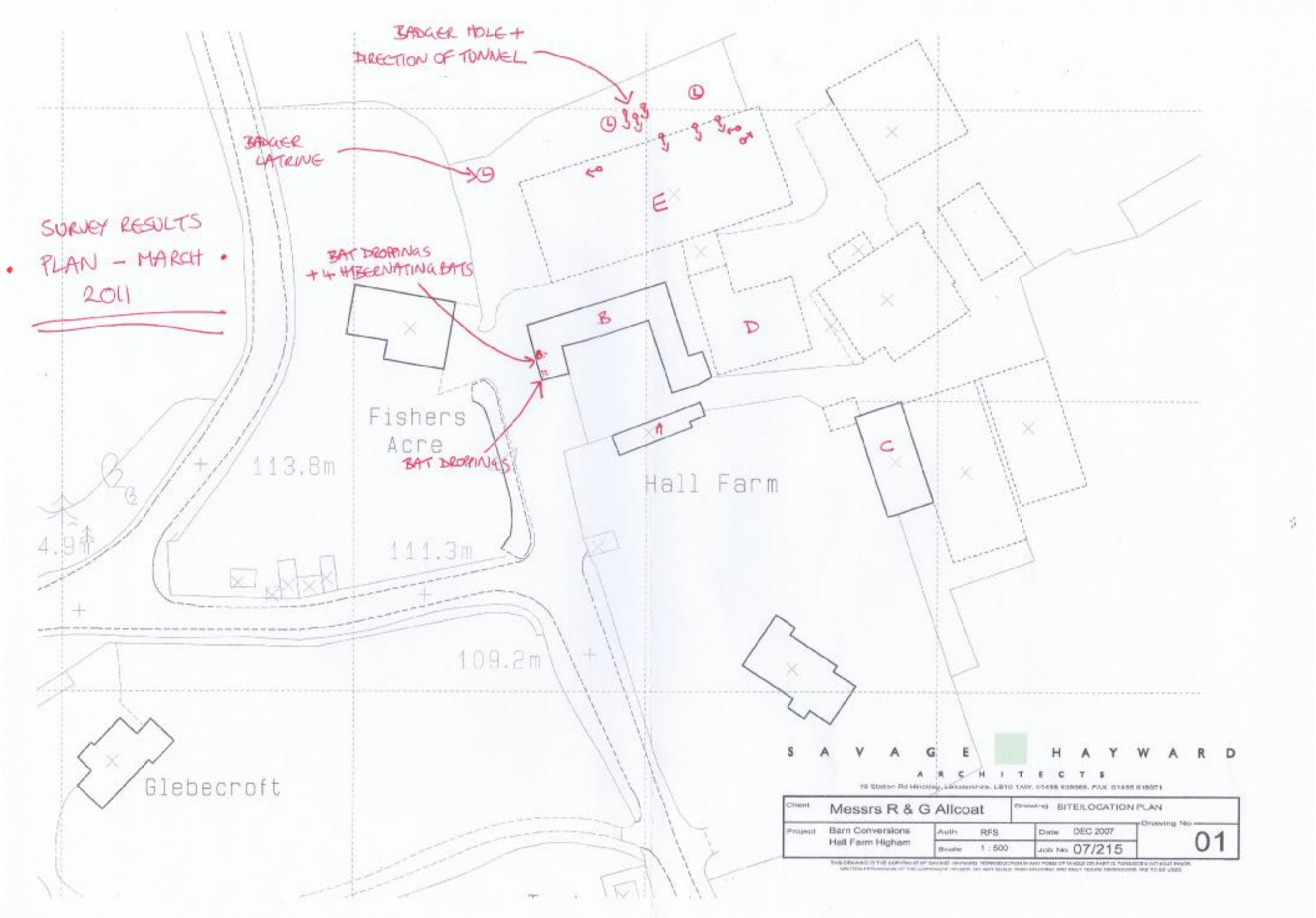












SURVEY RESULTS
PLAN - MARCH
2011
BADGER HOLE +
DIRECTION OF TUNNEL
BADGER
LATRINE
BAT DROPPINGS
+ 4 HIBERNATING BATS
BAT DROPPINGS
Fishers
Acre
Hall Farm
Glebecroft
113.8m
111.3m
109.2m
4.9m
A
B
C
D
E
SAVAGE HAYWARD
ARCHITECTS
Client
Messrs R & G Allcoat
Drawing
SITE/LOCATION PLAN
Project
Barn Conversions
Hall Farm Higham
Auth
RFS
Scale
1 : 500
Date
DEC 2007
Job No
07/215
Drawing No
01

13.3.3 No other evidence of protected species was identified at this stage other than the incidental sightings below.

Incidental sightings

Singing or seen within the site:

Bullfinch (*Pyrrhula pyrrhula*)
Great tit *(Parus major)*
Wood pigeon *(Columba palumbus)*
Blackbird *(Turdus merula)*
Sparrow species
Robin *(Erithacus rubecula)*
Blue tit *(Parus caeruleus)*
Chiffchaff (*Phylloscopus collybita*)
Collared dove *(Streptopelia decaocto)*
Wren (*Troglodytes troglodytes*)
Yellowhammer (*Emberiza citrinella*)

13.4 Combined survey conclusions

13.4.1 During the May 2008 bat activity survey no bats were seen to emerge from the barns although the bat roost within the south-western ground floor cell of barn B had been recorded during the initial inspection. The initial inspection of barns A-E in March 2011 revealed the same evidence of roosting bats within barn B as previously identified. However, upon closer inspection four hibernating bats were recorded in this location, three Pipistrelle and a single brown long-eared. Hibernation roosts have a high conservation value (even those with low numbers of more common bat species, as is the case here) and as the proposals will directly impact this roost it is essential that replacement hibernation provision be made in another building within the site. It is also advised that further bat activity surveys of the barns be undertaken to establish whether bat roosting is also taking place during the summer months. The results of such surveys can then inform a detailed mitigation scheme and licence application. No evidence of other bat species was noted**.**

13.4.2 No evidence of active bird's nests were identified during the course of the survey, however nesting birds are likely to be present during April-September, particularly as swallows will likely return in April and a number of inactive bird's nests were recorded in barns A, B, C, D and E. Replacement nesting provision for the bird species recorded on site should be accommodated within the scheme.

13.4.3 Evidence of a probable main badger sett was recorded within and adjacent to barn E. It is noted that the application area has been designed such that the main badger sett does not fall within the proposed gardens and the badger sett can remain *in situ* once barn E has been removed during the least sensitive time of year (July-November inclusive). Access to foraging areas will also be retained and in order to avoid any potential conflict badger-proof fencing will also be erected around the gardens to prevent badgers accessing this area. Further details are provided in the section below.

13.5 Combined obligations and recommendations

13.5.1 Paragraphs 9.1- 9.4 of the main report remain relevant and are reiterated at this stage.

13.5.2 The presence of hibernating common pipistrelle and brown long-eared bats within the ground floor of barn B indicates that the works would result in the disturbance of bats and the destruction of their roost during the conversion of the buildings. In assessing the level of disturbance against the "Habitats Regulations" it is considered that disturbance would occur as the resident bats would be prevented from maintaining their population within their natural range in relation to the available local habitat when development works proceeded. Under the Wildlife & Countryside Act 1981 it is also considered that disturbance would occur (although this defines disturbance differently) as the conversion of barn B would remove the roosting opportunities for bats at this location. A **derogation licence is necessary** under the 'Habitats Regulations' to make the works legally compliant. In addition to this, as the barns also have the potential to support roosting bats during the summer months, **further bat activity surveys** to be undertaken May-August inclusive will also be required to further inform such a licence application and in order to meet the **minimum** requirements of Natural England. Development works should ideally be undertaken at times when bats are least vulnerable. Such times would be when they are between their summer roosts and hibernation sites (being between September – November and March – April in any given year). As brown long-eared bats are sometimes known to stay at a site past the autumn when they might secret themselves away in crevices, a **watching brief** by a licensed bat worker is also recommended. It is further recommended that a safe, undisturbed roost location for the bats be provided within the proposed development scheme and that bats are always able to roost on site even during the construction period with the provision of temporary roosting opportunities or by programming of works such that roosting opportunities are continuously available to bats pre-development, during construction and post-development. The method by which we recommend such provision be made is outlined in the Mitigation section below.

13.5.3 A Licensed Bat Worker will need to be commissioned to undertake a "**watching brief**" of the construction works during the soft-stripping of roof materials above walls and removal of ridge tiles, door frames, joinery, pointing of brickwork etc., as required by the works to a programme *previously agreed* by the Bat Worker until such destructive works have reached a point at which the Bat Worker is confident that bat presence is unlikely to be identified beyond that point. As hibernating bats have been recorded using the site no works potentially disturbing to bats should be undertaken in rain or at temperatures below 5ºC . Any evidence of bats found during the course of works should be taken into the care of the Bat Worker in a suitable vivarium with mealworms, water and suitable roosting media and released under appropriate weather conditions or introduced to the temporary roost however, should a significant number of bats, i.e. more than 2 bats of the same species, be identified the advice of the Bat Worker and Natural England should be taken at this stage as it is likely that a more significant roost is present on site than could be confirmed at the time of the survey.

13.5.4 *Badgers*

Badgers are protected by the *Protection of Badgers Act 199*2, *Schedule 7 of the Wildlife & Countryside Act 1981 and the Wildlife & Countryside (Amendment) Act 1985*, which protects Badgers and their setts. It prohibits certain activities such as killing/injuring badger(s) or damaging, destroying or blocking sett entrance(s) as well as disturbing while a sett is occupied and makes such actions illegal without an appropriate licence.

Due to the level of activity at the sett found on site and the direction of the tunnels it was considered that the sett could be left with minimal disturbance from the proposed development of the site. It is recommended that a 10m exclusion zone from the eastern boundary of the site is suitably fenced-off around the sett before any works are undertaken.

The positioning of the proposed garden fencing needs to be considered in relation to its proximity to the sett. The exact location of the sett should be marked on any plans used for construction purposes and this will be undertaken following a check for the presence of badgers immediately prior to the start of works.

Any excavations on the northern side of barn B or E for the proposed conversion or drainage should be undertaken using hand tools to avoid disturbance to the sett if within 10m.

Barn E should be dismantled and removed with great care to avoid any disturbance to badgers or their sett. The dismantling of this building should include cutting off the steel columns at ground level and carefully lifting the barn to the south, away from the badger sett. Such works should be undertaken between the months of July and November when badgers are more active and spend less time in their setts.

The sett area should be left undisturbed to the north of the garden boundary and consideration should be given to specific planting around the area to provide cover around the sett entrance especially since the cover of barn E will be removed as part of the works. Fencing could be used to restrict badger access to the gardens provided post holes were excavated by hand if closer than 10m to any sett holes.

If the excavations are found to be disturbing or exposing any parts of the sett or its tunnels then works must stop immediately and a suitably qualified ecologist should be contacted. These works may then require a licence from Natural England.

Should any ground clearance be required as part of the proposals, works can be undertaken during the winter months with a suitably qualified ecologist undertaking a 'watching brief'. If more evidence is found the situation will need to be reassessed and application for a disturbance licence may be necessary. Any excavations near the sett should be undertaken between the months of July and November when badgers are more active and spend less time in their setts.

Sett Closure

The following is for information only and details the process of sett closure.

The closure of any setts would need to be carried out under licence from Natural England whose guidelines recommend that a closure should not be carried out between 1st December and 1st July. The licence application will need to demonstrate that the Badgers have an alternative sett to go to. This may be either an existing sett within the same clan territory, or a specially constructed artificial sett. Since no suitable existing setts have been located it would appear the construction of artificial setts will be necessary.

The construction of artificial setts can take place at any time but are ideally completed in time to allow several months (often at least the closed season, November-July) for Badgers to locate and establish use of the new sett prior to exclusion of the presently occupied sett. The design of the artificial sett will be dependent on the status of the present sett but is generally built to the same scale. Badgers must be shown to be using the artificial sett before the existing sett can be destroyed.

Existing setts are closed using exclusion methods. This either involves attaching a one-way gate to the hole entrance and laying down chain-link fencing to deter Badgers from digging back into the sett, or by erecting an electric fence around the entire sett with one-way gates at regular intervals along the fence line. The one-way gates allow Badgers to exit the sett, but not re-enter. The exclusion process will take a minimum of five weeks. Any signs of Badgers trying to re-enter the sett after the gates have been closed will result in the process being extended.

When it is safe to presume that there are no Badgers present in the excluded sett it can be destroyed. The sett will be destroyed by machine under the supervision of a licensed ecologist. The site may then need to be monitored to ensure Badgers do not return and dig new holes before the proposed works have commenced.

13.6 Mitigation

13.6.1 ***Bats***

Permanent hibernation roost provision

The mitigation proposed for the 3№ hibernating common pipistrelle and single hibernating brown long-eared bats using the ground floor of barn B would be to provide a purpose made hibernation roost facility within the western cell of barn A. This could comprise internal enhancements as per the diagram below including attaching vertical battens either side of the ridge and at the eaves which would re-create suitable crevice roosting opportunities for hibernating bats comparable to those currently used by bats in barn B. The existing access into the western elevation of barn A would also be enhanced by removing/managing overgrown vegetation to provide comparable access opportunities to those currently used by bats within barn B. **Such works would be timetabled such that bats are not left without a hibernation roost and roosting opportunities are available at the site year-round before, during and after works. It is vital, therefore, that access is maintained to and no works commence on the ground floor south-western cell of barn B in the interim period post summer and pre-development until such times that the permanent hibernation roost within barn A is complete.** Furthermore a licensed bat worker must be on site with a 'watching brief' while any previously identified materials are soft-stripped by hand under the bat worker's instruction (see 8.3.6 above). In addition to this, works will be programmed to take place under licence and, where possible, during the least sensitive time of year for bats. Should a bat be found during this period it will be released only in suitable weather conditions, i.e. not during periods of rain or if the air temperature is below 5ºC.

The works themselves should include certain design features suitable for bats. No preservative treated timber should be used while bats are present. Historically treatment of timber, especially roof timbers, in buildings has been detrimental to bat populations. It is therefore essential that any timber treatment is undertaken using appropriate products at a time of year when bats will not be affected. The following link to Natural England advice note TIN092 must be used for necessary advice on this subject where such works are proposed:

http://naturalengland.etraderstores.com/NaturalEnglandShop/TIN092

Should the further bat activity surveys reveal evidence of bat roosting in any of the barns during the summer months, it is considered, given the lack of evidence of void-seeking bats such as Natterer's during either the May 2008 or March 2011 surveys, that such species are most likely to be crevice-dwelling bats such as pipistrelle or small Mytois bats. Appropriate mitigation for summer roosting by such bat species would be to provide a purpose made roost facility on the southern gable end of barn B at the south-western extremity of this structure. This could comprise standard bat boxes or a more permanent solution of proprietary access bricks allowing access to a concealed cavity or a form of weather boarding or tile hanging allowing access to the rear for bats on the external face of the building. We would suggest in the circumstances that the best solution would be to provide a weather-boarded solution in accordance with the proposed sketched mitigation at Appendix D

The above mitigation would be fine-tuned prior to a licence application to Natural England following further surveying at an appropriate time of year (May-August inclusive). This would be carried out in accordance with the Bat Conservation Trust Bat Survey Guidelines 2007.

13.6.2 *Breeding birds*

In order to ensure no nett loss of biodiversity in accordance with PPS9 it is essential that nest boxes or other breeding facilities are provided on site to maintain and enhance the existing breeding possibilities for various bird species which would otherwise be lost as part of the proposed development. Replacement nesting provision for starling and house sparrow (both RSPB 'red listed birds' of conservation concern) should be made within the proposed scheme. House sparrow 'terrace' boxes should be erected under the eaves of some buildings with a north or east orientation. In addition to this several bird boxes suitable for use by starlings should be erected in loose colonies on some of the buildings with a north or east orientation. Nesting provision for swallow (RSPB 'amber listed birds' of conservation concern) should be made within the proposed storage barn within the second largest cell at the centre of barn A with access for swallows via a permanently open window allowing free flighted access. Thrush nesting boxes should also be erected on buildings within the site also with a north or east orientation suitable for blackbird and robin. Separate advice on positioning, etc., can be provided by ECOLOCATION if required.

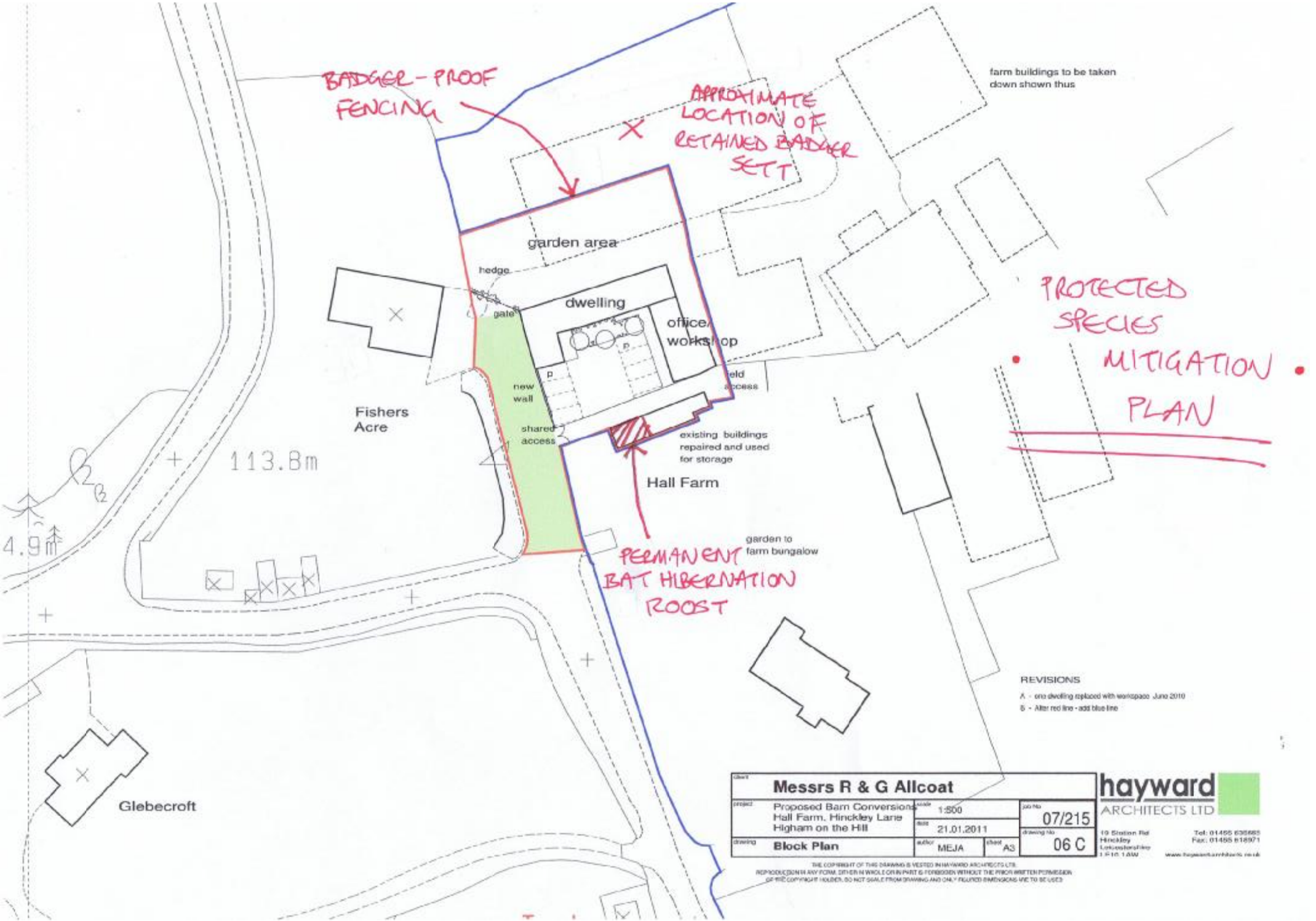
13.6.3 Bats and many, once common, garden and farmland bird species have been in decline in recent decades. Therefore any measures to enhance roosting and nesting possibilities which can be incorporated into the proposed development are to be welcomed, though not an obligation. ECOLOCATION can offer advice in this respect if so required*.

* ECOLOCATION can supply suitable wildlife boxes, please contact for advice or see website 'www.gbae.co.uk'.

13.7 Assessment of favourable conservation status test in The Conservation of Habitats and Species Regulations 2010

13.7.1 The Favourable Conservation Test

The populations of bats present can be maintained at, or above, their present level on site by way of the mitigation and compensation proposed within the species' natural range and in relation to available habitat.



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