ECOLOCATION

Protected Species Surveys for Development

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

Bat Survey Assessment

(Revision B)

at

143 The Park
Market Bosworth
Nuneaton
CV13 0LP

for

Mr. S. Houldcroft

(14th June 2011)

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

Contents

1. Instructions
2. Purpose and Scope
3. Timing and Conditions
4. The Site
5. Habitat Assessment
6. Data Search
7. Walkover Survey and Analysis
8. Intrusive Survey and Results
9. Survey Conclusions
10. Obligations and Recommendations
11. Mitigation
12. References
13. Addendum

1. Instructions

1.1 ECOLOCATION were appointed by Mr. S. Houldcroft, 143 The Park, Market Bosworth, Nuneaton, Warwickshire CV13 0LP to undertake a bat assessment of a detached house and garage at the above address.

2. Purpose & Scope

2.1 The purpose of the survey and report was to assess the likelihood of presence or use of the buildings affected by proposed building works by bats and to support a planning application for demolition of the garage and an extension to the existing dwelling submitted to Hinckley & Bosworth Borough Council.

2.2 The scope of the survey was to encompass the dwelling, garage and a reasonable amount of working space around them but to concentrate on the built structures.

3. Timing and Conditions

3.1 The site was visited on Wednesday 13th April commencing at 1000hrs.

Parameter	Recorded Figure
Temperature	11ºC
Cloud cover	60%
Precipitation	None
Wind speed (Beaufort Scale)	2 – light breeze

4. Site

4.1 The site (grid ref. SK414032) was located at the eastern periphery of Market Bosworth on 'The Park' which faced the parkland setting of Bosworth Park to the south and open countryside, comprising agricultural pasture land to the north. To the east and west were further dwellings forming the row known as The Park which were separated from the main village to the west by an area known as The Wilderness and open spaces to the east and south of Bosworth Hall Hotel.

4.2 The building itself comprised a two-storey brick built dwelling with a hipped roof finished with plain clay tiles. The dwelling comprised a basic rectangular footprint with a projecting element to the front (south) elevation. To the north-east of the building was a detached single-storey sectional garage, with a vaulted pitched profiled asbestos cement sheet roof over a timber frame. The dwelling was probably built around 1960 and benefited from cavity walls with a traditionally constructed roof with purlins and rafters. The hipped roof above the rectangular part of the dwelling together with the hipped roof of the projecting gable formed one continuous roof void. This roof was lined with traditional bituminous sarking felt and was insulated with fibreglass at ceiling level between the joists.



Front (south) elevation



East elevation



Rear (north) elevation



West elevation



Garage



Garage - internal



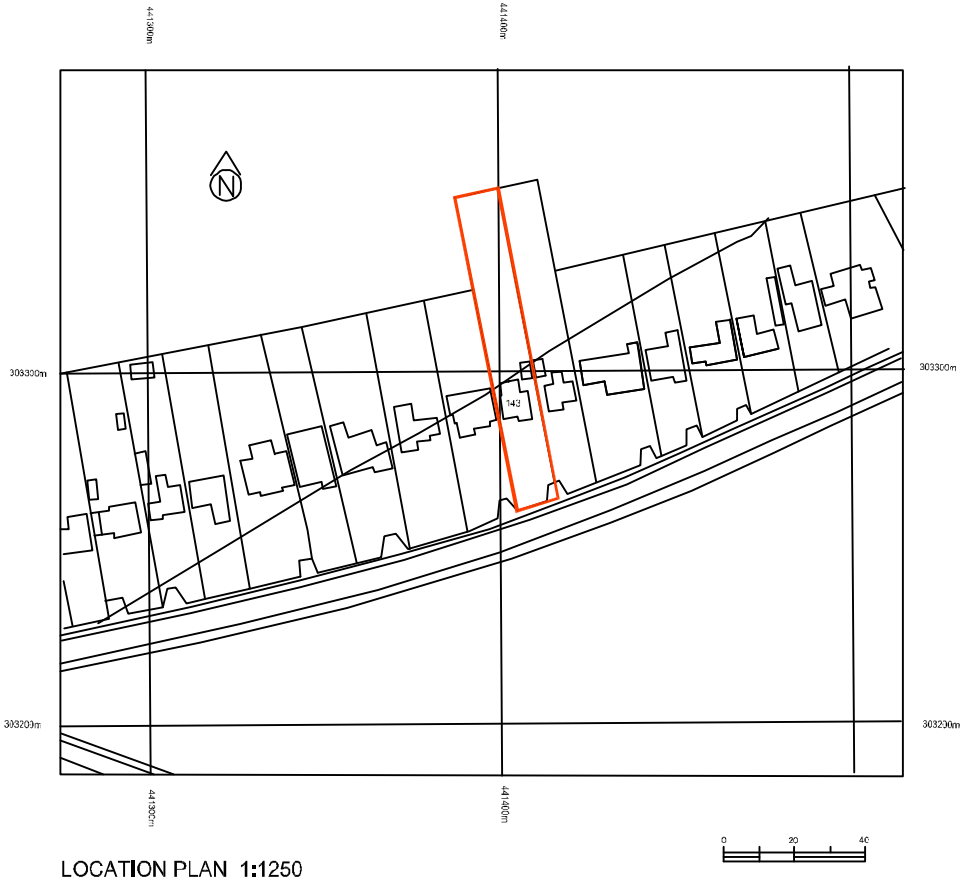


Dwelling roof space



ECOLOCATION

A3



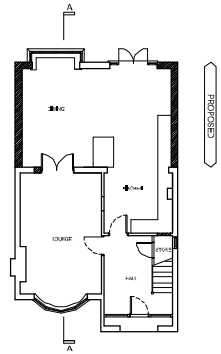
LOCATION PLAN 1:1250

AMENDMENTS

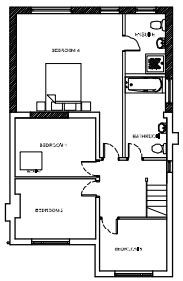
CLIENT:	H ASTLE & S HOULDCROFT
LOCATION:	143 THE PARK MARKET BOSWORTH
TITLE:	SITE LOCATION PLAN
STATUS:	PLANNING

DRAWN: SJH	DATE: 24/03/2011	DRG NO: 01
REV: -	SCALE: 1:1250@A3	CHECKED:

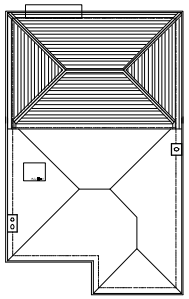
A1



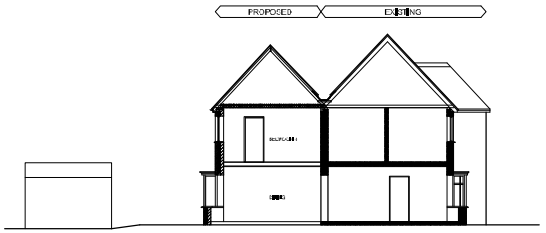
PROPOSED GROUND FLOOR PLAN



PROPOSED FIRST FLOOR PLAN



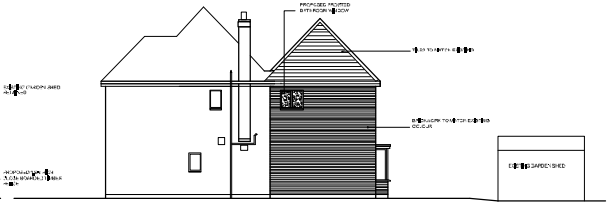
PROPOSED ROOF PLAN



PROPOSED SECTION A-A



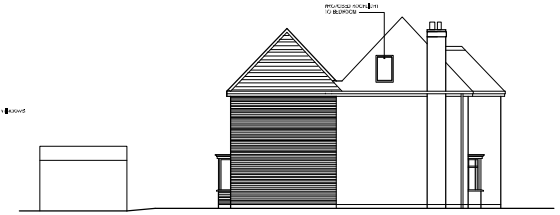
PROPOSED SOUTH ELEVATION



PROPOSED EAST ELEVATION



PROPOSED NORTH (REAR) ELEVATION



PROPOSED WEST ELEVATION



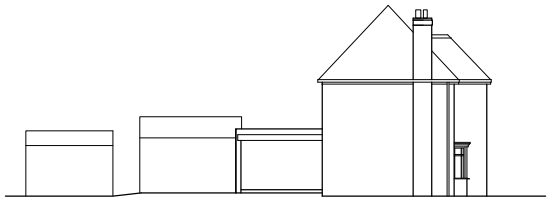
EXISTING SOUTH ELEVATION



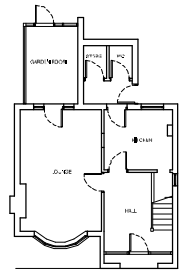
EXISTING EAST ELEVATION



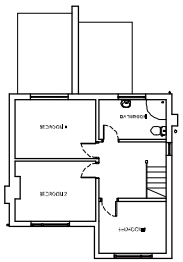
EXISTING NORTH ELEVATION



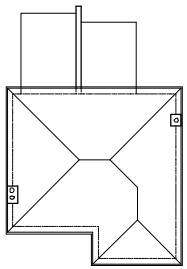
EXISTING WEST ELEVATION



EXISTING GROUND FLOOR PLAN



EXISTING FIRST FLOOR PLAN



EXISTING ROOF PLAN

The Building Regulations are designed from a minimum base by other persons for other dwellings.

The Contractor is to check and verify all building and site dimensions, levels and sewer invert levels at connection points with details shown on the submitted drawings. If not working to dimensions shown, levels, sizes, positions or details which cannot be scaled accurately from the drawings, the Contractor is to obtain clarification from the Architect before proceeding with the work. Any discrepancies between drawings and site conditions are to be reported to the Architect immediately. Any dimensions or details which are not clear or are omitted should be requested from the Architect. Do not scale from drawings. Only figured dimensions are to be taken from drawings. All dimensions are to be checked on site before any work is put in hand or any materials or components are ordered. Any discrepancies between drawings and site conditions are to be reported to the Architect immediately. Any dimensions or details which are not clear or are omitted should be requested from the Architect. Do not scale from drawings. Only figured dimensions are to be taken from drawings. All dimensions are to be checked on site before any work is put in hand or any materials or components are ordered. Any discrepancies between drawings and site conditions are to be reported to the Architect immediately.

Before excavating for any foundations or trenches, all details and type of ground conditions, location and depth of existing services are to be established by the Contractor. A suitable method of foundation is to be adopted subject to existing ground conditions. Any unsuitable or made ground, contamination or other ground problems are to be further investigated by a suitably experienced engineer and the Building Control Officer notified prior to any foundations being laid. Where existing trees are to be retained they are to be protected in accordance with BS5837:2005 'Trees in relation to construction'. All trees to be retained are to be protected by a suitable barrier at least 3 metres from the trunk and 3 metres from any building and excavation. A suitable method of foundation is to be adopted to accommodate the proximity of the trees.

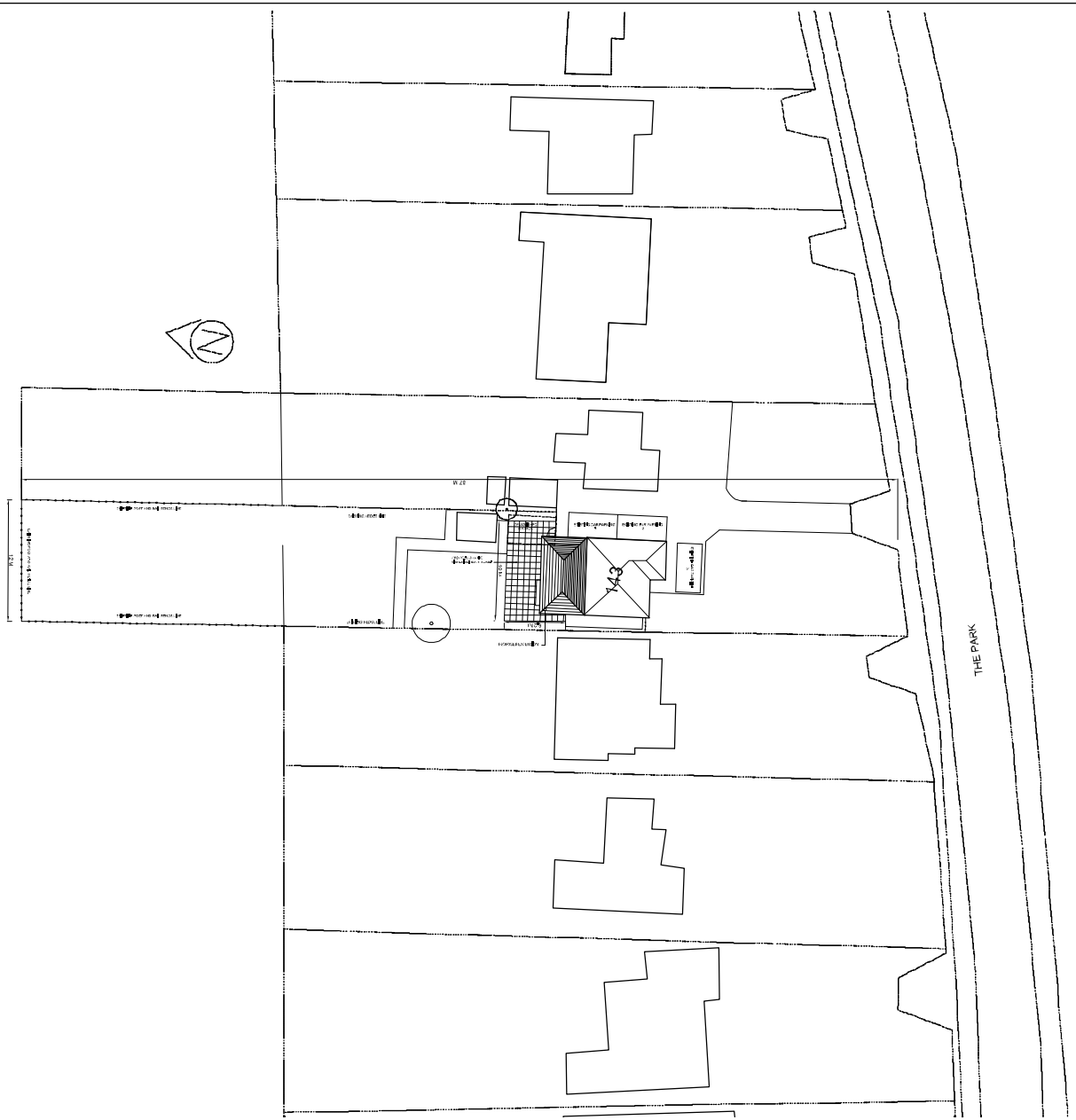
Dimensions are for illustrative purposes only & as such are subject to detailed design and confirmation by the relevant consultants, engineers, suppliers & manufacturers. Setting out of the building is the responsibility of the contractor who must check all dimensions on site before any work is put in hand. Any discrepancies must be reported to the Architect immediately. All dimensions are to be checked on site before any work is put in hand or any materials or components are ordered. Any discrepancies between drawings and site conditions are to be reported to the Architect immediately.

Glazing manufacturers are responsible for the design of glazing to comply with the requirements of the Building Regulations. Glazing in doors, side panels & within 800mm of floor level to be safety glass to BS6206 & BS6262 Part 4. Glazing in critical locations to be safety glass to BS6206 & BS6262 Part 4. Glazing in doors, side panels & within 800mm of floor level to be safety glass to BS6206 & BS6262 Part 4.

Amendments

Client:	H Astle and S Houldcroft		
Location:	143 The Park Market Bosworth		
Title:	Existing and Proposed Plans/Elevations/Section		
Status:	Planning		
Drawn:	SJh	Date: 22/03/2011	Drg No: 02
Rev:	-	Scale: @100@A1	Checked: N/A

A1



AMENDMENTS

CLIENT:	H ASTLE AND S HOULDCROFT
LOCATION:	143 THE PARK MARKET BOSWORTH
TITLE:	PROPOSED BLOCK PLAN
STATUS:	PLANNING

DRAWN: SJH	DATE: 22/03/2011	DRG NO: 03	
REV: -	SCALE: 1@500@A1	CHECKED: N/A	

5. Habitat Assessment

5.1 The habitat immediately adjacent to the site was good in respect of bat foraging in that the site itself and others on The Park benefited from mature trees along the road frontage running east-west from the eastern periphery gateway to Market Bosworth towards the village centre and this, combined with the extensive parkland setting of Bosworth Park to the south and the wooded areas and waterbodies associated with Bosworth Hall Hotel and The Wilderness to the west were of potential foraging use for bats. There was also a lake at Bosworth Park some 450m south-west of the site.

5.2 A search to a 2km radius of the site indicated 3 areas of ancient replanted woodland together with 23 areas of woodland included in The National Inventory of Woodland and Trees (England). Small watercourses also flowed through the area to the north and south of the site and a number of farm, fishing and garden ponds were present within this radius. It was notable that the main areas of substantial woodland and lakes surrounded by woodland were evident within a 2km radius to the south of the site with further significant woodland to the north and north-west.

Ancient Woodland (England)

Grid Reference	Wood Name	Theme ID	Theme Name
sk410020	OLD COVERT	1105038	ANCIENT REPLANTED WOODLAND
sk415019	SPRING WOOD	1105039	ANCIENT REPLANTED WOODLAND
sk417017	SPRING WOOD	1105039	ANCIENT REPLANTED WOODLAND

National Inventory of Woodland and Trees (England)

Feature type	Reference date	Update type
BROADLEAVED	310398	
BROADLEAVED	310398	
BROADLEAVED	310398	
BROADLEAVED	310398	
FELLED	310398	
BROADLEAVED	310398	
BROADLEAVED	310398	
YOUNG TREES	310300	WGS
BROADLEAVED	310398	
BROADLEAVED	310398	
BROADLEAVED	310398	
BROADLEAVED	310398	
YOUNG TREES	310300	WGS
BROADLEAVED	310398	
BROADLEAVED	310398	
BROADLEAVED	310398	
FELLED	310398	
BROADLEAVED	310398	
BROADLEAVED	310398	
YOUNG TREES	310302	WGS
YOUNG TREES	310302	WGS
YOUNG TREES	310302	WGS
YOUNG TREES	310302	WGS

5.3 It is known that certain species of bat will commute up to and beyond 10km from their roost sites overnight and a search to this radius indicated 22 areas of Ancient Woodland (England) together with 260 areas of woodland included in The National Inventory of Woodland and Trees (England). In terms of waterbodies and watercourses Thornton Reservoir was present some 7km north-east of the site and the River Sence flowed roughly north-east to south-west some 5km distant and the Ashby-de-la-Zouch Canal ran approximately north-south to the west of Market Bosworth 2km away. Apart from these many other small watercourses and tributaries together with ponds, as described above, were present within this radius and the lack of substantial roads, such as motorways, in the locality indicated that all of these areas may have been accessible to bats should they have foraged this far from the site.

5.4 The mosaic of gardens and public open spaces in local villages as well as Market Bosworth itself, as previously noted, would have provided good opportunities for bats.

5.5 Overall the foraging opportunities for bats within the limits of this assessment were considered good locally (due to the presence of open countryside, parkland and watercourses within close proximity) with similar opportunities also occurring further afield with a number of ancient woodlands, a reservoir, canal and lack of dispersal barriers through open countryside within the wider 10km radius.



ECOLOCATION

6. Data Search

6.1 A search of pre-existing protected species records via the National Biodiversity Network produced evidence of Whiskered bat *(Myotis mystacinus),* Brown Long-eared bat *(Plecotus auritus),* Long-eared bat species *(Plecotus sp.),* Indet bat, Common *Pipistrelle (Pipistrellus pipistrellus),* Pipistrelle bat species *(Pipistrellus sp.),* Soprano Pipistrelle *(Pipistrellus pygmaeus)* and Natterer's bat *(Myotis nattereri)* within the 10km SK40 grid square. Within 2km of this grid reference evidence of Indet bat and Common Pipistrelle had been recorded.

6.2 ECOLOCATION have recorded brown long-eared bat roosting, commuting and foraging from a property within 100m in 2008 together with a roost of common pipistrelle within 100m comprising around 19№ of bats and another roost of brown long-eared bats from a property within 100m from February 2011.

7. Walkover Survey and Analysis

7.1 An initial walkover survey of the site indicated that the dwelling was in a fairly good state of repair and, given its age, only a small number of possible access points were apparent. The most notable areas of potential access for bats into the building were under lifted hip tiles and lifted roof tiles on the front elevation, around gaps under tiles at the chimney on the side (eastern) elevation, under lifted tiles close to hip tiles on the rear elevation and via gaps around the chimney on the western (side) elevation. The soffits appeared well sealed.

7.2 Internally, access for bats directly into the roof void were not obvious as the bituminous felt was mostly well fitted, although there was occasional sagging in places.

7.3 Access for bats into the garage was available via an opening between the last rafter and the wall and via wooden slats, both on the rear elevation. Internally roosting opportunities were limited by the asbestos/cement profiled sheets.

7.4 The type of building and the associated habitat indicated that there was a likelihood of occupation by both Pipistrelle *(Pipistrellus sp.)* and Brown Long-eared species *(Plecotus sp.)* due to the presence of cavity walls and a traditionally constructed, open roof space lined with bituminous underfelt on the main dwelling; however, there was also the possibility with the habitat available that other species could also be present.

7.5 The likelihood of bat occupation at the walkover stage was considered medium-high due to the potential access and construction coupled with the high value foraging opportunities for bats in the locality.

8. Intrusive Survey and Results

8.1 An intrusive investigation of the building was undertaken by Anna Swift, Natural England Bat Licence No. 20110070 using Petzl Tikka Plus 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.

8.2 A search for individual bats, carcasses, droppings, urine staining, polished surfaces, build-up of insect remains etc was made internally and externally of the building.

8.3 Internally, 20№ probable pipistrelle bat droppings, were found on fibreglass insulation below a purlin towards the centre of the eastern elevation - please refer to the diagram below for location of bat evidence. No evidence of bats was recorded externally of the building, although the time of year and recent weather conditions could account for this. A number of cobwebs were noted throughout the remainder of the roof space along purlins and rafters, although these were not present ceiling to apex their presence along most of the timber beams is perhaps suggestive of only occasional flight in the roof space by a low number of bats.

8.4 Due to the time of year of the survey, a sample of bat droppings was collected from the main roof sent off for DNA analysis to gain a reasonable level of confidence in the identification of the bat species utilising the main roof void. The results of the analysis indicate a maximum likelihood of common pipistrelle bats (see attached certificate).

THE UNIVERSITY OF WARWICK

EcoWarwicker
Ecological Forensics

7th May 2011

Re: Bat Identification Results for George Burton, Ecolocation

Bat job number 005446 received 21st April 2011
Labelled: 143 The Park, Market Bosworth, Nuneaton CV13 0LP
PCR amplification successful. DNA sequence:
CTCATTCATTGATCTACCAGCTCCATCAAACATTTCAGCATGATGAAACTTTGGATCC
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.

Dr Robin Allaby

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Wellesbourne, Warwick,
CV35 9EF United Kingdom
Tel: 02476575059
Fax: 02476574500
Email: r.g.allaby@warwick.ac.uk

143 THE PARK, MARKET BOSWORTH—SURVEY RESULTS



KEY:

* = 20 common pipistrelle droppings

8.5 No evidence of bats was recorded within the garage.

8.6 No evidence of nesting birds was identified at the time of survey.



Bat evidence in the dwelling roof void



Cobwebs at hip junctions, purlin and rafters

9. Survey Conclusions

9.1 Approximately 20 common pipistrelle bat droppings (as confirmed by DNA analysis) were recorded in the roof void of the dwelling. The low number of droppings suggests use of the roost by <3 individual bats for a short period and the construction of the building is such that roosting is most likely to take place during the active bat period from April to October. No other evidence of bats was recorded during the survey although the presence of cavity walls and bituminous underfelt to the roof of the dwelling present additional opportunities for crevice dwelling bats, such as pipistrelle or small Myotis. It is noted that the proposed extension to the rear (northern) elevation could impact potential bat access points and as such bat activity surveys are proposed in section 10 to establish the use or otherwise of the access points by bats including the numbers of bats, species and roost type. It is also noted that there is sufficient scope within the scheme to accommodate appropriate bat mitigation for both void-seeking (should they be found during activity surveys) and crevice-dwelling bat species as the roof space will only be affected to a minor extent by the inclusion of a roof light to the bedroom below (which will be separated from the roof space by a dividing wall and hence will not illuminate the dwelling roof void where the bat roost has been recorded). Whilst the proposed roof light would reduce the overall roof void available to bats, its proposed location (on the western elevation) is on the opposite elevation to where the bat evidence was recorded in April 2011 and the roof void will still be of a sufficient size to accommodate the likely number of common pipistrelle bats present and even a maternity roost of this bat species, should this be found during the activity surveys. If the results of the activity surveys indicate other bat species or roosts of higher significance than originally anticipated, it is clear from the plans that there is scope to provide additional bat mitigation or enhancements within the roof void of the extension, should this be necessary. In addition to this the existing cavity walls and bituminous roof lining will remain. Bat mitigation is likely to include the re-creation of suitable bat access points and appropriate timing of works, both of which can be achieved within the scheme.

9.2 No evidence of any breeding birds or other protected species was identified during the survey.

10. Obligations and Recommendations

10.1 All species of British bat and their roosts (places of shelter or rest) are protected by law from intentional and reckless disturbance under The Wildlife and Countryside Act 1981 (amended by the Countryside and Rights of Way Acts 2000, and the Conservation of Habitats and Species Regulations 2010 to incorporate the European Habitats directive.

10.2 Bats are highly mobile and when not in hibernation can occupy a building 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 or roosting in other parts of the building at this stage does not *guarantee* that this is not taking place intermittently or may not take place in the future.

10.3 It should be noted that bats can crawl into tiny crevices to roost and hibernate in brickwork or beneath roof tiles etc and due vigilance should therefore be maintained during the course of construction to ensure that hibernating and roosting bats, if found, are not disturbed. Should bats be discovered in such circumstances the work should cease and ECOLOCATION or the local office of Natural England be contacted for advice.

10.4 Following completion of the survey, based on its results and despite constraints due to timing, as potential bat access points, an existing roost of common pipistrelle bats and possible roosting areas for void seeking bats will be impacted/disturbed by the proposals, it is recommended that **two bat activity surveys** are completed to determine bat usage of the building in terms of species, population size, roost location and access points by Licensed Bat Workers; and also in order to determine whether a license from Natural England would be required to disturb bats to facilitate the development. Such surveying should be carried out between May and August inclusive to provide optimal results in accordance with the Bat Survey Guidelines (BCT 2007).

10.5 The majority of species of nesting bird are protected under the Wildlife & Countryside Act 1981 and as amended by the Countryside & Rights of Way Act 2000. Works must be planned to avoid disturbance of nesting birds if present before commencement or if nesting commences during the works and the site should be inspected prior to commencement by a person competent to do so to ensure that no active nests are disturbed.

10.6 Should any protected species be discovered before or during the works ECOLOCATION or Natural England should be contacted for advice.

10.7 Whilst not an obligation it is notable that bats have been in steep decline in recent decades and as such the opportunity to provide purpose built bat accesses to the roofs of the proposed extension would be welcomed. Details for such a provision can be provided upon request by ECOLOCATION.

10.8 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

11. Mitigation

11.1 Further mitigation and compensation for bats may be necessary following the completion of further surveying at the appropriate time as stated above. It is not possible to design mitigation at this stage, however it is clear that whatever mitigation (for species within their known geographical distribution) may be necessary could be achieved on site through timing of works as well as the provision of bat access to the retained roof void for common pipistrelle bats (and void-seeking bats, such as brown long-eared, should they be found during the activity surveys). Appropriate mitigation for the common pipistrelle roost could include providing access to the area between the tiles and the lining or the provision of bat access directly into a bat box within the roof void or cavity wall and could accommodate a worst case scenario for bats if required. Similarly if evidence of void-seeking bats is found, a maternity roost of this species could be accommodated within the existing roof void or within the roof void of the proposed extension.

12. References

Bat Workers Manual, JNCC, 1999
Bat Survey Guidelines, Bat Conservation Trust, 2007
Bat Mitigation Guidelines, English Nature Jan 2004
The Conservation of Habitats and Species Regulations, HMSO (2010)
Wildlife & Countryside Act 1981 (JNCC)
PPS9 'Biodiversity & Geological Conservation' ODPM/DCLG (2005)
www.magic.gov.uk
OS Street Atlas, Leicestershire & Rutland, Phillips
Google Earth Pro
Plan reproduced by kind permission of Mr. S. Houldcroft

13. Addendum

Following the completion of the above study and the recommendation at 5.0 that further emergence and re-entry surveying be undertaken prior to the finalisation of any consideration of mitigation requirements, such surveying was instructed by Mr. S. Houldcroft and the site revisited.

13.1Bat Emergence Survey

13.1.1 An emergence survey was undertaken on 17th May 2011 by two suitably experienced surveyors led by Anna Swift, Natural England Bat Licence №. 20110070, stationed as indicated on the following aerial image. Sunset was at 20:56hrs and surveying commenced at 20:30hrs.

Parameter	Recorded Figure
Temperature	Start - 15ºC End - 13.7ºC
Cloud cover	100%
Precipitation	None
Wind speed (Beaufort Scale)	1 – light air

Surveyor 1

Using Pettersson D240x time expansion detection recording to Roland Edirol R-09 digital device in .wav format plus heterodyne channel to headphones.

Time (24 hrs)	Species	.wav File №.	Activity	How Identified
21.11	Noctule			
21.11	2 x Common Pipistrelle		Emerged from under apex of front projecting hip	Bat Det/Visual Obs
21.12	1 x Common Pipistrelle		Emerged from under apex of front projecting hip	Bat Det/Visual Obs
21.15	2 x Common Pipistrelle		Emerged from under apex of front projecting hip	Bat Det/Visual Obs
21.15	3 x Common Pipistrelle		Emerged from under apex of front projecting hip	Bat Det/Visual Obs
21.16	3 x Common Pipistrelle		Emerged from under apex of front projecting hip	Bat Det/Visual Obs
21.17	2 x Common Pipistrelle		Emerged from under apex of front projecting hip	Bat Det/Visual Obs
21.18	Indet bat- no echolocation		Emerged from under apex of front projecting hip	Bat Det/Visual Obs
21.18	1 x Common Pipistrelle		Emerged from under apex of front projecting hip	Bat Det/Visual Obs
21.18	1 x indet bat		Emerged – no sound	Bat Det/Visual Obs
21.20	1 x indet bat		Emerged – no sound	Bat Det/Visual Obs
21.25	Brown long-eared		1 x pass	Bat Det/Visual Obs
21.27	Brown long-eared		Heard, not seen	Bat Detector
21.28	1 x common pipistrelle		Foraging in front garden	Bat Det/Visual Obs
21.30	Brown long-eared		Heard, not seen	Bat Detector
21.34	Brown long-eared	3+4	Heard, not seen	Bat Detector
21.35	Brown long-eared	5	Heard, not seen	Bat Detector
21.36-41	Brown long-eared	6+7	Foraging, not seen	Bat Detector
21.39	Serotine		1 x pass over garden	Bat Det/Visual Obs
21.40	Brown long-eared	7	1 x pass in trees behind	Bat Det/Visual Obs
21.43-54	Brown long-eared	8+9	Heard, not seen	Bat Detector
21.46	Brown long-eared	10+11	Loop in front garden	Bat Det/Visual Obs
21.50	4 x brown long-eared		Circling front garden	Bat Det/Visual Obs
21.56	Brown long-eared		Circling front garden	Bat Det/Visual Obs
21.56	1 x common pipistrelle		Pass E **à** W	Bat Det/Visual Obs
22.00	Brown long-eared		Pass N **à** S	Bat Det/Visual Obs
22.01-11	Brown long-eared		Foraging in front garden	Bat Det/Visual Obs

Surveyor 2

Using Pettersson D230 detector in heterodyne mode to headphones

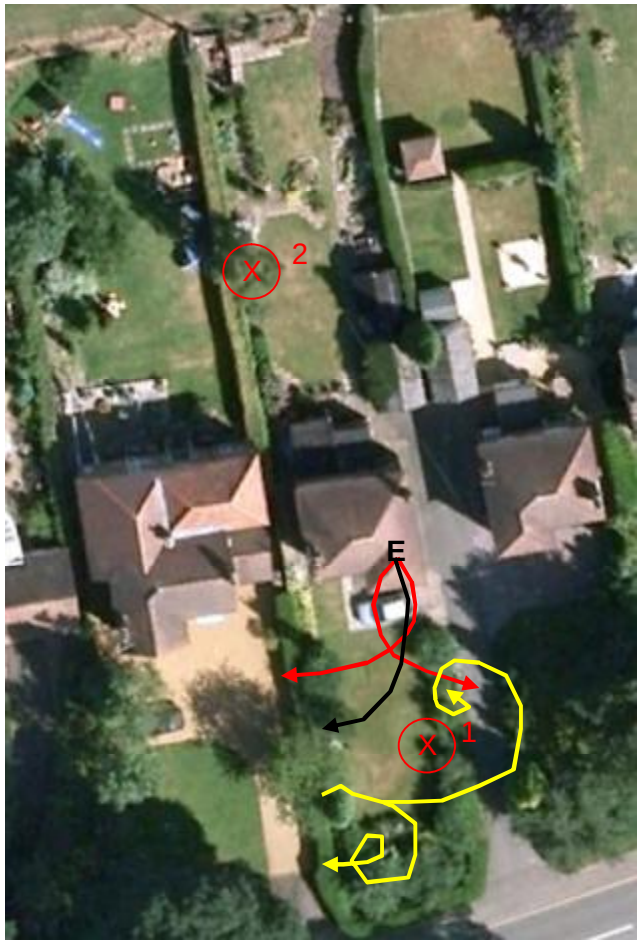
Time (24 hrs)	Species	Activity	How Identified
21.09	Common pipistrelle	Emerged, silent at first then flew south and west	Bat detector/Visual obs
21.10	Common pipistrelle	Foraging above house and garden, continued into field behind	Bat detector/Visual obs
21.14	Noctule	Unseen pass	Bat detector
21.26	Serotine	Unseen, pass	Bat detector
21.27	Common Pipistrelle	Foraging left ß à right over garden	Bat detector/Visual obs
21.31- 21.37	Common Pipistrelle	Foraging in rear garden and overhead	Bat detector/Visual obs
21.41	Brown long-eared	Pass, front of house	Bat detector/Visual obs
21.45	Pipistrelle	Distant pass	Bat detector
21.47	Brown long-eared	Foraging nearby, unseen	Bat detector
22.07	Common Pipistrelle	Foraging, unseen	Bat detector

Emergence Note:

14 Common Pipistrelle and 3 Indeterminate bats emerged from apex of the front projecting hip. A single Common Pipistrelle emerged from the west elevation.

13.1.2 Incidental sightings

Hedgehog



X Surveyor position
Common Pipistrelle emergence
Indeterminate bat emergence
E Emergence location
Brown long-eared bat activity

13.1.3 Following the emergence survey a re-entry survey was undertaken on 2nd June 2011 by two suitably experienced surveyors led by Anna Swift, Natural England Bat Licence №. 20110070, stationed as indicated on the following aerial image. Sunrise was at 04:47hrs and surveying commenced at 03:15hrs.

Parameter	Recorded Figure
Temperature	Commencement 10.8ºC – Completion 11.1 ºC
Cloud cover	30%
Precipitation	None
Wind speed (Beaufort Scale)	1 – light air

Surveyor 1

Using Pettersson D240x time expansion detection recording to Roland Edirol R-09 digital device in .wav format plus heterodyne channel to headphones.

Time (24 hrs)	Species	.wav File №.	Activity	How Identified
03.14	Common Pipistrelle		Pass E à W in front of house	Bat Detector/Visual Observation
03.16	1 x indeterminate		Circling close to front projecting hip then disappeared. *Possibly entered*.	Visual Observation
03.16	Common Pipistrelle		Pass unseen	Bat Detector
03.24	Common Pipistrelle	1	Pass unseen	Bat Detector
03.27-28	1 x Common Pipistrelle	2	Swarming, circled in front garden and entered front projecting hip	Bat Detector/Visual Observation
03.29	1 x Common Pipistrelle		Swarming, circled in front garden and entered front projecting hip	Bat Detector/Visual Observation
03.33	Common Pipistrelle		Pass unseen	Bat Detector
03.35	2 x Common Pipistrelle		Flew W à E in front of house	Bat Detector/Visual Observation
03.44	Common Pipistrelle		From S into front garden then E	Bat Detector/Visual Observation
03.47	1 x Brown Long-eared		Flew up into eaves of front garden	Bat Detector/Visual Observation
03.49	Common Pipistrelle		Pass unseen	Bat Detector
03.52	Brown Long-eared	3	Pass unseen	Bat Detector
03.55	Common Pipistrelle		ß à S à E in front garden	Bat Detector/Visual Observation
03.59	Common Pipistrelle		Pass E à W rear of house	Bat Detector/Visual Observation
04.03	1 x Common Pipistrelle		Circled and entered front projecting hip	Bat Detector/Visual Observation
04.07	1 x Common Pipistrelle		Circled front projecting hip then flew E	Bat Detector/Visual Observation
04.08	Common Pipistrelle		Foraging in front garden	Bat Detector/Visual Observation
04.10	Common Pipistrelle		Circled front projecting hip then flew E	Bat Detector/Visual Observation
04.11-17	15 x Common Pipistrelle		Swarming front projecting hip, all entered	Bat Detector/Visual Observation
04.19	4 x Common Pipistrelle		Circled front projecting hip and entered	Bat Detector/Visual Observation
04.21	1 x Common Pipistrelle		Circled front projecting hip and entered	Bat Detector/Visual Observation
04.22	1 x Common Pipistrelle		Circled front projecting hip and entered	Bat Detector/Visual Observation

Surveyor 2

Using Pettersson D230 detector in heterodyne mode to headphones

Time (24 hrs)	Species	Activity	How Identified
03.24	Common Pipistrelle	Faint pass (in vicinity)	Bat Detector
03.27	Common Pipistrelle	Faint pass (in vicinity)	Bat Detector
03.32	Common Pipistrelle	Foraging over house E à W	Bat Detector/Visual Obs
03.50	Common Pipistrelle	Foraging over garden E à W	Bat Detector/Visual Obs
04.11	Common Pipistrelle	Faint pass	Bat Detector
04.15	Indeterminate	2-3 individuals, several passes.	Visual Obs

Re-entry note:

1 indeterminate bat *possibly* entered and 24 common pipistrelle entered the apex of the front projecting hip



X Surveyor position

Common Pipistrelle swarming activity

R Re-entry location

13.1.4 Incidental sightings

Hedgehog

13.1.5 The first common pipistrelle emerged from the western elevation at 21:09, some 13 minutes after sunset. From 21:11-21:18 a further 14№ common pipistrelles emerged from under the apex of the projecting hip at the front of the property on the southern elevation. A further 3№ indeterminate bats emerged at 21:18 and 21:20 from the same access points as the 14№ common pipistrelle had emerged. The indeterminate bats are reported as such because they did not echolocate upon emergence, although the location and time of emergence together with their behaviour is indicative of probable pipistrelle sp. Most of the remaining activity during the evening emergence survey was in the front garden with numerous passes and foraging activity by brown long-eared bats.

13.1.6 During the dawn survey 24№ common pipistrelle were recorded swarming around the front garden and around the projecting hip on the front elevation before entering under the apex of the front projecting hip (the same location identified as a bat exit point during the evening emergence survey on 17.05.11). The first common pipistrelle entered the front projecting hip at 03:27 (some 80 minutes before sunrise) and the last entered at 04:22 with a peak activity of 15№ swarming individuals from 04:11-04:17 (30 minutes before sunrise). At 03:16 an indeterminate bat (appeared silent as no echolocation was picked up by the Pettersson D240x bat detector) was recorded flying close to roof tiles on the front projecting hip and then was not seen again. As such it has been recorded as possibly entering the hip, although it is acknowledged that such behaviour is often observed with brown long-eared bats that seem to stay close to a building and then 'disappear' although they have not entered the building (pers. comms). Nevertheless, the indeterminate bat was recorded as 'possibly entered' in order to adopt a precautionary approach. Much of the remaining bat activity was in the front garden with several common pipistrelle passes and very few brown long-eared passes.

13.2 Combined Survey Conclusions

13.2.1 The results of the initial bat assessment of the property indicated a small amount of bat droppings within the roof void; subsequent DNA analysis of these droppings indicated a 'maximum likelihood' of common pipistrelle. During the evening emergence survey on 17th May 2011 14№ common pipistrelle and 3№ indeterminate bat species were recorded emerging from the apex of the front projecting hip (south elevation) followed by abundant brown long-eared bat activity in the front garden during the remainder of the survey. During the dawn re-entry survey on 2nd June 2011, 24№ common pipistrelle were recorded swarming and then entering the apex of the front projecting hip. In addition to this an indeterminate bat species was recorded as possibly entering the front projecting hip at 03:16. The remainder of bat activity during the dawn survey mostly occurred in the front garden with numerous common pipistrelle passes and only a single brown long-eared pass.

13.2.2 The indeterminate bat species recorded during the evening emergence survey are considered most likely to be common pipistrelle given they emerged 22-24 minutes after sunset which is within the peak emergence time for common pipistrelles (20-30 minutes) and potentially too early for brown long-eared bat (the only other bat species recorded during the survey) as this species tend to emerge 45-60 minutes after sunset. In addition to this, these bats also emerged from the same access points as the 14№ common pipistrelle during the same flurry of bat activity.

13.2.3 One indeterminate bat species was recorded during the dawn re-entry survey. This bat has been recorded as possibly entering the front projecting hip as it was seen close to the roof tiles and then wasn't seen again, although equally it wasn't seen to enter. Also no echolocation was picked up by the bat detector and such behaviour has been recorded by brown long-eared bats at other sites where the bats seem to 'appear then disappear' but did not enter the building in question. However, as further clarification was not possible it has been reported as an indeterminate bat that possibly entered in order that a precautionary approach may be adopted. It should be noted that the mitigation proposed below is appropriate, given the evidence recorded during the surveys, time of emergence, re-entry and access points used, for common pipistrelle and indeed whatever the indeterminate bat species may be, if not common pipistrelle, as the principle of mitigation remains the same.

13.2.4 In summary, it is therefore considered that a maternity roost of at least 24№ common pipistrelle are roosting in the rafter depth between the tiles and the bituminous lining with access at the apex of the front projecting hip. It is possible that there is a small summer roost of an indeterminate bat species, although taking all of the evidence into account, it appears most likely that such emerging bats were common pipistrelle and the silent bat close to the roof tiles on the dawn survey was not seen to enter the building. Very little bat activity was recorded in the rear garden with no bat activity at the rear of the property on the north elevation (the site of the proposed extension).

13.3 Combined Obligations and Recommendations

13.3.1 All species of British bat and their roosts ('places of shelter or rest') are protected by law from intentional and reckless *disturbance* under the Wildlife and Countryside Act 1981 and all of these (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.

13.3.2 Paragraphs 10.1, 10.2, 10.3, 10.5, 10.6, 10.7 and 10.8 are reiterated at this stage as they remain relevant.

13.3.3 From the findings of surveying it is clear that a maternity roost of common pipistrelle is roosting between the tiles and the bituminous lining with access points at the apex of the front projecting hip. The proposed works will not directly impact upon the bat roost on the southern elevation as the proposed extension affects the rear (northern) elevation with a small impact to roof tiles on the western elevation for the inclusion of a roof light to be shafted to the 1st floor room below. As such the currently used bat access points will remain intact and the microclimate of the roost at the front projecting hip will remain unchanged. In assessing the level of disturbance against the "Habitats Regulations" it is considered that disturbance is unlikely to occur as although the resident bats are present in numbers and represent a likely maternity roost, their roost will not be directly impacted by the proposals and the possibility of disturbance can be further reduced by careful timing of works. Under the Wildlife & Countryside Act 1981 it is also considered unlikely that disturbance would occur (although this defines disturbance differently) as the extension to the building would not remove any roosting opportunities for bats at this location. As such we consider the proposed development, to be of "insignificant impact" as it would not adversely affect the conservation status of the breeding populations of bats across their natural range, and, as such, is not a licensable activity. Certain mitigation will however be necessary, see below.

13.4 Mitigation

13.4.1 The principle of the mitigation proposal is to undertake any potentially disturbing works (such as the stripping of roof tiles) during the least sensitive time of year for the bats and whilst they are not in residence. Such works should ideally be undertaken when bats are between their summer roosts and hibernation sites (being between **October-November** and **March-April** in any given year) although the hibernation potential for bats at this site is considered to be low so works could take place 1st October – 30th April inclusive in any given year. A programme of the proposed works is included below in order to demonstrate that only ground works will take place during the summer months and any potentially disturbing works will take place immediately following an inspection by an Ecologist at the beginning of October 2011 (although the timetable of works can apply to any given year).

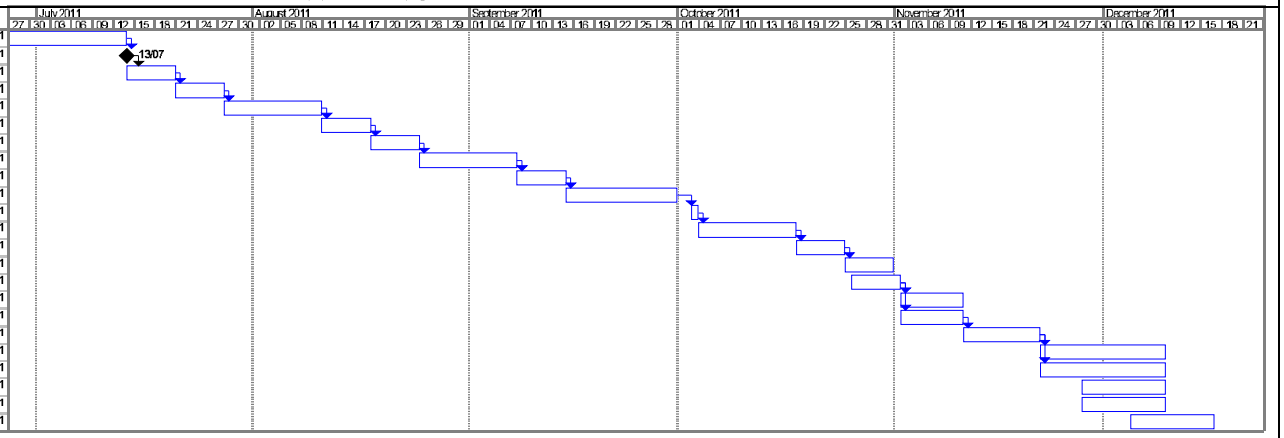
13.4.2 Bats can make use of different parts of a building at different times of year, for instance bats may move from the south elevation of a building to a more northerly elevation in order to take advantage of changes in microclimate. As the common pipistrelles were roosting between the tiles and the lining on the front (southern elevation) of the building, they could potentially crawl through this area to roost at another elevation, depending on the ambient temperature. Therefore it is recommended that 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 at the rear elevation above the eaves and at the western elevation at the location of the proposed roof light etc., 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. Any evidence

of bats found during the course of this process 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 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. Such works must not be completed in rain or temperatures below 5ºC.

13.4.3 In respect specifically of the 1-3 possible indeterminate bat species that may be roosting at the front projecting hip (if indeed they are not common pipistrelle), it is advised that the mitigation as described in 13.4.1-13.4.2 is applicable and appropriate.

143 The Park Market Bosworth proposed construction programme

ID	Task Name	Duration	Start	Finish
1	Planning Application	8.2 wks	Wed 18/05/11	Wed 13/07/11
2	Planning Approval	0 days	Wed 13/07/11	Wed 13/07/11
3	Contractor lead in	1 wk	Thu 14/07/11	Wed 20/07/11
4	Demolition / clear site	1 wk	Thu 21/07/11	Wed 27/07/11
5	Foundations	2 wks	Thu 28/07/11	Wed 10/08/11
6	Brickwork to DPC	1 wk	Thu 11/08/11	Wed 17/08/11
7	Install dpm, insulation & cast slab	1 wk	Thu 18/08/11	Wed 24/08/11
8	Brickwork to 1st floor level	2 wks	Thu 25/08/11	Wed 07/09/11
9	Install 1st floor joists	1 wk	Thu 08/09/11	Wed 14/09/11
10	Brickwork to eaves level	2.8 wks	Thu 15/09/11	Fri 30/09/11
11	strip back existing roof, whilst Ecologist is present	1 day	Mon 03/10/11	Mon 03/10/11
12	Install timber roof form Valley gutter	2 wks	Tue 04/10/11	Mon 17/10/11
13	Tile roof, valley gutter & flashings	1 wk	Tue 18/10/11	Mon 24/10/11
14	Fascia, soffit and rw goods	5 days	Tue 25/10/11	Mon 31/10/11
15	First floor boards	5 days	Wed 26/10/11	Tue 01/11/11
16	First fix electrical	7 days	Wed 02/11/11	Thu 10/11/11
17	First fix plumbing & gas	7 days	Wed 02/11/11	Thu 10/11/11
18	Plaster and skim	7 days	Fri 11/11/11	Mon 21/11/11
19	second fix electrical	14 days	Tue 22/11/11	Fri 09/12/11
20	second fix plumbing, heating, gas	14 days	Tue 22/11/11	Fri 09/12/11
21	fit kitchen	10 days	Mon 28/11/11	Fri 09/12/11
22	fit bathroom	10 days	Mon 28/11/11	Fri 09/12/11
23	finishes, paint, floor, tiling	10 days	Mon 05/12/11	Fri 16/12/11



Project: the park 01 planning
Date: Tue 07/09/11

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

ISSUE - 01