

**PROPOSED DEVELOPMENT AT
WALLINGTON FARM, WORTHENBURY,
WREXHAM**

BAT METHOD STATEMENT

DECEMBER 2015



ces ecology
consultant ecologists

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Author: 

Date: 10/12/2015

Compiled by: 

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Checked by: 

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A EXECUTIVE SUMMARY

The proposed development will involve the conversion of two adjoined barns (B1 and B2) to residential use, as holiday apartments. A third building (B3) will be used as general storage (for the farm and holiday lets). Two areas of land will be landscaped to form gardens for the two holiday apartments.

A small number (at least 8) of common pipistrelles *Pipistrellus pipistrellus* and at least 3 Natterer's bats *Myotis nattereri* use the existing barn buildings (B1 and B2) as a small non-maternity summer/day roosting site. A licence is therefore required before any work that may potentially disturb the bats takes place. Measures to ensure the maintenance of the favourable conservation status of common pipistrelle and Natterer's bats will be implemented. This will include the provision of an alternative roosting site (a dedicated bat loft) within an adjacent building (B3), with a secure long-term future.

Building B3 will have a 'self-contained' roof void with an approximate floor area of 11.5m by 5.2m with a height from the loft floor to ridge beam of 2.0m. This building is gable ended and has a total height of 5.75m.

Subject to the grant of licence, the bat loft and bat boxes will be in place by early March. Work will only commence on Buildings B1 and B2 once the bat loft has been implemented in B3 and bats have vacated their existing roost site. Immediately prior to works commencing, the roof voids will be surveyed again for the presence of bats. A hibernation bat box (Schwegler 1WQ) will be erected on building B3 as part of the pre-commencement survey. If the appointed ecologist or their accredited agent is confident that no bats are present works will proceed carefully with the removal of roof tiles and ridges by hand, under the supervision of the appointed ecologist/accredited agent. A single Habibat bat box will be installed into each of the gable ends of buildings B1, B2 and B3 (five Habibat boxes in total) prior to bats returning to site (boxes installed February - April). Buildings B1 and B2 will be converted over an eight to ten week period in February - March - April 2016.

The Applicant intends to continue living on site. However, the long-term future of the bat loft and bat boxes for bat roosting will be assured by including the relevant documentation in the deeds upon any future sale/s of the holiday apartments.

There are no plans to remove any hedgerows or areas of extensive vegetation within the grounds of the property. The proposed development activities are not likely to significantly alter the commuting or foraging areas of the bats on site.

Post-development monitoring will be conducted annually during the summer for a period of two years following completion of the development works by the appointed ecologist or their accredited agent. A monitoring hatch (locked at all times) will be built into the ceiling of building B3 to provide access into the bat loft for population monitoring purposes. Human access into the bat loft will be restricted to bat population monitoring; the loft will not be used for storage. Details of bat usage will be recorded after each monitoring visit. The property owners (the applicant) will hold the key to the hatch.

Arrangements will be made to ensure the security and integrity of the bat loft by including the relevant documentation in the deeds upon any future sale of the holiday apartments. Any future owners will be made aware of their responsibilities towards bats and their role in safeguarding the dedicated bat loft area in building B3.

B INTRODUCTION

B.1 Background to activity/development

Cheshire Ecological Services Ltd (CES) was commissioned by Doreen Manning on behalf of IT Manning & Partners to produce and submit a Natural Resources Wales (NRW) bat licence application and method statement in connection with proposed development works at the Wallington Farm site on Wallington Lane, Worthenbury.

The proposed works involve the conversion of two adjoining barns (buildings B1 and B2) into residential use, as holiday apartments. A further building (B3) will be used as general storage for the Wallington Farm and the holiday lets. Two areas of land will be landscaped to form gardens for the two holiday apartments.

Building B1 is a two storey barn with a single storey extension (B1a) which has a corrugated metal roof. B1 has an unlined pitched slate roof with open pitching holes at the gable ends. There are also a number of slipped slates. A number of roosting opportunities are available within the loft, including timber peg holes, slots and cracks. The roof void is approximately 19m by 5m with a height of approximately 4m.

Building B2 is a single storey barn with an unlined pitched slate roof. There is no loft void in this building. The internal walls are covered in whitewash however there are cracks and crevices offering roosting opportunities.

There is good linear landscape connectivity with interconnecting hedgerows in the surrounding farmland.

Bat surveys in relation to the conversion of buildings B1 and B2 were conducted in September 2014 and May and June 2015.

A NRW bat licence will need to be obtained in order to allow the proposed development and associated bat compensation works to proceed lawfully.

B.2 Full details of proposed works on site that are to be covered by the licence

The proposed works to be licensed will involve the conversion of buildings B1 and B2 to residential use, as two holiday apartments. A hibernation bat box (Schwegler 1WQ) will be erected on building B3 during the pre-commencement bat survey. A dedicated bat loft will be completed and 4 wooden bat boxes will be erected in the building B3 by early March, prior to the commencement of works on buildings B1 and B2. A pre-commencement survey will then be conducted on buildings B1 and B2. It is proposed to convert buildings B1 and B2 over an eight to ten week period in February-March-April 2016. A single Habibat bat box will be installed into each of the gable ends of buildings B1, B2 and B3 (five Habibat boxes in total) prior to bats returning to site (boxes installed February - April).

Upon receipt of a Natural Resources Wales licence it is proposed to convert buildings B1 and B2 during February-March-April 2016 after the small non-maternity summer/day roost has dissipated and before it returns in May 2016. Providing roofing works on B1 and B2 are complete by the end of April, and the building is considered to be unsuitable for bats, internal works can be

carried out thereafter. No evidence has been found to suggest that bats hibernate in this building.

Work on the conversion of buildings B1 and B2 will not begin until the buildings have been thoroughly checked by the appointed ecologist or their accredited agent and declared free of bats and the appointed ecologist is satisfied that all works to building B3 have been completed as detailed in this method statement.

Planning permission for the conversion of buildings was granted by Wrexham County Borough Council (Application number P/2015/0604) on 19th September 2015.

B.3 Actions requiring licensing

Actions requiring licence potentially affecting bats will include: Disturb, damage a breeding site/resting place, destroy a breeding site/resting place.

C SURVEY AND SITE ASSESSMENT

C.1 Existing information on bat species at the survey site

In September 2014 ecologists from Wildbanks Conservation conducted a bat and bird survey of the outbuildings at the Wallington Farm site. This survey involved a daytime internal inspection of the buildings and a dusk emergence survey. Bat droppings were recorded in buildings B1 and B2 and on a window ledge outside B3. During the dusk emergence survey, ten bats were recorded emerging from buildings B1 and B2. The species recorded included Common pipistrelle and Myotis sp.

Cofnod, the Local Biological Records Centre for North Wales indicated that the following species have been recorded within 2km of the proposed development site: common pipistrelle, pipistrelle sp. and unidentified bat sp.

Common pipistrelle is one of the three most common species in the UK and is widespread in Wales. Myotis sp. (i.e. Whiskered, Brandts, Natterers and Daubentons) bats are considered to be widespread in Wales, and may be more numerous here than elsewhere in Britain.

C.2 Statutory sites notified for the species (SSSIs or SACs) within 10km

No statutory sites notified for bats are located within 10km of the proposed development site. The proposed development will not impact upon any SSSIs and/or SACs.

C.3 Objectives of the CES 2015 survey effort

An initial daytime survey visit was undertaken on 12th May 2015 to inspect buildings B1, B1a, B2 and B3 for signs of past or present bat roosting and to recommend any actions that may result from the findings of this survey. Field signs were searched for that might indicate the species and number of bats that could use the site and the purpose for the bats using the building, i.e. type of roost such as maternity.

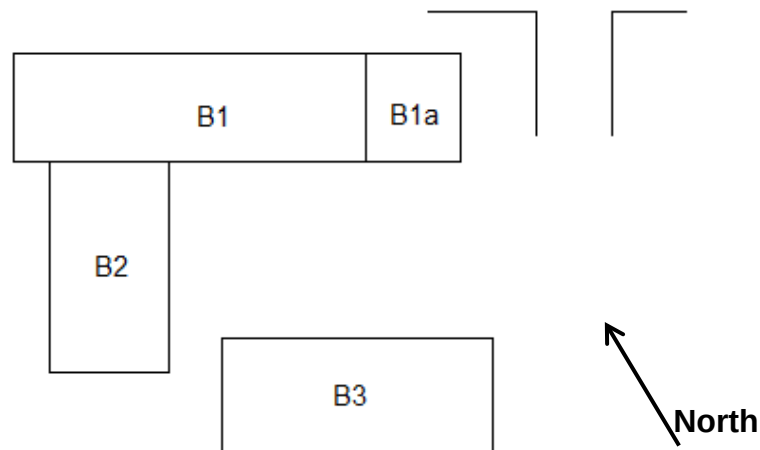
An evening emergence survey was also conducted on 12th May and a dawn re-entry survey was conducted on 4th June 2015 to confirm bat species and numbers.

C.4 Scaled maps/plans of survey area

See appended plans:

- C.4a – Site Location Map (OS)
- C.4b – Site Location Map (Aerial)

C.5 Site/habitat description



Simplified Diagram of Site Layout

Building 1



B1 is located approximately 30m above sea-level. The building is a traditional barn which is currently used as storage at Wallington Farm. B1 is a brick built, two storey building with a roof void. The pitched slate roof is unlined and gable ended.

There are open pitching holes at the gable ends and slipped tiles.

There are a roost site opportunities in these loft areas particularly in timber peg holes, slots, cracks etc.



Building 1a



B1a is attached to the eastern gable end of B1. This is a single storey workshop with a pitched corrugated metal roof.

Building 2



B2 forms an 'L' shaped barn with B1. This is a single storey brick storage building with a pitched unlined slate roof. There is no loft void.



The internal walls are covered in white wash. A number of cracks and crevices were identified.

Building 3



B3 is located adjacent to B2 and adjacent the existing farmhouse. This is a single storey brick building with a pitched slate roof. There is no loft void.

There are open pitching holes and slipped slates.



The roof is lined with a bitumen/hessian traditional roofing felt. Therefore there is a potential roost site for bats between the felt and roof slates above. There are a number of tears in the felt. There are roofing timber 'slots' and 'peg-holes' and cracks in internal brickwork.



Surrounding habitat



The surrounding habitat comprised predominantly farmland used for stock grazing with interconnecting boundary hedgerows (see Fig. C.4b). Elsewhere on the Wallington Farm site is the existing farmhouse which is being retained and associated landscaped garden.

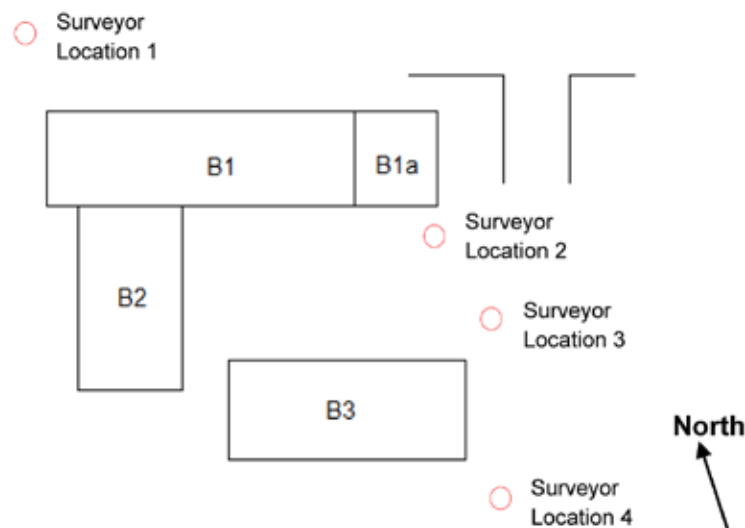
C.6 Field survey(s)

Survey Methodology

12th May 2015

Buildings 1, 1a, 2 and 3 were searched internally and externally for evidence of bat activity during a daytime survey. Emphasis was given to searching cracks, crevices and cavities for evidence of bat usage. Samples of any bat droppings identified were collected, in order to be sent to Warwick University for DNA analysis.

An evening emergence survey was then conducted. Four surveyors took up positions at various points around the farmyard in order to observe any bats that emerged from the buildings.



Plan showing location of surveyors during the evening emergence survey on 12th May 2015 and dawn re-entry survey on 4th June 2015

4th June 2015

A dawn re-entry survey was also conducted. Four surveyors took up the same positions (see above plan) around the farmyard in order to observe any bats that entered the buildings. An internal inspection was undertaken following this survey.

16th June – 23rd June 2015

An AnaBat static bat detector was placed in the loft area of B1 from 16th June to 23rd June 2015. This recorded bat activity between these dates.

Survey Effort

A total of two daytime internal surveys, one evening emergence survey and one dawn survey have been conducted by CES at the Wallington Farm site in 2015. Additionally, an Anabat static bat detector was placed in building B1 to record bat activity over a period of one week in June 2015. Further survey effort was not conducted as it was considered that a sufficiently accurate count of bat numbers had been made during the surveys to enable the likelihood of small non-maternity summer roost/day roost status to be determined and relevant and appropriate mitigation to be proposed. Further surveys would not have provided information materially different to that already obtained and would not have affected the mitigation strategy proposed in the Method Statement.

Timings and Weather Conditions

Details regarding the three surveys conducted by CES in 2015 are detailed below:

SURVEY TYPE (DATE)	TIME (HOURS)	TEMP (°C)	WEATHER CONDITIONS
Daytime Internal (12/05/15)	18:30	16	Dry with a strong breeze. Cloud cover: 40% Precipitation: None Wind speed: Unknown
Dusk emergence (12/05/15)	20:30	12.7	Dry with a weakening breeze. Cloud cover: 40% Precipitation: None Wind speed: 9mph
	21:00	11.2	
	21:30	10.5	
	22:00	10.3	
	22:30	9.9	
Dawn re-entry and daytime internal (04/06/15)	02:45	5.0	Dry. Cloud cover: ~20% Precipitation: None Wind speed: Unknown
	03:30	4.3	
	04:00	4.8	
	04:30	5.8	

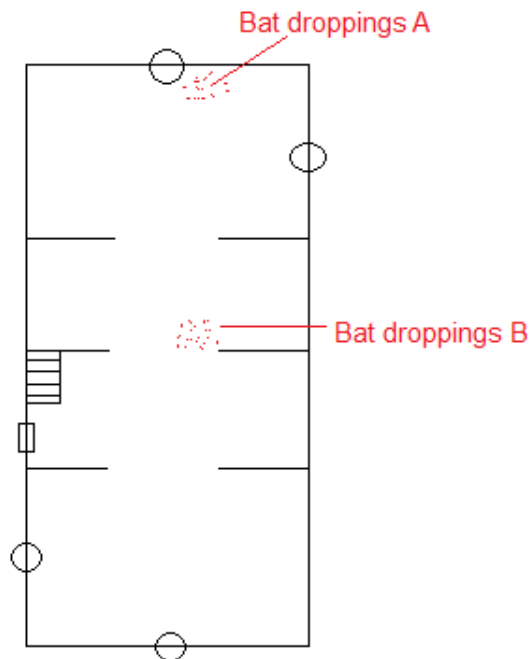
Temperatures during the dawn re-entry survey were lower than the seasonal average, however almost twice the number of bat contacts was recorded and/or observed during this survey than during the dusk emergence. The temperatures are therefore not considered to have impacted on bat activity during the survey.

Personnel

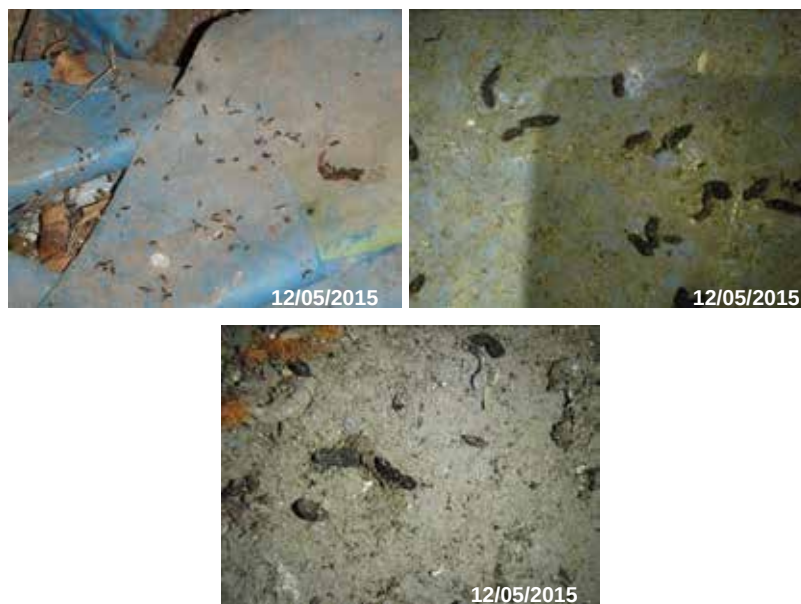
SURVEYOR NAME	LICENCE NO.	EXPERIENCE	EQUIPMENT USED
Mike Freeman	61024:OTH:CSAB:2014	Lead ecologist – experienced and licensed bat surveyor.	Pettersson D200 Elekon Batscanner
Faye Davies	63080:OTH:CSAB:2015	CES Senior Ecologist – experienced and licensed bat surveyor.	Pettersson D200
Amy Green	65623:OTH:CSAB:2015	Ecologist – experienced and licensed bat surveyor.	Batbox Duet
Natasha Firth	N/A	CES Ecologist - experienced in identifying bat calls.	BatBox Duet

C.7 Survey results**12th May 2015 – Daytime Survey*****Building 1***

Bat droppings were mainly found in two areas of the loft as shown in the diagram below.



Simplified diagram of the roof void in B1 showing the locations of bat droppings



Samples of droppings from area A and B were collected and sent to Warwick University for DNA analysis to identify the species.

No bats were recorded in the roof void at the time of survey.

Building 1a

No evidence of bat usage was recorded in this building at the time of survey.

Building 2

No evidence of bat usage was recorded in this building at the time of survey.

Building 3

No evidence of bat usage was recorded in this building at the time of survey.



Bat access/entry point through open pitching hole on northern aspect of B1

Results of the DNA Analysis

Sample A belonged to Common pipistrelle.

Sample B belonged to Natterer's bat.

Natterer's bat was therefore considered likely to be the Myotis species recorded on the heterodyne bat detectors by various surveyors during the dusk emergence and dawn re-entry survey.

16th June - 23rd June 2015 – AnaBat Data

Date	16-Jun	17-Jun	18-Jun	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	Total	%
BLE	10	16	1	112	3	0	11	14	167	13.31%
Myotis	13	30	11	48	17	14	40	30	203	16.18%
Noctule	0	0	1	0	0	1	1	0	3	0.24%
P45	30	23	20	26	1	0	51	28	179	14.26%
P55	1	15	0	7	2	1	7	19	52	4.14%
Pip sp.	130	78	68	100	77	54	72	72	651	51.87%
Total	184	162	101	293	100	70	182	163	1255	100%
Note: Numbers indicate number of contacts recorded not number of bats										

The vast majority of calls appeared to originate from outside of the building which would correlate with the results of the dusk emergence and dawn re-entry surveys. Pipistrelle calls with a peak frequency of 49-51 Hz have been recorded as Pip sp. Some of the myotis calls were indicative of Natterer's bat due to the steep slope concentrated around 1k.

Bat Survey Results Summary Table

Date	Survey method	Temp.	Weather conditions	Building Ref:	Results
12/05/2015	Daytime internal and external	18:30hrs: 16°C	Fine, dry with a strong breeze	B1	Accumulations of bat droppings were recorded in the loft void in two distinct areas. These droppings were identified as belonging to Common pipistrelle and Natterer's bat after DNA analysis.
				B1a	No evidence of bat usage.
				B2	No evidence of bat usage.
				B3	No evidence of bat usage.
12/05/2015	Dusk emergence survey	20:30hrs: 12.7° C 21.00hrs: 11.2° C 21.30hrs: 10.5° C 22.00hrs: 10.3° C 22:30hrs: 9.9°C	Fine, dry with a light breeze	B1	A single common pipistrelle and unidentified bat were recorded potentially exiting building via open pitching holes. Common pipistrelles were recorded flying in and out of the pitching holes.
				B1a	No bats were seen to emerge from this building.
				B2	No bats were seen to emerge from this building.
				B3	No bats were seen to emerge from this building.
04/06/2015	Dawn re-entry survey	02:45hrs: 5.0°C 03.30hrs: 4.3° C 04.00hrs: 4.8° C 04:30hrs: 5.8° C	Fine, calm and dry	B1	Common pipistrelles were recorded flying in and out of the pitching holes. On one occasion one common pipistrelle flew into the barn and was recorded flying in the loft void. On another occasion, two common pipistrelles were recorded flying in the loft void.
				B1a	No bats were observed to enter this building.
				B2	No bats were observed to enter this building.
				B3	No bats were observed to enter this building.
16/06/2015 - 23/06/2015	AnaBat Data	N/A	N/A	B1	Contacts from brown long-eared, Myotis sp., noctule, common pipistrelle, soprano pipistrelle and pipistrelle sp. were recorded during this period. Many of these calls were considered to originate from outside of the building. Pipistrelle and Myotis calls were the most consistently numerous. Some of the Myotis calls were considered to be Natterer's bat.

C.8 Interpretation/evaluation of survey results

Count/estimate of bat numbers

Building 1 supports roosting by a small number (up to 10) of common pipistrelles and (up to 5) of Natterer's bats. Due to the number of bats observed it is considered that this is a small non-maternity summer/day roost.

Status of site

The number of bats observed and the distribution of droppings indicate that the site is used during the summer and autumn. Bats were observed in May and June 2015 and also in September 2014 by Wildbanks Conservation. No surveys have been conducted during the winter, however there was no evidence to suggest that the buildings would support hibernating bats.

The 2014 Wildbanks Conservation surveys indicated that bats were observed exiting buildings B1 and B2. Similarly small numbers of bat droppings were observed in buildings B2 and B3. The droppings found at B3 in 2014 comprised 3 droppings on an external window ledge and so could have been the result of a flying bat and do not necessarily indicate roosting. No evidence of bats using buildings B2 and B3 was recorded during the 2015 surveys. No DNA analysis was conducted as part of the 2014 survey effort.

Roost significance

These are small numbers of common pipistrelle and Natterer's bats. Both of these species are common/widespread in North Wales, and can both be broadly classified as crevice dwelling bats and so require suitable roosting features. However Natterer's often prefer loft voids as they frequently light sample before emerging.

Constraints

The three separate visits to buildings B1, B1a, B2 and B3 were carried out by CES over a period of two months but can only provide a 'snapshot' of bat activity in those particular weather conditions over that period.

D IMPACT ASSESSMENT

D.1 Short term impacts: disturbance

If the conversion of buildings B1 and B2 was to proceed without any mitigation measures and an appropriate timescale for the works in place, the bats (potentially present at the time) could be disturbed during site preparation works, e.g. removal of materials to be salvaged.

D.2 Long-term impacts: roost modification

Not applicable.

D.3 Long-term impacts: roost loss

If the development were to proceed without any mitigation measures in place the bat roosts on the site would be destroyed (possibly with the bats in

residence if done during May - October), therefore bats could be killed or injured.

D.4 Long term impacts: fragmentation and isolation

Were the development to proceed without the any mitigation measures in place there would still not be a loss of linear features in respect of this particular development as there are no plans to remove any hedgerows, trees or extensive areas of vegetation within the grounds of Wallington Farm. The loss of the bat roosts, however, could be important to populations in the vicinity as it is not known if there are any alternative or similar roost sites within the local area.

D.5 Post - development interference impacts

In the absence of mitigation there could potentially be post-development impacts upon bats at the site in terms of increased external lighting around the site and potentially building B3 being fully available for use by people which would lead to disturbance if any bats were using the loft area above the storage area; although bat access into this building would potentially be unavailable/limited in the absence of mitigation.

Without mitigation in place the bat roost would be lost and not replaced. It is possible that there may be other roost sites at Wallington Farm but none of the other buildings have been surveyed as there are no current plans to develop them.

However, with appropriate mitigation the existing roost will be destroyed at an appropriate time of year when the bats are not in residence and an appropriate alternative roost site available before bats return to the site to roost.

Human access to the dedicated bat loft area will be restricted to an annual summer bat monitoring visit for two years following the completion of the development works.

Disturbance to building B3 will be minimal and access will not be allowed into the bat loft except for bat monitoring purposes.

D.6 Predicted scale of impact

If the development were to proceed without mitigation measures in place, there would be a negative impact on the status of the common pipistrelle and Natterer's bats at the site due to the loss of the roost.

The loss of this particular bat roost within the local area could also be important to bats in this area as it is not known if there are any alternative or similar roost sites in the vicinity of the site. The impact at the local level cannot therefore currently be estimated.

It is expected that the suitability of the surrounding habitat will not be materially altered; there should not be any long-term detrimental effects in a wider context in regard of this development.

DELIVERY INFORMATION - MITIGATION, COMPENSATION & MONITORING

E WORKS TO BE UNDERTAKEN

E.1 Bat capture and exclusion (if applicable)

- E.1.1 Prior to the conversion of buildings B1 and B2 the roof voids will be surveyed again for the presence of bats.
- E.1.2 If no bats are observed during these searches and the appointed ecologist is satisfied that no bats will be harmed, works will proceed carefully.
- E.1.3 In the event that bats are discovered during these searches, they will be allowed to relocate themselves overnight or caught by hand, where possible, and moved to the newly installed bat mitigation features (see E1.4 below).
- E.1.4 The pre-commencement survey of B1 and B2 may uncover, theoretically at least, the presence of hibernating bats. Works will avoid encountering torpid bats in roof structures by only working when temperatures have not dropped below 8° C over four consecutive days and nights, where practicable. If unavoidable, and a torpid bat is discovered, it will be taken into care and fed until such times when conditions are suitable and the bat will then be released into a hibernation bat box (Schwegler 1WQ) which will have previously been erected on building B3. It must be stressed that this will be an unlikely situation dictated by exceptional circumstances.
- E.1.5 Bats will only be handled by appropriately trained licensed bat workers and gloves will be worn for health and safety reasons.
- E.1.6 If the bats are unable to be caught because they are too deep in cracks and crevices, the roost will be left partially exposed to encourage the bats to disperse naturally overnight. Works will be postponed in the roost areas until the bats have all relocated either by themselves or through the actions of the licensed bat worker.
- E.1.7 Once all bats have dispersed naturally or been removed, disturbing works will commence in the original locations of the relocated bats to stop re-entry. It should be emphasised that only relatively small numbers of bats have ever been found on this site so the likelihood of significant bat disturbance is low.
- E.1.8 Before commencing any work on site in bat sensitive areas, 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.
- E.1.9 Where necessary, the roofs of buildings B1, B2 and B3 will be carefully stripped by hand of the existing tiles and ridges, thereby minimising any potential risk to bats. The removal of tiles and ridges will be carried out under the supervision of the appointed ecologist or their accredited agent. In the unlikely event that bats are accidentally

discovered during these operations then the procedures detailed above will be adopted.

E.1.10 In the unlikely event that bats are found that are accidentally injured, appear unhealthy, or require sustenance during building works, they will be taken immediately by the licensed ecologist to the RSPCA Wildlife Hospital at Nantwich; this wildlife hospital in Cheshire is experienced in caring for injured or sick bats.

E.1.11 The conversion works of buildings B1 and B2 can then commence. If during these unsupervised works, a bat or bats are subsequently discovered all work will cease immediately and CES Ecology will be contacted for advice. This requirement would be included in the site induction given to the contractors by the appointed ecologist.

E.2 Bat roosts and habitat

E.2.1 In-situ retention of roost/s

Not applicable.

E.2.2 Modification of existing roost

Not applicable.

E.2.3 New roost creation (including bat houses and bat boxes)

The mitigation proposal is based on providing alternative roosting accommodation in an adjacent building B3. The building has a gable-ended, pitched roof which currently does not have a loft void. The proposals involve boarding out the roof void in order to provide a dedicated 'bat loft'. It will have a loft floor installed. The overall height of the building is 5.75m, and the 'bat loft' will measure 11.5m by 5.2m with a height of 2.0m. Refer to Figure E2.5c.

The loft void will be dedicated to bat usage and no storage or access by the owners will be allowed. An access hatch will be provided to allow monitoring inspections by bat workers. The hatch will have a padlock to restrict access by unauthorised personnel, including the owners. A sign will be put on the hatch saying "No Access - Protected Bat Roost".

The dimensions of the proposed bat loft will be 11.5m by 5.2m and 2.0m high. The loft roof will be lined with traditional Type 1F hessian backed bitumen roofing felt and NOT a modern roof lining or breathable roof membrane.

Bats will be able to enter the designated roof void in building B3 via four 15mm x 25mm access slots and a pitching hole measuring 400mm in diameter in each gable end. Additionally, three ridge tile access points will be provided in the mortar along the ridge (three on each roof face) and three lead tile saddles (three on each roof face) will be provided to allow access into the loft by bats, as shown in appended plans and shown in Ridge Tile Access Detail 4B and Bat Access 'Slate' 1B in Figs. E.2.3a and E.2.3b.

There will be **no external lighting around this building.**

Within the roof void, four wooden bat boxes will be fixed to beams/purlins to offer enclosed roosting sites for bats. If new bitumen roofing felt is to be used, it will be cut on three sides in several places to create 40mm by 60mm holes at several levels down from the ridge. The cut felt will be left to hang. If the existing roof felt is to be retained, this was observed to have suitable gaps at the time of survey and so the above actions would not be required. This will allow bats to roost in the felt/slate interface and will provide features for both roof void dwelling/flying bats (Natterer's) and crevice dwelling bats (pipistrelles).

Additionally, Habibat bat boxes will be built into the brickwork at each gable end of the converted buildings (B1/B2) and B3, totalling five bat boxes. The Habibat bat box can be incorporated into the fabric of a building under renovation as it is the width of one standard UK brick (refer to Figure E2.5b).

If the roof works on buildings B1 and B2 involve installing a roof lining, this should be Type 1F hessian-backed bitumastic roofing felt. Whilst it is not proposed to create specific access points for bats into the roof of these apartments, installation of a breathable/modern roofing membrane is considered to pose too much of a risk to bats in the medium to long term; overtime it is possible that crevices in the roof (tiles, ridge tiles, soffits etc) may occur.

Lighting around the site

Some of the bats found on site like pipistrelles feed on insects that are attracted to artificial lighting. However, other species of bat such as Natterer's, which roost on site, generally avoid artificial light. Lighting is considered to be particularly harmful if used near hedgerows and buildings used by bats, and bat usage of these features is well demonstrated on the Wallington Farm site. In view of the above there will be no external lighting around the dedicated bat roost in building B3 or natural features used by bats for commuting and foraging, including tree lines and hedges. Generally speaking any lighting will be kept to a minimum and be low level downward pointing in keeping with the rural location and reduction in light pollution.

E.2.4 Maintenance and/or modification of new and existing habitat

Habitat management and maintenance proposed specifically for bats will involve the maintenance of future access to new and retained roost sites/features.

The existing major flight lines and habitat connectivity at the site will be retained. New hedgerow planting of native species will be implemented to the west of B2, in order to create an enclosed garden area for this property (refer to Figure E.2.5a).

E.2.5 Scaled maps/plans

Drawings showing details of buildings B1, B2 and the proposed dedicated bat loft in B3 are appended to this document (Figs. E.2.5a, E.2.5b & E.2.5c).

E.3 Mechanism for ensuring delivery of mitigation and compensation measures

E.3.1 The Applicant, with the assistance of the appointed ecologist, will ensure that the mitigation measures are implemented and that the monitoring work is carried out. This will ensure that a high standard of work is maintained both during and following the proposed works. Monitoring data will be compiled on an annual basis by the appointed ecologist and sent to Natural Resources Wales as part of the 'End of Licence Return' procedure.

E.3.2 Costs for the population monitoring visits have already been provided by CES Ecology and approved by the Applicant. Payment for these population monitoring visits will be collected by CES Ecology upon receipt of the Natural Resources Wales licence, (i.e. population monitoring will have been paid for in advance).

E.3.3 To ensure the long-term future of the dedicated bat loft within building B3, a covenant will be included as part of any future Sale Agreement to ensure that any new owners are aware of the existence of the loft, that disturbance to the bat loft is minimised and that access for population monitoring purposes can still be carried out.

E.3.4 Human access to the bat loft will be restricted to the population monitoring visits.

E.3.5 The licence application form has been signed by the Applicant to agree that the mitigation measures proposed will be implemented to protect the bats, before, during and post-development, to maintain the favourable conservation status of the species.

E.4 Mitigation contingencies

No contingency plans have been proposed.

E.5 Bio-security Risk Assessment

All site workers will be given a toolbox talk prior to the commencement of works which will advise workers about the risk of rabies and so to avoid handling bats, wherever possible. If this is not possible, workers must wear thick leather gloves to avoid being bitten. The risk of this is considered to be low.

F POST-DEVELOPMENT SITE SAFEGUARD

F.1 Habitat/site management and maintenance

The site is surrounded by farmland under the ownership of the Applicant. There are no known changes to this land and it is therefore expected to remain unchanged for the foreseeable future. The Applicant intends to

continue to live in the adjacent farmhouse and will utilise the ground floor of building B3 for storage. Buildings B1 and B2 will be rented out as holiday accommodation. In order to ensure the long term future of the dedicated bat loft, a covenant will be included as part of any future Sale Agreement to ensure that any new owners are aware of the existence of the loft, that disturbance to the bat loft is minimised and that human access to the bat loft for the purposes of bat population monitoring can still be carried out.

F.2 Population monitoring, roost usage etc.

F.2.1 A monitoring hatch (locked at all times) will be built into the ceiling of building B3 to enable monitoring visits to be made by a licensed bat worker once a year for a period of two years. The property owners will hold the key. There will be no other access into the loft area (except for those designed for bats). The loft area will not be used for storage.

F.2.2 Annual monitoring visits will be carried out during the summer (between May and July). The appointed ecologist will conduct the monitoring visits at a time agreed between the ecologist and the property owner.

F.2.3 During the population monitoring visits, the appointed ecologist or their accredited agent will visually search for evidence of bat activity during a daytime inspection. Emphasis will be given to searching bat boxes, cracks, crevices and cavities between the batons for evidence of bat usage in the dedicated bat loft. A dusk emergence survey of building B3 will be conducted by the appointed ecologist and one assistant during the summer months

F.2.4 A powerful hand torch, pen torch and fibre-optic endoscope (if required) will be used for illumination of large areas, cracks and crevices. Ladders will also be used to access the loft from the ground floor of the building. The appointed ecologist and assistant will use heterodyne portable bat detectors during the emergence surveys.

F.3 Post-development mitigation contingencies

The mitigation strategy details the proposed roosting sites and features which will be erected/incorporated into the existing buildings to accommodate a number of bat species. No further action is considered necessary and/or likely to increase the suitability of the post-development site for bats.

F.4 Mechanism for ensuring delivery of post-development works

The mitigation site is to be located within the footprint of the existing farm and will remain in the ownership of the Applicant. There are no plans at present for the Applicant to sell the converted barns (B1 and B2) (and associated storage building the bat loft (B3)). The Applicant intends to continue living in the existing farmhouse and will rent the converted barns out as holiday lets.

To ensure the long-term future of the dedicated bat loft within building B3, a covenant will be included as part of any future Sale Agreement to ensure that any new owners are aware of the existence of the loft, that disturbance to the bat loft is minimised and that access for population monitoring purposes can still be carried out.

G TIMETABLE OF WORKS

- G.1 The starting date for the works is dependent upon the issuing of the NRW licence; conversion works of buildings B1 and B2 will not commence until the licence has been obtained and these buildings declared free of bats by the appointed ecologist (February/March 2016).
- G.2 The intention is to conduct the works on the new bat loft during January and February 2016, ensuring that the new bat loft will be in place by early March, prior to the commencement of conversion works of buildings B1 and B2. All roofing/external works will be complete by the end of April (i.e. the building should be well sealed and unsuitable for bats). Internal conversion works can be done thereafter, as bats should no longer be associated with these buildings.

Table A: Development activities and timing

Activity	Timing	Notes
Conduct pre-commencement bat survey of B3 and, (if the building is considered by the appointed ecologist to be free of bats), works can commence. Install Schwegler 1WQ bat box on B3.	January - February 2016	Any tile and ridge removal/roof works in 'bat sensitive areas' will be conducted under the supervision of the licensed bat ecologist and/or their accredited agent.
Install dedicated bat loft and two Habibat boxes in B3. Install 4 wooden bat boxes on the beams/purlins in bat loft in B3.	January - February 2016	Bat boxes will be installed under the supervision of the licensed bat ecologist. Appointed ecologist and/or accredited agent to confirm that dedicated bat loft area is suitable (i.e. all 'bat features' have been provided).
Conduct pre-commencement bat survey of B1/B2 and, if the building is considered by the appointed ecologist to be free of bats), works can commence.	February - March 2016	Any tile and ridge removal/roof works in 'bat sensitive areas' will be conducted under the supervision of the licensed bat ecologist and/or their accredited agent.
Conversion of B1 and B2 including installation of three Habibat boxes.	February - March - April 2016	The conversion works are expected to take no more than 8 -10 weeks.

Table B: Post-development monitoring

Year	2016	2017
Details	Internal inspection of dedicated bat loft within the roof void of B3 including the four bat boxes during the summer months. An emergence survey of B3 by the appointed ecologist and one assistant during the summer months.	Internal inspection of dedicated bat loft within the roof void of B3 and the four bat boxes during the summer months. An emergence survey of B3 by the appointed ecologist and one assistant during the summer months.

H LAND OWNERSHIP – MITIGATION SITE/COMPENSATION SITE

H.1 Mitigation Site/Compensation Site Ownership

The mitigation site is currently located adjacent the existing farmhouse, within the Wallington Farm area, and in the ownership of the Applicant.

H.2 Mitigation Site/Compensation Site Ownership post-construction

The mitigation site is to be located within the footprint of the existing farm and will remain in the ownership of the Applicant. There are no plans at present for the Applicant to sell the existing farmhouse, proposed holiday apartments (and associated storage building containing the bat loft). The Applicant intends to continue living in the existing farmhouse.

I REFERENCES

BCT (2012). Hundt L. Bat Surveys: Good Practice Guidelines, Second Edition, Bat Conservation Trust.

J ANNEXES

J.1 Pre-existing survey reports:

- CES Wallington Farm, Worthenbury Bat Survey Report (2015)
- Wildbanks Conservation Wallington Farm, Worthenbury Bat and Breeding Bird Survey Report (2014)

J.2 Appended maps, figures, plans, designs:

- C.4a, C.4b, E.2.3a, E.2.3b, E.2.5a, E.2.5b, E.2.5c.

Annex J.1: Pre-existing survey reports

- **Wallington Farm, Worthenbury – CES Bat Survey Report(2015)**
- **Wallington Farm, Worthenbury – Wildbanks Conservation Bat and Breeding Bird Survey Report (2014)**

**WALLINGTON FARM, WORTHENBURY,
WREXHAM -**

BAT SURVEY & MITIGATION STRATEGY

JULY 2015



ces ecology
consultant ecologists

**WALLINGTON FARM, WORTHENBURY,
WREXHAM**

**BAT SURVEY &
MITIGATION STRATEGY (JULY 2015)**

Author:  **Date:** 07/07/2015

Compiled by:  **Date:** 08/07/2015

Checked by:  **Date:** 08/07/2015

JULY 2015

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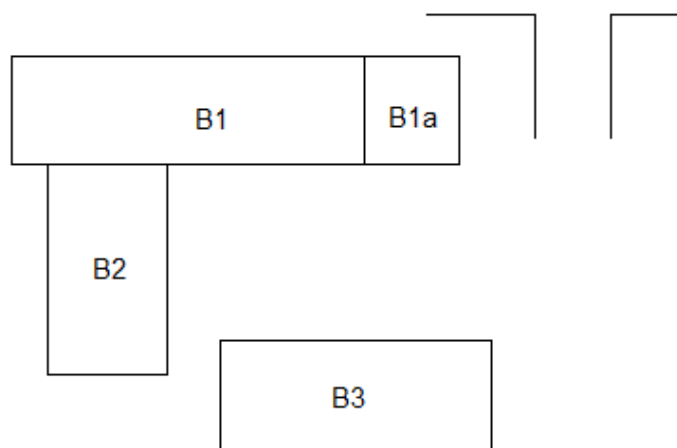
Appendix 1: Site Location Plan

1.0 INTRODUCTION

- 1.1 An updated bat survey was commissioned to be conducted at Wallington Farm, Worthenbury, Wrexham LL13 0AN.
- 1.2 The Ordnance Survey grid reference for the site is SJ 41331 45121 (refer to Appendix A – Site Location Plan).
- 1.3 Plans have been proposed to convert the barns into residential units.
- 1.4 Bat surveys have previously been conducted on 4th September 2014 by Wildbanks Conservation. A daytime search of the affected buildings was undertaken and an evening emergence survey carried out on the same day.
- 1.5 Evidence of bat roosting was found in the form of bat droppings in all three buildings but particularly in Building 1 (the main two storey barn loft area).
- 1.6 Emerging bats were also noted in the evening leaving from four different locations on two of the buildings. The species identified were common pipistrelle (*Pipistrellus pipistrellus*) and an unidentified myotis species (*Myotis sp.*).
- 1.7 In total ten bats were seen emerging – seven common pipistrelles and three myotis.
- 1.8 As the above surveys were conducted in September the timing, whilst adequate to confirm presence/absence, was not optimum to fully establish the type of bat roost present.
- 1.9 In view of this further dusk emergence and dawn re-entry surveys were recommended to be conducted in the optimum period of mid-May to mid-August.
- 1.10 This report details the findings of those further surveys carried out in May and June 2015 by CES Ecology. In view of this it should be read in conjunction with the previous survey report from Wildbanks Conservation dated September 2014.

Site Description

- 1.11 The site comprises three brick built slate roofed buildings as shown in the diagram below.



Simplified diagram of building layout

- 1.12 **Building 1 (B1)** was a two storey traditional barn with a single storey corrugated metal roofed attached workshop (B1a). The two storey building had an unlined slate roof.



- 1.13 **Building 2 (B2)** had an unlined slate roof, was single storey and there was no roof void.



- 1.14 **Building 3 (B3)** had a slate roof lined with bitumen/hessian traditional sarking felt.



Surrounding Habitat

- 1.15 The surrounding habitat is farmland given over mainly to stock grazing.



- 1.16 There were short managed hedgerows with occasional hedgerow trees.

Aims of the Survey

- 1.17 To confirm the presence of bats following the 2014 surveys and to identify the type of roost, numbers and species present.
- 1.18 To assess the impact the proposed development may have on the populations of bats that are present within the site.
- 1.19 To recommend any actions that may be required resulting from the above.

Surveyor details

- 1.20 The survey was conducted by Mike Freeman. He is a professional wildlife consultant specialising in bats, badgers and birds. He has been a licensed bat worker since 1984 and a licensed bat worker trainer since 1989. He has been chairman of the Cheshire Bat Group since its formation in 1986 and is a voluntary Bat Warden for Natural England. He is an Associate member of the Chartered Institute of Ecology and Environmental Management (ACIEEM).
- 1.21 Assistance for the dusk and dawn surveys was given by three experienced surveyors including a second licensed bat worker.

2.0 LEGAL PROTECTION FOR BATS

- 2.1 All UK bats and their roosts are protected by law which gives strong legal protection to all bat species and their roosts. For all countries in the UK the legal protection may be **summarised** as follows:

You will be committing a criminal offence if you:

- 1. Deliberately* capture, injure or kill a bat
- 2. Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats
- 3. Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time)
- 4. Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat
- 5. Intentionally or recklessly obstruct access to a bat roost even if bats are not present at the time

*(*In a court, 'deliberately' will probably be interpreted as someone who, although not intending to capture/injure or kill a bat, performed the relevant action, being sufficiently informed and aware of the consequence his/her action would most likely have).*

Defences include:

- 1. Tending/caring for a bat solely for the purpose of restoring it to health and subsequent release.
- 2. Mercy killing where there is no reasonable hope of recovery (provided that person did not cause the injury in the first place – in which case the illegal act has already taken place).

Penalties on conviction – the maximum fine is £5,000 per incident or per bat (some roosts contain several hundred bats), up to six months in prison, and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.

NB. Whilst the protection afforded to bats is virtually the same in all UK countries please refer to the specific legislation for England and Wales, Scotland and Northern Ireland for the precise wording – the above is a brief summary only.

Licensing Procedures

Licences to permit illegal activities relating to bats and their roost sites can be issued for specific purposes by the relevant licensing authorities in each country. These are sometimes called 'derogation licences' or 'European Protected Species' licences. It is an offence not to comply with the terms and conditions of a derogation licence. If you carry out work affecting bats or roosts without a licence, you will be breaking the law.

In the case of development works three tests must all be satisfied before the relevant licensing authority can issue a licence:

1. A licence MAY be granted *'to preserve 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'*.
2. A licence may NOT be granted UNLESS the licensing authority is satisfied *'that there is no satisfactory alternative'*.
3. A licence CANNOT BE ISSUED unless the licensing authority is satisfied that the action proposed *'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'*.

2.2 The following people need to take particular note of the legislation:

Property owners/householders who have a bat roost in their property;
Woodland owners/managers & owners of individual trees;
Arboriculturalists & foresters;
Pest controllers;
Planning officers;
Building surveyors;
Architects;
Property developers;
Demolition companies;
Builders;
Roofers;
Ecological consultants.

3.0 BATS IN BUILDINGS

- 3.1 Buildings provide a choice of safe, dry places made from materials like timbers, bricks, stone, tiles and slates.
- 3.2 Buildings present a whole range of potential roost sites for bats e.g.: -
In walls:

- Behind external hanging tiles or weatherboarding
- In cavity spaces
- At top of solid walls

In eaves:

- Above soffit, or behind fascia and barge boarding

In roofs:

- In tunnel under ridge tiles
- Between underfelt and tiles or slates
- In roof space along ridge beam and at timber joints, at gable end or around chimneybreast.

- 3.3 The most obvious use of buildings by bats is between May and August, when the pregnant females gather in maternity roosts to give birth and raise their young.
- 3.4 Females and young often remain in one site all summer or move about using several roosts.
- 3.5 Most summer colonies will have dispersed by the autumn, though brown long-eared (*Plecotus auritus*) bats often appear early in the year (early April) and leave later (October or later). These bats occasionally use the roost throughout the entire year.
- 3.6 Buildings may also be used as temporary or “transitional roosts” by small numbers of adult and immature bats of both sexes, particularly in spring and autumn.
- 3.7 Many outbuildings are attractive to bats for temporary night-time roosts or as sheltered feeding perches. The latter are indicated by the presence of a lot of insect remains, particularly of moths or large beetles and some droppings.
- 3.8 Cool, undisturbed, humid places are important as hibernation sites. Most species will tuck themselves into small crevices e.g. between bricks/stonework, and can easily pass the winter there unnoticed.
- 3.9 Bats are usually concealed in crevices, behind roofing felt, in cavity walls, behind soffits and barge boards, in old timber joints or under ridge tiles and are only occasionally seen out in the open in lofts. Consequently, the key identification feature is the presence of droppings. Sometimes droppings may be found on the outside of buildings e.g. on windows, walls or windowsills. On other occasion's droppings found in loft spaces beneath ridge-boards and around chimneys or gable ends is also typical of bats. Hibernating bats leave little or no field signs.
- 3.10 Bats are sometimes drawn to open water tanks in lofts in search of a drink. They fall into the tank, cannot get out and eventually drown. Dead bats are often found in these 'open' tanks in roof spaces where bats habituate.
- 3.11 Another clue to the presence of bats is a characteristic odour. A polished or clean surface near a place where light enters may also indicate habitual usage by bats. Sometimes bats can be heard “chittering” but this is usually in warm summer weather or when they are about to leave the roost to forage at dusk.

- 3.12 The species most commonly occurring in buildings (usually modern houses in summer) are two of the pipistrelle species (*Pipistrellus pipistrellus*, *Pipistrellus pygmaeus*). These highly gregarious small bats use buildings for breeding during the summer and, in general, the bats disperse during the autumn. They often roost behind soffits, in cavity walls or behind external cladding. In such cases droppings are often found on external surfaces below the roost entrance/exit. The most likely place to find droppings in the roof void are at the gable end wall and along the eaves. In some cases, the bats may roost beneath ridge tiles, on top of the ridge beam or under insulation close to the eaves. Pipistrelles are frequently found overwintering deep in the cracks, crevices and cavities of usually uninhabited buildings (e.g. barns) and in such cases they leave little or no field signs.
- 3.13 The brown long-eared bat is one of the most common species in Britain and is the one most likely to be encountered in roof voids and may occasionally be seen clinging on to timbers near the apex of the roof. Like the pipistrelle, highest numbers may be seen on hot days between June and September when breeding colonies may be present. During the autumn and in cool weather, bats remain concealed in crevices or hollow walls but may appear on mild days or if disturbed. Brown long-eared bats tend to fly around in the open roof void and hang from the ridge during the night, so droppings are usually found scattered over the floor or concentrated in piles beneath favoured roosting areas, typically beneath the ridge beam. In hipped roofs, piles of droppings may also be found in the junction between two hips.
- 3.14 A number of other species - serotine (*Eptesicus serotinus*), greater horseshoe bat (*Rhinolophus ferrumequinum*) and lesser horseshoe (*Rhinolophus hipposideros*) are dependent on roofs but only the latter is found locally in the area, though there has been the occasional record of serotine in the North West.
- 3.15 Whiskered (*Myotis mystacinus*), Brandt's (*Myotis brandtii*), Natterer's (*Myotis nattereri*) and Daubenton's (*Myotis daubentonii*) bats may be present in the area and may be found in roofs but they are not particularly common in such sites. Roosting position is variable but they will be found in the same sorts of places as other species.
- 3.16 There are six different types of bat roost (A M HUTSON 1993)
- (i) Spring gathering roosts
 - (ii) Maternity roosts
 - (iii) Mating roosts
 - (iv) Night roosts and feeding roosts
 - (v) Prehibernal roosts
 - (vi) Hibernation roosts

Bats regularly move from site to site even within the above categories.

4.0 METHODOLOGY

- 4.1 The buildings were searched internally and externally for evidence of bat usage as detailed in Section 3.0 above.
- 4.2 Ladders, a powerful hand lamp and a fibre optic endoscope were used as aids.
- 4.3 Four observers also undertook one dusk and one dawn survey.

- 4.4 Each observer was equipped with a portable tuneable heterodyne bat detector as a means of locating and identifying flying bats.
- 4.5 Additionally an AnaBat static bat detector was placed in the loft area of B1 from 16/6/15 to 23/6/15. This recorded bat activity between these dates.
- 4.6 Samples of bat droppings were taken from two areas of the loft of B1. These were then sent to The University of Warwick School of Life Sciences for DNA analysis to positively identify the species involved.

5.0 TIMING OF THE SURVEY

- 5.1 The daytime and dusk survey was conducted on the 12th May 2015.
- 5.2 The weather during these surveys was dry with a strong breeze in the early part but dying down later.

TIME (HRS)	TEMP (° C)
18.30	16
20.30	12.7
21.00	11.2
21.30	10.5
22.00	10.3
22.30	9.9

- 5.3 The dawn survey was conducted on the 4th June 2015.
- 5.4 The weather was clear at first but 20% cloud cover later, and calm but relatively cold for the time of year.

TIME (HRS)	TEMP (° C)
02.45	5.0
03.30	4.3
04.00	4.8
04.30	5.8

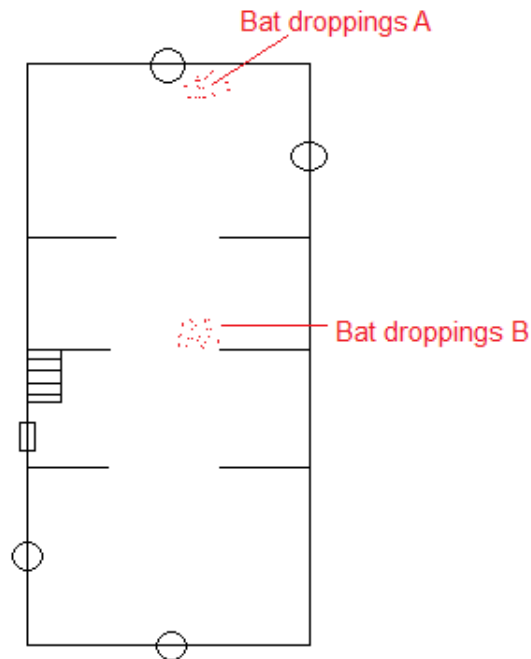
6.0 LIMITATIONS OF THE SURVEY

- 6.1 Some areas of the loft of B1 had an unsafe floor and so ladders were not used to closely inspect the underside of the roof (due to concerns that the floor was not suitable to support ladders).
- 6.2 Areas of B3 between the slates and bitumen felt lining could not be accessed.
- 6.3 The temperatures on the dawn survey were un-seasonally cold but as is shown there was still significant bat activity.

7.0 RESULTS

Building 1 (B1)

- 7.1 Bat droppings were found in mainly two areas of the loft as shown in the diagram below.



Simplified diagram of loft area of B1 showing location of bat droppings

- 7.2 Samples of these bat droppings were taken from both areas A and B and were sent to Warwick University for DNA analysis to identify to species.



- 7.3 The location of these droppings corresponds to the locations where droppings were found in the September 2014 survey.

- 7.4 There are a number of potential roost sites in these loft areas particularly in timber peg holes, slots, cracks etc.



- 7.5 Entry/exit sites are through open pitching holes but also potentially through slipped slates.



Building 2 (B2)

- 7.6 This area has no loft void and an unlined slate roof.



- 7.7 The walls are covered in old whitewash but there are cracks and crevices where bats could potentially roost particularly pipistrelles in winter.



- 7.8 However, no evidence of recent bat usage was found at the time of this daytime survey.

Building 3 (B3)

- 7.9 This building has a bitumen/hessian traditional roofing felt and therefore a potential roost site for bats between the felt and roof slates above. There are a number of tears in the felt making potential roost sites for bats.



- 7.10 Other potential roost sites were in roofing timber 'slots' and peg-holes' and cracks in internal brickwork.

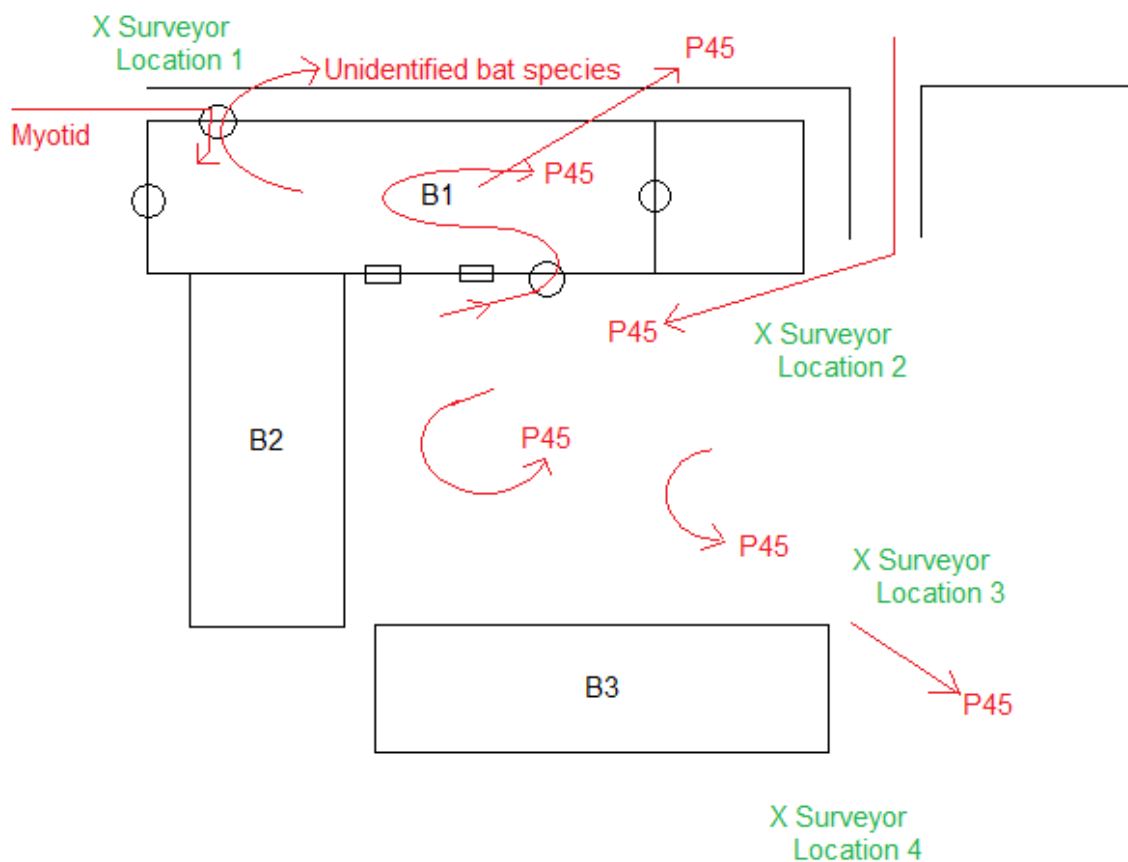


- 7.11 Potential entry points were through open doors and pitching holes and through broken or slipped slates and ridges.



- 7.12 As with B2 however, no evidence of recent bat usage was found at the time of this survey.

Dusk Emergence Survey



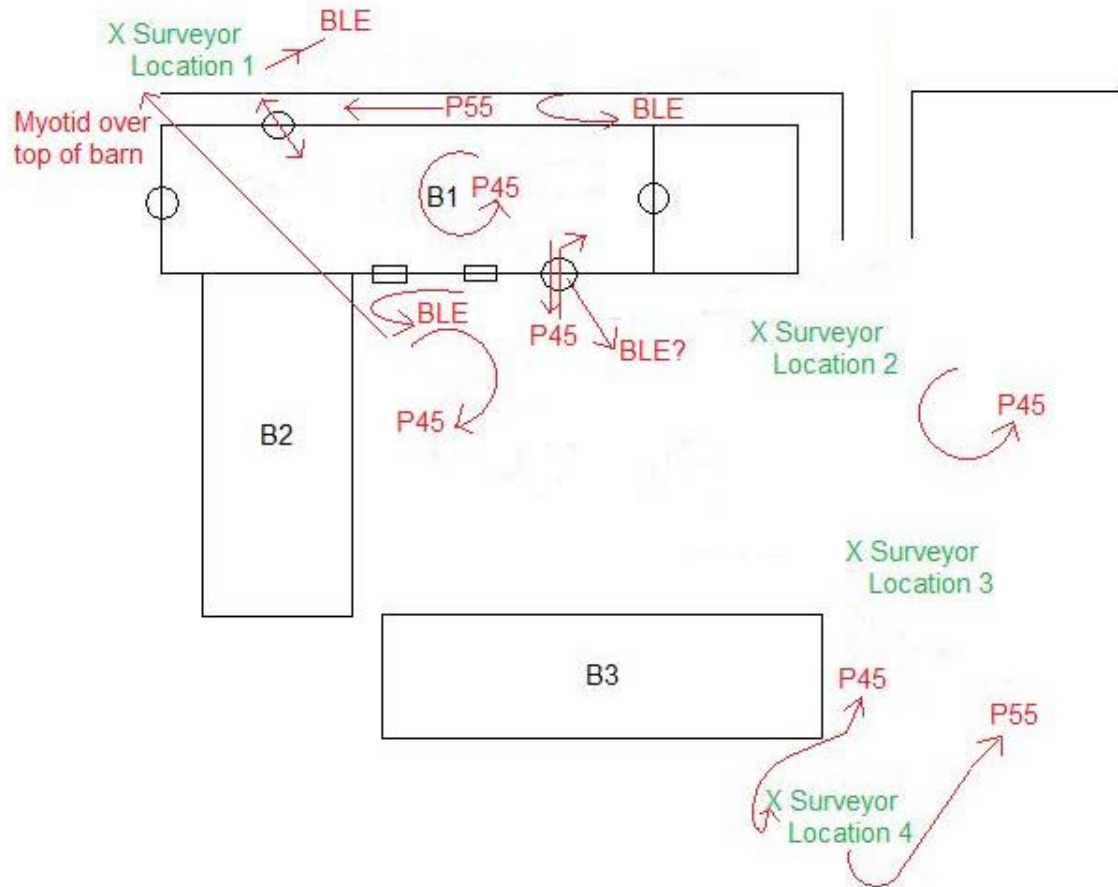
Simplified diagram of Bat Activity around barns on evening of 12/05/15

- 7.13 Bat activity noted around the building on the evening emergence survey mainly consisted of common pipistrelles (P45) and a single myotis sighting. An occasional soprano pipistrelle (P55) was also recorded.
- 7.14 A noctule was noted but this was not associated with the building.
- 7.15 Common pipistrelle were noted in the barn loft area but it is unclear if the bats identified had flown in from outside or were roosting in there. On at least one occasion a common pipistrelle was seen to fly in and out again through the pitching holes.

TABLE OF BAT SIGHTINGS, TIMINGS AND COMMENTS

TIME	SPECIES	OBSERVER NO.	COMMENTS
21.07	Soprano Pip	2	Heard not seen
21.08	Soprano Pip	2	Heard not seen
21.11	Unidentified	1	Flew out of pitching hole of B1
21.24	Soprano Pip	3	Heard only
21.25	Common Pip	2	Heard only
21.29	Common Pip	1	Flew into pitching hole and out a few times in B1
21.29	Soprano Pip	4	Heard only
21.30	Common Pip	2	Foraging over farmland
21.31	Noctule	2	Heard only
21.31	Common Pip	1	Flew out of pitching hole Building B1
21.34	Common Pip	3	Foraging over farmyard
21.34	Noctule	1	Heard overhead
21.36	Common Pip	1	Possibly emerged from ridge/roof tile
21.36	Common Pip	1	Flying in and out of pitching holes B1
21.36	Common Pip	2	Flies into B1 via pitching hole
21.36	Common Pip	3	Foraging over farmyard
21.42	Common Pip	4	Flew by building B3
21.42	Common Pip	2	Inside loft area of B1 flying around
21.42	Common Pip	3	Foraging over farmyard
21.45	Common Pip	1	Foraging around outside of barns
21.54	Common Pip	3	Foraging around farmyard
21.55	Common Pip	1	Foraging around outside of barns
21.56	Myotis	1	Flew towards barn and possibly into loft
21.59	Common Pip	2	Inside loft area of B1
22.01	Common Pip	1	Possibly flew out of gable end pitching hole of B1
22.03	Common Pip	4	Nearby B3
22.18	Common Pip	4	Nearby B3

Dawn Re-Entry Survey



Simplified diagram of bat activity dawn re-entry 04/06/15

- 7.16 As with the dusk survey a few weeks earlier, bat activity on the dawn survey consisted mainly of common pipistrelles (P45) with occasional contacts with soprano pipistrelle (P55), brown long eared (BLE) and a myotis species (MYOTID).
- 7.17 Common pipistrelles were seen inside the barn, flying around, with two at the same time on one occasion.

TABLE OF BAT SIGHTINGS, TIMINGS AND COMMENTS (DAWN 04/06/15)

TIME	SPECIES	OBSERVER NO.	COMMENTS
02.55	Pipistrelle Sp.	3	Heard only.
03.00	Brown Long Eared?	2	Possible came out of B1 pitching hole?
03.01	Myotis	1	Faint call heard only
03.04	Common Pip	2, 3 & 4	Flying around yard area.
03.08	Brown Long Eared	4	Flying into yard from front corner of house.
03.11	Bat Sp.	1	Flying over yard behind B1. No call detected.
03.17	Soprano Pip	4	Flying around gable end of B3.
03.19	Common Pip	3	Heard only.
03.20	Common Pip	2	Flew out of pitching hole of B1.
03.25	Brown Long Eared?	1	Flying near ivy on side of barn. Possibly gleaning.
03.26	Soprano Pip	1	Flew in front of B1 left to right.
03.26	Common Pip	1	Flew in front of B1 left to right.
03.27	Common Pip	2 & 3	Flew out of pitching hole of B1.
03.27	Pipistrelle Sp.	4	Heard only.
03.28	Common Pip	3	Heard only briefly.
03.30	Myotis	1	Flew over B1 into field behind.
03.36	Common Pip	1	Flew over B1.
03.37	Common Pip	2	Flies in and out of pitching hole B1.
03.37	Common Pip	3	Heard only.
03.38	Myotis	1	Heard only.
03.38	Common Pip	4	At gable end B3.
03.39	Common Pip	3	Heard only.
03.40	Common Pip	2	Flies in and out of pitching hole B1.
03.40	Bat Sp. (BLE?)	2	Flies around pitching hole. No sound detected.
03.40	Common Pip	3	Heard only.
03.43	Brown Long Eared?	1	Flew by observer, close proximity, no sound detected.
03.45	Soprano Pip	4	2 bats flying around gable end of B3.
03.46	Common Pip	1	Flying around side of B1.
03.46	Common Pip	2	Enters B1 via pitching hole.
03.47	Common Pip	3	2 bats at gable end of B3.
03.51	Common Pip	1	Foraging along lane behind barn.
03.51	Common Pip	1	Flies into pitching hole B1.
03.52	Common Pip	4	Flew across farmyard.
03.53	Common Pip	1	Flew in and out pitching hole B1.
03.53	Common Pip	3	Flew around farmyard.
03.54	Soprano Pip	4	Heard only.
03.55	Common Pip	1	Foraging along lane behind barn.
03.55	Common Pip	2	Flies into pitching hole B1.
03.55	Common Pip	3	Heard only.
03.56	Common Pip	1	Landed on raised tile of B1 but flew off again.
03.56	Common Pip	3	Heard only.

TIME	SPECIES	OBSERVER NO.	COMMENTS
03.57	Common Pip	2	Flew into pitching hole B1.
03.58	Common Pip	2	2 bats foraging around yard.
03.59	Soprano Pip	4	Flies towards yard.
04.00	Common Pip	2	Flew into pitching hole B1.
04.01	Common Pip	1	Flew in and out pitching hole B1.
04.01	Common Pip	3	Around farmyard.
04.04	Common Pip	1	Foraging along lane behind barn.
04.04	Common Pip	4	Flew towards farmyard.
04.07	Common Pip	3	Around farmyard.
04.08	Common Pip	1	Flew over roof of B1.
04.09	Soprano Pip	4	Flew towards yard.
04.13	Common Pip	1	Flew in and out pitching hole B1.
04.15	Common Pip	2	1 entered B1 and 1 bat flying inside loft.

Results of the DNA analysis of droppings found in B1 loft

- 7.18 Sample A belonged to COMMON PIPISTRELLE.
- 7.19 Sample B belonged to NATTERERS BAT.
- 7.20 Natterer's bat was therefore the likely myotis species picked up on the heterodyne bat detectors by various surveyors during the dusk emergence and dawn re-entry survey.

Results of the AnaBat data from loft area of B1

Date	16-Jun	17-Jun	18-Jun	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	Total	%
BLE	10	16	1	112	3	0	11	14	167	13.31%
Myotis	13	30	11	48	17	14	40	30	203	16.18%
Noctule	0	0	1	0	0	1	1	0	3	0.24%
P45	30	23	20	26	1	0	51	28	179	14.26%
P55	1	15	0	7	2	1	7	19	52	4.14%
Pip sp	130	78	68	100	77	54	72	72	651	51.87%
Total	184	162	101	293	100	70	182	163	1255	100%

Notes:

- Vast majority of calls appeared to originate from outside of the building as sound files were very pixilated/unclear.
- Pipistrelle calls with a peak frequency of 49-51 Hz have been recorded as Pip Sp.
- Analysis of Myotis bat calls to species level is notoriously difficult, and was particularly so in this case due to the poor pixilation of the majority of the calls. However, some of the myotis calls were indicative of Natterer's bat due to the steep slope concentrated around 1k.

8.0 DISCUSSION

- 8.1 Roosting by a small number (8-10) of common pipistrelles and (3-5) Natterer's bats has been confirmed, in B1 by a number of different survey techniques.
- Two daytime surveys
 - DNA analysis of droppings
 - Two dusk emergence and one dawn re-entry surveys
 - AnaBat survey inside barn
- 8.2 No further roosting evidence was found in either B2 or B3 but in the September 2014 survey the junction corner of B1 and B2 was found to be an emergence point.
- 8.3 As well as the accumulations of bat droppings found in B1 in both September 2014 and June 2015 a few bat droppings were also found in September 2014 in buildings B2 and B3.
- 8.4 No bat droppings were found in B2 or B3 at the time of the June 2015 survey.

9.0 IMPLICATIONS AND RECOMMENDATIONS

- 9.1 As roosting by both common pipistrelles and Natterer's bats has been confirmed then a licence will be required from Natural Resources Wales before any disturbing works can take place on this site.
- 9.2 A licence will be required to cover both building B1 and B2 development and conversion to residential as proposed.
- 9.3 A full mitigation strategy (including timings) will be required for a licence application but the following summary describes the general mitigation strategy. ***This strategy should therefore be used to annotate the current development proposals so that drawings indicate the proposed bat roost features etc. At the licence application stage, detailed plans of the access tiles etc will be required.***

Outline mitigation proposal

- 9.4 It appears from the plans supplied (Drawing numbers 1 to 7) that the two storey barn (B1) and single storey barn (B2) will be fully converted into apartments and there will be no roof voids below the pitched slate covered roofs.
- 9.5 Both Natterer's bats and common pipistrelles can be broadly classed as crevice dwelling bats with regard to their roosting habits and requirements.
- 9.6 However, common pipistrelles do not normally require light-sampling areas whereas Natterer's bats are known to have abandoned barns after conversion, probably because insufficient 'indoor' flight opportunities were provided i.e a loft void.
- 9.7 In view of this, it would be preferable if a roof void of sufficient dimensions could be provided to offer such 'light sampling' facilities. As there are no plans for a roof void to be provided in B1 and B2 it is proposed to providing such an area in B3. Current

proposals for this building include essential repairs and use as a general storage building.

- 9.8 Provision of 'bat loft' area over B3 will provide a good opportunity for compensation for both Natterer's bats and common pipistrelles if the whole roof void can be boarded out to provide a dedicated bat loft. It already contains a number of suitable roost sites e.g. between the lining felt and roof slates and 'slots', 'peg holes' and shrunken mortice joints in the roofing timbers. The latter sites are favoured by Natterer's bats in particular. This should be augmented by the provision of a minimum of 4 wooden bat boxes secured onto the beams/purlins.
- 9.9 Access into the roof void will be made at the gable ends via slots and small circular 'pitching' holes, sufficient in size to permit effective light-sampling flight by Natterers bat.
- 9.10 Direct access to the slate/roofing felt interface will be provided by lead saddles/raised slates/and/or raised ridges.
- 9.11 Habitat Bat Boxes will be built into the brickwork at either gable end of the renovated building (B1/B2) and the general storage building (B3). The Habitat Bat Box can be incorporated into the fabric of a building under renovation as it is the width of one standard UK brick.
- 9.12 If for any reason, it is necessary to replace any of the roofs lining, it is important that Type 1F bitumen roofing felt is used. Under no circumstances should modern roof lining/breathable roof lining be used as this is known to kill and injure bats.
- 9.13 Works on the affected buildings should ideally be conducted between October and May of any year, which is outside the main breeding season.
- 9.14 The above is only an outline strategy for the purposes of the planning application and will need to be finely detailed when a licence application is made.

10.0 CONCLUSION

- 10.1 Common pipistrelles and Natterer's bats have been shown to roost in B1 and potentially in B2 and B3.
- 10.2 A licence from Natural Resources Wales will be required before any works commence that affects these buildings.

Appendix A: Site Location Plan



Legend

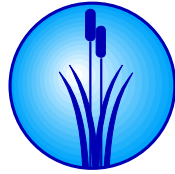
- B1 = Building 1**
- B2 = Building 2**
- B3 = Building 3**

Client:	Doreen Manning	
Project:	Wallington Farm, Worthenbury	
Map:	Site Location Plan	
CES Ref:	CES/1176/07-15/LO	
Scale:	Not to scale	
Date/Rev:	July 2015	0

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Bickley Hall Farm
Bickley
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Cheshire
SY14 8EF





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Bickley Hall Farm
Bickley, Malpas
Cheshire SY14 8EF

Tel: 01948 820229

Email: info@ces-ecology.co.uk
Web: ces-ecology.co.uk

Wallington Farm, Wallington Lane, Worthenbury

Bat and Breeding Bird Survey Report

September, 2014

Produced by  Wildbanks
Conservation

www.wildbanksconservation.com

C O N T E N T S:

- 1.0 Introduction
- 2.0 Survey Methodology
- 3.0 Results
- 4.0 Discussion
- 5.0 Recommendations

Appendices

- A1 Site Photographs - Plates 1 – 12
- A2 Relevant Legislation and Planning Policy in Relation to Bat Species

Figures

- 1 Site and Building Plan with flight routes, Target Notes and roost locations

1.0 INTRODUCTION

- 1.1 Mrs Manning commissioned Wildbanks Conservation to undertake a breeding bird survey and bat assessment of outbuildings at Wallington Farm, Worthenbury, in support of a planning application to carry out major refurbishment and re-roofing of the buildings. This report details the findings of external and internal building assessments as well as the results of an emergence survey completed in September, 2014.
- 1.2 The application site comprises two farm outbuildings on Wallington Lane near Worthenbury (OS grid reference SJ 41331 45121). The property is situated 1.95km east of Bangor on Dee and 9.1km south east of the centre of Wrexham. On site habitat comprise buildings, hard-standing, hedgerows, trees, lawn and landscaped gardens. The site is part of a working dairy farm and is adjacent to a number of large steel agricultural buildings surrounded by pasture and arable land.
- 1.3 The proposed development will see both barns fully renovated into residential properties. Works to all areas of the buildings will take place including roof, walls and windows/doors

2.0 SURVEY METHODOLOGY

Desktop Study

- 2.1 A review of the Multi-Agency Governmental Information for the Countryside (MAGIC) website was undertaken within 1km of the development site to identify any sites with statutory nature conservation designations. A number of non-statutory nature conservation bodies were also contacted for existing ecological records. These included:

- National Biodiversity Network

Internal/ External Building Assessment

- 2.2 The exterior of the building was visually assessed for potential access points and evidence of bat activity. Features such as small gaps under barge/soffit/fascia boards, raised or missing roof/ridge tiles and gaps at gable ends, which have the potential for use as access points, were sought. Evidence that bats actively used these potential access points would include staining within/under the gaps, or bat droppings; a note being made wherever these were present. The presence of cobwebs and / or general detritus within and around potential access points was used as an indicator that bats had not recently used the area to access the building.
- 2.3 The interiors of the building, including roof voids where present, were also visually assessed for evidence of bat activity and/or for the potential to be used by bats. Evidence of a roost was determined by the presence of dead or live bat(s), concentrated piles or scattered droppings, food remains such as insect wing fragments as well as scratch marks and/or staining.
- 2.4 The survey was conducted by one licensed bat ecologist and one assistant on the 4th September, 2014.

Nocturnal Survey

- 2.5 During the internal and external building assessment, evidence of use by bats and associated features that had the potential to offer roosting opportunities was identified. It was determined that the buildings provided high/moderate potential as a possible bat roost. As such, a dusk emergence survey was undertaken on the building on the 4th September 2014 to determine whether any bats were roosting within the building. To complete this assessment two ecologists (one licensed and one trainee bat ecologist) were positioned around the building to ensure all aspects

of the building could be fully observed. The surveys were conducted following BCT guidelines, 2012.

2.6 The emergence survey was undertaken on 4th September 2014 when weather conditions were suitable i.e. mild, calm and dry. Batbox Duet bat detectors connected to digital WAV recorders were used during this survey to aid species identification.

2.7 September is within the main activity season for bats but outside the main survey season to assess maternity roosts. Consequently, the nocturnal survey has been undertaken on the building during the optimal survey period to confirm the presence or likely absence of a bat roost but not to fully establish the type of bat roost present

Other Protected Species

2.8 During the surveys, consideration was also given to other protected or notable species, in particular but not restricted to barn owls (*Tyto alba*) and other nesting birds.

RESULTS

Desktop Study

- 3.1 There is one statutorily protected site within 2km of the application site. The River Dee SAC and SSSI is located 1.78km north west of the survey site. The site is designated as such due to it being a water course of plain to montane levels with its habitat characterised by an abundance of water crowfoots (*Ranunculus* spp.) and water starworts (*Callitriche* spp).
- 3.2 No locally designated sites are within 2km of the application site.
- 3.3 NBN Gateway holds a number of records of common pipistrelle bats within 2km of the application site.

Internal/ External Building Assessment (Figure 1 and Plates 1- 5)

- 3.4 The outbuildings at Wallington Farm are one and two storey barns of brick construction with slate tile covered roofs (Plates 1,2,4 and 5). A small extension building B1b (Plate 3) exists as a one storey shed of brick construction with a corrugated tin sheet roof painted black. Surrounding habitat comprised a farm courtyard of hard-standing, gardens laid to lawn with semi-mature trees and agricultural buildings. The development site is within a rural setting and surrounded by pasture and arable fields with managed hedgerows forming field boundaries.
- 3.5 Table 1 below details the full results of the building assessments. The results of the survey are summarised below.
- 3.6 The buildings have been split up into distinct sections so that they can be assessed separately for their bat roost potential. Please refer to Figure 1: Site and Building Plan
- 3.7 Building B3 is not part of the development proposal but is within 2m of building B2 and is of the same construction and in a similar condition to buildings B1 and B2. The owner of the property also mentioned anecdotally the potential presence of bats within building B3. It was therefore decided that the building be assessed for bat roost potential and observed during the emergent survey.

3.8 Building B1a (Plates 1 and 2)

Building B1a is a two storey, red brick barn with three rooms on the ground floor used as storage and livestock sheds, with the upper floor being open plan and used as storage. Evidence of recent bat occupation was observed throughout the first floor of building B1a. At one location (TN1) within the first floor an accumulation of over 50 bat droppings was found beneath potential access points within a brick supporting wall. Another accumulation of around 30 bat droppings was observed in the south eastern corner of the building scattered on a piece of blue plastic (Plate 7). Occasional bat droppings were also observed on the internal walls throughout the upper floor as well as one bat dropping in the gap within a purlin timber. No evidence of bat occupation was found within the ground floor of Building B1a.

3.9 Building B1b (Plate 3)

Building B1b is a single storey, red brick extension on to the eastern gable end of B1a comprising one room that is currently used as a tool and machinery store. No evidence of bats was found within the building or on the external walls of the building.

3.10 Building B2 (Plate 4)

Building B2 is a single storey red brick barn with four rooms, previously used as livestock sheds. Five bat droppings were found in building B2 on an interior dividing wall (TN3) and a further 3 droppings found at TN4 adhered to the interior wall. Potential bat access points included broken windows, open doors and gaps within ridge tiles

3.11 Building B3 (Plate 5)

Building B3 is a red brick outbuilding with a slate tiled roof. Large oak trusses hold up the roof and underfelt is present (Plates 11 and 12). Three bat droppings were found on the external window frame and window ledge of building B3 (TN5). The glass is missing from the windows, allowing access and they are located on the northern aspect of the building, facing in to the courtyard.

Bldg. Ref. No.	Building Construction/Description.	Structural Features								Potential Bat Access Points/Evidence of Bats Observed	Internal Features	Potential as a Bat Roost Site/Comments
		Gables	Barge Boards	Soffit Boards	Fascia s	Flashing	Roof Void	Sarking	Underfelt			
B1a	Two storey double brick wall built outbuilding with pitched slate tiled roof. Hand sawn oak timbers throughout roof void. Floor between storeys constructed from machined timbers. Used for storage Plates 1, 2, 6 & 8	✓	×	×	×	×	×	×	×	Gaps beneath ridge tiles and beneath occasional raised slate tiles allowing access in to the first floor. Feature holes built into brickwork. Two large circular window holes with no glass present. Cracks in external brickwork and masonry and around second storey doors. No evidence of bat presence observed externally.	The upper floor is one open area with four windows and numerous holes present allowing a lot of light to penetrate. No underfelt or sarking was present on the roof and 90 % of the underside of the slate tiles could be inspected. Brick walls extend to support the roof Purlins run the length of the roof and are double beams with gaps in between. Gaps where rafters meet purlins in roof void. Height to ridge 3.5 - 4m.	High/moderate potential to support a maternity bat roost or regularly used roost. High potential to be used as an occasional roost by individual bats. Low potential to be used as a hibernation roost Bat droppings were observed in two large accumulations (TN 1 & 2) within the first floor as well as scattered throughout internal walls and on artefacts stored on the floor. Numerous roosting opportunities exist within the walls and in and around the timbers of the roof Numerous swallows nests were present and sparrows were also observed Some light ingress was present into the first floor due to four windows

Bldg. Ref. No.	Building Construction/Description.	Structural Features								Potential Bat Access Points/Evidence of Bats Observed	Internal Features	Potential as a Bat Roost Site/Comments
		Gables	Barge Boards	Soffit Boards	Fascia s	Flashing	Roof Void	Sarking	Underfelt			
B1b	One-storey, double brick wall built outbuilding with tin sheeting roof painted black. Abutting eastern gable end of B1a. Hand sawn timbers throughout roof void Plate 3	✓	✗	✗	✗	✗	✗	✗	✗	Gaps between the wall plate and the metal roof on the Eastern external wall. Open door. No evidence of bats found	Used as a workshop and tool/machinery store. Double brick wall – potential spaces in between brick work. Height to ridge 3.5 - 4m.	Negligible potential to support either a maternity or regularly used roost and low potential to be used as an occasional roost by individual bats. Negligible potential to be used as a hibernation roost Unobstructed southern aspect will allow the outbuilding to heat up during warm weather due to the presence of a black metal roof, lowering the potential for use by bats. Swallows active within the building and nesting throughout.

Bldg. Ref. No.	Building Construction/Description.	Structural Features								Potential Bat Access Points/Evidence of Bats Observed	Internal Features	Potential as a Bat Roost Site/Comments
		Gables	Barge Boards	Soffit Boards	Fascia s	Flashing	Roof Void	Sarking	Underfelt			
B2	One-storey, double brick wall built outbuilding with pitched slate tiled roof. Hand sawn oak timbers throughout. Abutting the south western corner of building B1 Plates 4, 9 & 10	✓	✗	✗	✗	✗	✗	✗	✗	Holes in external brick work under guttering and on the wall plate where. Access into the rooms via open stable doors. Open and/or smashed windows on the western elevation of the building Scattered bat droppings present on internal walls.	Double brick wall – potential spaces in between brick work. Open roof void with large timbers, gaps between timbers Gaps where rafters meet purlins in roof void. Underfelt present providing gap beneath tiles. Height to ridge 3.5 - 4m.	Moderate potential to support a maternity bat roost or regularly used roost. Moderate potential to be used as an occasional roost by individual bats. Low potential to be used as a hibernation roost Eight bat droppings found scattered on internal walls (TN 3 & 4) Some light ingress due to windows in each room. Numerous sparrows and swallows observed and nesting in the building

Bldg. Ref. No.	Building Construction/Description.	Structural Features								Potential Bat Access Points/Evidence of Bats Observed	Internal Features	Potential as a Bat Roost Site/Comments
		Gables	Barge Boards	Soffit Boards	Fascia s	Flashing	Roof Void	Sarking	Underfelt			
B3	One-storey, double brick wall built outbuilding with pitched slate tiled roof. Hand sawn oak timbers throughout roof void with large truss structure and underfelt present. Plates 5, 11 & 12	✓	✗	✗	✗	✗	✗	✗	✓	Holes in external brick work under guttering and under the underfelt in the roof void. One large window smashed entirely on northern aspect. Three bat droppings found externally on the smashed window frame and window ledge.	Double brick supporting wall in the middle of the building with opportunities for bats in between the brick work and mortar. Large oak timber truss supporting roof with gaps in wood joins. Gaps where rafters meet purlins in roof void. Mice heard running between underfelt and slate tiling in roof void.	Moderate potential to support a maternity bat roost or regularly used roost. Moderate potential to be used as an occasional roost by individual bats. Low potential to be used as a hibernation roost No evidence of bat use inside, but some bat droppings found near open window externally (TN5). Numerous swallows observed and nesting in the building

3.12 Table 2: Classification of roost potential of building sections within the property

Building Section	Potential as a maternity or regularly used roost	Potential as an occasional roost by individual bats	Potential as a hibernation roost
B1a	High/moderate	High	Low
B1b	Negligible	Low	Negligible
B2	Moderate	Moderate	Low
B3	Moderate	Moderate	Low

Nocturnal Survey

- 3.13 Weather conditions during the emergence survey undertaken on 4th September 2014 were optimal with a light breeze (beaufort 3) and no rain, cloud cover 2 octare and an ambient air temperature of 16°C. The survey started at 19:30 and concluded at 21:35. Sunset was at 19:55.
- 3.14 The first bat detected was a Common Pipistrelle at 19:58, this bat was observed flying in a westerly direction over building B1a (Route 1 on Figure 2) and arrived from off site. Common Pipistrelles were then frequently seen flying and foraging around the courtyard and along Wallington Lane adjacent to building B1a until the survey finished at 21:35.
- 3.15 Ten bats were seen emerging from buildings B1a and B2 during the survey, the first emerged at 20:12 (14 minutes after sunset) and the final bat emerging at 20:35 (37 minutes after sunset). Seven of these being Common Pipistrelles and three of them being suspected *Myotis* species. A more detailed chronology of the bats that emerged is given in table 3.
- 3.16 It is not possible to confirm the presence of a *myotis* species, but it is suggested that a *myotis* species is present based upon the size of bat droppings found within the building, the size of the bat seen emerging and subsequently flying over the surveyor in close proximity, the sound of the call and the later emergence time of 37 minutes after sunset. The echolocation call has been analysed but the pass was brief and the bat was in close proximity to the building. As a Pipistrelle's call can sound very similar to that of a *myotis* bat in a cluttered environment (such as flying within or close to a building), it was not possible to confirm it was a myotis bat or establish down to species level what *myotis* bat is present. Further surveys will be required to confirm the species present.

3.17 Table 3: Summary of emergence times and roost location

Emergence location	Time	Species	Quantity	Building Number
1	20:12	Common Pipistrelle	2	B1a
2	20:14	Common Pipistrelle	1	B2
2	20:18	Common Pipistrelle	1	B2
1	20:21	Common Pipistrelle	1	B1a
3	20:24	Common Pipistrelle	2	B1a
4	20:33	Myotis species	2	B1a
4	20:35	Myotis species	1	B1a
Location Description				
Location 1	Area above the top of the single blue door on the first floor (Plate 1)			
Location 2	Behind the guttering (Plate 2)			
Location 3	Behind timber cladding above doorway where it joins the roof (Plate 4)			
Location 4	Unconfirmed roost location as bats flew out of large open window from first floor. The window is in close proximity to accumulation of droppings at TN 1. (Plate 1)			

Other protected species

3.18 No evidence of other protected or notable species was recorded during the Visual Assessment. Evidence of nesting birds was noted within all buildings – swallows and sparrows observed in each building.

Tree Assessments

3.19 The application site comprises buildings and hard-standing with lawn gardens. None of the trees on site provided potential roosting habitat for bat species, furthermore they are of a significant distance away from the proposed development works to be unaffected.

3.20 No trees are to be lost or pruned to accommodate this development.

Constraints to survey

3.21 Some areas of the buildings and features with the potential to be used by bats could not be fully checked during the internal and external surveys, these included areas behind the timbers of the roofs, behind the underfelt and areas of buildings that could not be accessed due to collection of farm equipment. During the emergence survey, surveyors were able to cover all of the areas that could not be fully accessed during the Visual Assessment.

DISCUSSION

- 4.1 During the Visual Assessment and Emergence Survey conducted on the 4th September 2014 evidence of bat activity was found and ten bats were seen emerging from buildings B1a and B2.
- 4.2 Two accumulations of droppings were observed within the first floor of building B1a. Roosting opportunities within the brick wall existed directly above these accumulations. Within the droppings both older and fresh droppings were observed. These droppings were considered to be reasonably large in size indicating that a bat larger than *pipistrellus* sp. is present. Eight bats were seen emerging from building B1a at locations 1, 2 and 4. The bats recorded emerging from B1a were seven common pipistrelle (*Pipistrellus pipistrellus*) bats and three suspected *myotis* species of bat.
- 4.3 Further surveys are required to confirm whether species other than common pipistrelle are roosting within building B1a.
- 4.4 Eight bat droppings were found in building B2 scattered on internal walls. Potential bat access points included numerous broken windows on the western elevation and open doors. Various internal roosting opportunities existed (Plate 10) and two Common pipistrelle bats were seen emerging from location 3.
- 4.5 Three bat droppings were found on the external window ledge of building B3. The window is located on the northern aspect of the building, facing the courtyard and has no glass, allowing unobstructed access into building B3. Various internal roosting opportunities existed (Plate 12). No confirmed roosts were identified.
- 4.6 Bat activity in the vicinity of the site was considered to be fairly average given the habitats within and adjacent to the site.
- 4.7 It is considered that the level of survey effort undertaken is insufficient to fully assess the identified bat roosts. As such further surveys are recommended to establish the size and status of the roosts present. At this time insufficient information is therefore available to prepare a proportionate mitigation strategy to minimise any potential impacts of development.
- 4.8 Swallows and house sparrows were seen nesting within all buildings. All bird species are protected whilst on the nest under The Wildlife & Countryside Act 1981 (as amended). As such it is recommended that any works to the building is undertaken outside the bird breeding season (March – September inclusive). However, if this is

not possible any windows, doors or walls to be affected should be checked by a suitably qualified and experienced ecologist to confirm absence of any breeding birds prior to the works.

RECOMMENDATIONS

- 5.1 It is recommended that detailed bat assessments should be undertaken on buildings B1 and B2. Such surveys should comprise, but may not be limited to, at least one further Emergence Survey and one dawn return to roost survey in 2015. Nocturnal assessments should be undertaken during the recommended survey season of between May – September and during favourable weather conditions which comprise overnight temperatures of 10°C or above and little to no wind or rain.
- 5.2 It is likely that a European Protected Species Licence will be sought from Natural Resources Wales once three nocturnal surveys have been carried out, in order to facilitate the proposed development. These three nocturnal surveys would include the survey conducted in September 2014. This licence will comprise an appropriate mitigation and compensation strategy to ensure that no bats are harmed during the works and to maintain the species at a favourable conservation status in the long term. Full planning permission must be in place prior to submission of the EPS licence
- 5.3 Swallows and house sparrows were seen nesting within all buildings. All bird species are protected whilst on the nest under The Wildlife & Countryside Act 1981 (as amended). As such it is recommended that any works to the building are undertaken outside the bird breeding season (March – September inclusive). However, if this is not possible any windows, doors or walls to be affected should be checked by a suitably qualified and experienced ecologist to confirm absence of any breeding birds prior to the works.

A1 APPENDIX – SITE PHOTOGRAPHS – PLATES 1 - 8

A1.1 Plate 1 – Southern elevation of building B1a



A1.2 Plate 2 – Northern elevation of building B1a



A1.3 **Plate 3** – Building B1b southern elevation



A1.4 **Plate 4** – Eastern elevation of Building B2



A1.5 **Plate 5** – Northern elevation of Building B3



A1.6 **Plate 6** – Building B1a, first floor roof structure



A1.7 **Plate 7** – Bat droppings at TN2 within Building B1a



A1.8 **Plate 8** – Example of potential roost location within Building B1a



A1.9 **Plate 9** – Building B2, roof structure



A1.10 **Plate 10** – Potential roosting opportunities within Building B2



A1.11 **Plate 11** – Building B3 roof structure



A1.12 **Plate 12** – Building B3 Roof structure and potential roosting features



A2 APPENDIX – RELEVANT LEGISLATION & PLANNING POLICY IN RELATION TO BAT SPECIES

Relevant Legislation

- A2.1 Due to recent declines in bat species' populations within the United Kingdom, all bat species and their roost sites in Britain are protected under the Wildlife and Countryside Act 1981 (as amended). They are also included on Annex IV of Council Directive 92/43/EEC of 21st May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (known as the Habitats Directive). As a result of the United Kingdom ratifying this directive, all British bats are protected under The Conservation of Habitats and Species Regulations 2010. Under this legislation it is an offence to intentionally kill, injure or capture or intentionally (or recklessly in England and Wales) disturb bats or obstruct access to, damage or destroy bat roosts.
- A2.2 Under the law, a bat roost is any structure or place used for shelter or protection e.g. a building, bridge or tree. Bats use many roost sites and feeding areas throughout the year and since they tend to re-use the same roosts for generations these sites are protected whether bats are present or not.
- A2.3 Any activity resulting in a contravention of the legislation described above would require a Natural England licence to avoid committing an offence. Natural England issue licences for the purposes of:
- “preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and benefit”.
- A2.5 The National Planning Policy Framework sets out how the planning system should contribute to and enhance nature conservation and the local environment. This is to be achieved through a combination of local planning policies as well as through the determination of planning applications with the aim of minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

A2.6 As such it is essential that the presence or otherwise of protected species, and the extent to which they are affected by proposals is established prior to planning permission being granted. Furthermore, where protected species are present and proposals may result in harm to the species or its habitat, steps should be taken to ensure the long-term protection of the species, such as through attaching appropriate planning conditions for example.

Natural Environment and Rural Communities Act 2006 (NERC Act)

A2.7 *Biodiversity: Section 40*

Under this legislation all local authorities have a legal duty to have regard to the purpose of conserving biodiversity (as defined in the Town and Country Planning Act (1990), Part 11). It also further refines the definition of biodiversity conservation, stating that it includes restoring or enhancing a population or habitat.

A2.8 *England: Section 41*

In England, this duty applies to any minister of the Crown and any government department and has specific reference to the Convention on Biological Diversity. However, Defra expects that the organisations affected will make reference to the lists of Habitats and Species of Principal Importance in England (produced under Section 41 of the NERC Act) when implementing the duty.

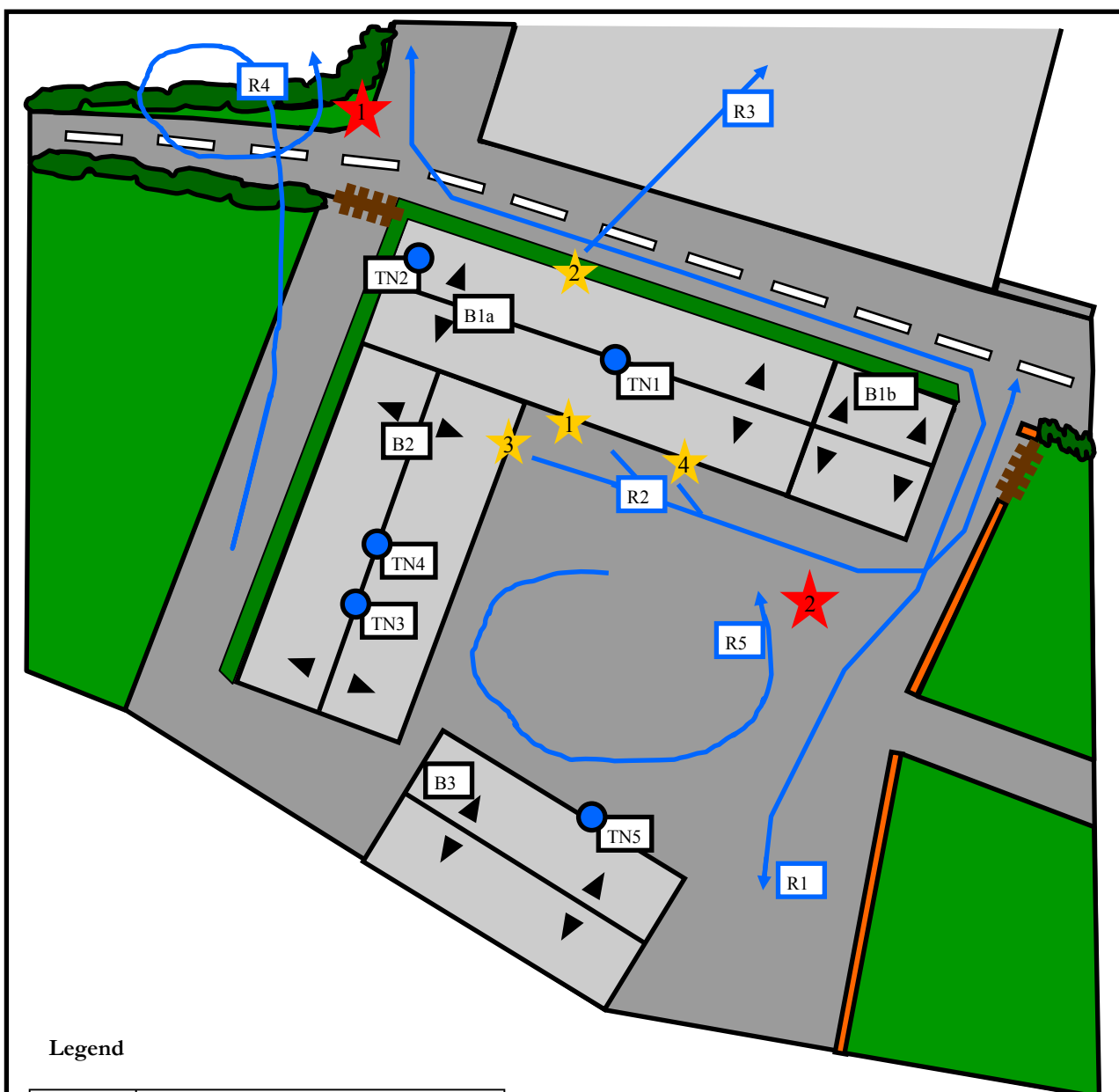
A2.9 Out of the eighteen bat species known to occur in the UK, seven of those species are listed as Species of Principal Importance, these include; Barbastelle bat *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum*, and lesser horseshoe bat *R. hipposideros*.

A2.10 Defra has produce guidance for local authorities on the implementation of biodiversity duty. This document echoes policies set out in Planning Policy Statement 9, the accompanying good practice guide and PAS2010. Of relevance to developers is that it encourages local planning authorities to:

- (i) provide screening advice to developers prior to the submission of a planning application;

- (ii) require relevant biodiversity information to be submitted with a planning application in order for the application to be considered valid;
- (iii) use of planning conditions and obligations to impose mitigation and enhancement measures if such measures are not included at an appropriate level in the development proposal;
- (iv) monitor the implementation of planning conditions and obligations relating to biodiversity conservation and to take action if these conditions are not met;
- (v) actively seek opportunities to enhance biodiversity, in addition to statutory requirements to protect designated sites, habitats and species.

A2.11 The guidance also suggests that planning obligations could be used to secure financial payments to ensure improved and ongoing management of nature conservation sites as mitigation for habitat loss within the development site.



Legend

	Point of bat emergence		Target Note –Accumulation of droppings
	Location of surveyor		Building with roof pitch and
	Flight path and route number		Hedgerow
	Lawn / grass field		Hardstanding
	Wall		

Wildbanks Conservation

The Old Smithy, 3 Wrexham Road, Overton-on-Dee, Wrexham, LL13 0DY
5 Auckland Drive, Halfway, Sheffield, S20 4TP

info@wildbanksconservation.com
www.wildbanksconservation.com

Project	Wallington Farm, Wallington Lane
Title	Figure 1: Site and Building Plan
Client	Mrs Doreen Manning
Date	4th September 2014
Ref.	WBQ14-016

Annex J.2: Appended maps, designs and plans

Figure C.4a – Site Location Map (OS)



Legend

Proposed Development Site Boundary

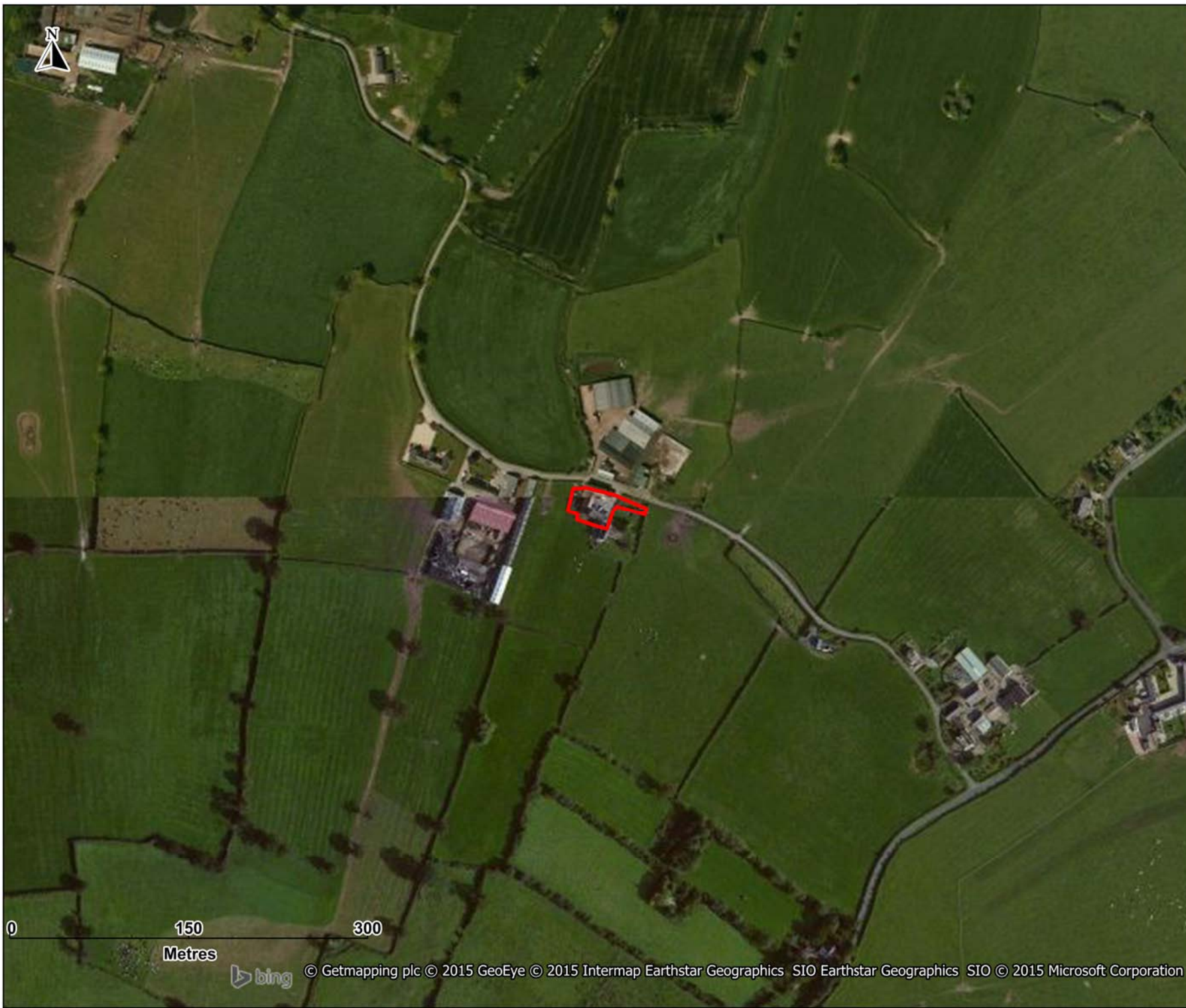
Client:	IT Manning & Partners	
Project:	Wallington Farm, Worthenbury	
Map:	Fig. C.4a - Site Location Map (OS)	
CES Ref:	CES/1176/12-15/NF	
Scale:	Not to scale / Indicative	
Date/Rev:	December 2015	0

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Figure C.4b – Site Location Map (Aerial)

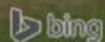


Legend

— Proposed Development Site Boundary

Client:	IT Manning & Partners	
Project:	Wallington Farm, Worthenbury	
Map:	Fig. C.4b - Site Location Map (Aerial)	
CES Ref:	CES/1176/12-15/NF	
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Figure E.2.3a – Ridge Tile Access Detail 4B

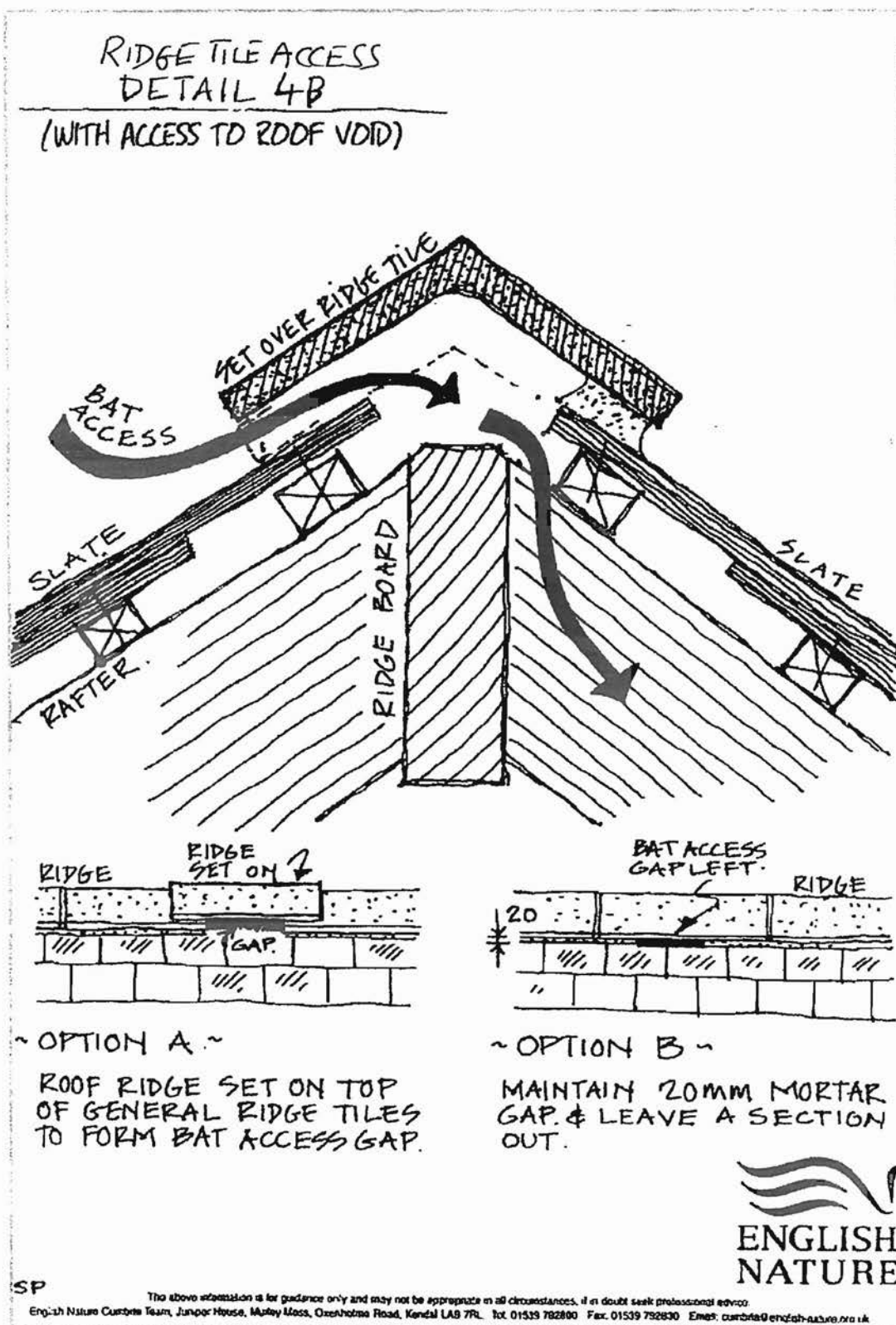
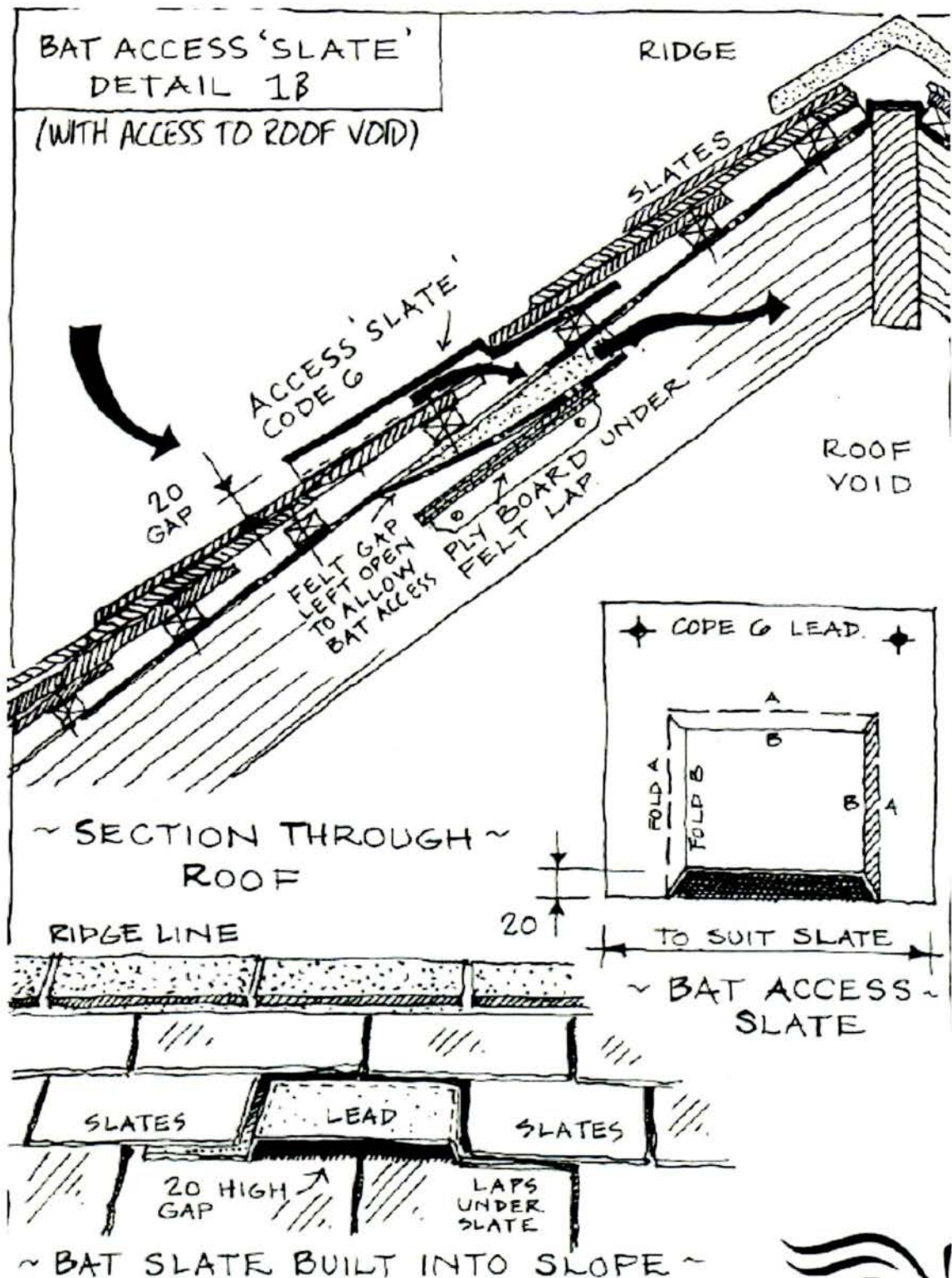


Figure E.2.3b – Bat Access ‘Slate’ Detail 1B

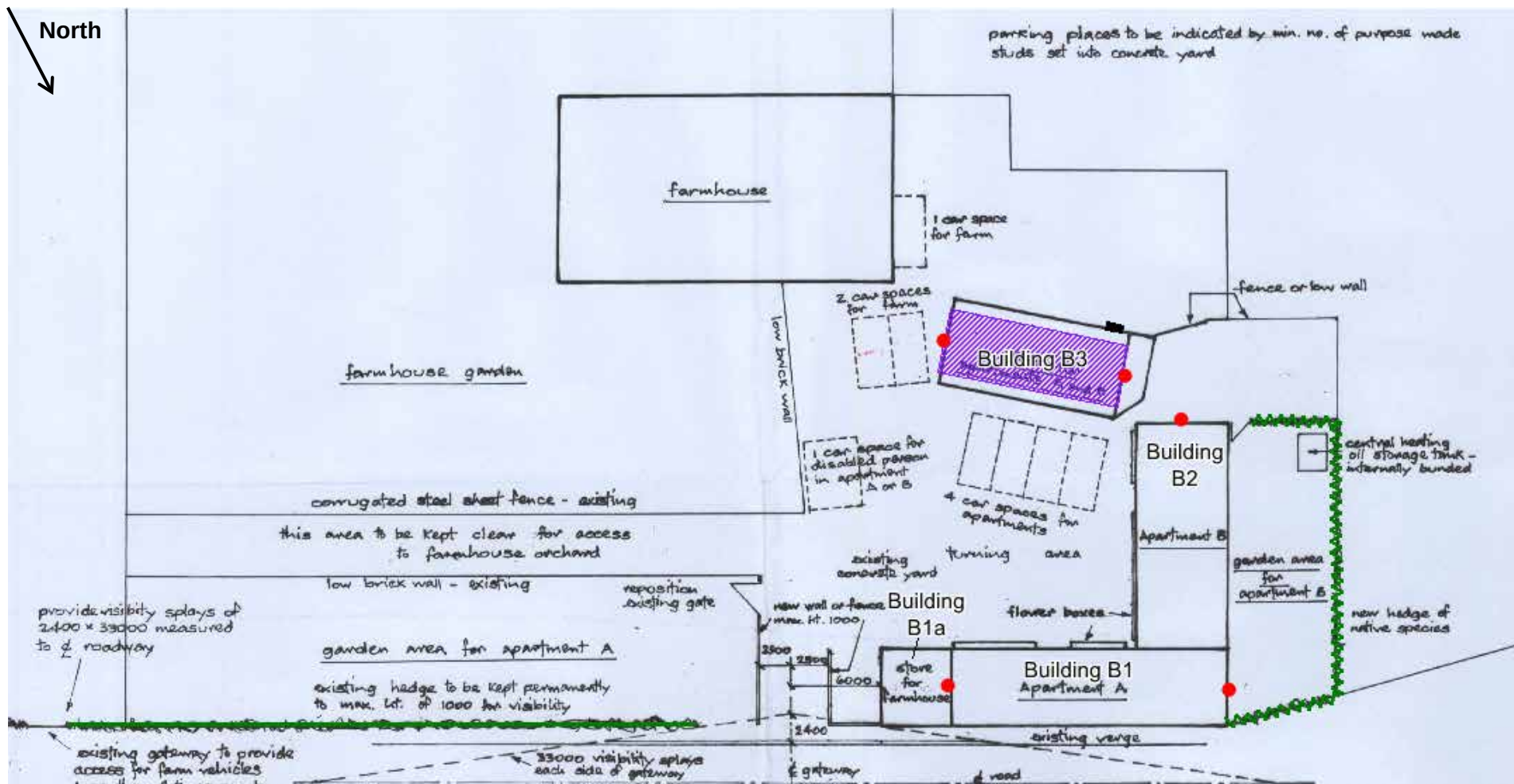


SP

The above information is for guidance only and may not be appropriate in all circumstances. If in doubt seek professional advice.
English Nature, Cumbria Team, Juniper House, Murey Moss, Overholme Road, Kendal LA9 7RL. Tel: 01539 792600 Fax: 01539 792630 Email: cumbria@english-nature.org.uk

ENGLISH
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Figure E.2.5a – Proposed Development Plan



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Client:	IT Manning & Partners
Project:	Wallington Farm, Worthingbury
Map:	E.2.5a - Proposed Development Plan
Revision:	-
Date:	December 2015
CES Reference:	CES/1176/12-15/NF
Scale:	NOT TO SCALE

Key

Dedicated Bat Loft

Hibernation Bat Box (x1)

Habitat Bat Box (x5)

Proposed Hedgerow Planting

Existing Hedgerow

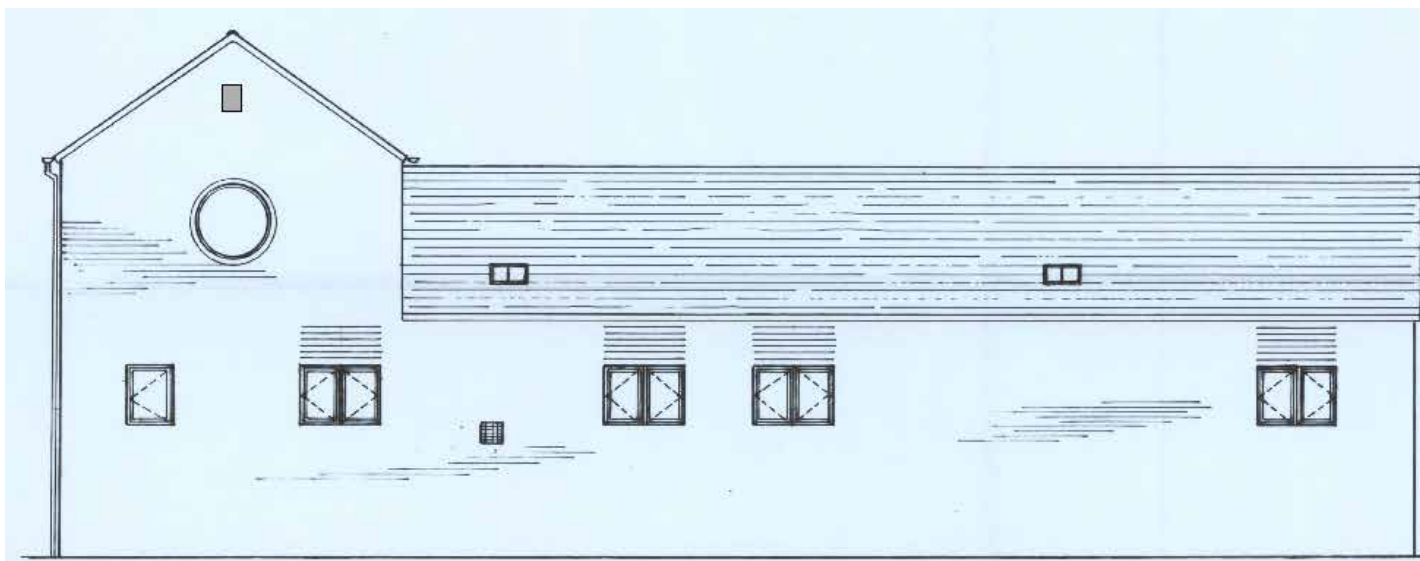


Figure E.2.5b – Mitigation Proposals for B1 & B2

Eastern
Elevation



Western
Elevation



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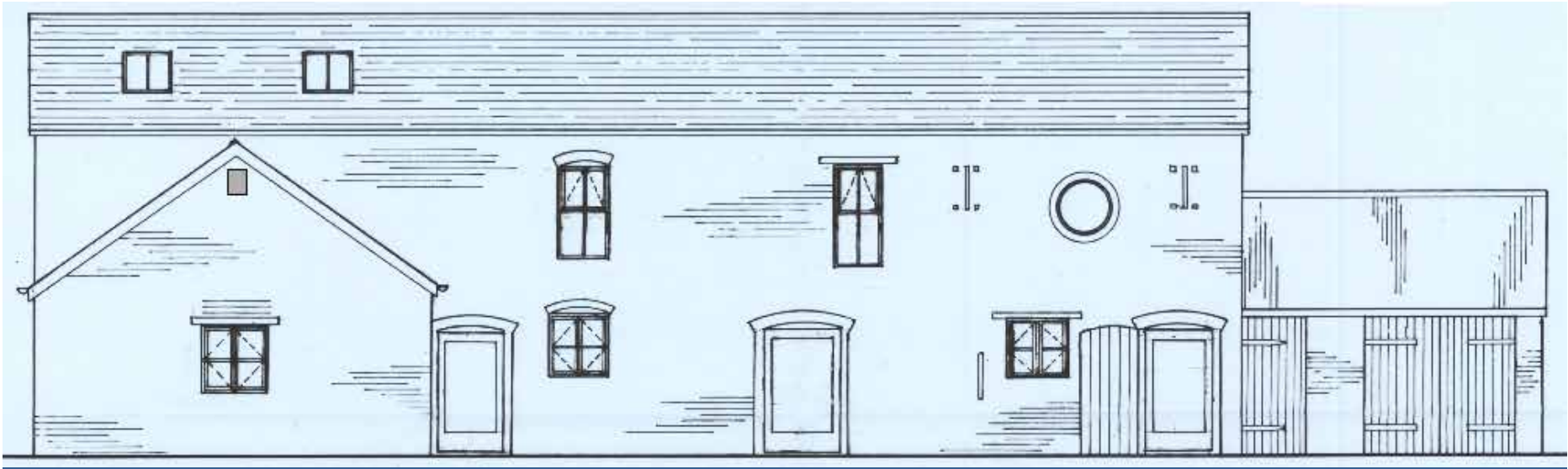
Client:	IT Manning & Partners
Project:	Wallington Farm, Worthenbury
Map:	E.2.5b - Proposed Mitigation Plan - B1 & B2
Revision:	-
Date:	December 2015
CES Reference:	CES/1176/12-15/NF
Scale:	NOT TO SCALE

Key

Habibat Bat Box



Southern
Elevation



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Client:	IT Manning & Partners
Project:	Wallington Farm, Worthenbury
Map:	E.2.5b -Proposed Mitigation Plan - B1 & B2
Revision:	-
Date:	December 2015
CES Reference:	CES/1176/12-15/NF
Scale:	NOT TO SCALE

Key

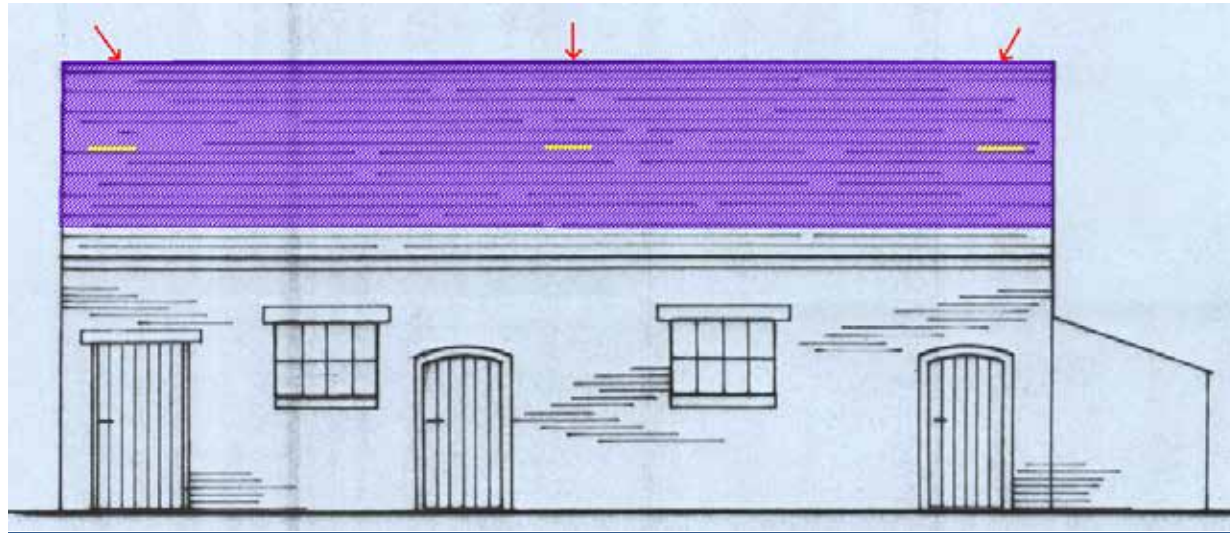
Habibat Bat Box



N.B. No mitigation proposed for northern elevation due to lack of gable ends.

Figure E.2.5c – Mitigation Proposals for B3

Northern
Elevation



Southern
Elevation



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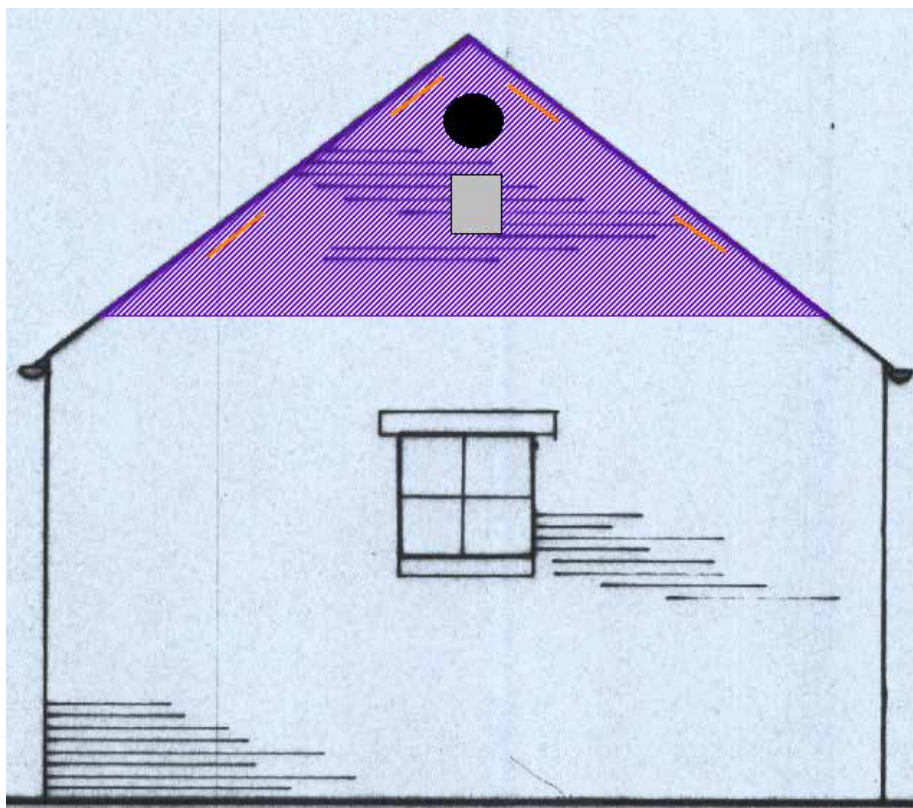
Client:	IT Manning & Partners
Project:	Wallington Farm, Worthenbury
Map:	E.2.5b Mitigation Proposals for B3
Revision:	-
Date:	December 2015
CES Reference:	CES/1176/12-15/NF
Scale:	NOT TO SCALE

Key

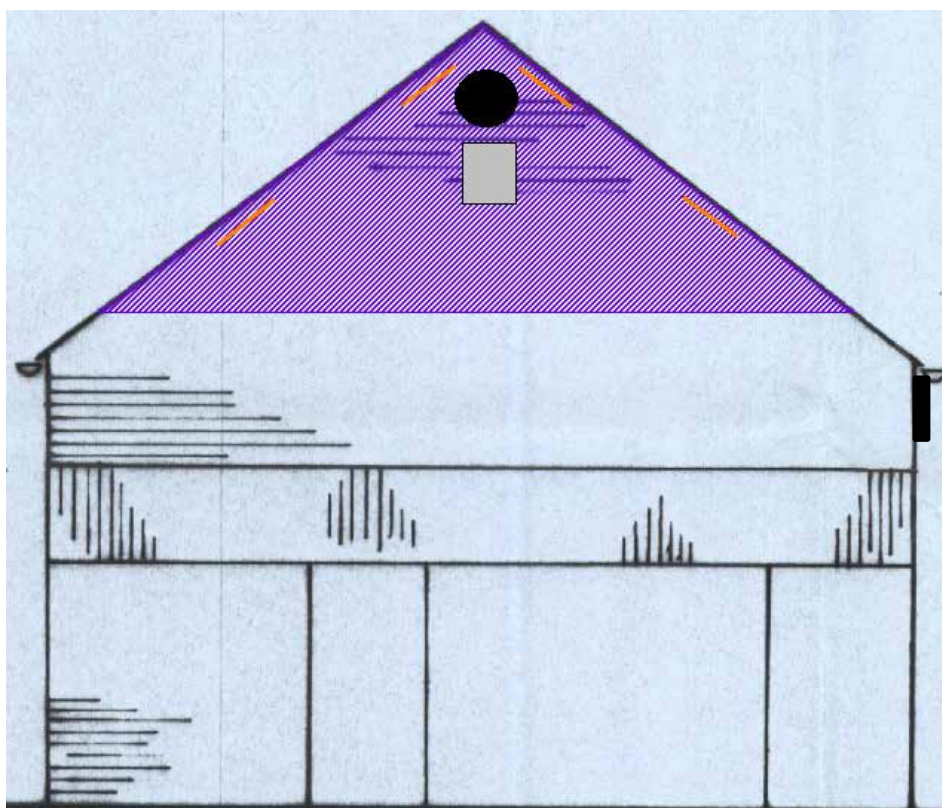
- Dedicated Bat Loft (Approximate Dimensions: 11.5m x 5.2m x 2.0m)
- Hibernation Bat Box (Schwedgler 1WQ)
- 1B Slope Access
- 4B Ridge Access



Eastern Elevation



Western Elevation



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Client:	IT Manning & Partners
Project:	Wallington Farm, Worthenbury
Map:	E.2.5c Mitigation Proposals for B3
Revision:	-
Date:	December 2015
CES Reference:	CES/1176/12-15/NF
Scale:	NOT TO SCALE

Key

Dedicated Bat Loft (Approximate Dimensions: 11.5m x 5.2m x 2.0m)

Habibat Bat Box

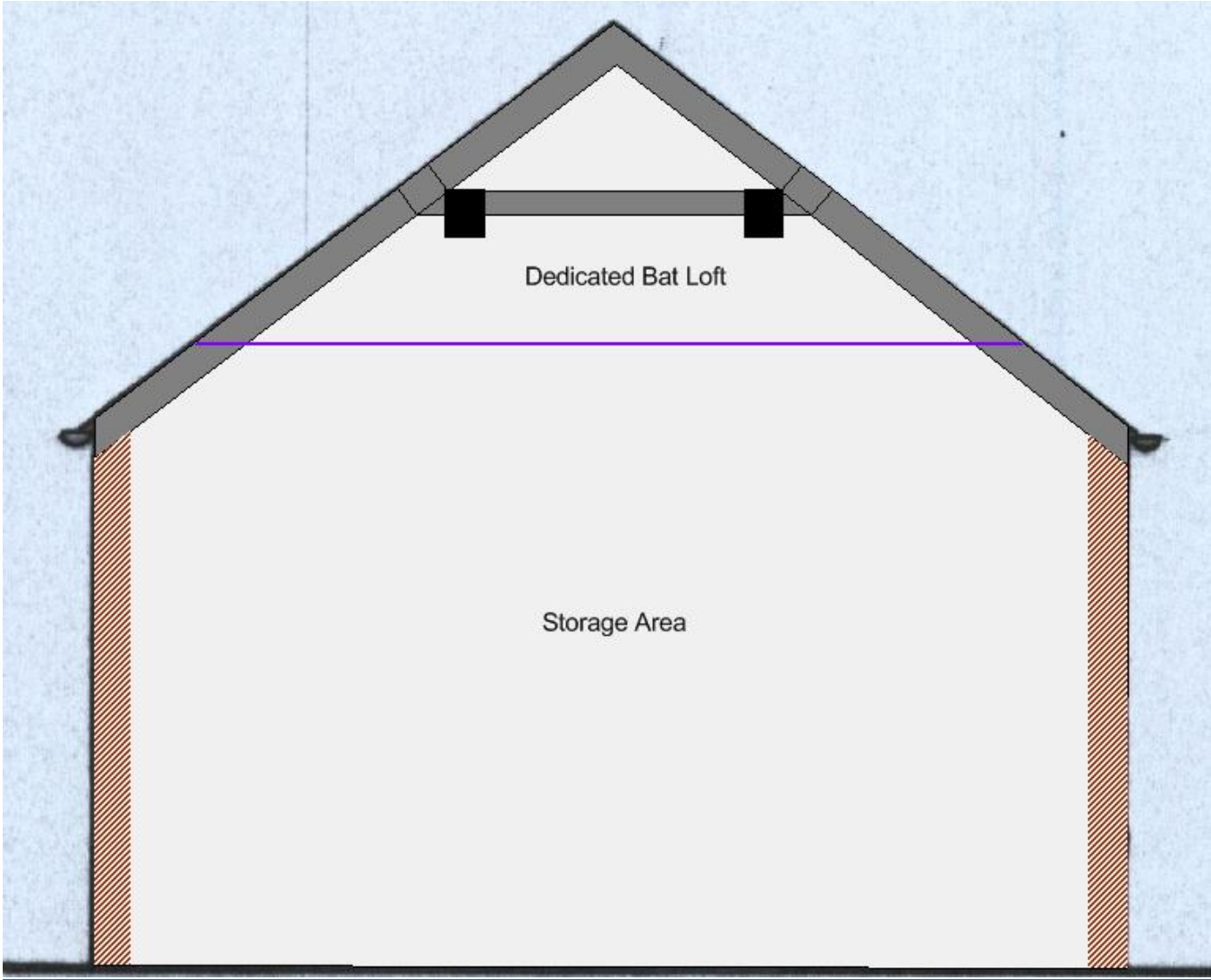
Slot Access (Approximate Dimensions: 15mm x 25mm)

Pitching Hole Access (Approximate Diameter: 400mm)

Hibernation Bat Box (Schwegler 1WQ)



Cross Section of
B3



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Client:	IT Manning & Partners
Project:	Wallington Farm, Worthenbury
Map:	E.2.5c – Proposed Mitigation for B3
Revision:	-
Date:	December 2015
CES Reference:	CES/1176/12-15
Scale:	NOT TO SCALE

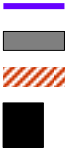
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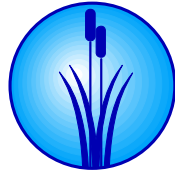
Loft Floor

Beams

Walls

Wooden bat boxes (x4)





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Bickley Hall Farm
Bickley, Malpas
Cheshire SY14 8EF

Tel: 01948 820229

Email: info@ces-ecology.co.uk
Web: ces-ecology.co.uk