

EXAMPLE OF A METHOD STATEMENT FOR A BAT MITIGATION LICENCE APPLICATION



A Executive Summary

Mr & Mrs Plecotus own Home Farm, a farmstead in a 100-hectare (247 acres) former beef-rearing farm, located 1.6 kilometres (one mile) to the northwest of Hometon village, in Homecountyshire.

After appeal, planning permission and listed building consent for change of use - converting two barns into holiday let accommodation and office space - was granted by Homeford District Council on 31 August 2007 (ref. HOM/2007/1000/AC and HOM/2007/1001/LB) subject to a condition relating to the presence of bats.

Condition 10 attached to the planning permission requires that, "Prior to development of the buildings identified, surveys for protected species, including bats, shall be undertaken, and if present, a mitigation and compensatory strategy must be submitted to and approved in writing by the local planning authority, before the development proceeds on site."

Although not part of this development, the farmhouse's bargeboards need replacing. Bat access into the loft spaces will be retained.

XYZ Bat Surveys Ltd was commissioned in June 2007 to conduct a wildlife survey of the structures. To comply with Condition 10, two inspections, an emergence and a dawn survey for bats were undertaken on 30 June 2007 and 01 & 02 May 2008, and a bat application with its Method Statement submitted to Natural England on 15 May 2008.

The farmstead comprises of four buildings: a farmhouse, two traditional stone barns - a double-height barn (Barn A) and a two-storey barn (Barn B), and a modern, prefabricated steel-framed barn (Barn C). The farmhouse and older barns surround a farmyard; these structures are stone-walled, hip-pitched, stone-tiled and timber-framed. The modern barn is situated c.25 metres to the south of the farmyard, beside the access lane.

The two older barns are little used and are deteriorating. Conversion will secure their future use, restoration will secure their Listed Building value, and sensitive mitigation will secure the bat roosts within them. Without development, the buildings could eventually fall into disrepair and their usefulness to bats equally depreciate. The development has therefore taken into consideration Regulation 44(3)(a) and 44(2)(e)* - fuller consideration of these tests are given in the accompanying Reasoned Statement.

Bat surveys indicate the farmhouse is used as a maternity roost by Brown Long-eared Bat, with regular non-breeding, summer use of the two older barns by Brown Long-eared Bat (more so in Barn B). There is also frequent summer and possible hibernation use by Common Pipistrelle, and occasional foraging use by a *Myotis* bat species, possibly Natterer's Bat, within the two older barns.

Conversion of the two older barns will remove bat foraging and roosting space. The provision of two dedicated roof lofts for bats (in Barn B), numerous new access points to roof void space (in Barn A & B) and continued access and use of the farmhouse roof lofts, will maintain the local population of bats. Barn C is not part of this development, but may be dismantled due to conflict with the AONB status of the local landscape. It is believed that the proposed mitigation strategy for bats has therefore taken into consideration and meets Regulation 44(3)(b)**.

Ownership and responsibility for the maintenance of the farmhouse and converted structures will remain with Mr & Mrs Plecotus.

* Conservation (Natural Habitats & c.) Regulations, 1994. Regulation 44(3)(a) "*there is no satisfactory alternative*" and 44(2)(e) "*preserving public health or public safety or other imperative reasons of overriding public interest*"

including those of a social or economic nature and beneficial consequences of primary importance for the environment’.

** Conservation (Natural Habitats & c.) Regulations, 1994. Regulation 44(3)(b) *“The action authorised will not be detrimental to the maintenance of the population of the species at a favoured conservation status in their natural range.”*

B Introduction

B.1 Background to activity/development, include a brief summary of why the activity is necessary.

The owners are diversifying to maintain the farm business. Most of the farmland is rented out to cattle and sheep grazing. Mr & Mrs Plecotus are getting too elderly for traditional farming, and wish to expand their holiday letting business. The grounds have two stocked fishing lakes and beautiful surroundings. The farmhouse's 'B&B' is of limited size and can no longer cater for the increased level of tourism interest. The proposed development will be able to accommodate this interest and support a viable business. The revenue generated from this venture will be used to maintain the upkeep of the farmstead and its local rural landscape, which exist within an AONB.

B.2 Full details of proposed works on site that are to be covered by the licence e.g. barn/loft conversion to new dwelling, demolition of buildings, re-pointing of bridges and tunnels, lime kilns etc. Include current status of planning permission (if applicable).

The farmhouse and modern barn are not being developed. Conversion of the two older barns will involve replacing both roofs, reusing and replacing, where possible, with the same stone tiles; replacing rotten timbers and re-lining. Additional external refurbishment include building walls, installing and replacing soffits, guttering and their mounts, replacing and installing doors, windows and their frames, and re-pointing. Internal conversion will include installing floors in both barns, and routing utilities including plumbing, electrics and water.

The proposed external features will comply with the Listed Building consent, but access features will not conflict with this consent.

C Survey and site assessment

C.1 Pre-existing information on the bat species at the survey site. Provide records from local environmental records centres, local bat groups, and previous survey work by the applicant or others.

The owners have lived at Home Farm for over 30 years. They report seeing bats regularly in most past summers around the farmhouse and in the farmyard, but they do not know which species. Apart from this, we know of no pre-existing bat records for the site prior to our surveys in 2007.

A request to the Homecountyshire Biological Records Centre for bat records within 2 km of the site produced two records since 2006 - a single record of a pipistrelle bat roost, some 550 metres away at a farm to the south, and a single record of Brown Long-eared Bats, 1.2 km away to the west; the status of either roost is unknown (see Appendix G.2.3 below).

A search on NBN for the 10km square containing Home Farm returned the presence of four species, pipistrelle sp, Brown Long-eared Bat, Natterer's Bat and Serotine Bat.

C.2 Status of species at the local, county and regional levels.

This would seem to be a poorly recorded area since data searches produced little information in an area seemingly highly suitable for bats.

C.2.1 Common Pipistrelle

Nationally, "Native, common across UK...Population Estimate: UK 2,430,000" * and it is also thought to be common throughout the county and the region **. The status of this species locally is less certain due to under-recording, but is suspected to be relatively common.

C.2.2 Brown Long-eared Bat

Nationally, "Native, common...Population Estimate: UK 245,000" *. Within the county it is, "A relatively common and widespread species" **, but can be 'local' in parts of the region. The presence of a maternity roost is of parish level importance.

C.2.3 Natterer's Bat

Nationally, "Native, fairly common throughout much of the UK...Population Estimate: UK 148,000" *. Within the county, it is described as "Not common yet a reasonably widespread species" **, but it can be scarce in some parts of the region. Had a roost for this species been confirmed, it could be regarded as of parish level importance.

* *UK Mammals: Species Status and Population Trends*. JNCC/Tracking Mammals Partnership. 2005

** Homecountyshire BAP

C.3 Objectives of the survey. e.g. to determine presence/absence of bats, bat usage of site (e.g. maternity, hibernation, night roosts; foraging, commuting, swarming sites).

Bat surveys were used to determine the current and past use of all structures at the farm by bat species, and to establish the status of each bat species in each structure throughout the year. Flight-paths and commuting routes to foraging areas was also explored. The conservation importance of each species' status on site was assessed. This information will be used to impose suitable working practices, including timings, to minimise impact on bats during the development, and to provide appropriate and proportional compensatory roosts for bats during and after the development, as proposed in this Method Statement.

C.4 Scaled plan/map of survey area of appropriate scale and orientation with integral or separate location map at 1:50,000 or 1:25,000 scales. Aerial photographs are also useful.

Fig 1. Insert location map – showing setting, landscape, contours, connectivity; north and scale

Fig 2. Insert site map – showing building layout, labelled, immediate surroundings; north and scale

C.5 Site/habitat description (relevant to bats), based on day-time visits (to include description of roost and habitat relevant to bat commuting/foraging behaviour). Include annotated photographs if helpful.

C.5.1 Landscape

The farm is in a hilly local landscape, characterised by semi-improved permanent pasture and some arable with low stone-walled and stock-fenced field boundaries. Where less exposed and sloping, field boundaries are mostly lined with low scrubby vegetation, brambles, with some scrub encroachment into field edges.

A small, quite narrow, tree and scrub-covered stream valley runs in an arc about 100 metres around the west and north side of the farmstead. Two, quite well established, 30 metre long, stocked ponds with marginal vegetation exist to the north. Connectivity for bats from the farm buildings to this presumed foraging area is good.

Fig 3. Insert aerial map – can be same scale as site map, showing quality of connectivity, land-use and features described under C.5.1.

The farm buildings surround a hardened gravel and earth packed farmyard, which narrows to a rough access track. This joins a county lane 100 metre away to the south. Low stone walls bound this track back to the lane.

C.5.2 Farm buildings

Farmhouse. Traditional two-storey, dressed stone and brick-walled, single-pitched, stone tiled, with a central chimney. Two large open voids under a truss supported roof, separated by a brick chimney and parti-wall, with gaps. The roof is bitumastic lined and is in good repair. The voids are accessible to bats via gaps in the eaves and ridge.

Barn A. Rectangular, open double-height barn, gable-ended, single-pitch and stone-tiled. The exposed timber-frame show a tie-beams and queen-post design; no lining. Three open-fronted bays are timber constructed of a supporting-post and brace design. The three walls are built of random stone and rubble filled. Airy, quite light, no secluded lofts, but opportunities for crevice-dwelling bats exist in stone walls and under tiles.

Barn B. Rectangular, partly two-storey, hipped, single-pitched barn. Wall-plates support the tie-beam ends and the unboxed rafters are exposed along the broad eaves. The upper floor lofts are bitumastic felt lined. The walls are of a similar construction to Barn A. Many opportunities for crevice and free-hanging bats exist, although the large voids/ lofts are not especially dark.

Barn C. Rectangular; a modern, metal framed, metal corrugated roof with gap boarded walls. No bat opportunities.

Fig xx. Insert photographs – showing each building described in C.5.2.

C.6 Field survey(s). Include survey method (emergence counts, dawn surveys, site inspections), timings (day/evening), weather conditions (wind, rain, temperature – tabulated for multiple survey visits), personnel involved (provide individual licence numbers, if held), and equipment used (type of bat detectors and logging equipment).

C.6.1 Visual inspection.

Two inspections were carried out by two observers during daytime on 30 Jun 2007 and 01 May 2008. All four structures were examined both internally and externally during both inspections, except Barn C which was only surveyed once on 30 Jun 2007.

Equipment used and at hand included: -

- Zeiss 8 x close-focusing binoculars;
- Cluson 1M candle-power lamp;
- VO36-10ww endoscope;
- 3.8-metre extendable ladder.

During these inspections each building was thoroughly searched. Places searched for potential access points and roosting opportunities inside and outside of the structures included: -

- Roof structure crevices - under roof slates/ tiles, gaps under ridge-tiles, under and over wall plates, roof timbers cracks, behind soffits and boardboards;
- Roof structure voids – including both loft voids inside the farmhouse;
- Wall voids – stonewall cavities inside and outside the structures.

Evidence searched for to indicate use by bats included: -

- The presence of free-hanging bats and bats within voids and crevices;
- Bat droppings (aged where possible), urine-stains, rub-marks in wall holes, timber joints, including around window and door frames; and feeding-remains e.g. moth wings.

C.6.2 Emergence survey.

One evening emergence survey was conducted on 01 May 2008. Two observers, one stationed on the north side of the farmhouse and the other stationed in the centre of the farmyard with occasional visits inside the barns.

This survey commenced c.¼ hour before sunset and lasted until c.1½ hours after sunset. The weather was fine, dry, mild and in a light breeze, and so was suitable for bat emergence and foraging (see Table 1 below).

The equipment used for the survey included: -

- Batbox Duet (frequency division and heterodyne bat detector)
- Pettersson D-240x (time expansion and heterodyne bat detector)
- Edirol R-09 digital recorder and/ or Sony Walkman Minidisc (used to record time-expanded and/ or frequency divided echolocation)
- BatScan v9.6 (sound analysis software)

An AnaBat SD1 (frequency division automated recording static bat detector) was stationed in the northern first-floor loft of Barn B, was set to record bat sounds from sunset to after sunrise the night of 01/ 02 May 2008.

C.6.3 Dawn/ swarming survey.

The dawn survey used similar observer placement, equipment and experienced similar weather to the evening emergence survey. This survey commenced c.1½ hours before sunset and lasted until sunrise.

C.6.4 Personnel

Apart from the application's named ecologist, Miss Bat Ecologist also conducted inspections and nocturnal surveys. She is a Natural England 'conservation' licence holder (20070000), a bat surveyor and Assistant Ecologist at XYZ Bat Surveys Ltd. with 4 years experience of surveying 30 bat roosts for 'development' licence applications, including Brown Long-eared Bat roosts.

C.6.5 Survey summary

Table 1. Summary of bat surveys

Survey	Date	Timings	Weather
Visual inspection	30 Jun 2007 & 01 May 2008	2 hours each, during daytime	Fine and dry
Emergence	01 May 2008	20:10 to 22:00 (sunset 20:26)	13.8 to 11.1 ⁰ C, 3/8 octas, F.2
Dawn swarming	02 May 2008	04:00 to 05:30 (sunrise 05:32)	10.2 to 11.3 ⁰ C, 4/8 octas, F.2

C.6.6 Constraints

There were no major constraints. Evidence for some crevice dwelling bats can be difficult to find, and although torn in places, evidence for bats could exist hidden behind and beneath roofing felt and under roof tiles. Nocturnal surveys were therefore used to check for evidence missed during the visual inspections, although bats exiting the opposite sides of the two barns from the surveyor had the potential to be missed.

C.7 Survey results. Summarise findings in table form (if appropriate); provide clear, annotated and cross-referenced maps/plans/photographs to show roost locations, flight lines, access points, dimensions of existing roosts etc.). Raw data to be appended, (including sonograms).

C.7.1 Inspection

C.7.1.1 Farmhouse. During the inspection on 30 Jun 2007, nine adult Brown Long-eared Bat with three pups were seen beside the ridgebeam, huddled beside the southeast end truss and rafter. Many hundreds, possibly thousands of long-eared bat droppings (presumably Brown Long-eared Bat) were found under the central ridge in both lofts, with a good scattering elsewhere within the lofts. These were of mixed ages, including over 100 fresh droppings. Four Brown Long-eared Bat were discovered hanging from the ridgebeam on 01 May 2008.

A few gaps in the mortar under ridge-tiles and gaps created by warped soffits offer bat access to the lofts, these and a few slipped tiles offer roosting opportunities for bats inside the tile-felt void.

C.7.1.2 Barn A.

This barn is used for parked agricultural machinery and vehicles, and little else. It is quite airy, draughty and light, but many opportunities for roosting bats do exist, in wall crevices, wall-tops and in a few timber cracks.

The stone walls have numerous holes, two on the south-facing gable each contained one or two quite fresh pipstrelle bat droppings on 30 Jun 2007. Although no such droppings were found in May 2008, these, and some other wall holes, were free of cobwebs and dust, suggesting use by bats.

On 30 Jun 2007, four piles of 5 to 10 fresh long-eared bat droppings were found on covers and the barn floor, and a widespread, very light scattering of droppings existed throughout less disturbed parts of the barn. A few scattered moth wings were also found. These were considered to have been feed remains of bats, rather than victims of spiders. The barn seems to receive regular human activity, and although not cleaned out, past droppings may have been lost due to this activity and its openness.

A light scattering of pipistrelle droppings were found on the barn floor, with a few droppings loosely concentrated in two places towards the south and west walls, with one or two additional droppings adhered to these walls.

A timber joint void with the collar beam and queen post above the south end bay was greasemarked, but no bat was found inside.

Only a few, scattered pipistrelle droppings were found on 01 May, a few other droppings were too degraded to identify.

C.7.1.3 Barn B.

This barn is used for equipment and chemical storage and there is a workshop on the ground floor. The first floors, accessible by fixed ladders, seem little used and are mostly clear, containing just a few hay bails and agricultural debris. The large front doors lead to a double-height central portion. The ground floor south compartment, running the width of the barn, is a workshop and repair area. The equivalent space on the north side is split into two, now un-used bays, which formally housed livestock.

During the inspection on 30 Jun 2007, both the first-floor levels each supported over a hundred long-eared bat droppings, more in the south loft; many were fresh, found under the ridge and hip-beams. Presumably the same droppings, appearing older were discovered in similar places on 01 May 2008, with two piles of newer long-eared droppings in the south side loft. A light scatter of less than 20 mixed age long-eared bat droppings were found on both occasions on the barn floor.

Light from single small windows facing the farmyard and from the un-boarded eaves made the loft areas a little lighter than would be considered ideal for long-eared bat day roosts, although darker recesses do exist.

Two piles of quite fresh long-eared bat droppings were found on the floor of the former livestock units, under exposed joists on 30 Jun 2007.

A broad gap above the large double front doors was examined on both inspections and found to be rubbed and stained with the passage of bats.

On 30 Jun 2007, a light scatter of pipstrelle bat droppings existed in the large open central area, and piles of up to 5 were found under tears in the felt lining on the first floor loft areas. Less than 10 pipistrelle bat droppings were discovered within Barn B on 01 May 2008.

Gaps under stone tiles and wall voids seemed to offer many opportunities for roosting bats.

C.7.1.4 Barn C. No evidence of bats was found. The structure has no obvious opportunities for bats.

Fig xx. Insert annotated photographs – showing each structure, and examples of each type of roost, its access and bat evidence.

C.7.2 Emergence and dawn surveys

C.7.2.1 Evening emergence survey (01 May 2008)

Six bats emerged from the west gable end of the farmhouse between 21:17 and 21:31, two were confirmed as Brown Long-eared Bats. Echolocation by this species is faint and easily missed. The flight action, quietness and habit of the four remaining bats were indicative of this species.

A Brown Long-eared Bat appeared to emerge from out over the central door of Barn B at 21:47, it flew NW over the top of the barn.

Shortly after dusk, single Common Pipistrelles appeared to emerge from under roof tiles of both barns, towards the south ends. After 21:25 up to three Common Pipistrelles foraged around the farmyard, occasionally entering both barns. At least one was still present at the end of the survey.

C.7.2.2 Dawn swarming survey

From 04:00 to 04:18, four Brown Long-eared Bats appeared from the NW and each seemed to disappear under the west gable soffit of the farmhouse.

At 04:30, two Common Pipistrelles showed swarming behaviour near the south end of Barn A before disappearing, presumably under a tile on the east-facing pitch.

C.7.3 AnaBat results

The AnaBat recorded five series of passes, twice by Brown Long-eared Bat and three times by Common Pipistrelle during the night of 01/ 02 May 2008. These data suggest light-sampling pre-emergence by a single Brown Long-eared Bat, and it or another returning two hours later. The Common Pipistrelle records suggest intermittent foraging inside the barn during the early evening.

C.7.4 Survey summary

Using the detector information, it is presumed that bat droppings found within three structures belong to Brown Long-eared Bat and Common Pipistrelle.

Table 2. Summary of bat evidence found during surveys.

Structure	Date/ time	observations
Farmhouse	30 Jun 2007	Some bat opportunities, mostly in the roof. 9 adult BLE with 3 pups. 1000s of BLE droppings in both lofts, mostly quite old, but 100+ fresh; mostly under the ridge-beam, many scattered elsewhere.
	01 May 2008	Similar, but fewer fresh droppings. 4 BLE present.
	01/02 May 2008	6 BLE emerged W gable, 4 returned.
Barn A	30 Jun 2007	Numerous bat opportunities. 2+ external wall holes with PIP evidence. 4 x 5-10 BLE droppings, some quite fresh, plus light scatter elsewhere. 2 x c.10 C PIP droppings under presumed roosts under S & W wall-plate; light scatter elsewhere.
	01 May 2008	Timber-joint bat roost near S end, spp. unknown.
	01/02 May 2008	Less bat evidence, few fresh scattered PIP droppings. 2 C PIP emerged from under roof tiles, 2 returned and 'swarmed' over roof on east pitch.
Barn B	30 Jun 2007	Numerous bat opportunities. 100+ BLE old, many fresh in both 1 st floor loft areas, scatter elsewhere. 3 x small pile C PIP droppings under felt tears in 1 st floor, light scatter elsewhere.
	01 May 2008	Same, a few fresh BLE droppings in south loft.
	01/02 May 2008	1 BLE emerged over central door. 1 C PIP emerged from under the S hipped roof section.
Barn C	30 Jun 2007	Virtually no bat opportunities found.

Fig xx. Signs and evidence of bats found during daytime searches 30 June 2007 & 01 May 2008

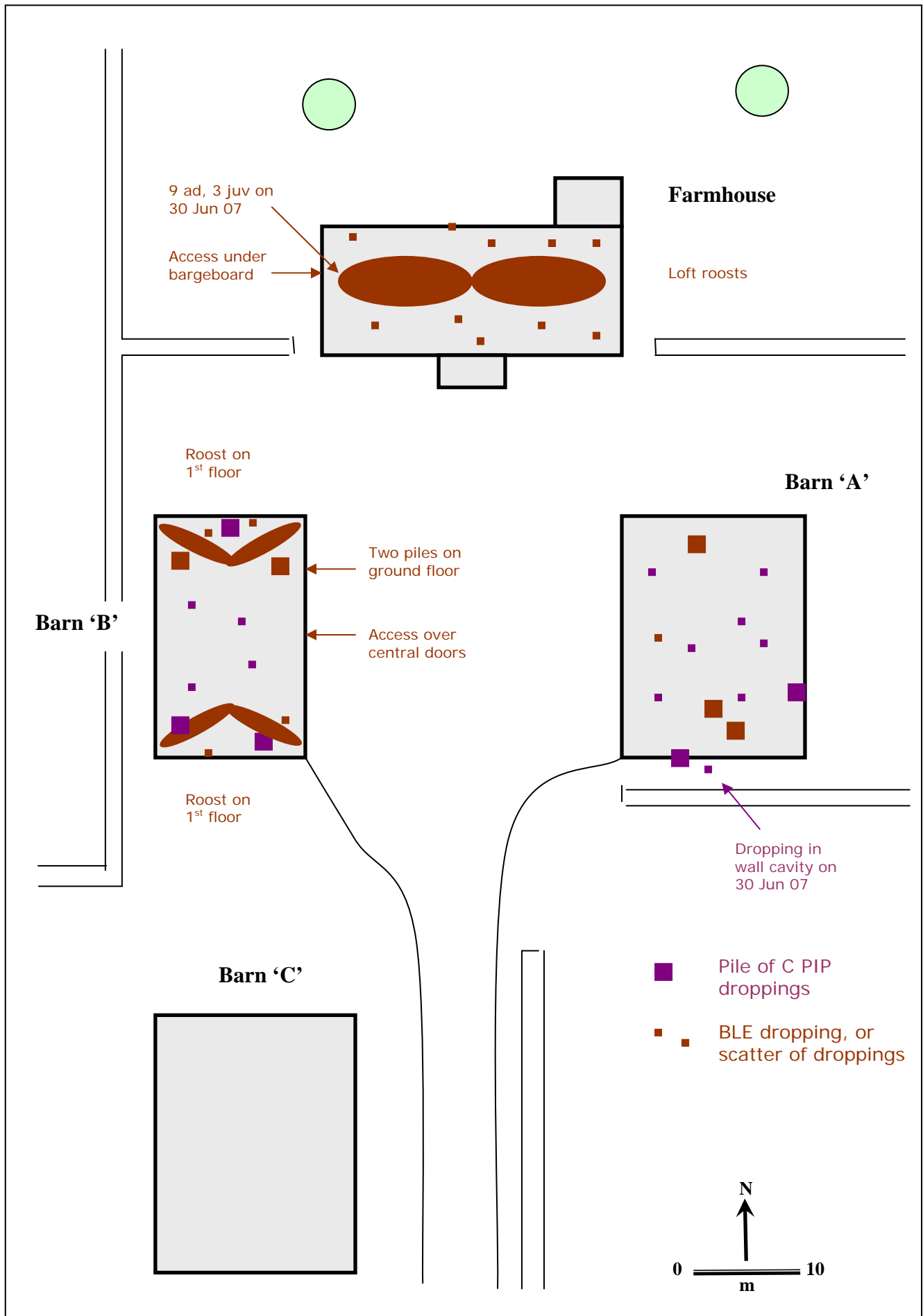
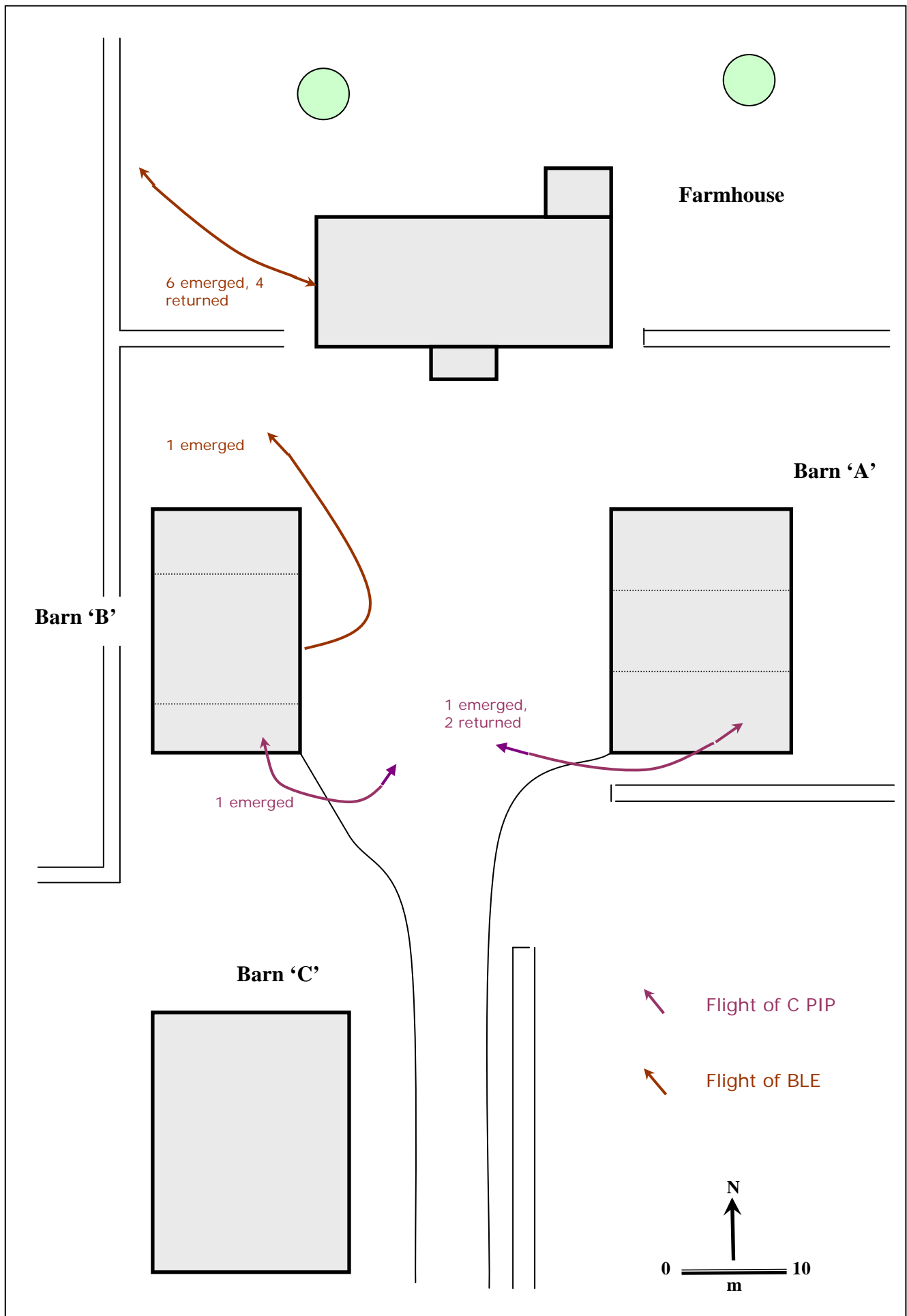


Fig xx. Records of bats found during nocturnal surveys 01/ 02 May 2008



C.8 Interpretation/evaluation of survey results (Bat Mitigation Guidelines section 5.8) Provide count/estimate of bat numbers, status of site (e.g. hibernation, maternity or feeding roost, swarming site etc), roost significance, constraints on survey (e.g. time of year, cold weather, access problems – justify as necessary).

The prolonged wet, windy and cold summer of 2007 caused many maternity roosts to fail and be abandoned, so colonies inspected then may not have reflected representative activity.

No winter survey work and no close-up inspection of roof tiles externally. Bat presence and populations at certain times of year are therefore only best estimates.

C.8.1 Brown Long-eared Bat

A small (to medium)-sized, maternity colony exists within both farmhouse lofts. Bats from this colony, and perhaps including non-breeding individuals regularly day-roost and feed in the upper floors areas of Barn B, with foraging, night-roosts/ feeding perches throughout the remaining areas of Barn B and in Barn A. The site is unlikely to support hibernating Brown Long-eared Bats, but this is not known for sure.

Estimated population of any given year: < 30 adult/ juvenile bats (less in 2007).

C.8.1 Common Pipistrelle

Small, non-maternity, summer roosts exist in both Barn A & B, with regular foraging inside and around these structures. Although not noted, the farmhouse probably also supports this species. Hibernation by this species is considered quite likely in both of the older barns, but a winter visit was not carried out to determine this for sure.

Estimated population of any given year: < 15 adult bats.

C.8.2 *Myotis* sp./ Natterer's Bat

A single echolocation of a *Myotis* bat species, possibly Natterer's was reported on 01 May 2008. Opportunities for this genus exist within the structures, but no evidence of a *Myotis* roost was found.

[Estimated population of any given year: < 3 adult bats; on site, but no roost found]

Including the farmhouse, which supports "a maternity site of a common species", and the barns, which are "hibernation sites for small numbers of common/ rarer species", this site appears to be of medium conservation significance. *

* Bat Mitigation Guidelines, p. 39 Fig. 4.

D Impact assessment in absence of mitigation. See Bat Mitigation Guidelines (section 6.2)

D.1 Short-term impacts: disturbance e.g. noise, vibration, dust, lighting, access obstruction due to scaffolding and plastic sheeting.

Without the implementation of mitigation, short term impacts on bats by this development at a vulnerable time of year will result in the damage and loss of roosts, disturbance and possible direct harm to bats, either crushed during roof work or entombed during pointing work. The impact on bats at a local scale could be moderately high.

Even with mitigation, an increase in traffic, people, noise and light will occur on site, but delaying the work until a less sensitive time of year will avoid disturbing breeding and hibernating bats. The structures to be developed are not considered to support an important autumn transitional roost. In the short term, the works will disturb bats still present during the autumn. Roof and wall repairs are scheduled to be completed before Nov to avoid disturbing hibernating bats, so other works continuing through the winter period are expected to cause negligible disturbance.

D.2 Long-term impacts: roost modification e.g. new entrances (including human access e.g. for servicing/maintenance), change in size of roost space, changes in air flow etc., temperature and humidity. Note that impacts can be positive or negative as this is in absence of mitigation.

The provision of secure and modified bat lofts with internal features to enhance their attractiveness to bats are expected to compensate for the loss of the larger, but much poorer spaces that currently exist in farm structures. Lofts already utilised by bats will be modified and enhanced since at present they are not ideal.

D.3 Long-term impacts: roost loss. Impact on different species populations to be taken into account at local, regional, and national level.

Some night-feeding and day-roosting space will be lost to the conversion. However, dedicated secure roosts in two locations most utilised by Brown Long-eared Bats will be modified. Existing opportunities for crevice-dwelling bats in under tiles and in walls will be retained, reinstated and more will be created. The proposed compensation is therefore expected to result in only negligible impact on the bats species recorded on site at a local level, and no impact at any other greater level.

D.4 Long-term impacts: fragmentation and isolation. e.g. loss of linear features such as hedges, tree lines, increased lighting, severance of flight lines by roads/rail lines.

No habitat changes, and no loss of hedgerows and stone walls is proposed. There is no fragmentation or isolation issue relating to this development.

D.5 Post-development interference impacts. e.g. extra street lighting, use of loft space as storage.

The development will result in only a slight increase in human presence. No (additional) street-lighting exists here, but security/ greeting lighting shining into the farmyard will be on a relatively short timer and motion-sensitive only to large objects. Some bat access faces outwards to the unlit garden and hedgebanks.

One of the dedicated bat lofts, above office space, will not be accessible to guests and visitors, but neither will be used for storage and the small access hatches will have bat roost warning signs on them.

D.6 Predicted scale of impact on species status at the site, local county and regional levels.

The development will destroy night roosts, temporarily disturb minor hibernation roosts, and will modify and temporarily disturb a possible mating roost. The impact level during the development is expected to be low. *

The maternity roost in the farmhouse will remain unchanged (although one bat access point will be modified and reinstated). Given the provision of two dedicated bat roosts and other bat roost access features in both barn roofs, the post-development scale of impact is predicated to be negligible and is probably positive.

* Bat Mitigation Guidelines p.37 Table 6.1

E Land ownership – Mitigation site(s) (area(s) where any works will be done to offset development impacts, including development plot if applicable)

E.1 Mitigation site ownership If the mitigation site is not owned by the applicant, you must provide the written consent of the relevant land owner(s). You must also provide details of how any measures to secure the population are to be maintained in the long term (e.g. a legal agreement).

The site will remain under the ownership of Mr & Mrs Plecotus. Bat roost features will not require regular maintenance. The owners are wildlife enthusiasts; after the ecologist's monitoring period has elapsed, the owners have agreed to permit a member of the county bat group to access and monitor the roosts, and to advise on any maintenance if required.

F References: List any references cited, and include credits for source information.

Battersby, J. (Edited and compiled; 2005), *UK Mammals: Species Status and Population Trends*. JNCC/Tracking Mammals Partnership 2005. ISBN 1-86107-568-5
<http://www.jncc.gov.uk/page-3311>

Homecountyshire Biodiversity Partnership (ed). *Homecountyshire Biodiversity Action Plan*. 1998

Mitchell-Jones, A. J. *Bat Mitigation Guidelines*. Jan 2004. English Nature. ISBN 1-85716-781-3.
<http://naturalengland.communisis.com/naturalenglandshop/docs/IN13.6.pdf>

Mitchell-Jones, A. J. & McLeish, A. P. *The Bat Workers' Manual*. 3rd ed. 2004. JNCC.
<http://www.jncc.gov.uk/page-2861>

Parsons, K. et al. *Bat Surveys. Good Practice Guidelines*. Bat Conservation Trust. 2007. ISBN 978-1-872745-99-2

G Annexes

G.1 Pre-existing survey reports

N/A

G.2 Raw survey data.

G.2.1. Table 3. Results of hand-held bat detector survey 01/ 02 May 2008

Date	Time	Building	Species	number	Activity
01 May 2008	21:17	Farmhouse	Brown L-e Bat	1	Emerged from W gable
01 May 2008	21:19	Farmhouse	Brown L-e Bat	1	Emerged from W gable
etc					
01 May 2008	21:25	Barn A	Common Pip.	2	Emerged from tile near S end
etc					
01 May 2008	21:47	Barn B	Brown L-e Bat	1	Emerged from central door
etc					

G.2.2. Table 4. Results of static AnaBat bat detector survey, northern loft of Barn B, night of 01/ 02 May 2008

Date	Time	Building	Species	number	Activity
01 May 2008	21:32	Barn B	Brown L-e Bat	1	Contact call
etc					
01 May 2008			Common Pip.	1	Foraging call
etc					

G.2.3. Table 5. Data search for local bat records (see C.1 above).

Species	Date	Location	Grid reference	Notes/ activity	Distance & direction from site
Pipistrelle bat sp	01/05/2006	Another Farm	YZ 123 123	Present	550 m, south
Brown Long-eared Bat	01/06/2007	A House	YZ 321 321	Droppings in loft	1200 m, west

Document 2 - Delivery Information

The format below must be used and completed by a consultant ecologist or other suitably experienced person

This document will be attached to the licence

A Mitigation and compensation.

A.1 Summary of mitigation strategy Overview of how the impacts will be addressed in order to ensure no detriment to the maintenance of the population at a favourable conservation status. To include a scaled map or plan that can be compared with the proposals on the survey results plan.

Populations of both bat species known to occur at this site will be maintained and may increase as a result of the mitigation strategy. To summarise, the strategy includes: -

- Two Schwegler 2F woodcrete boxes erected on farmhouse garden trees
- Sensitive timing of work in late autumn to avoid largest number and hibernating bats;
- Pre-works inspection survey of both barns;
- Worker/contractor induction on bat presence, provide Method Statement and summary sheet of guidance to workers/contractors;
- Bat licensee (licensed bat ecologist) will supervise the hand-removal of roof materials and wherever bats are likely to be present;
- Flexible strategies for safely removing bats from harm during the development under different weather conditions;
- One-way bat excluders fitted to wall voids;
- Create two secure, dedicated bat lofts with exposed timber features attractive to bats;
- Provide four 'squeeze-boxes' suitable for crevice-dwelling bats;
- Bat droppings seeded in new lofts;
- Retain access to lofts during soffit repairs to farmhouse;
- Provide eaves, ridge and hip-ridge access to new bat lofts and tile-felt void in Barn B;
- Provide eaves, ridge and pitch access to tile-felt void in Barn A;
- Retain and adapt external bat access to wall cavities in Barn A & B;
- Remove loose, part rotten mortise-style joint from Barn A and place inside south bat loft of Barn B;
- External lighting will be on a relatively short timer, directed away from bat roost access points and flight paths and motion-sensitive only to large objects.

Fig xx. Insert plan of bat roost features

B Works to be undertaken by the ecologist or suitably experienced person.

B.1 Capture and exclusion (if applicable). Timings, effort, methods to be employed, care of bats, release sites etc. Include diagrams and photographs to show capture/exclusion apparatus. Include map to show location of capture and exclusion activities.

Before commencing any work on site, builders and contractors will be inducted by a licensed bat ecologist to make them aware of the possible presence of bats, their legal protection and of working practices to avoid harming bats. A copy of the Method Statement will remain available on site at all times, a summary sheet of guidance will be given to each builders and contractors working on the structures.

Bats may be encountered during the development, timing the most sensitive work in late autumn is hoped to avoid bats as far as possible, in that most bats will have left the site, but those remaining are less likely to be torpid or hibernating, and are therefore safer to move than if the work was left later in the year.

Before work starts on the roofs, two 2F Schwegler bat boxes will be fixed to two maturing deciduous trees located in the farmhouse garden, 30 and 60 metres away from Barn B. The bat boxes will be a minimum of 4 m above ground level. These bat boxes will remain on site permanently.

If bats are encountered during supervised works, the licensed bat handler will capture the bat with thin gloved hands or a hand net, place the bat in a drawn-string cloth bag and then take it to either a bat box (locations as shown on Fig xx), or it will be placed inside an existing suitable bat roost, including the farmhouse lofts, if available. Injured bats will be immediately taken into care (as directed by BWM, s.7.3, pp. 64-66; 3rd ed, 2004). Details of a local well experienced 'bat hospital' are known.

Works will avoid encountering torpid bats in roof structures by only working during periods when temperatures have not dropped below 8°C over 4 consecutive days and nights, where practicable. If unavoidable, and a torpid bat is discovered, it will be taken temporarily into care and fed until such time when conditions are suitable and the bat will then be released at dusk near the farm buildings, where alternative roosts will still be available.

If a bat is discovered at other, unsupervised times, work will cease immediately, the licensee or accredited agent will be called for advice. This advice will include leaving the bat to disperse of its own accord, or wait for the licensed handler to appear and move the bat. Builders and contractors are explicitly forbidden from handling bats.

Where stonewall cavities require pointing, these will be checked with a flexible endoscope. Where the absence of bats cannot be assumed, these cavities will chalk-marked and fitted with one-way excluders with rockwool blocked around it to only permit bats to exit the pipe and not re-enter the cavity. The excluder comprises of a plastic pipe with a 26mm bore, facing slightly downwards (to avoid water ingress), projecting at least 100mm from the wall. This will remain in place over 4 consecutive days and nights where (night-time) temperatures have not dropped below 8°C. (exclusion is guided by BWM, s.9.1.2, pp. 88-90; 3rd ed, 2004). The cavity will then be checked again immediately prior to being infilled.

B.2 Other enhancements

Bat droppings collected from the barns will be retained and then used to seed the new bats lofts.

C Works to be undertaken by the Developer/Landowner.

C.1 Bat roosts

C.1.1 In-situ retention of roost(s) – providing details of all re-roofing works for example, replacement of tile type, replacement of felt with breathable membrane, use of insect guards, timber treatment; also include addition or changes in insulation and any impact on temperature/humidity. Explain how roost entrances will be retained and if purpose built entrances are required a scaled drawing of their design is required. Any enhancements to the roosts such as crevice provision should also be detailed. (include photographs)

The large open spaces of Barn A and part of the roof space in Barn B will be lost to bats, however Barn A was little used by bats, partly due to being too light and draughty and in Barn B, much of the roost space will be secured and enhanced for bats.

Roofing work will replace a few rotten timbers and will reuse the same stone tiles to both barns. In places, tiles on the ridges, hip-ridges and pitches will be positioned to allow bats access to the tile-liner void, thereby creating new larger spaces for crevices dwelling bats in Barn A, and enhance that existing in Barn B. For more detail on these bat access designs, see C.1.2.2 below.

C.1.2 Modification of existing roost(s) dimension details, scale drawings of the roost and access points, orientation, state what services will be incorporated in the roost that might require regular servicing, for example, lift winding gear, electrical or plumbing services, gas boilers, partitioning of voids where a large property is being converted to a number of units, etc. (include photographs)

C.1.2.1 Dedicated bat lofts and access.

The two hay-lofts used by bats that exist in Barn B will be modified. They will be secured and dedicated for use by bats. These hay-lofts occupy the first floor compartments at the south and north ends of the barn. As bat lofts, they will be of a similar size, these being 9.0 metres (long) x 6.0 metres (wide) x 3.5 metres in height to the ridge apex. Tyvek will be used to line the roofs, but if still used in the bat lofts, the inner faces of the lofts will be lined with bitumastic or hessian felt, behind the roof timbers, giving maximum exposure of timbers for bats, and this material roosts to offers better purchase for bats. Each loft will have two hip-ridge bat access points, plus ridge and eaves bat access every 1.5 metres. Bat access will have a minimum height of 20mm and a length of between 30 and 150mm. Access designs are discussed in more detail below in C.1.2.2. Similar sized slots will be cut in (both) liners opposite these access points to permit bats access to the loft voids. Liners will stop at least 20mm short of the ridgeboard on all pitches, to allow bats access via the ridges.

Four squeeze-boxes (two inside each loft) will be fitted onto the face of the two largest pitches, about halfway up between two rafters. These boxes are a very narrow triangle in profile and a quadrangle in shape, 1.0 x 0.45 (rafter gap width) metres in size, roughly comprising of two boards on wedged battens create an opening of 50mm at the bottom. These squeeze-boxes are known to attract crevices-dwelling bats.

C.1.3.2 Access to the roof tile and felt void.

Three types of bat access will be provided on the roofs of Barn A and B, a fourth roof access type will be retained on the farmhouse. No bat slates, louvered or dormer entrances are permitted due to Listed Building constraints, but adapting the use of existing stone tiles will be used to create the following bat access points: -

- Ridge access. This will follow the design of 'Option B' of 'Ridge Tile Access 4A' diagram (see [Appendix A](#)). 20 x 100 mm gaps will be left in the mortar every 1.5 metres or so on the main and hipped ridges. The ridge gap will also be left unfilled as far as possible, providing long voids favoured by pipistrelle bats.
- Pitch access. This will follow a similar principal to the ridge access, in that occasional tiles positioned overlapping and sat on neighbouring tiles will have a 20mm gap underneath, the width will be 100-150mm, depending on tile sizes available (this access does not follow the 'Bat Access 'Slate' Access 1A' diagram). One per hipped pitch and four per long pitch will be installed about halfway up the pitch, on both barns.
- Eaves access. Barn A has closed eaves with soffit boards. Barn B has open, exposed timbers along broad eaves front and back, and its sides have narrow, closed eaves. The principle of bat access is the same, 20 x 100 mm gaps will be provided behind soffit boards (where they exists) and similarly sized access will be retained or created either through or over the outer wall on closed eaves, or over the wall-

plate on the broad exposed timber eaves, such bats can either access the dedicated bat lofts, or/ and access the rubble-filled cavity wall. Some of this will follow the design of 'Bat Access to Stone Wall Top Detail 3' diagram (see [Appendix A](#)). No eaves type access will be placed above windows and doors.

- Farmhouse access. Bats appear to be entering the loft behind a bargeboard where it has become unattached from the wall, near the apex. This will be re-fixed, but on 20mm spacers allowing bats to continue using this access. Other access is thought to exist, but will be unaffected.
- Wall void access. Some existing holes located in the south and north walls of both barns, east wall of Barn A and west wall of Barn B, will be retained and modified. If requiring some pointing, after bats are excluded, rockwool will be replaced with mortar around the pipe, which will then be removed leaving a void entrance for bats. This will roughly follow the design of 'Solid Stone Wall Access Design 6' diagram (see [Appendix A](#)).

C.1.3.3 Other external features affecting bat roosts

Brown Long-eared Bats, in particular, are sensitive to artificial light and avoid it. Most bat access will be away from the central courtyard area, but to further reduce bat disturbance, security/ greeting lighting will not shine directly on any roost access/known flight path/foraging area, and will only face downwards. Lights will be on a relatively short timer and triggered only by large objects i.e. will not turn on at the passing of bats.

C.1.3.4 Inspection hatches and timber treatment

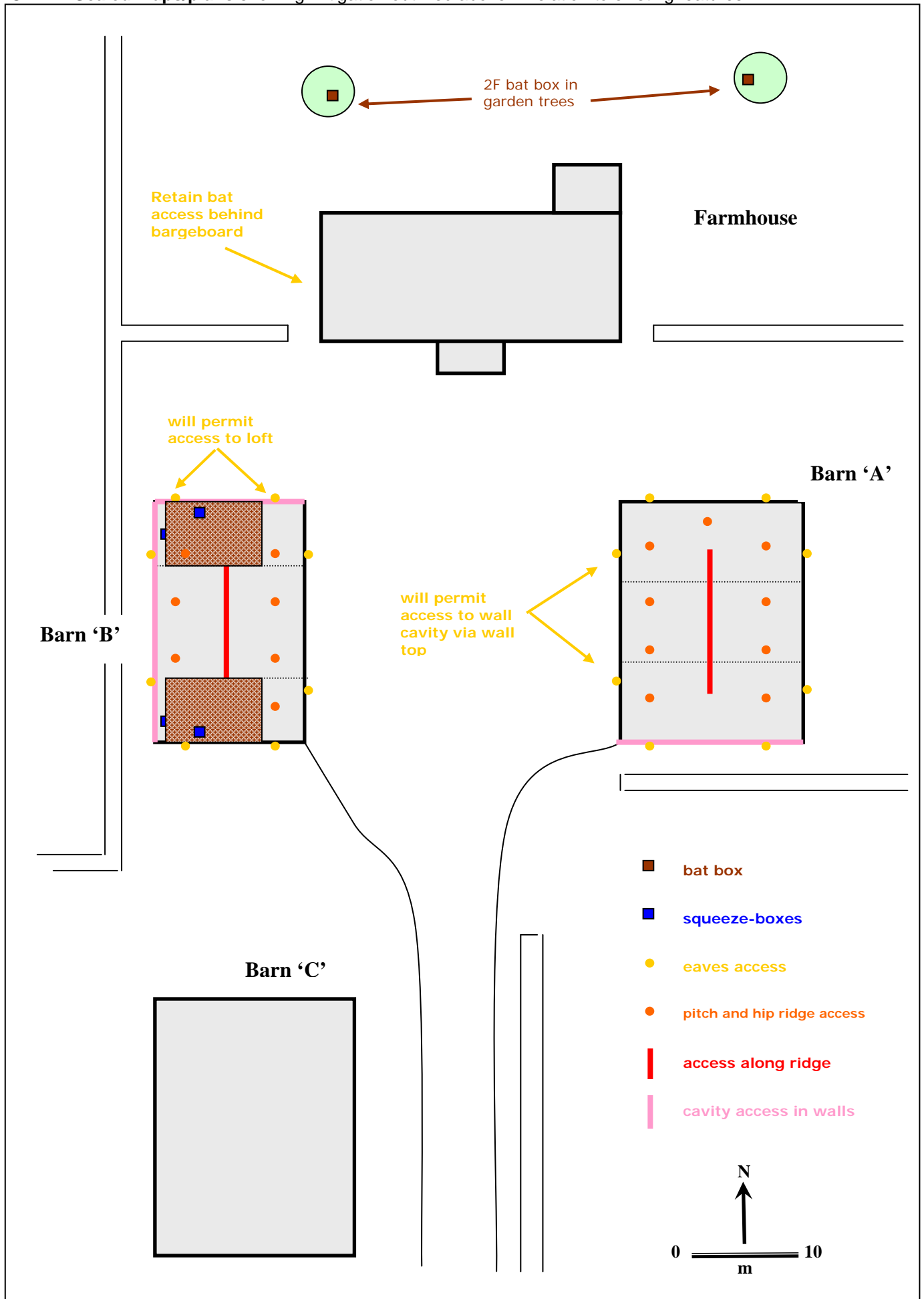
Two inspection hatches will be incorporated into the bat lofts. These will be 450mm x450mm to discourage use of the lofts for storage. Signs on these hatches will have wording to indicate the presence of a bat roost, that only licensed bat workers should access and a Bat Helpline or local bat group telephone number will be provided.

Replacement and existing timbers will not be treated whilst bats are suspected as being present, or may become present within a few weeks of the treatment. Treatment will be by use of hand-brush and will only use one of the products listed in [Appendix B](#).

C.1.3 New roost creation (including bat houses, cotes and bat boxes) – dimension details including access points, location details, materials to be used e.g., timber, sarking felt, etc.. aspect, justify variation from the original roost. Diagrams of widely available standard bat box designs are not required, just refer to bat box name and reference number, e.g., 1FF Schwegler.

N/A

C.1.4 Scaled maps/plans showing mitigation outlined above in relation to existing features.



D Post-development site safeguard

D.1 Habitat/site management and maintenance – to include details of what will be done in terms of habitat management and site maintenance required to ensure long-term security of affected population. Include details of site/structure ownership, and who will be responsible for undertaking the work and who is responsible for funding.

The development will remain under the ownership of Mr & Mrs Plecotus who have read and agreed with this Method Statement's proposals. Mr & Mrs Plecotus have agreed to allow a member of the county bat group access to the roosts for monitoring purposes and to advise on maintenance if required.

The 'traditional' garden is well tended, it supports a range of blooms and shrubs, and a pond provides suitable habitat for insects and foraging bats. Linear features leading from the farm buildings to the valley and fish lakes below provide sufficient connectivity. If it becomes considered necessary, native shrubs will be planted to fill gaps.

D.2 Population monitoring, roost usage etc. – to include details of monitoring effort, timing and equipment to be used.

The site will be inspected before, during and immediately after development work is completed in autumn 2008. A further inspection of the loft and boxes, and an emergence survey will be carried out by a licensed bat surveyor during Jul and Sep 2009 (May to August 2010 if second timetable followed), the summer following the completion of the development.

D.3 Mechanism for ensuring delivery of post-development works e.g. Section 106 Agreement, to include details of who will undertake the work and reporting details, other covenants or contractual agreements.

Condition 10 of the Planning Permission required protected species, including bats to be catered for in the development.

E Timetable of works. A diagram to include timings of all capture, exclusion, mitigation and construction works.

The timetable of works attempts to avoid times when greatest numbers of bats are present, and it also attempts to avoid hibernating bats. If it appears that work cannot be accomplished within this timetable, a modification will be submitted to Natural England, which will likely include a timetable shown in [Appendix C](#).

Time of year	Proposed action	Impact on bats and mitigation
early Sep 2008	Erect bat boxes on trees.	Provide alternative temporary bat roost before work commences.
mid-Sep to late-Oct 2008	Roof repairs - strip roof, replace timbers and original tiles, felt; bat access features installed.	Loose Barn 'A' roosts. Temp loose Barn 'B' roosts. Do 'B' before 'A', do 'B' in two phases to allow roosting. Supervised works. Install ridge and pitch access.
early-mid Oct 2008	Install ceiling and fit-out bat loft	Bat disturbance. Post-fit checks.
mid-late Oct 2008	Replace soffits, bargeboard and guttering.	Poss loss of roosting opportunities. Create gaps behind soffits, esp. around gables.
mid-late Oct 2008	Replace windows, doors; internal proofing	Possible entrapment and harm. Supervised work.
mid-late Oct 2008	Re-pointing	Possible entrapment. Pre-fill checks, exclusion and retain wall holes.
late Oct 2008	Mitigation check	Inspect bat lofts, access and roof crevices features.
Nov 2008 to Mar 2009	Internal refurbishment	Ongoing minor disturbance. Post-development checks by ecologist.
Jun and Sep 2009	monitoring	Inspect lofts, including farmhouse, emergence survey in Jun.

Appendix A. Designs to be adopted for bat access into roof voids and lofts.

Insert diagram of 'English Nature Bat Access Slate 1A'

Appendix B. A list of remedial timber treatment products suitable for use in bat roosts.

Insert list of suitable and approved timber treatment products

Appendix C. Alternative timetable to be submitted with a modification should work fail to commence under the currently proposed autumn timetable.

Time of year	Proposed action	Impact on bats and mitigation
early Sep 2008		Erect bat boxes on trees
late-Mar to Apr 2009	Roof repairs; strip roof, replace timbers and original tiles, felt; bat access features	Loose Barn 'A' roosts. Temp loose Barn 'B' roosts. Do 'B' before 'A', do 'B' in two phases to allow roosting. Supervised works. Install ridge and pitch access.
late-Apr 2009	Replace eaves, bargeboard and guttering.	Poss loss of roosting opportunities. Create gaps behind soffits, esp. around gables.
early-May 2009	Install ceiling and fit-out bat loft	Bat disturbance. Post-fit checks.
early-mid May 2009	Replace windows, doors; internal proofing	Possible entrapment and harm. Supervised work.
mid-May 2009	Re-pointing	Possible entrapment. Pre-fill checks, exclusion and retain wall holes.
late-May 2009	Mitigation check	Inspect bat lofts, access and roof crevices features.
Jun to Oct 2009	Internal refurbishment	Ongoing minor disturbance. Post-development checks by ecologist.
Jun and Sep 2010	monitoring	Inspect lofts, including farmhouse, emergence survey in Jun.