To:	Steven Bainbridge	**At:**	Evolution Town Planning Ltd
From:	Tom Moore	**At:**	BASEcology Ltd
Date:	19th January 2018		
Subject:	Development of up to five dwellings on land to the rear of Red House Farm, Ashbocking		

Dear Mr Bainbridge,

Further to the Preliminary Ecological Appraisal and Bat Surveys report undertaken in 2015, please find detailed below an updated summary of the ecological assessment to accommodate the following developments to the application:

> *'This Planning and Design and Access Statement supports a planning application for the development of up to five dwellings on land to the rear of Red House Farm, Ashbocking and has been prepared by Evolution Town Planning Ltd. It follows an earlier planning application and appeal but circumstances have changed as well as the details of the site proposals. The planning application has benefitted from pre-application advice from the District Council. The altered circumstances include:*
>
> - *An increase in the number of proposed dwellings to provide for a boost to housing supply;*
> - *A recent High Court case which has clarified the meaning of isolated development in Paragraph 55 of the NPPF and a planning appeal which the District Council recently lost on this point; and*
> - *A change to the indicated mix of dwelling types to reflect comments received previously from the parish council.*
>
> *The planning application is in outline with the following matters reserved for determination at the later reserved matters stage: appearance, landscaping, and layout scale. This application sets out a proposal for the site which has been designed to replace redundant engineering workshops with dwellings which are sympathetic to the proportions of the existing buildings and the adjacent Red House Farmhouse'.*

Methodology

The site was revisited on 11th January 2018 to reassess the structural suitability of the buildings for bat roost and nesting bird potential. The survey comprises a systematic search of the exterior and interior to identify nests and/or locate confirmed / potential bat roosts and access points, and to locate any evidence of bats such as live or dead specimens, droppings, urine splashes, fur-oil staining, feeding remains (moth wings), squeaking noises, bat-fly (*Nycteribiid*) pupal cases and/or odour.

The survey gives particular attention to the following structural features:

- Gaps between ridge tiles and ridge and roof tiles, usually where the mortar has fallen out or the tiles are broken or lifted;
- The ridge area of the roof (particularly between the ridge beam and roofing material);
- Lifted lead flashing associated with roof valleys, ridges and hips, or where lead flashing replaces tiles;
- Spaces between external weatherboarding / cladding and the timber frame or walls;
- Gaps behind window frames, lintels and doorways including the main doors;
- Tenon and mortise joints between truss beams and braces and the principal support columns;
- Cracks and crevices in timbers;

- Gaps between stones or bricks (especially where purlins enter the wall and by the wall plate); and
- Surfaces such as the ground, ledges, windows, sills or walls, machinery or stored material within the barns (which should be searched for bat droppings and/or urine sports or stains).

The internal and external surveys were aided via the use of binoculars, 1,000,000 candle-power torch, head torch, telescopic ladder, LED pen torch and EM Touch detector where necessary.

Results

Modified Barn

The exterior of the barn features a pitched slate roof, rendered brickwork at the wall base, and timber cladding across the gable ends and mid- and upper sections of the walls. The rear (northern edge) of the barn also features extensive repairs formed from wooden cladding and corrugated metal, which have been fitted to remediate significant structural damage and deterioration.

Fig. 01: Previous roost location

Fig.02: Barn rear and stock yard

The timber frontage and slate roof of the barn are considered of good structural condition. The open eaves surrounding the far western lean-to provide internal access into the barn. No signs were however noted around the barn, including within and around the previous small common pipistrelle *Pipistrellus pipistrellus* day roost (recorded in June 2015 opposite the western annex). The rear of the barn features numerous cracks and crevices beneath the timber and metal cladding due to the make-shift repairs that have been made. No signs of presence were similarly noted.

Annexes

The eastern annex forms the most recent extension of the main barn building. The building is considered in a good state of repair at the time of survey. Very minor damage was noted to the soffits on the south-western corner, which could provide roosting opportunity for crevice dwelling species such as pipistrelles. No signs, however, such as scratch marks, staining or droppings were noted around these features or around the surrounds of the entire annex. The presence of thick cobwebs also indicated no recent through passage.

The western annex is constructed from Flemish bond walls (alternative courses of headers and stretchers), with a pantiled roof and brick gables at either end. The annex features wooden fascias and soffits on one side only (on the short eastern side opposite the stock yard).

The roof of the building features numerous raised / missing / broken pantiles, and damaged brickwork around the window plinths. A number of windows have also been boarded up with plywood. The overall structural condition for roosting purposes is, therefore, considered moderate. No signs were however noted around any of these features or around the wider building during the course of the updated inspection.

Fig. 03: Eastern annex

Fig.04: Western Annex

Outbuildings

Three outbuildings are located to the north and north-east of the modified barn. The first outbuilding features an open frontage and is constructed from Flemish bond walls and a pantilled roof. It is considered of moderate structural condition, with raised / missing tiles, gaps underneath the ridge tiles, and damaged brickwork. No signs of bats were noted during the updated inspection.

The second gable-ended outbuilding is located on the northern edge of the stockyard. Building materials include breezeblock walls, a corrugated metal roof, wooden fascias / soffits / bargeboards, and timber cladded gables at either end. Three scattered pipistrelle droppings were previously noted on the southern face opposite the stockyard although no signs were noted during the updated inspection.

The third outbuilding is constructed from breezeblocks, with a flat roof covered in felt, and wooden fascias around the eaves. The northern edge also supports a small timber clad lean-to with an open frontage and felt roof. No signs of bats were noted during the updated inspection.

Fig. 05: Outbuilding 1

Fig.06: Outbuilding 2 & 3

Discussion

No structural changes were noted to the modified barn, annexes or outbuildings during the updated 2018 inspection. No signs were also noted to otherwise confirm the presence of roosts, although the Potential Bat Roost Features detailed in the results section above still afford opportunity for smaller roosts such as that discovered during June 2015. The likely absence of a larger roost such as a maternity has been inferred from the results of the emergence and re-entry surveys undertaken in 2015 and the absence of any signs of presence such as live or dead specimens, droppings, urine splashes, fur-oil staining and/or squeaking noises discovered in 2018.

We are also advised that certain permitted development rights apply to the site:

- A change of use of offices to residential use has been granted via Class O Prior Approval (Council ref. 0817/17). Alongside this various internal works would be permissible where they had no external effect because they would not constitute development in planning terms.
- Buildings not affected by the office to residential prior approval could benefit from permitted development rights for demolition subject to a prior notification process focusses on demolition and restoration methods being agreed with the Council. This could apply to all outbuildings and the workshops not subject of the Class O change of use approval.

Therefore, certain internal conversion works and external demolition works can be undertaken on this site, which could affect biodiversity interests, with little recourse to the planning system and as such provide a baseline position against which to compare the effects of this planning application.

No further emergence / re-entry surveys were undertaken at this stage as the client is aware an updated survey(s) will be required before the full planning application to support a European Protected Species Licence (EPSL) application.

Further survey work (i.e. emergence / re-entry surveys) will be undertaken prior to any demolition and rebuilding work. Therefore, no further survey work is considered necessary at this outline stage based on the original (2015) survey results and the results of the updated inspection in which no signs or structural changes were noted.

The results of the updated inspection therefore indicate the recommendations detailed within the 2015 bat survey report are still pertinent for the proposed outline application and these remain sufficient to prevent harm to protected species or permanent loss of habitat as a result of planning permission being granted.

If you require any further information, clarification or advice in relation to this ecology note, please do not hesitate to contact me from my details listed below.

Kind Regards

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Preliminary Ecological Appraisal

Red House Farm, Ashbocking, Suffolk

Evolution Town Planning LLP

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CONTENTS

LIST OF ABBREVIATIONS

BAP	Biodiversity Action Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CRoW	The Countryside and Rights of Way Act 2000
CWS	County Wildlife Site
EPSL	European Protected Species Licence
GCN	Great crested newt
JNCC	Joint Nature Conservation Committee
LNR	Local Nature Reserve
NERC	The Natural Environment and Rural Communities Act 2006
NNR	National Nature Reserve
NPPF	National Planning Policy Framework 2012
PEA	Preliminary Ecological Appraisal
SAC	Special Area of Conservation
SBAP	Suffolk Biodiversity Action Plan
SBRC	Suffolk Biological Records Centre
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
WCA	The Wildlife and Countryside Act 1981 (as amended)

EXECUTIVE SUMMARY

Introduction	BASEcology was commissioned by Evolution Town Planning LLP to undertake a Preliminary Ecological Appraisal (PEA) to support a residential planning application for three dwellings at Red House Farm in Ashbocking, Suffolk.
Methodology	A desk study was undertaken to obtain and review records of protected / notable species and habitats within a defined search area from the centre of the site. The search radius was 1 km for statutory and non-statutory designated sites and protected / notable species, and 500 m for Habitats and Species of Principal Importance and Biodiversity Action Plan (BAP) priority habitats and species. The respective search radii were considered suitable for the scale and type of the proposed development. An Extended Phase 1 Habitat Survey was carried out following standard methodology published by the Joint Nature Conservation Committee (JNCC). This methodology is a standardised technique for rapidly obtaining baseline ecological information over a large area of land. All habitat types present on site were recorded on a map and dominant plant species were recorded in accordance with standard nomenclature. In accordance with best practice, the standard survey methodology was extended to consider and include all protected / notable fauna and habitats suitable to support them. Any incidental records or evidence of species were target noted and each habitat was evaluated for its potential to support protected or notable species.
Results	No statutory designated sites were highlighted within the respective search radii of the desk study. One non-statutory designated site, Brooke House Suffolk Wildlife Trust (SWT) HQ, is located approximately 750 m north-east. One Habitat of Principal Importance, good quality semi-improved grassland (also listed as UKBAP and SBAP priority habitat), was identified within a 500 m search radius (c.400 m south-east of the site on the far side of the B1078 Road). Suffolk Biological Records Centre (SBRC) holds records of plants, invertebrates, birds, otter and water vole within the search radius. Most of these however, are considered of sufficient distance from the site not to be directly or indirectly affected by the development proposals. Eleven habitats were identified during the Extended Phase 1 Habitat Survey including scattered broadleaved and coniferous trees, dense and scattered scrub, amenity grassland, ornamental shrubs, species-rich hedgerow with trees, species-poor hedgerow with trees dry ditch, and buildings and hardstanding. The habitats on-site and within the immediate site environs provide opportunity for birds, and bats.
Recommendations	Habitats: Generic mitigation is recommended to avoid / minimise generation of excessive litter, dust, noise and vibration during the construction phases of the proposed development. Protected species: **In light of the findings it is considered that further bat surveys are required. Details of the recommended survey work for this species group are provided within the separate bat survey report that accompanies this PEA report**. No further Phase 2 surveys are proposed for the site although general species mitigation for birds is provided below: *Birds:* All tree and scrub clearance works should be undertaken outside the nesting season (February – August inclusive). Where vegetation cannot be removed outside of the nesting season, pre-clearance checks must be undertaken by an experienced ecologist to identify if any birds are nesting within or close to the vegetation due to be removed. An informed decision should then be made if the vegetation clearance can be undertaken. If a bird nest is found, it must be left in-situ and protected from works; no works can be undertaken in that area until the young birds have fledged from the nest site. This may take several weeks and will vary depending on the species.

	Artificial lighting should be standardised within the development plans. In instances where it is deemed necessary, it should be designed and positioned to minimise any adverse impacts on the retained surrounding vegetation. Such measures include the use of hoods and cowls and directional lighting away from adjacent areas of hedgerows / trees / scrub.

This sheet is intended as a summary only

SECTION 1

INTRODUCTION

1 INTRODUCTION

1.1 Overview and site context

1.1.1 BASEcology was commissioned by Evolution Town Planning LLP to undertake a Preliminary Ecological Appraisal (PEA) to support a planning application for the proposed residential development of three dwellings at Red House Farm in Ashbocking, Suffolk.

1.1.2 The site is located off from the B1078 Road in Ashbocking village, Suffolk, approximately nine miles north of Ipswich Town. The central Ordnance Survey National Grid Reference of the site is TM 17681 53921. The site currently supports a number of mixed-use buildings surrounded by amenity grassland and a single pond, with hedgerows and trees along the site borders. The buildings are to be demolished as part of the development proposals.

1.1.3 The site environs are dominated by arable farmland, with the former farmhouse (Red House Farmhouse) bordering the southern site boundary. The local green infrastructure is limited to hedgerows along the respective field margins, aerial photographs of which indicate many are severed and fragmented. The local green infrastructure in relation to the site is, therefore, considered relatively poor.

1.2 Legislation and Policy Context

1.2.1 Relevant wildlife and countryside legislation have been used along with planning policy guidance and the UK Biodiversity Framework to inform this assessment. Their context and applicability is explained as appropriate in the relevant sections of the report and additional details are presented in Appendix A.

1.2.2 The key articles of relevance are:

- The Conservation of Habitats and Species Regulations 2010, as amended (Habitats Regulations);
- The Wildlife and Countryside Act 1981, as amended (WCA);
- The Countryside and Rights of Way (CRoW) Act 2000;
- The Natural Environment and Rural Communities (NERC) Act 2006;
- National Planning Policy Framework (NPPF) 2012;
- The Protection of Badgers Act 1992;
- The Hedgerow Regulations 1997;
- The UK Post-2010 Biodiversity Framework (2011-2020);
- Biodiversity 2020: A strategy for England's wildlife and ecosystem services;
- UK Biodiversity Action Plan (UKBAP); and
- Suffolk Biodiversity Action Plan (SBAP).

SECTION 2

METHODOLOGY

2 METHODOLOGY

2.1.1 This PEA follows the Chartered Institute of Ecology and Environmental Management (CIEEM) published guidelines[1] and comprises a desk study and an Extended Phase 1 Habitat Survey.

2.2 Desk Study

2.2.1 A desk study was undertaken to obtain and review records of protected / notable species and habitats within a defined search area from the centre of the site. The search radius was 1 km for statutory and non-statutory designated sites and protected / notable species, and 500 m for Habitats and Species of Principal Importance and Biodiversity Action Plan (BAP) priority habitats and species. The respective search radii were considered suitable for the scale and type of the proposed development.

2.2.2 The designated sites included within this search were as follows:

- Special Areas of Conservation (SAC);
- Special Protection Areas (SPA);
- Ramsar Sites;
- Sites of Special Scientific Interest (SSSI);
- National Nature Reserves (NNR);
- Local Nature Reserves (LNR); and
- County Wildlife Sites (CWS).

2.2.3 The following data sources were used, contacted and/or reviewed:

- Suffolk Biological Records Centre (SBRC);
- Multi Agency Geographic Information for the Countryside (MAGIC)[2];
- Species and habitats of principal importance in England, Section 41 of the Natural Environment and Rural Communities Act 2006[3];
- UKBAP[4]; and
- EBAP[5].

2.3 Extended Phase 1 Habitat Survey

2.3.1 An Extended Phase 1 Habitat Survey was undertaken by a suitably experienced ecologist on 18th March 2015. The survey assessed the ecological value of the site, and recorded any protected habitats and evidence of, or potential for, any protected or notable species on site or within the relevant surrounding area.

2.3.2 The Extended Phase 1 Habitat Survey followed standard methodology published by the Joint Nature Conservation Committee (JNCC)[6]. This

[1] CIEEM (2013). Guidelines for Preliminary Ecological Appraisal. Technical Guidance Series
[2] http://magic.defra.gov.uk accessed 06/01/15
[3] http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx accessed 06/05/15
[4] http://jncc.defra.gov.uk/page-5705 accessed 06/05/15
[5] http://www.essexbiodiversity.org.uk accessed 06/05/15
[6] Joint Nature Conservation Committee (2010) Handbook for Phase 1 Habitat Survey - A Technique for Environmental Audit. Joint Nature Conservation Committee, Peterborough.

methodology is a standardised technique for rapidly obtaining baseline ecological information over a large area of land. All habitat types present on site were recorded on a map (Appendix C) and dominant plant species were recorded in accordance with standard nomenclature[7]. Scientific names are only mentioned the first time the species occur in the report.

2.3.3 In accordance with best practice, the standard survey methodology was extended to consider and include all protected / notable fauna and habitats suitable to support them[8]. Any incidental records or evidence of species were target noted and each habitat was evaluated for its potential to support protected or notable species.

2.4 Survey Limitations

Desk Study

2.4.1 An absence of desk study records does not necessarily convey an absence of such species in that area, but is often a facet of under-recording. Because the desk study is designed to give an overview of the species already recorded in the local area, and merely provides indicative data prior to more detailed Phase 2 surveys, it is not considered to be a significant constraint.

Phase 1 Habitat Survey

2.4.2 The Phase 1 Habitat Survey was carried out on one visit during the month of March. As such, seasonal variations could not be observed and potentially only a selection of all species that occur within the survey area will have been noted. The Phase 1 Habitat Survey therefore provides a general assessment of potential nature conservation value. However, it is considered that the combination of biological records from the desk study and the site visit provides an accurate representation of the various species and habitat types present or potentially present within the survey area.

2.4.3 The Phase 1 Habitat Map (Appendix C) has been reproduced from field notes and plans. Whilst this provides a sufficient level of detail to fulfil the requirements of a Preliminary Ecological Assessment, the map is not intended to provide exact locations and distributions of key habitats. Furthermore the habitats and the management of the habitats are likely to change over time.

7 Stace, C. (2010) New Flora of the British Isles; Third Edition. Cambridge University Press, Cambridge.
[8] Institute of Ecology and Environmental Management (2012). Guidelines for Preliminary Ecological Appraisal; Revised 2nd Edition July 2012.
http://www.ieem.net/data/files/Resource_Library/Technical_Guidance_Series/GPEA/GPEA_July2012_web.pdf

SECTION 3

RESULTS

3 RESULTS

3.1 Desk Study

Statutory Sites

3.1.1 No statutory designated sites were found during the desk study within the respective search radii of the site.

Non-Statutory Sites

3.1.2 One non-statutory site, Brook House (Suffolk Wildlife Trust HQ), was noted within 1 km. A summary of this site is provided in Table 3.1 below.

Table 3.1: Non-Statutory Sites

Site Name	Site Status	Site Summary	Location
Brooke House - Suffolk Wildlife Trust (SWT) HQ	SWT Reserve	Brooke House is an old cottage that has been adapted and extended to form the HQ of SWT. The house is surrounded by gardens with fruit trees and a pond, in which water vole are present.	c. 750 m north-east

Habitats of Principal Importance, UKBAP and SBAP Priority Habitats

3.1.3 One Habitats of Principal Importance (also listed as UKBAP and Suffolk BAP priority habitat) was identified within a 500 m radius of the site as detailed in Table 3.2.

Table 3.2: Habitats of Principal Importance, UKBAP and SBAP Priority Habitats

Habitat Type	Policy Context*	Location
Good quality semi-improved grassland	Sect.41 / UKBAP / SBAP	Approximately 400 m south-east of the site, on the far side of the B1078 Road.

* Sect.41 = Habitat of Principal Importance (Section 41, NERC Act, 2006) and UKBAP = UK Biodiversity Action Plan; and SBAP = Suffolk Biodiversity Action Plan

Protected and Notable Species

Species records obtained from the data trawl within 1 km of the proposed site, including nationally rare and legally protected flora and fauna, are summarised in the sections and associated tables below and have informed the selection of target species groups for assessment. The full desk study obtained from SBRC is available on request.

Plants

3.1.4 SBRC holds no two records of notable / protected plants within the search radius. Further details relating to the conservation status of each species and date of recording are presented in Table 3.3 below.

Table 3.3: Summary of plant records within 1 km search radius

Common name	Scientific name	Date	Conservation status	Location
Dittander	*Lepidium latifolium*	2005	Nationally scarce	c.675m south-east
Welsh Poppy	*Meconopsis cambrica*	2005	Nationally scarce	N/A (grid reference not sufficiently precise to calculate)

Invertebrates

3.1.5 SBRC holds no records of notable / protected invertebrate fauna within the search radius.

Herpetofauna

3.1.6 Amphibians: SBRC holds no recent records of great crested newt (*Triturus cristatus*) within the search radius.

3.1.7 Reptiles: There are no records of reptiles within the search radius.

Birds

3.1.8 SBRC holds 113 records of 37 different bird species within 1 km of the site. The most recent of these for each species is presented in Table 3.4 below.

3.1.9 Five Schedule 1 bird species were noted within the search radius: kingfisher (*Alcedo atthis*), hen harrier (*Circus cyaneus*), redwing (*Turdus iliacus*), fieldfare (*Turdus pilaris*) and barn owl (*Tyto alba*). As such it is an offence to intentionally or recklessly disturb these species at, on, or near an active nest site.

3.1.10 All birds are protected under the Wildlife and Countryside Act (1981) as amended. Various bird species are also listed as Species of Principal Importance / UKBAP priorities.

Table 3.4: Summary of bird records within 1 km search radius

Common name	Scientific name	Date	Conservation status
Lesser Redpoll	*Acanthis cabaret*	2008	BRed, Sect.41, Sect.42, UKBAP
Skylark	*Alauda arvensis*	2011	BD2.2, BRed, ScotBL, Sect.41, UKBAP
Kingfisher	*Alcedo atthis*	2010	BAmb, BD1, Bern2, ScotBL, WCA1i
Greylag Goose	*Anser anser*	2009	BAmb, BD2.1, CMS_A2, CMS_AEWA-A2, WCA1ii
Meadow Pipit	*Anthus pratensis*	2010	BAmb, Bern2
Swift	*Apus apus*	2011	BAmb, ScotBL
Little Owl	*Athene noctua*	2008	Bern2, CITESA
Goldfinch	*Carduelis carduelis*	2011	Bern2
Hen Harrier	*Circus cyaneus*	2013	BD1, BRed, CITESA, CMS_A2, ScotBL, Sect.41, Sect.42,

			WCA1i
Blue Tit	*Cyanistes caeruleus*	2011	Bern2
House Martin	*Delichon urbicum*	2009	BAmb, Bern2
Great Spotted Woodpecker	*Dendrocopos major*	2011	Bern2
Yellowhammer	*Emberiza citrinella*	2011	Bern2, BRed, Sect.41, Sect.42, UKBAP
Robin	*Erithacus rubecula*	2011	Bern2, ScotBL
Kestrel	*Falco tinnunculus*	2011	BAmb, Bern2, CITESA, CMS_A2, ScotBL, Sect.42
Swallow	*Hirundo rustica*	2011	BAmb, Bern2
Herring Gull	*Larus argentatus*	2011	BD2.2, BRed, CMS_AEWA-A2, ScotBL, UKBAP
Linnet	*Linaria cannabina*	2011	Bern2, BRed, ScotBL, UKBAP
Nightingale	*Luscinia megarhynchos*	2009	BAmb, Bern2
Pied Wagtail	*Motacilla alba*	2011	Bern2
Spotted Flycatcher	*Muscicapa striata*	2008	Bern2, BRed, CMS_A2, ScotBL, Sect.41, Sect.42, UKBAP
Great Tit	*Parus major*	2011	Bern2
House Sparrow	*Passer domesticus*	2011	BRed, Sect.41, Sect.42, UKBAP
Grey Partridge	*Perdix perdix*	2010	BD2.1, BRed, ScotBL, Sect.41, Sect.42, UKBAP
Coal Tit	*Periparus ater*	2011	Bern2
Green Woodpecker	*Picus viridis*	2011	BAmb, Bern2
Dunnock	*Prunella modularis*	2011	BAmb, Bern2, UKBAP
Bullfinch	*Pyrrhula pyrrhula*	2011	BAmb, ScotBL, UKBAP
Turtle Dove	*Streptopelia turtur*	2011	BD2.2, BRed, CITESA, ScotBL, Sect.41, Sect.42, UKBAP
Tawny Owl	*Strix aluco*	2008	Bern2, CITESA
Starling	*Sturnus vulgaris*	2011	BD2.2, BRed, UKBAP
Wren	*Troglodytes troglodytes*	2011	Bern2
Redwing	*Turdus iliacus*	2009	BD2.2, BRed, ScotBL, WCA1i
Song Thrush	*Turdus philomelos*	2011	BD2.2, BRed, ScotBL, UKBAP
Fieldfare	*Turdus pilaris*	2011	BD2.2, BRed, WCA1i
Barn Owl	*Tyto alba*	2013	BAmb, Bern2, CITESA, ScotBL, WCA1i
Lapwing	*Vanellus vanellus*	2009	BD2.2, BRed, CMS_A2, CMS_AEWA-A2, ScotBL, Sect.41, Sect.42, UKBAP

* BAmber = Included in Birds of Conservation Concern (BoCC) Amber List; BD2.1 = Birds Directive Annex 2.1; Bern2 = Bern Convention Appendix 2; BRed = Included in Birds of Conservation Concern (BoCC) [9] Red List; CITESA = EC CITES Annex A; CMS_A2 = Convention on Migratory Species, Annex 2; CMS_AEWA-A2 = Convention on Migratory Species, African-

[9] http://www.bto.org/sites/default/files/u12/bocc3.pdf accessed 06/05/15

Eurasian Waterbirds Agreement - Annex II; RLGLB.NT = IUCN (1994) - Lower risk - near threatened; SBAP = Suffolk BAP Priority Species; Sect.41 = Listed on NERC Act Section 41; UKBAP = UK Biodiversity Action Plan Priority Species; WCA1i = Listed on Schedule 1 of the Wildlife and Countryside Act (1981, as amended); WCA1ii = Listed on Schedule 5 (Schedule 1 Part 2) of the Wildlife and Countryside Act (1981, as amended).

Mammals

3.1.11 Badger (*Meles meles*): SBRC holds no badger records within the search radius.

3.1.12 Bats: There are no records of bat roosts or activity within the search radius. All UK bat species are protected under the Conservation of Habitats and Species Regulations (2010) as amended and under the Wildlife and Countryside Act (1981) as amended. Various bats species are also listed as Species of Principal Importance / UKBAP and Suffolk BAP priorities.Dormouse (*Muscardinus avellanarius*): The SBRC holds no dormouse records within the search radius.

3.1.13 Otter (Lutra lutra) and water vole (Arvicola amphibius): There is one otter record within the search radius, c. 700 m south-east of the site (In the interfluvial area between the river Fynn and river Lark), and one water vole record c. 750 m north-east (from the pond at Brook House SWT HQ).

3.1.14 Otters are protected under the Conservation of Habitats and Species Regulations (2010) as amended and under the Wildlife and Countryside Act (1981) as amended. Otters are also priority species under Section 41 of the NERC Act (2006). Water voles are protected under the Wildlife and Countryside Act (1981) as amended and are also priority species under Section 41 of the NERC Act (2006).

Non-native invasive plant species

3.1.15 There is one record of a Schedule 3 plant species, yellow archangel (*Lamiastrum galeobdolon* subsp. *argentatum*), within the 1 km search radius. The record is not sufficiently precise, however, to accurately calculate the distance of this from the site.

3.2 Extended Phase 1 Habitat Survey

3.2.1 Eleven habitats were identified during the Extended Phase 1 Habitat Survey. Further details of each habitat are provided below and presented on the Phase 1 Habitat Map within Appendix C. Alpha-numeric codes below cross-refer to the JNCC Phase 1 Habitat Survey habitat classifications[10].

Broadleaved and coniferous scattered trees – A.3.1 & A.3.2

3.2.2 The site features semi-mature and mature trees around the pond, and a number of trees varying age and stature along eastern and western site margins; a number of these, however, are featured within hedgerows and are therefore discussed separately in the relevant section below. Species

[10] Joint Nature Conservation Committee (JNCC) (2010) Handbook for Phase 1 habitat survey - a technique for environmental audit.

present include ash (*Fraxinus excelsior*), cypress (*Cupressaceae* spp.), lime (*Tilia* sp.), poplar (*Populus* sp.), silver birch (*Betula pendula*) and willow (*Salix* spp.). The trees afford nesting opportunities for birds although none were considered of particular interest for roosting bats.

Dense and scattered scrub - A.2.1 & A.2.2

3.2.3 Scrub habitat is present along the north-eastern boundary and around the pond. The habitat features common species such as bramble (*Rubus fruiticosus*), ash (*Fraxinus excelsior*), blackthorn (*Prunus spinosa*), dog rose (*Rosa canina*), elder (*Sambucus nigra*), elm (*Ulmus* sp.), field maple (*Acer campestre*) and hawthorn (*Crataegus monogyna*). The scrub provides suitable habitat for common invertebrates, birds, and bats (foraging only).

Pond and wet ditch (open water) – G.1

3.2.4 A single pond, known to support carp, is located along the western boundary. The margins feature common species such as reedmace (*Typha latifolia*) and rush (*Juncaceae* sp.). The immediate pond environs comprise a mosaic of rough grassland, ornamental shrubs and tall ruderal vegetation.

3.2.5 A wet ditch runs along the north-western boundary, north-south beside the species poor hedgerow. The ditch does not support any aquatic vegetation and due to the shallow depth is likely to dry out every year during the summer period.

3.2.6 The pond and wet ditch provides suitable habitat for common invertebrate species. Neither habitat is considered suitable for great crested newt. In the unlikely instance of presence, the carp within the pond would predate on eggs/larvae, therefore prohibiting recruitment and compromising the population viability.

Amenity grassland & introduced shrub – J.1.2 & J.1.4

3.2.7 The site supports amenity grassland in the northern section of the site, to the north of the existing buildings. The sward features common amenity species such as annual meadow-grass (*Poa annua*), common daisy (*Bellis perennis*), creeping buttercup (*Ranunculus repens*), perennial rye-grass (*Lolium perenne*), and white clover (*Trifolium repens*). The immediate pond surrounds, north-eastern site corner, and southern border of the amenity grassland also feature scattered ornamental shrubs.

3.2.8 The grassland is considered to be of low biological interest due to the short sward height, which affords little value to fauna species. The taller ornamental shrubs provide nesting and foraging opportunity for common bird and invertebrate species.

Species-rich hedge and trees – J.2.3.1

3.2.9 The north-western boundary supports a short length of native species-rich hedgerow with trees. The hedge features a species composition of ash, blackthorn, dog rose (*Rosa canina*), field maple, and hawthorn. It is currently managed (at the time of survey) with a dry ditch running along the entire base.

3.2.10 The access track leading up from the B1078 Road also features species-rich hedges with trees on either side. Both hedgerows are under regular management. Species present include blackthorn, dog rose, English oak, field maple, hawthorn, and lime.

3.2.11 The hedgerows afford suitable habitat conditions for common invertebrate fauna, birds and foraging bats. The mature English oak trees along the access track also affords limited structural opportunity for roosting bats, although this is considered outside of the immediate developmental zone of influence in any case.

Species-poor hedge and trees – J.2.3.2

3.2.12 The northern and north-western site margins feature species-poor hedges and trees. The hedges are currently managed and feature dry / shallow wet ditches alongside. Species present within the hedgerows include ash, bramble, blackthorn, dog rose, field maple, and hawthorn. The habitat provides nesting and foraging opportunity for common bird and invertebrate species.

Dry ditch - J.2.6

3.2.13 The northern, north-eastern and north-western boundaries of the site features dry ditches. This habitat alone is not considered to be of significant biodiversity value.

Buildings and hardstanding – J.3.6

3.2.14 The centre of the site supports a highly modified barn with three outbuildings off the north-eastern corner. The footprint of the barn measures approximately 700 m^2.

3.2.15 The original barn would have been rectangular with a perpendicular single-storey annex attached to the western end. The north north-western edge of the barn (parallel to the annex) has since been extended to increase storage / working space within, and a two-storey residence has been added perpendicular to the eastern barn edge.

3.2.16 The barn is constructed from a number of different materials, representative of the extensive remedial work that has been carried out. The old section of the barn was previously constructed from a timber frame, with wooden cladding across the sides. However, due to the number of renovations and necessary repairs that have been carried out over the years, a large number of these have been replaced with newer and cheaper materials.

3.2.17 The original annex on the western edge of the barn is constructed from a timber frame, with Flemish bond brickwork and pantiles across the roof. The newer extension, located beside the annex, features a metal frame and asbestos cladding across the roof and external walls. The second extension on the opposite (eastern) end of the barn is constructed from stretcher bond brickwork, with a pitched slate roof.

3.2.18 Overall, the barn and outbuildings are considered to support opportunity for potential bat roosts.

3.2.19 The harstanding areas are considered of negligible biological interest.

SECTION 4

DISCUSSION AND RECOMMENDATIONS

4 DISCUSSION AND RECOMMENDATIONS

4.1 Statutory and Non-statutory Designated Sites

4.1.1 No statutory designated sites were highlighted within the respective search radii of the desk study. One non-statutory designated site, Brook House Suffolk Wildlife Trust HQ, was noted c.750m north-east of the site, although this is considered outside of the developmental zone of influence. There is no opportunity, therefore, for the proposed development to result in any negative impact on statutory or non-statutory designated sites.

4.2 Notable Habitats

4.2.1 One Habitat of Principal Importance (also listed as UKBAP and SBAP priority habitat) was identified within a 500 m radius of the site: one area of good quality semi-improved grassland located c.400 m south-east on the far side of the B1078 Road. Due to the nature and scale of the proposed development, and the distance separating the grassland from the site, there is no opportunity for any negative impact on Habitats of Principal Importance.

4.2.2 Generic construction mitigation is recommended to minimise any negative impact on nearby habitats, which may be of significance to the local green infrastructure but are not otherwise protected or considered notable. Mitigation measures include avoidance / minimising generation of excessive litter, dust, noise and vibration during the construction phases of the proposed development.

4.3 Protected and Notable Species

4.3.1 The results of the desk study and Extended Phase 1 Habitat Survey highlighted the potential presence of protected / notable species, principally birds and bats, within the immediate site environs. The latter species group could place potential ecological constraints on the development proposals.

Plants

4.3.2 SBRC holds two records of two different flowering plant species within the search radius. However, the habitat conditions on-site / within the immediate environs are not considered suitable for one of the species (dittander) and the other (welsh poppy) is likely to be a garden escape based on its natural range (northern and south-western England, and Wales; Rose, 1981)[11]. No habitats were noted during the Extended Phase 1 Habitat Survey that would otherwise warrant further botanical survey.

Invertebrates

4.3.3 SBRC holds no records of invertebrate fauna within the search radius. Furthermore, there are no habitats of interest within the developmental zone of influence that would necessitate more detailed survey work to be carried out for this species group.

[11] F.Rose (1981) The Wild Flower Key. Revised by Clare O'Reilly, 2006. Frederick Warne. ISBN 0-7232-5175-4.

Herpetofauna

4.3.4 Reptiles: There are no records of reptiles within the search radius. The site margins afford suitable, albeit sub-optimal, habitat for transient species such as grass snake (*Natrix natrix*) although this habitat will be retained in accordance with the proposed design layout. No mitigation is therefore required to protect this species group.

4.3.5 Amphibians: There are no records of GCN within the search radius. The likelihood of presence either on-site or within the immediate surrounds is considered negligible in respect of the surrounding arable farmscape and low pond density: one pond within 100 m (on-site and stocked with carp), no ponds 100 m - 250 m, and two ponds and two ditches 250 m - 500 m.

Birds

4.3.6 Five Schedule 1 bird species were highlighted by SBRC within the search radius. The site margins afford suitable habitat for two of these (fieldfare and redwing), although this habitat will be retained in accordance with the proposed design layout. The likelihood of the site supporting these species is furthermore considered low in context of the widespread availability of less disturbed hedgerows within the surrounding farmscape.

4.3.7 Basic mitigation recommendations for nesting and foraging birds are detailed below:

- Any vegetation removal, or actions that will impact upon vegetation, should be carried out outside of the peak bird breeding season. If this is not possible, works should only be carried out during this period if preceded by a survey to identify any active nests or nests being built. Any such nests would then require temporary exclusion zones to be placed around them until such time that the dependent young have fledged and left the area. The distance of which would depend on the species recorded. The peak bird breeding season extends between February and August (inclusive), although active nests can theoretically be encountered at any time of the year; and
- Any suitable habitats to be lost should be replaced within the site with native and locally appropriate species.
- Artificial lighting should be standardised within the development plans where it cannot be otherwise reasonably avoided. In instances where it is deemed necessary, it should be designed and positioned to minimise any adverse impacts on the retained surrounding vegetation. Such measures include the use of hoods and cowls and directional lighting away from adjacent areas of hedgerows / scrub / trees.

Mammals

4.3.8 Badger: There are no records of badger activity within the search radius. The habitat characteristics and topography both on-site and within the immediate environs are considered sub-optimal for sett construction, and no signs such as setts, snuffle holes or latrines were discovered during the Phase 1 survey. The species is therefore considered likely absent from the developmental zone of influence.

4.3.9 Bats: There are no records of bat roosts or activity within the search radius indicating this species group is under recorded in the local area.

4.3.10 A separate Preliminary Roost Assessment (PRA) survey and report[12] has been carried out and prepared for the proposed planning application alongside the Phase 1 Habitat Survey. The need for such a survey was identified during the early conception phases of the project due to the size, design and condition of the buildings proposed for demolition. None of the trees within the immediate zone of influence are considered of sufficient structural interest to warrant further survey work, and therefore, these have not been considered any further for this species group.

4.3.11 Dormice: There are no records of dormice within the search radius. The site supports hedgerows around the margins although the absence of suitable woodland and hedgerow connectivity in the wider area indicates species is likely absent from the site environs.

4.3.12 Otter and water vole: SBRC holds one record of otter and one of water vole within the search radius. There is no suitable habitat, however, for either species on-site or within the immediate environs.

Non-native invasive plants

4.3.13 One Schedule 9 plant species, yellow archangel, was recorded within the search radius, and none were recorded during the Phase 1 Habitat Survey. No further action is therefore considered necessary.

4.4 Recommendations

4.4.1 The following recommendations detailed within Table 4.1 are based on the information derived from the desk study and Phase 1 Habitat Survey. The information provided in this report has been used to inform the detailed design, with the aim of minimising impacts on the ecological receptors identified as far as possible.

Table 4.1: Recommendations

Ecological receptor	Recommendations	Programme / timing constraints
Birds	Any tree / scrub clearance works should be undertaken outside the nesting season. Where vegetation cannot be removed outside of the nesting season, pre-clearance checks must be undertaken by an experienced ecologist to identify if any birds are nesting within or close to the vegetation due to be removed. An informed decision should then be made if the vegetation clearance can be undertaken.	Peak bird breeding season extends between February and August (inclusive).

[12] BASEcology (July, 2015) Bat Surveys Draft Interim Report: Red House Farm. Prepared for Town Evolution Planning LLP.

	If a bird nest is found, it must be left in-situ and protected from works; no works can be undertaken in that area until the young birds have fledged from the nest site. This may take several weeks and will vary depending on the species. Artificial lighting should be standardised within the development plans where it cannot be otherwise reasonably avoided. In instances where it is deemed necessary, it should be designed and positioned to minimise any adverse impacts on the retained surrounding vegetation. Such measures include the use of hoods and cowls and directional lighting away from adjacent areas of trees / scrub.	
Bats	Details of recommendations and timings for this species group are provided within the separate bat survey report[12] that accompanies this PEA report.	

APPENDIX A

LEGISLATION AND POLICY CONTEXT

LEGISLATION AND POLICY CONTEXT

Introduction

The following Appendix sets out details of legislation within the UK and how this legislation applies to particular species groups. The key pieces of international and national legislation are described after which specific legislation pertaining to species or species groups are described in turn.

International and national legislation

EC Habitats Directive

In 1992 the then European Community adopted Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the Habitats Directive. The main aim of the EC Habitats Directive is to promote the maintenance of biodiversity by requiring member states to introduce protection for these habitats and species of European importance. The mechanism for protection is through designation of Special Areas of Conservation (SACs), both for habitats and for certain species listed within Annex II. There are a number of species listed within Annex II of the Habitats Directive that are present within the UK; these include four lower plant species, nine higher plant species, six species of molluscs, six species of arthropods, eight species of fish, two species of amphibian, and nine species of mammal.

The Bern Convention

The Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) came into force in 1982. The principal aims of the Convention are to ensure conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix 3. To this end the Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1000 wild animal species.

Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention or CMS) was adopted in Bonn, Germany in 1979 and came into force in 1985. Contracting Parties work together to conserve migratory species and their habitats by providing strict protection for endangered migratory species (listed in Appendix 1 of the Convention), concluding multilateral agreements for the conservation and management of migratory species which require or would benefit from international cooperation (listed in Appendix 2 of the Convention), and by undertaking co-operative research activities.

Convention on Biological Diversity

The Convention on Biological Diversity (Biodiversity Convention or CBD) was adopted at the Earth Summit in Rio de Janeiro, and entered into force in December 1993. It was the first treaty to provide a legal framework for biodiversity conservation. Contracting Parties are required to create and enforce national strategies and action plans to conserve, protect and enhance biological diversity.

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) is the principle mechanism for the legislative protection of wildlife in Great Britain. However it does not extend to Northern Ireland, the Channel Islands or the Isle of Man. This legislation is the means by which the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') and the European Union Directives on the Conservation of Wild Birds (79/409/EEC) and Natural Habitats and Wild Fauna and Flora (92/43/FFC) are implemented in Great Britain.

Conservation of Habitats and Species Regulations 2010, as amended

In the UK the Council Directive 92/43/EEC has been transposed into national laws by means of the Conservation (Natural Habitats, & c.) Regulations 1994 (as amended), and the Regulations (Northern Ireland) 1995 (as amended). The Regulations came into force on 30 October 1994, and have been amended several times. Subsequently the Conservation of Habitats and Species Regulations 2010 was created which consolidates all the various amendments made to the 1994 Regulations in respect of England and Wales and is commonly known as the 'the Habitats Regulations'. In Scotland the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the 1994 Regulations. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland.

The Regulations contain five Parts and four Schedules, and provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

Other Legislation

Wild Mammals (Protection) Act 1996

The Act protects wild mammals from malicious or intentional harm.

Protection of Badgers Act 1992?

Species and Habitat Specific Legislation

Plants

Wild plants are protected under Section 13 of the Wildlife and Countryside Act 1981 (as amended). It prohibits the unauthorised intentional uprooting of any wild plant species and forbids any picking, uprooting or destruction of plants listed on Schedule 8 of which there are over 150.

The Conservation of Habitats and Species Regulations 2010 have nine plants listed within Annex IV these are; shore dock, (*Rumex rupestris*), killamey fern (*Trichomanes speciosum*), early gentian (*Gentianella anglica*), lady's slipper (*Cypripedium calceolus*), creeping marshwort (*Apium repens*), slender naiad (*Najas flexilis*), fen orchid (*Liparis loeselii*), floating-leaved water plantain (*Luronium natans*), and yellow marsh saxifrage (*Saxifraga hirculus*). It is an offence to deliberately pick, collect cut, uproot or destroy any protected plant, or keep, transport, sell, or exchange, any live or dead such plant species, this applies to all stages of its life cycle.

Invasive Species

Schedule 9, Section 14 of the Wildlife and Countryside Act (1981, as amended) prohibits the introduction into the wild of any species that is not ordinarily resident in and is not a regular visitor to Great Britain in a wild state, or any species of the 69 plants listed on Schedule 9.

The frequently encountered invasive species within proposed development sites include Japanese knotweed (*Fallopia japonica*); Giant hogweed (*Heracleum mantegazzianum*); Himalayan balsam (*Impatiens glandulifera*); Floating pennywort (*Hydrocotyle ranunculoides*); New Zealand pygmyweed (*Crassula helmsii*); Rhododendron (*Rhododendron ponticum*); and certain hybrids of the above, some species may be native yet are listed for conservation purposes.

Plant or soil material contaminated by Japanese knotweed that is to be discarded is considered to be a 'controlled waste' under the Environmental Protection Act 1990 (EPA 1990). It is an offence to deposit, treat, keep, or dispose of controlled waste without a licence. Furthermore knotweed that has been cut down and removed must be received by an authorised person to be disposed of correctly. A licence can be obtained from the Environment Agency (EA). The release or planting of a listed species in the wild can be permitted under a licence granted by the relevant statutory body.

Fungi

There are five species of fungi protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). These include the sandy stilt puffball (*Battarrea phalloides*), royal bolete (*Boletus regius*), and the hedgehog fungus (*Hericium erinaceus*). It is an offence to pick, uproot, trade in, or possess for the purpose of trade, any species listed under schedule 8.

Invertebrates

A number of invertebrates such as stag beetles (*Lucanus cervus*), silver studded blue butterfly (*Plebejus argus*) or white letter hairstreak (*Stymondia w-album*) are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981, as amended). This legislation makes it illegal to intentionally kill, injure, or take a protected invertebrate, or to damage, destroy, or obstruct access to any structure or place used for shelter or protection by such a species; and disturb any protected species occupying such a structure or place.

Three invertebrates are listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2010, the large blue butterfly (*Maculinea arion*), fisher's estuarine moth (*Gortyna borelii lunata*), and lesser whirlpool ram's-horn snail (*Anisus vorticulus*). It is an offence deliberately to kill, capture, or disturb a listed species, or to damage or destroy the breeding site or resting place of such an animal.

Amphibians

There are four widespread amphibian species, common frog (Rana temporaria), common toad (*Bufo bufo*), palmate newt (*Lissotriton helveticus*), and smooth newt (*Lissotriton vulgaris*). All of the four widespread species receive partial protection under Schedule 5 of the Wildlife and Countryside Act (1981, as amended) making it an offence to offer them for sale or trade.

Great Crested Newts, Natterjack Toads and Pool Frogs

Great crested newts (*Triturus cristatus*) (GCN) and natterjack toads (*Epidalea calamita*) are fully protected under Schedule 5 (in respect of section 9(4)(b) and (c) and (5) only) of the Wildlife and Countryside Act (1981, as amended) and the Conservation of Habitats and Species Regulations 2010. Reintroduced populations of 'native' pool frogs (*Pelophylax lessonae),* currently restricted to one site in Norfolk, also receive the same protection. It is illegal to possess a protected species (alive or dead), deliberately capture, injure or kill, to intentionally or recklessly disturb, or to deliberately take or destroy the eggs of these protected species. It is also illegal to damage, destroy or intentionally or recklessly obstruct access to a breeding or resting place used by these protected species'. All life stages of each species' are afforded the same level of protection.

In order to undertake any activity which would otherwise result in any of the above offences being committed, it may be necessary to obtain a European Protected Species (EPS) licence from the relevant statutory body (Natural England (NE), Countryside Council for Wales (CCW) or Scottish natural Heritage (SNH)). It is possible to undertake surveys which would otherwise involve unlawful acts, such as disturbance, by obtaining a survey license which provides authorisation for scientific and educational purposes.

Reptiles

The four common reptile species, adder (*Vipera berus*), grass snake (*Natrix natrix*), common lizard (*Zootoca vivipara*) and slow worm (*Anguis fragilis*), are protected under Schedule 5 of the Wildlife and Countryside Act (1981, as amended) against deliberate and / or intentional killing, injuring and trade.

If common reptile species are found to be present or considered potentially present within a proposed development site, mitigation will be required to ensure that no legislative offence will be committed.

Birds

All birds, their nests and eggs are protected by the Wildlife and Countryside Act (1981, as amended). It is an offence to intentionally kill, injure, or take any wild bird, or take or destroy an egg of any wild bird. It is also an offence to damage or destroy the nest of any wild bird (whilst being built, or in use). Therefore, clearance of vegetation within the site boundary, or immediately adjacent to the site during the nesting season could result in an offence occurring under the Act. The bird breeding season can be taken to run between the 1 February and 31 August and is subject to geographical and seasonal factors. There are 79 species of birds listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Mammals

All wild mammals are protected under the Wild Mammals (Protection) Act 1996 from certain cruel acts; and for connected purposes. It is an offence to mutilate, kick, beat, nail, or otherwise inflict unnecessary suffering on any wild mammal.

Badgers

Badgers (*Meles meles*) are protected under the Protection of Badgers Act (1992) and the Wildlife and Countryside Act (1981, as amended). As such it is an offence to wilfully take, kill,

injure or ill-treat a badger, or possess a dead badger or any part of a badger. Under the Act their setts are also protected against obstruction, destruction, or damage in any part.

Sett interference includes damaging or destroying a sett, obstructing access to a sett, and disturbing a badger whilst it is occupying a sett.

Work that cause significant disturbance to badgers or their setts is illegal without a development licence from the relevant statutory body (NE, CCW, SNH). As a precautionary principle, a buffer distance between a badger sett and the works will be determined, based upon guidance from an appropriately experienced ecologist. This buffer distance should be based upon the size and activity levels at the sett, the topography between the sett and the works and the nature of the works.

Bats

All native UK bat species are fully protected by UK law under Schedule 5 (in respect of section 9(4)(b) and (c) and (5) only) and Schedule 6 of the Wildlife and Countryside Act (1981, as amended), and under Schedule 2 of the Conservation of Habitats and Species Regulations 2010. It is illegal to deliberately capture, injure or kill a bat or to intentionally or recklessly disturb bats. It is also illegal to damage, destroy or intentionally or recklessly obstruct access to a breeding or resting place used by a bat.

Any activity that would result in a contravention of the above legislation would likely require an EPS licence from the relevant statutory body (NE, CCW or SNH). Works or mitigation activities involving interference with bats or bat shelters must be carried out by a licensed bat worker.

Dormice

Dormice (*Muscardinus avellanarius*) are protected under Schedule 5 (in respect of section 9(4)(b) and (c) and (5) only) of the Wildlife and Countryside Act (1981, as amended) and are listed in Schedule 2 of the Conservation of Habitats and Species Regulations 2010. Under the current legislation it is illegal to intentionally or deliberately kill, injure or capture dormice, deliberately disturb dormice (whether in a nest or not); or to damage, or destroy dormouse breeding sites or resting places.

Any activity that would result in a contravention of the above legislation would likely require an EPS licence from the relevant statutory body (NE, CCW or SNH).

Otters

The otter (*Lutra lutra*) is fully protected under Schedule 5 (in respect of section 9(4)(b) and (c) and (5) only) of the Wildlife and Countryside Act (1981, as amended) and are listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2010. It is therefore illegal to deliberately capture, injure or kill an otter, possess an otter (dead or alive), or any other part of an otter, or intentionally or recklessly disturb otters. It is also illegal to damage, destroy or intentionally or recklessly obstruct access to a holt or other resting place used by an otter.

Any activity that would result in a contravention of the above legislation would likely require an EPS licence from the relevant statutory body (NE, CCW or SNH).

Water voles

Water voles (*Arvicola amphibius*) are protected under Schedule 5 of the Wildlife and Countryside Act (1981, as amended). It is an offence to possess, control or sell water voles

or to intentionally kill, injure or take water voles. It is also an offence to intentionally or recklessly damage, destroy or obstruct access to a place that water voles use for shelter or protection or disturb water voles whilst using such a place.

A licence is required for catching / handling water voles, or for field surveys that are intrusive or disturbing where the surveyor suspects' water voles are present. A licence can be obtained by applying to the relevant statutory body (NE, SNH, and CCW,). Please note that the legislation does not permit licences to be issued in relation to development of land.

Hedgerows

The Hedgerows Regulations (1997) make provision for the protection of important hedgerows in England and Wales. The regulations affect hedgerows which are 20m or more in length, or connected at both ends to another hedgerow of any length.

They relate to hedgerows which are on, or adjoining land used for the following purposes: agriculture or forestry; the breeding or keeping of horses, ponies or donkeys; common land; village greens; Sites of Special Scientific Interest (which include all terrestrial SACs, NNRs, and SPAs) and Local Nature Reserves. They do not include hedges that is attached to, or marking the boundaries of a private house.

It is an offence to intentionally or recklessly remove or cause or permit another person to remove a hedgerow or intentionally or recklessly remove, or cause or permit another person to remove, a hedgerow without planning permission or without prior notification to the local planning authority .

General Guidance on European Protected Species Licence Applications

Should a European Protected Species (EPS) be found on a development site, and where best practice guidance either cannot be followed or is not applicable an EPS licence will be required. The licence permits operations that otherwise would be unlawful and fall outside the Good Practice Guidance, an application for such a licence should be made to the relevant statutory body (NE, CCW or SNH) before any works can proceed. It is also possible to obtain a general licence that may cover an area rather than applying in each individual case for a separate specific/individual licence.

Should the survey information be considered insufficient or the statutory body is not satisfied with the application, the licence application may be refused. This could potentially result in significant delays to a project, if not considered in time; however, early consideration of the potential presence of EPS on a site and an assessment of suitable mitigation measures to derogate such possibilities early in a project will negate this potential delay.

Biodiversity Policies

The key national policies which influence the ecology and nature conservation assessments are the:

- National Planning Policy Framework (NPPF) (DCLG 2012);
- The UK Biodiversity Framework (2011-2020).

The NPPF replaces all Planning Policy Statements and sets out the government's national planning policy on the protection of biodiversity. One of the 12 core planning principal is that planning should contribute to conserving and enhancing the natural environment and reducing pollution. Allocations of land for development should prefer land of lesser environmental value.

The UK Biodiversity Framework is an important framework that is owned, governed and implemented by the four UK countries, assisted by Defra and JNCC in their UK co-ordination capacities. Although differing in details and approach, the four UK countries have published strategies which promote the same principles and address the same global targets: joining-up our approach to biodiversity across sectors; and identifying, valuing and protecting our 'Natural Capital' to protect national well-being now and in the future. This new framework has been developed to enhance the recovery of priority habitats and species in England (published under section 41 of the Natural Environment and Rural Communities (NERC) Act 2006), thereby contributing to the delivery of the England Biodiversity Strategy. The framework has been developed and endorsed by the England Biodiversity Group and wider partnership. It is the starting point for a more integrated approach to biodiversity conservation in England, building on the strengths of the former UK Biodiversity Action Plan (BAP) process and improving those areas where insufficient progress was being made.

APPENDIX B

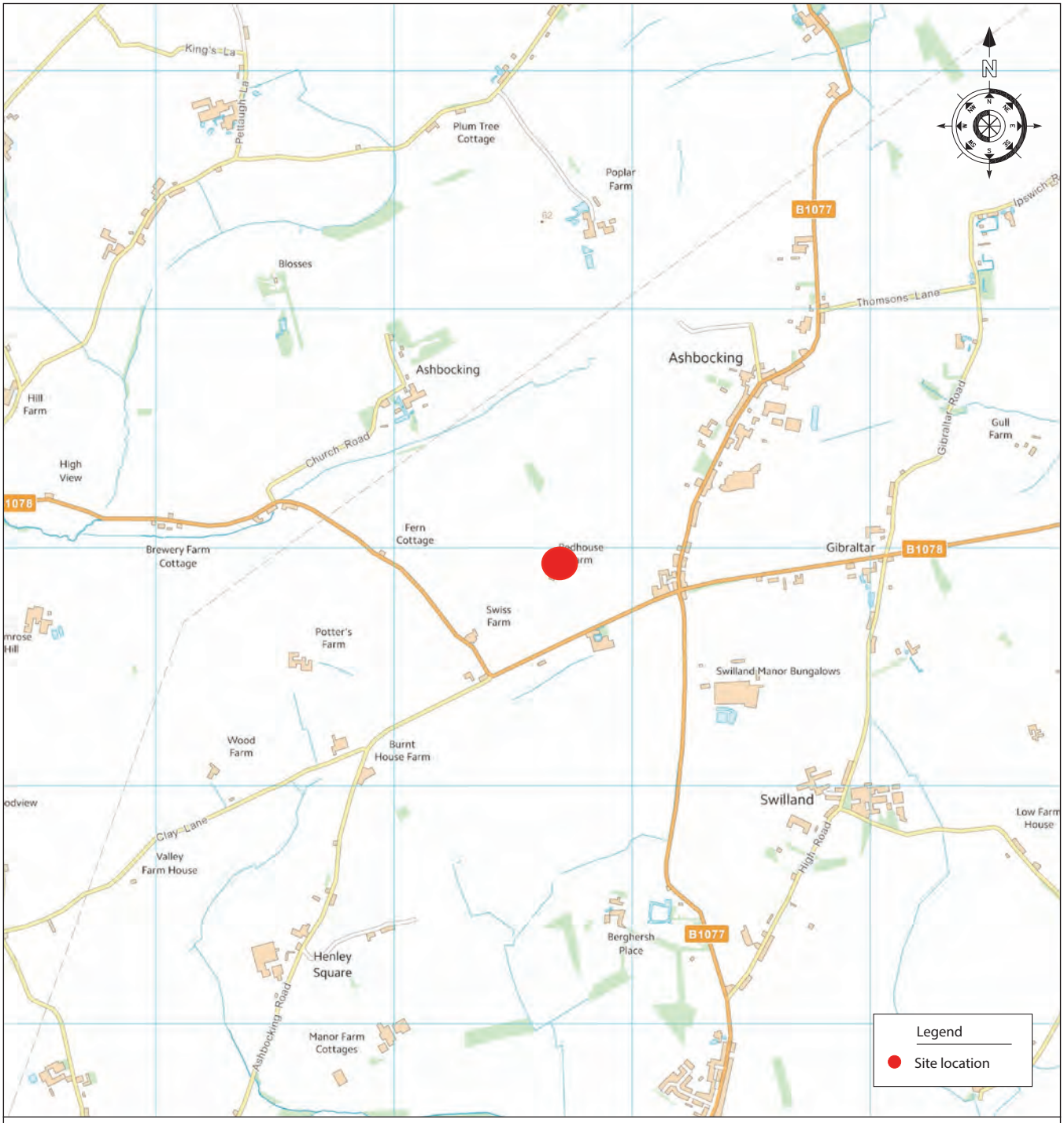
TARGET NOTES

TARGET NOTES

Target note No.	Target note
1	Highly modified barn – refurbished frontage in good structural condition. Slate roof and rendered brickwork at the base. Timber gable ends, rear, and lean-to offer suitable crevices for crevice dwelling bats and potential internal access. Similar opportunities on pantiled roof of western annex.
2	Carp pond - reedmace and rush around the margins. Rough grassland, ornamental shrubs and tall ruderal vegetation around the top and sides of the pond banks.
3	Semi-mature poplar treeline – one tree with snag-end at height and young ivy. No more than low potential for roosting bats. Remaining trees all of negligible potential.
4	Scattered / continuous scrub beneath poplars – young ash, bramble, and field maple beside dry ditch.
5	Blackthorn hedge with young ash trees and dry ditch – nesting bird potential.
6	Managed hedge with trees along northern boundary. Blackthorn with ash, field maple and hawthorn trees – nesting bird potential.
7	Same composition as TN6 plus dog rose.
8	Small section of dense scrub intermixed with ornamental shrubs in the north-eastern corner – nesting bird potential.
9	Species rich hedge along access track. – blackthorn, English oak, field maple, hawthorn, lime and rose - nesting bird potential.
10	English oak standard within hedge along access track. Dense ivy, no other obvious structural features. Likely to be outside of the developmental zone of impact.

APPENDIX C

FIGURES



201504 Red House Farm, Ashbocking

Figure 01: Location Plan

July 2015

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201504 Red House Farm, Ashbocking

Figure 02: Statutory and Non-Statutory Designated Sites

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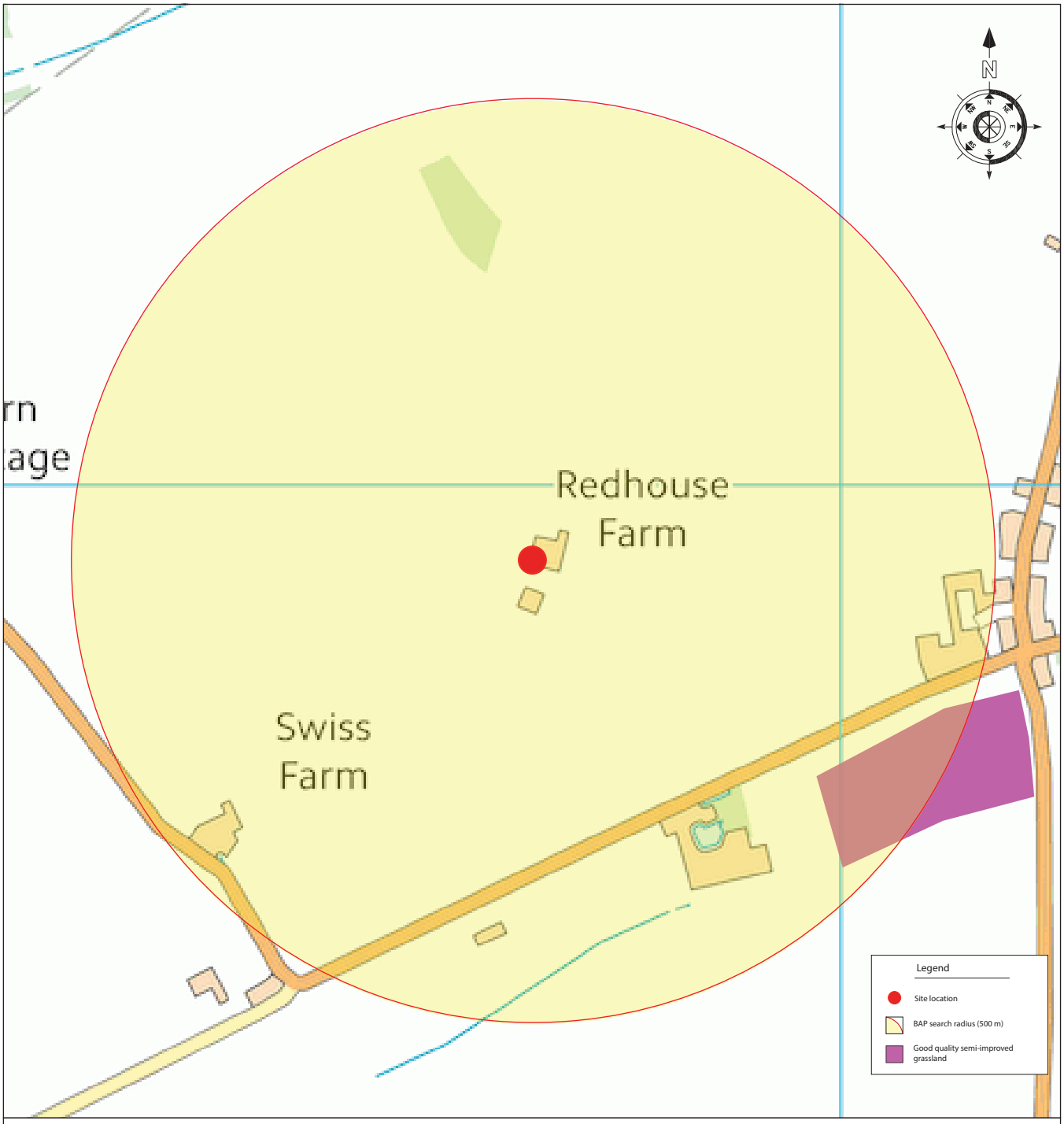

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201504 Red House Farm, Ashbocking

Figure 03: UKBAP, Suffolk BAP and Habitats of Principle Importance

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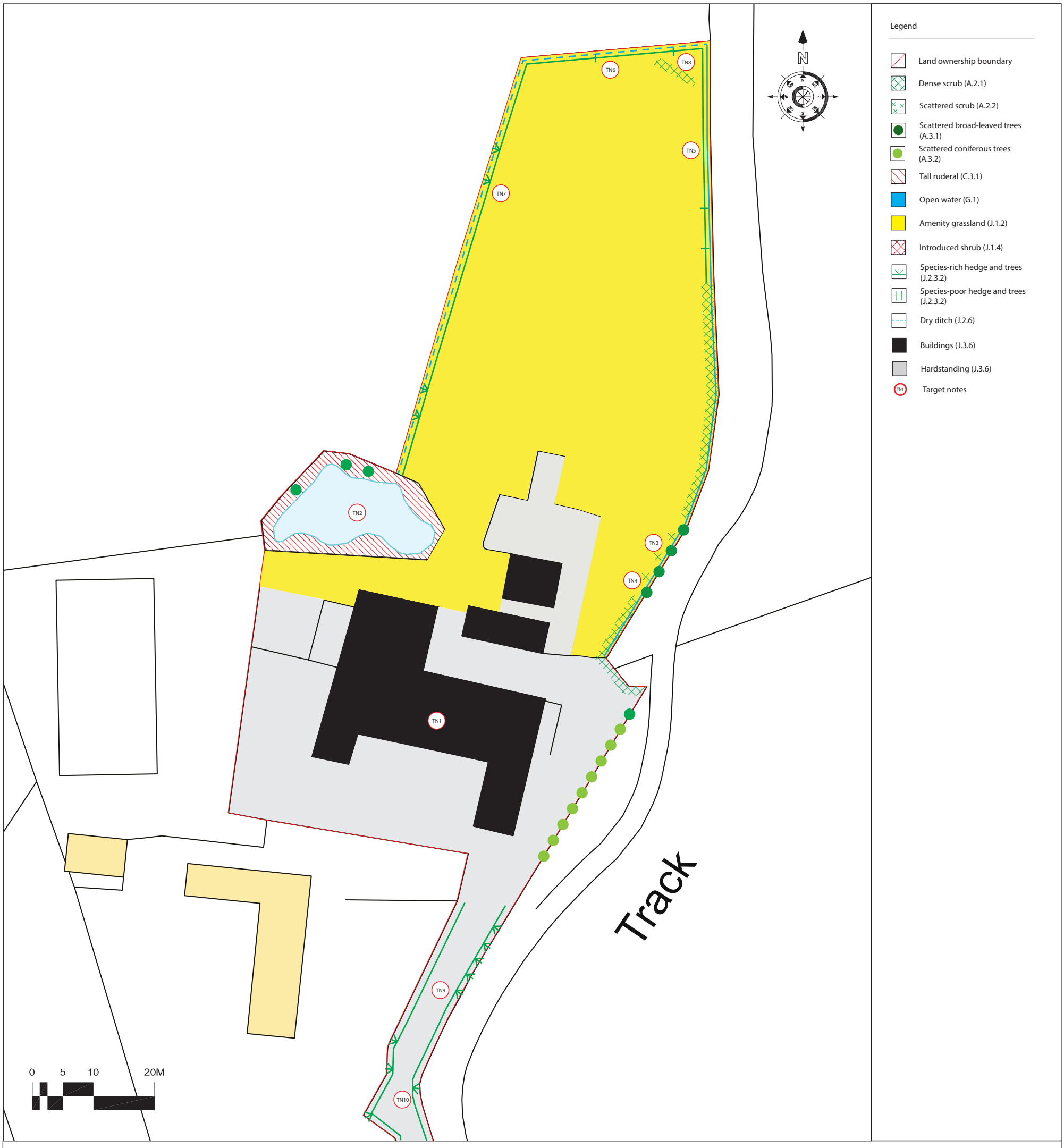

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201504 Red House Farm, Ashbocking

Phase 1 Habitat Survey

July 2015

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Bat Surveys

Red House Farm, Ashbocking, Suffolk

Evolution Town Planning LLP

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CONTENTS

LIST OF ABBREVIATIONS

BAP	Biodiversity Action Plan
BLE	Brown long-eared (bat)
CIEEM	Chartered Institute of Ecology and Environmental Management
EPSL	European Protected Species Licence
JNCC	Joint Nature Conservation Committee
LNR	Local Nature Reserve
NERC	The Natural Environment and Rural Communities Act 2006
NPPF	National Planning Policy Framework 2012
PRA	Preliminary Roost Assessment
SBAP	Suffolk Biodiversity Action Plan
SBRC	Suffolk Biological Records Centre
WCA	The Wildlife and Countryside Act 1981 (as amended)

EXECUTIVE SUMMARY

Introduction	BASEcology was commissioned by Evolution Town Planning LLP to undertake Phase 2 bat surveys (Preliminary Roost Assessment [PRA] and further emergence and re-entry surveys), after the risk of potential bat roosts on-site was identified early within the project conception phase. These surveys were carried out alongside a Preliminary Ecological Appraisal (PEA) to support a planning application for the proposed replacement of three dwellings at Red House Farm in Ashbocking, Suffolk.
Methodology	A Preliminary Roost Assessment (PRA) of all buildings on-site was undertaken by a licensed bat ecologist. The PRA comprised an internal and external inspection, searching for roosting bats and signs of past usage. The structural design and condition of the buildings was also noted within the PRA to assess the suitability for different species and types of roosts. Emergence surveys were carried out by four surveyors deployed around the northern, north-eastern, southern and south-western aspects of the main building. These areas were previously identified during the PRA as having structural potential for roosting bats. The emergence survey commenced 15 minutes before sunset and ended two hours afterwards. Re-entry (dawn) surveys were carried out by two surveyors; one surveyor was positioned directly opposite the roost (Identified during the first emergence survey), and the other was mobile covering the northern, north-eastern and western aspects of the building. The re-entry survey commenced 1.5 hours before sunrise and ended at sunrise. The location, appearance, flight characteristics and time of sightings of bats were duly noted where possible during each survey. Survey equipment included one EM Touch, one Batbox Duet detectors, and two Anabat Express detectors. Subsequent analysis was undertaken on Batsound and Analook software.
Results	The results of the detailed bat surveys indicate that, at the time of survey, the mid- section of the old barn supported a small summer / transitional roost for a common species of bat; one common pipistrelle was noted on two occasions emerging from underneath the eaves of the highly modified barn opposite the western annex. The surveys were carried out in accordance with best practice guidance, with three emergence and re-entry surveys undertaken within the optimum survey period of May to August inclusive. It is, therefore, reasonable to propose the absence of a maternity roost on-site, as the survey period is reflective of when maternity roosts usually form and young are born and raised. Whilst the presence of smaller roosts outside of the survey period cannot be completely discounted, the absence of few internal signs in particular indicates that the buildings have not previously supported large numbers of bats. The likelihood of increased roosting activity outside of the survey period is also considered very low in context of the low overall level of bat activity recorded on-site throughout.
Recommendations	• Due to the confirmed presence of one bat roost within the buildings on-site, a European Protected Species Licence (EPSL) must be sought prior to the commencement of any site works. • Demolition works should commence upon the roof, with tiles individually removed be hand in a 'soft-strip' fashion. Timber cladding should similarly be removed by hand, with care and attention also given to any other areas showing signs of suitable structural damage (i.e. with a potential crevice behind). • In order to offset the potential loss of structural features suitable for roosting bats during the proposed development, new bat features must be incorporated into the building design of the proposed dwellings. It is considered that this measure would not only offset the adverse impact, but also provide a minor enhancement, as it would increase the overall number and longevity of available roost sites within the application site. • Basic mitigation relating to timings, site lighting and working hours must also be implemented during the construction and operational phases of

	the development to ensure existing flight paths / foraging areas are adequately protected throughout.

This sheet is intended as a summary only

SECTION 1

INTRODUCTION

1 INTRODUCTION

1.1 Overview and site context

1.1.1 BASEcology was commissioned by Evolution Town Planning LLP to undertake detailed bat surveys to support a planning application for the proposed replacement of three dwellings at Red House Farm in Ashbocking, Suffolk.

1.1.2 The site is located off the B1078 Road in Ashbocking, Suffolk, approximately nine miles north of Ipswich. The central Ordnance Survey National Grid Reference of the site is TM 17681 53921. The site currently supports a number of mixed-use buildings surrounded by amenity grassland and a single pond, with hedgerows and scattered trees along the site borders. The existing buildings on-site are to be demolished as part of the development proposal.

1.1.3 The planning statement sets out that the existing buildings include a flat with a lawful development certificate, an established history of B2 uses of the commercial part of the building and two approvals for conversion of offices to two dwellings which could be carried out at any time.

1.1.4 The site environs are dominated by arable farmland, with the former farmhouse (Red House Farmhouse) bordering the southern site boundary. The local green infrastructure is limited to hedgerows along the respective field margins. Aerial photographs indicate many of these in the wider area are severed and fragmented. The local green infrastructure in relation to the site is, therefore, considered relatively poor.

1.2 Survey Aim

1.2.1 Detailed bat surveys were carried out to confirm the presence or likely absence of bat roosts within the buildings on-site. These surveys were carried out alongside a Preliminary Ecological Appraisal[1] (PEA) after the risk of potential bat roosts on-site was identified early within the project conception phase.

1.3 Legislation and Policy Context

1.3.1 All native UK bat species are fully protected by UK law under Schedule 5 (in respect of section 9(4)(b) and (c) and (5) only) and Schedule 6 of the Wildlife and Countryside Act (1981, as amended), and under Schedule 2 of the Conservation of Habitats and Species Regulations 2010. It is illegal to deliberately capture, injure or kill a bat or to intentionally or recklessly disturb bats. It is also illegal to damage, destroy or intentionally or recklessly obstruct access to a breeding or resting place used by a bat.

1.3.2 Any activity that would result in a contravention of the above legislation would likely require an EPS licence from the relevant statutory body (Natural

[1] BASEcology (July, 2015) Preliminary Ecological Appraisal: Red House Farm. Prepared for Town Evolution Planning LLP.

England). Works or mitigation activities involving interference with bats or bat shelters must be carried out by a licensed bat worker.

1.3.3 Additional details relating to the context and applicability of legislation are presented in Appendix 1.

SECTION 2

METHODOLOGY

2 METHODOLOGY

2.1 Preliminary Roost Assessment (PRA)

2.1.1 A PRA of the buildings on-site was undertaken by a licensed bat ecologist (licence no. CLS00217) on 18th March 2015. The objectives of survey were to:

- determine the presence or likely absence of bats;
- locate any bat roosts; and
- determine the status of any bat roosts (e.g. breeding, hibernation).

2.1.2 The following methodology was adopted:

2.1.3 (a) Signs of residency by bat species*. This consisted of a slow methodical search, both internally and externally, for roosting bats and the signs of past usage. Scratch marks and staining at the entrance / exit holes of the potential roost can be used to identify the presence of bats, while droppings in roof voids and on walls, sills and in cracks can be used in many cases to identify the species of bat present. Similarly, the presence of dense spider webs at a potential roost can often indicate their absence.

2.1.4 (b) An assessment of the potential of a structure to provide different sorts of roosts based on previous experience of bat occupancy at other sites in the locale.

2.1.5 The survey was aided via the use of binoculars and a strong torch where necessary.

2.1.6 The building inspection classified each building / structure as one of the following categories:

- Confirmed bat roost;
- High potential to contain a bat roost;
- Moderate potential to contain a bat roost;
- Low potential to contain a bat roost; or
- Negligible potential to contain a bat roost.

2.1.7 A table detailing examples of the features usually used to classify a building are given in Appendix B.

2.2 Emergence and Re-Entry Surveys

2.2.1 The PRA results were used to inform each surveyor's position and focal points during the emergence and re-entry surveys (as detailed within Section 3.2). Three emergence (dusk) and re-entry (dawn) surveys were undertaken in June, July and August in accordance with best practice guidance[2].

2.2.2 The emergence surveys were carried out by four surveyors who were deployed on the northern, north-eastern, southern and south-western aspects

[2] Hundt L (2012) Bat Surveys: Good Practice Guidelines, 2nd edition. Bat Conservation Trust.

of the main building. These areas were previously identified during the PRA as having structural potential for roosting bats. The emergence survey commenced 15 minutes before sunset and ended two hours afterwards.

2.2.3 A re-entry (dawn) survey was carried out by two surveyors; one surveyor was positioned directly opposite the roost (identified during the first emergence survey) to monitor any re-entry, whilst the other was mobile covering the northern, north-eastern and western aspects of the building. The re-entry survey commenced 1.5 hours before sunrise and ended at sunrise.

2.2.4 The location, appearance, flight characteristics and time of sightings of bats were duly noted where possible during each survey. Equipment included one EM Touch, one Batbox Duet detectors, and two Anabat Express detectors. Subsequent analysis was undertaken on Batsound and Analook software.

2.3 Survey Limitations

Preliminary Roost Assessment (PRA)

The interior of the flat-roofed outbuilding (Outbuilding 3) was inaccessible during the time of the initial PRA. This is not, however, considered a significant survey constraint that would otherwise compromise the integrity of the results.

Emergence and Re-entry Surveys

2.3.1 Bat surveys undertaken using bat detectors are inherently biased as bats with louder calls (such as the *Nyctalus* species) will be recorded at a greater distance (and therefore more frequently) than species which use quiet calls such as *Plecotus* sp. This is an unavoidable limitation for all bat detector surveys, the implications of which have been considered when analysing the results.

SECTION 3

RESULTS

3 RESULTS

3.1 Preliminary Roost Assessment (Buildings)

3.1.1 The PRA includes a heavily modified barn and three small outbuildings located to the north-east currently in commercial and residential uses with permissions for further residential conversions which can be carried out at any time. The description of the building has been subdivided due to the varied structural design (arising from extensions) and large size (c. 725 m^2). A summary of the results is provided at the end of this section.

Mid- section (highly modified barn)

3.1.2 **External inspection**: The mid-section has evolved from a highly modified gable-ended barn, two junctions of smaller pitched roofs, and two lean-tos. The smaller pitched roofs adjoin the building perpendicular to the southern edge, with one lean-to in-between. The second lean-to is located in-between the western edge of the building and the western annex.

Eastern edge of the mid- section (also showing the eastern annex) and western lean-to

3.1.3 The exterior of the building features a pitched slate roof, rendered brickwork at the wall base, and timber cladding across the gable ends and mid- and upper sections of the walls. The rear (northern edge) of the building also features extensive repairs formed from wooden cladding and corrugated metal, which have been fitted to remediate significant structural damage and deterioration. The footprint of the building measures approximately 7.5 m x 25 m (width x length).

3.1.4 The timber frontage and slate roof of the building are considered of good structural condition. The open eaves surrounding the far western lean-to provide internal access into the building, and therefore, roosting opportunities within. No signs were, however, noted across the front of the building to indicate the presence of a significant roost.

3.1.5 The rear of the building features numerous cracks and crevices beneath the timber and metal cladding due to the make-shift repairs that have been made. No signs of presence were noted.

Southern face of the old barn and stockyard

3.1.6 **Internal inspection**: There is no attic space along the southern section of the building. Small voids are present beneath the smaller gable-ended roof sections, which run perpendicular to the main barn. These sections feature timber frames that are pinned together. The attic spaces measure approximately 5 m x 5 m x 1 m (width x length x height) and are poorly insulated with no underfelt beneath the rafters and only old fibre-glass material across the floors. All of the attic and void spaces were heavily cobwebbed with no signs of presence.

3.1.7 The western lean-to is a small enclosed space (c. 2 m width x c. 7 m length) that is separated off from the building. The lean-to features a false ceiling and small void space beneath the corrugated roof, and timber cladding across the adjoining wall of the building. The void is heavily cobwebbed with no signs of presence across the timbers, cladding or floor. The small room features a concrete floor and breezeblock walls, with Flemish brickwork and timber boards across the wall adjoining the building.

3.1.8 Two old brown long-eared bat (*Plecotus auritus*) droppings were noted on the south-eastern corner of the western lean-to (beside the only door), approximately 1.5 m above ground level. No further signs were noted within the interior.

Asbestos-clad extension

3.1.9 **External inspection:** The large extension has been built onto the northern edge of the old barn, in-between the main section and western annex opposite the pond. The building footprint measures approximately 9 m x 14 m (width x length).

3.1.10 It incorporates an old Flemish bond wall on the northern side, which previously formed an external wall that enclosed the stockyard area. The remaining external walls are constructed from breezeblocks, with large metal shutter doors on the eastern face bordering the stockyard. The roof and northern gable are covered in corrugated asbestos cladding. No signs of presence were noted around the building exterior.

Northern face of asbestos clad extension opposite the pond. Also showing the north face of the western annex (closet) and Outbuilding 1

3.1.11 **Internal inspection**: The building interior is open plan. It incorporates half of the western annex (northern section), which was previously opened up to increase the availability of work / storage space. The building is supported by a bolted metal frame, and also features an open roof with no attic space. No signs of presence were noted.

Interior of asbestos clad barn

Eastern annex

3.1.12 **External inspection**: The two-storey rectangular annex is aligned north north-east to south south-west on the eastern end of the main building. It forms the most recent extension of the main barn building. The second storey is currently occupied for residential purposes, with the lower level designed as a garage / storage area.

3.1.13 The footprint of the annex measures approximately 100 m^2. It is constructed from stretcher bond brickwork (alternative courses of stretchers), with a slate pitched roof on-top, a gable-end on the southern end, and wooden fascias, bargeboards and soffits beneath the eaves.

3.1.14 The building is considered in a good state of repair at the time of survey. Very minor damage was noted to the soffits on the south-western corner, which could provide roosting opportunity for crevice dwelling species such as pipistrelles. No signs, however, such as scratch marks, staining or droppings were noted around these features or around the surrounds of the entire annex. The presence of thick cobwebs also indicated no recent through passage.

3.1.15 The eastern edge of the annex also features a single-storey flat-roofed extension. The extension is constructed from breezeblocks with a felt roof and wooden fascias. No signs were noted around the exterior.

Eastern and western faces of the eastern annex (also showing the flat-roofed extension on the eastern side)

3.1.16 **Internal inspection**: The attic space measures approximately 6 m x 17 m x 1 m (width x length x height). The roof is supported by a modern timber frame and is well insulated with felt underneath the tiles and fibreglass across the attic floor. The roof is considered in good state of repair with no signs of light ingress or damage to the underfelt. No signs of droppings were noted on the attic floor, scratch marks or staining on the rafters, or bat carcasses within the water tank. No signs were similarly noted within the ground level garage or extension.

Western annex

3.1.17 **External inspection**: The single storey annex is aligned north north-east to south south-west on the western end of the main building.

3.1.18 The annex footprint measures approximately 140 m^2. It is constructed from Flemish bond walls (alternative courses of headers and stretchers), with a pantiled roof and brick gables at either end. The annex features wooden fascias and soffits on one side only (on the short eastern side opposite the stock yard).

3.1.19 The roof of the building features numerous raised / missing / broken pantiles, and damaged brickwork around the window plinths. A number of windows have also been boarded up with plywood. The overall structural condition for roosting purposes is, therefore, considered moderate. No signs were noted around any of these features or around the wider building exterior during the course of the PRA.

Western face of the western annex

3.1.20 **Internal inspection:** The annex is divided into two, with the northern half having been opened up and incorporated into the asbestos-clad extension beside in order to create a larger internal working space. The annex features a false ceiling in both parts, creating a dark attic space throughout. A pinned timber frame supports the roof, with underfelt beneath the rafters on the southern half. The attic floors are bare with no insulation, and the ground floors are concreted and painted red. All of the annex walls are painted white.

3.1.21 There is very little light ingress in either attic space, although the results from the external inspection indicate the raised / broken / missing tiles afford roosting opportunities beneath the pantiles and underfelt. No signs of bats were, however, noted across the heavily cobwebbed timber frame or on the attic floor. A single pipistrelle dropping was noted on south-eastern internal wall next to the door. No further signs were discovered within the annex.

Outbuilding 1 – Low potential

3.1.22 **External inspection**: The small outbuilding is of a gable-ended design, measuring approximately 4 m x 5 m (width x length)***.*** It is located in-between the asbestos extension of the old barn and another gable-ended outbuilding (Outbuilding 2), on the far-side of the Flemish bond wall that encloses the northern edge of the stockyard.

3.1.23 The outbuilding is constructed from Flemish bond walls and a pantilled roof, and features an open frontage. It is considered of moderate structural condition, with raised / missing tiles, gaps underneath the ridge tiles, and damaged brickwork***.*** No signs of bats were noted during the inspection of the exterior.

3.1.24 **Internal inspection**: A simple pinned wooden frame supports the pantilled roof of the small outbuilding, with no insulation such as underfelt underneath the tiles. No signs of presence were noted on the timbers, walls or floor.

Outbuilding 2 – Low potential

3.1.25 **External inspection**: The gable-ended outbuilding is located on the northern edge of the stockyard. Building materials include breezeblock walls, a corrugated metal roof, wooden fascias / soffits / bargeboards, and timber cladded gables at either end. The footprint of the outbuilding measures approximately 6 m x 15 m (width x length).

3.1.26 Three scattered pipistrelle droppings were noted c. 1 m from ground level on the southern face opposite the stockyard. Closer inspection revealed no damage and / or obvious points of access / egress above within the soffits.

Southern face of Outbuilding 2

3.1.27 **Internal inspection**: The interior features white breeze block walls, a concrete floor and a partially enclosed attic space (the mid section is open in order to provide natural light inside). No signs of bats were noted within the void space, walls or floor.

Outbuilding 3 – Low potential

3.1.28 **External inspection**: The flat-roofed building is located to the immediate north-east of the gable-ended outbuilding, and east of the pond. The outbuilding is a square shaped design measuring approximately 9 m x 9 m (width x length). It is constructed from breezeblocks, with a flat roof on top covered in felt, and wooden fascias around the eaves. The northern edge also supports a small timber clad lean-to with an open frontage and felt roof. The lean-to measures approximately 7 m x 1.5 m. No signs were noted around the exterior of the flat-roofed outbuilding or lean-to.

Eastern faces of Outbuilding 2 (closest) and 3

3.1.29 **Internal inspection**: The interior of the flat-roofed building was not accessible at the time of survey. This was not considered to be a significant survey constraint in light of the architectural design and good structural condition of the building.

PRA Summary

3.1.30 A summary of the PRA results is provided in the table below.

Table 3.1: PRA Summary

Building	External inspection	Internal inspection	Signs of presence / activity	Potential
Mid- section (old barn)	Yes	Yes	Yes – two old BLE[1] droppings within western lean-to	Moderate
Asbestos clad extension	Yes	Yes	No	Negligible
Eastern annex	Yes	Yes	No	Low
Western annex	Yes	Yes	Yes – 1 pip[2] dropping on wall	Moderate
Outbuilding 1	Yes	Yes	No	Low
Outbuilding 2	Yes	Yes	No	Low
Outbuilding 3	Yes	No	No	Low

[1]BLE = Brown Long-eared; [2]Pip = pipistrelle.

3.2 Emergence Survey 1 - 15/06/15

3.2.1 The emergence survey was undertaken in favourable weather conditions: 12°C start temperature, with a light wind (ENE 7 mph), scattered clouds and no rain. Weather conditions remained stable throughout with the temperature dropping one degree before the survey end. Sunset was registered at 21:16. The survey commenced at 21:00 and finished two hours later at 23:00.

3.2.2 Two common bat species (listed below) were recorded in total during the emergence survey.

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)

3.2.3 Activity on site was centred around the pond and wooded eastern boundary. Occasional passes were also recorded along the western annex and across the hardstanding area opposite the southern building edge.

3.2.4 One small roost was identified during the emergence survey. A single common pipistrelle was observed exiting early (for the species) from underneath the south-western eaves of the old barn (opposite the western annex). A summary of the survey results is provided in Table 3.2 below. Full details of the survey notes for each surveyor are provided in Appendix C.

Table 3.2: Emergence Survey Summary

Surveyor No.	Position	Roost recorded?	Species & No.	Point of emergence
1	North-eastern corner opposite stockyard	No	N/A	N/A
2	Northern edge	No	N/A	N/A

	opposite pond, beside north-western corner			
3	South-west corner opposite western annex	No	N/A	N/A
4	South of old barn on hardstanding	Yes	Cpip[1] x 1	Emerged from eaves opposite the western annex, swooped down and circled three times before flying off in eastern direction.

[1]Cpip = Common pipistrelle

3.3 Re-entry Survey 1 - 16/06/15

3.3.1 The re-entry survey was undertaken in favourable weather conditions: 8°C start temperature, with a light wind (E 3 mph), no cloud cover and no rain. Weather conditions remained stable throughout with no change in temperature recorded at the survey end. Sunrise was registered at 04:33. The survey commenced at 03:00 and finished 1.5 hours later at 04:33.

3.3.2 No bats were recorded during the re-entry survey. A summary of the survey results is provided in Table 3.3 below. Full details of the survey notes for each surveyor are provided in Appendix C.

Table 3.3: Re-entry Survey Summary

Surveyor No.	Position	Roost recorded?	Species & No.	Point of emergence
1	South-western corner opposite roost	No	N/A	N/A
2	Mobile across western annex, northern edge and north-eastern stockyard	No	N/A	N/A

3.4 Emergence Survey 2 - 30/07/15

3.4.1 The survey was carried out in favourable weather conditions: 12°C start temperature, with a light wind (NE 6 mph), overcast and no rain. Weather conditions remained stable throughout with the temperature dropping to 11°C at the survey end. Sunset was registered at 20:49. The survey commenced at 20:35 and finished two hours later at 22:30.

3.4.2 Two common bat species (listed below) were recorded in total during the emergence survey.

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)

3.4.3 Activity on site was much the same as the previous round of surveys, with greater activity around the pond and the eastern treeline. Occasional passes were also noted across the western and southern hardstanding areas parallel to the buildings.

3.4.4 No emergence was recorded during the course of the survey although two pipistrelles were noted flying into the asbestos-clad extension to feed inside. A summary of the survey results is provided in Table 3.4 below. Full details of the survey notes for each surveyor are provided in Appendix C.

Table 3.4: Emergence Survey Summary

Surveyor No.	Position	Roost recorded?	Species & No.	Point of emergence
1	North-eastern corner opposite stockyard	No	N/A	N/A
2	Northern edge opposite pond, beside north-western corner	No	N/A	N/A
3	South-west corner opposite western annex	No	N/A	N/A
4	South-western corner opposite roost	No	N/A	N/A

3.5 Re-entry Survey 2 - 31/07/15

3.5.1 Weather conditions were favourable throughout the survey: 11°C start temperature, with a light wind (NNW 2 mph), mist, no cloud cover and no rain. The temperature dropped one degree during the middle of the survey before finishing again at 11°C. Sunrise was registered at 05:13. The survey commenced at 03:45 and finished 1.5 hours later at 05:13.

3.5.2 One common bat species (listed below) was recorded during the emergence survey.

- Common pipistrelle (*Pipistrellus pipistrellus*)

3.5.3 Bat activity was limited to intermittent foraging around the pond and around the eastern tree line. A summary of the survey results is provided in Table 3.5 below. Full details of the survey notes for each surveyor are provided in Appendix C.

Table 3.5: Re-entry Survey Summary

Surveyor No.	Position	Roost recorded?	Species & No.	Point of emergence
1	South-western corner opposite roost	No	N/A	N/A
2	Mobile across western annex, northern edge and north-eastern stockyard	No	N/A	N/A

3.6 Emergence Survey 3 - 20/08/15

3.6.1 The survey was undertaken in favourable weather conditions despite a moderately high wind speed for the local area (S 11 mph); the site itself is sheltered by treelines and mature hedgerows and, therefore, remains relatively unaffected by this variable.

3.6.2 Conditions were overcast, with no rain and a start temperate of 19°C. Weather conditions remained stable throughout with an end temperature of 18°C. Sunset was registered at 20:09. The survey commenced at 19:55 and finished two hours later at 22:10.

3.6.3 Two common bat species (listed below) were recorded in total during the emergence survey.

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)

3.6.4 Activity on site was consistent with that recorded during the previous surveys, with greater levels around the pond and wooded eastern boundary and intermittent activity in all other areas.

3.6.5 One small common pipistrelle roost was identified in the same place as emergence survey 1; emergence was noted from underneath the south-western eaves of the old barn (opposite the western annex). A summary of the survey results is provided in Table 3.2 below. Full details of the survey notes for each surveyor are provided in Appendix C.

Table 3.2: Emergence Survey Summary

Surveyor No.	Position	Roost recorded?	Species & No.	Point of emergence
1	North-eastern corner opposite	No	N/A	N/A

	stockyard			
2	Northern edge opposite pond, beside north-western corner	No	N/A	N/A
3	South-west corner opposite western annex	No	N/A	N/A
4	South-western corner opposite roost	Yes	Cpip[1] x 1	Emerged from same point as emergence survey 1 – underneath the eaves opposite the western annex – circled twice before flying off east parallel to the building frontage.

[1]Cpip = Common pipistrelle

3.7 Re-entry Survey 3 - 21/08/15

3.7.1 The re-entry survey was undertaken in favourable weather conditions: 18°C start temperature, with a light-moderate wind (S 8 mph), overcast and no rain. Weather conditions remained stable throughout with no change in temperature recorded at the survey end. Sunrise was registered at 05:47. The survey commenced at 04:20 and finished 1.5 hours later at 05:47.

3.7.2 One common bat species (listed below) was recorded in total during the emergence survey.

- Common pipistrelle (*Pipistrellus pipistrellus*)

3.7.3 Similar to that of the previous re-entry survey, bat activity was limited to intermittent foraging around the pond and around the eastern tree line. A summary of the survey results is provided in Table 3.5 below. Full details of the survey notes for each surveyor are provided in Appendix C.

3.7.4 No bats were recorded re-entering during the survey. A summary of the survey results is provided in Table 3.3 below. Full details of the survey notes for each surveyor are provided in Appendix C.

Table 3.3: Re-entry Survey Summary

Surveyor No.	Position	Roost recorded?	Species & No.	Point of emergence
1	South-western corner opposite roost	No	N/A	N/A
2	Mobile across western annex, northern edge and north-eastern stockyard	No	N/A	N/A

SECTION 4

DISCUSSION AND MITIGATION

4 DISCUSSION AND MITIGATION

4.1 Discussion

4.1.1 Due to the confirmed presence of a small bat roost on-site, an EPSL must be obtained prior to the commencement of any construction works (including initial site clearance) as it is designed to ensure the proposed development adheres to legislative protection and does not negatively impact upon bats.

4.1.2 The results of the detailed bat surveys indicate that, at the time of survey, the mid- section of the building supported a small summer / transitional roost for a common species of bat. One common pipistrelle was noted on two occasions emerging from underneath the eaves of the highly modified barn opposite the western annex.

4.1.3 The surveys were carried out in accordance with best practice guidance, with three emergence and re-entry surveys carried out within the optimum survey period of May to August inclusive. It is, therefore, reasonable to propose the absence of a maternity roost on-site, as the survey period is reflective of when maternity roosts usually form and young are born and raised.

4.1.4 If a maternity roost were present on-site, a larger number of bats (including young which are noticeably smaller than the adults) would have been recorded emerging and re-entering the buildings. A large quantity of droppings, scratch marks and/or staining would also be reasonably expected in conjunction with a larger sized roost.

4.1.5 Due to the overall architectural design and structural condition of the building, and the surrounding habitat connectivity to the wider environs off-site it was not necessary to assess the presence or likely absence of other roosts such as mating and hibernation because this would go beyond best practice guidance (i.e. performing surveys / checks during mating and hibernation period). .

4.1.6 Whilst the presence of smaller roosts outside of the survey period cannot be completely discounted, the absence of few internal signs in particular (external signs such as droppings can easily be removed by strong wind or heavy/sustained precipitation) indicates that the buildings have not previously supported large numbers of bats. The likelihood of increased roosting activity outside of the survey period is also considered very low in context of the low overall level of bat activity recorded on-site throughout.

4.2 Potential Impacts

Roosting Bats – Habitat Loss

4.2.1 All of the buildings on-site are earmarked for removal as part of the initial site clearance. The confirmed pipistrelle roost will, therefore, be unavoidably lost during the initial construction phase of the proposed development. In the absence of mitigation, it is anticipated that the proposed development is likely to result in the loss of a small summer / transitional roost which would have a low impact on bat populations in the local area, and a negligible impact on bat populations at a county and regional level.

Bat Activity – Habitat Loss

4.2.2 Three common species of bat were noted during the course of the detailed surveys: common and soprano pipistrelle and brown long-eared (BLE). Only pipistrelles were recorded during the emergence and re-entry surveys (BLE droppings were noted during the PRA); the results, therefore, indicate historic, infrequent and/or seasonal BLE activity on-site.

4.2.3 In terms of the construction of the proposed development, it is currently envisaged that there will be a minor habitat loss (amenity grassland) during the construction phase, although this will be offset in the longer term with the soft landscaping of the garden spaces associated with the three new dwellings. The retention of the vegetated boundaries throughout the course of the development will ensure there is no habitat fragmentation on-site.

4.2.4 Based on the above and on the general low levels of bat activity, it is considered that in the absence of mitigation, potential impacts due to habitat loss on bat activity will be adverse, of low magnitude and significance at a site level during the construction phase, but minor beneficial during the latter operational phase.

Bat Activity - Disturbance

4.2.5 The construction of the new dwellings would result in an increase in human activity, dust, noise, vibration and light resulting in the potential for disturbance to bat activity. It is noted, however, that the construction works are undertaken during daylight hours when bats are inactive and although there may be increased levels of lighting, the security lighting will be limited. Therefore, in the absence of mitigation it is considered probable that potential impacts due to disturbance to bat activity will be adverse, of low magnitude and significant at a site level.

4.3 Mitigation

4.3.1 Due to the confirmed presence of one small/minor bat roost within the buildings on-site, a European Protected Species Licence (EPSL) must be sought prior to the commencement of any site works. This is to ensure the proposed development adheres to legislative protection (as detailed in Section 1.3 and Appendix A) and does not negatively impact upon bats.

4.3.2 Demolition works should commence upon the roof, with tiles individually removed be hand in a ‘soft-strip’ fashion. Timber cladding should similarly be removed by hand, with care and attention also given to any other areas showing signs of suitable structural damage (i.e. with a potential crevice behind).

4.3.3 The following mitigation listed below is considered proportionate to the type and scale of the proposed development. This is based on the usage of the site being limited to that of a summer / transient roost and for only an individual / small numbers of a common species to be present (which was the case during the first and third emergence survey).

4.3.4 In order to offset the potential loss of structural features suitable for roosting bats during the proposed development, new bat features must be incorporated into the building design of the proposed dwellings. It is

considered that this measure would not only offset the adverse impact, but also provide a minor enhancement, as it would increase the overall number and longevity of available roost sites within the application site.

- It is recommended that the new roosting features installed must be Ibstock bat bricks (or similar), Ibstock Bat box C and / or Schwegler 1FR bat tubes. At least two of these are recommended for each building.
- The new bat features should be installed at a height of at least 4m, on a variety of aspects to ensure varied thermal conditions are present within the new roosts. This will ensure that roosts with suitable conditions are present within the site throughout the year and in varied weather conditions.

4.3.5 Basic mitigation relating to timings, site lighting and working hours must also be implemented during the construction and operational phases of the development to ensure existing flight paths / foraging areas are adequately protected throughout. Further details relating to the necessary restrictions on lighting and works hours to adequately protect bats are expanded upon below:

- All staff working on site should receive a toolbox talk (TBT) prior to the recommencement of construction works. The TBT will focus on structural features of interest for roosting bats, protective legislation, and the risk of bat presence on-site.
- As a precaution, the demolition of buildings with potential to be used by roosting bats must be undertaken outside the core hibernation period, taken to be mid-November to February (a time when bats are considered to be particularly sensitive to disturbance).
- In terms of bat activity and disturbance, works should be undertaken during daylight hours (i.e. 07:00 to 19:00) and artificial lighting should be avoided wherever possible. Where this is not possible (i.e. during certain construction activities), low sodium lighting should be used as this is known to decrease the magnitude of impact on bat species. Furthermore, light spillage onto any linear features should be avoided by the use of directional lighting (i.e. the use of hoods and / or cowls). Any lighting schemes must be reviewed by a suitably qualified ecologist.

APPENDIX A

LEGISLATION AND POLICY CONTEXT

LEGISLATION AND POLICY CONTEXT

Introduction

The following Appendix sets out details of legislation within the UK and how this legislation applies to particular species groups such as bats. The key pieces of international and national legislation are detailled beneath.

International and national legislation

EC Habitats Directive

In 1992 the then European Community adopted Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the Habitats Directive. The main aim of the EC Habitats Directive is to promote the maintenance of biodiversity by requiring member states to introduce protection for these habitats and species of European importance. The mechanism for protection is through designation of Special Areas of Conservation (SACs), both for habitats and for certain species listed within Annex II. There are a number of species listed within Annex II of the Habitats Directive that are present within the UK; these include four lower plant species, nine higher plant species, six species of molluscs, six species of arthropods, eight species of fish, two species of amphibian, and nine species of mammal.

The Bern Convention

The Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) came into force in 1982. The principal aims of the Convention are to ensure conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix 3. To this end the Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1000 wild animal species.

Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention or CMS) was adopted in Bonn, Germany in 1979 and came into force in 1985. Contracting Parties work together to conserve migratory species and their habitats by providing strict protection for endangered migratory species (listed in Appendix 1 of the Convention), concluding multilateral agreements for the conservation and management of migratory species which require or would benefit from international cooperation (listed in Appendix 2 of the Convention), and by undertaking co-operative research activities.

Convention on Biological Diversity

The Convention on Biological Diversity (Biodiversity Convention or CBD) was adopted at the Earth Summit in Rio de Janeiro, and entered into force in December 1993. It was the first treaty to provide a legal framework for biodiversity conservation. Contracting Parties are required to create and enforce national strategies and action plans to conserve, protect and enhance biological diversity.

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) is the principle mechanism for the legislative protection of wildlife in Great Britain. However it does not extend to Northern Ireland, the Channel Islands or the Isle of Man. This legislation is the means by which the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') and the European Union Directives on the Conservation of Wild Birds (79/409/EEC) and Natural Habitats and Wild Fauna and Flora (92/43/FFC) are implemented in Great Britain.

Conservation of Habitats and Species Regulations 2010, as amended

In the UK the Council Directive 92/43/EEC has been transposed into national laws by means of the Conservation (Natural Habitats, & c.) Regulations 1994 (as amended), and the Regulations (Northern Ireland) 1995 (as amended). The Regulations came into force on 30 October 1994, and have been amended several times. Subsequently the Conservation of Habitats and Species Regulations 2010 was created which consolidates all the various amendments made to the 1994 Regulations in respect of England and Wales and is commonly known as the 'the Habitats Regulations'. In Scotland the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the 1994 Regulations. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland.

The Regulations contain five Parts and four Schedules, and provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

APPENDIX B

ASSESSMENT CRITERIA FOR ROOSTING BAT POTENTIAL

Appendix B: Assessment Criteria For Roosting Bat Potential

Grading system for Buildings

It should be noted that the grading system below only reports on the situation at the time of survey; should bat activity levels change after the initial survey, or should the buildings be modified (for example if roof tiles are removed or fascia boards develop cracks), the category may need revision.

Grading System For Buildings

Category (potential value)	**Description**
Confirmed roost	Bats discovered roosting within the building, or recorded emerging from / entering the building at dusk and / or dawn. Building found to contain conclusive evidence of occupation by bats, such as bat droppings. A confirmed record (as supplied by an established source such as the local bat group) would also apply to this category.
High value	Buildings with a large number of features of obvious potential value to bats (as above). Bats may be suspected to roost within the building (at least at certain times of year), but no supporting evidence found.
Moderate value	Buildings usually of brick or stone construction with a number of features of obvious potential value to roosting bats e.g. loose roof / ridge tiles, gaps in brickwork, gaps under fascia boards, and/or warm sealed roof-spaces with under-felt.
Low value	Buildings of largely unsuitable construction, but with few features of potential value to bats (e.g. gaps above windows, apparently shallow crevices). No supporting evidence (e.g. droppings / staining) found. Buildings may be surrounded by poor or sub-optimal bat foraging habitat, as is often the case in urban-centre locations.
No / negligible value	Buildings with no or very few features capable of supporting roosting bats. Often buildings are of 'sound' well-sealed structure, or have a single skin and no roof void. They tend to have high interior light-levels, and little or no insulation. Buildings without any roofs may also fall into this category.

APPENDIX C

RAW DATA

APPENDIX B RAW DATA

EMERGENCE SURVEY 1 RAW DATA – 15/06/15: Surveyor 1 (positioned north-eastern corner opposite stockyard)

Surveyor name	Tom Moore	**Date**	15/06/15	**Surveyor position**	North-eastern corner opposite stockyard	**Surveyor No.**	1
Detector	EM Touch	**Survey type**	Emergence	**Start time**	21:00	**End time**	23:00
Temperature	Start = 12°C Finish = 10°C	**Precipitation**	No	**Wind**	ENE 7 mph	**Cloud cover**	Scattered

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
21:47	Spip	1	3	Foraging	N-S	Flying northwards along treeline, foraging back and forth before continuing on original path.
21:50	Cpip	1	10+	Foraging	N	Foraging along treeline in within stockyard until 21:57.
21:55	Cpip	1	10+	Foraging	N	Same as above – second pipsitrelle foraging alongside.
21:58	Cpip	1-2	10+	Foraging	N	Same as above – 1-2 bats foraging, activity concentrated within stockyard with occasional detours along the treeline. Continuous foraging up until 22:14
22:19	Spip	1	1	Commuting	SW	Flew southwards along treeline cutting in SW into stockyard.
22:26	Cpip	1-2	10+	Foraging	Circling	Almost continuous foraging until survey end (23:00) around stockyard and treeline although mainly centred upon the former. Occasional gaps in activity - no more than a couple of minutes each time.

EMERGENCE SURVEY 1 RAW DATA – 15/06/15: Surveyor 2 (positioned near north-west corner opposite pond)

Surveyor name	Mikee Holt	**Date**	15/06/15	**Surveyor position**	Northern edge opposite pond, beside north-western corner	**Surveyor No.**	2
Detector	Batbox Duet	**Survey type**	Emergence	**Start time**	21:00	**End time**	23:00
Temperature	Start = 12°C Finish = 10°C	**Precipitation**	No	**Wind**	ENE 7 mph	**Cloud cover**	Scattered

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
21:43	Cpip	1	10+	Foraging	Circling / S	Foraging above pond until c.21:50, then flew southwards down annex edge of building.
21:51	Cpip	1	10+	Foraging	Circling	Foraging above pond for roughly half an hour.
21:53	Spip	1	10+	Foraging	Circling	Same as above for roughly twenty minutes.
21:55	Spip	1	10+	Foraging	Circling	Same as above.
22:14	Pip	1	1	Foraging / commuting	NW	North-westwards from direction of stockyard to forage around pond.
22:17	Pip	1	1	Foraging / commuting	NW	Same as above.
22:20	Pip	1	1	Foraging / commuting	NW	Same as above.
22:24	Cpip	1	10+	Foraging	Circling	Foraging intermittently above pond until 22:43.

EMERGENCE SURVEY 1 RAW DATA – 15/06/15: Surveyor 3 (positioned on south-west corner opposite western annex)

Surveyor name	Nick Aldus	**Date**	15/06/15	**Surveyor position**	South-west corner opposite western annex	**Surveyor No.**	3
Detector	Anabat Express	**Survey type**	Emergence	**Start time**	21:00	**End time**	23:00
Temperature	Start = 12°C Finish = 10°C	**Precipitation**	No	**Wind**	ENE 7 mph	**Cloud cover**	Scattered

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
21:52	Cpip	1	1	Commuting	NW	North-westwards above annex roof towards pond.
21:53	Cpip	1	1	Commuting / foraging	S	Flew southwards along building edge, foraging en route.
22:01	Spip	1		Foraging	Circling	Foraging up near pond beyond north-eastern corner of the annex.
22:03	Spip	1		Foraging	Circling	Same as above
22:06	Spip	1		Foraging	Circling	Same as above
22:07	Pip	1		Foraging	W-E	Foraging along annex edge.
22:11	Spip	1	1	Foraging	Circling	Foraging above roof of western annex.
22:25	Spip	1	1	Commuting	S, SE	Southwards parallel to building edge, cutting south-eastwards across building corner.

EMERGENCE SURVEY 1 RAW DATA – 15/06/15: Surveyor 4 (positioned south of main building)

Surveyor name	Steven Bainbridge	**Date**	15/06/15	**Surveyor position**	South of old barn on hardstanding	**Surveyor No.**	4
Detector	Anabat Express	**Survey type**	Emergence	**Start time**	21:00	**End time**	23:00
Temperature	Start = 12°C Finish = 10°C	**Precipitation**	No	**Wind**	ENE 7 mph	**Cloud cover**	Scattered

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
21:50	**Cpip**	**1**	**1**	**Emergence**	**E**	**Emerged from eaves opposite the western annex, swooped down and circled three times before flying off in eastern direction.**
21:53	Cpip	1	1	Commuting	E	Single pass along fence line W-E
22:00	Pip	1	1	Unknown	Circling	Brief pass seen above far end of western annex.
22:05	Pip	1	1	Foraging	Circling	Circling around northern end of western annex.
22:07	Spip	1	1	Foraging	W-E	Foraging along western edge of building footprint.
22:10	Spip	1	1	Commuting	S	Southwards above top of western annex.
22:11	Spip	1	1	Foraging	Circling	Foraging above roof of western annex.
22:25	Spip	1	1	Commuting	SE	Cut across southern corner of western annex above hardstanding.
22:30	Cpip	1	1	Commuting	S	Flying over roof top and hardstanding southwards.

RE-ENTRY SURVEY 1 RAW DATA – 16/06/15: Surveyor 1 (positioned opposite roost near south-western corner)

Surveyor name	Tom Moore	**Date**	16/06/15	**Surveyor position**	South-western corner opposite roost	**Surveyor No.**	1
Detector	EM Touch	**Survey type**	Re-entry	**Start time**	03:00	**End time**	04:33
Temperature	Start = 8°C Finish = 8°C	**Precipitation**	No	**Wind**	E 3 mph	**Cloud cover**	Overcast

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
No bats recorded during the course of the re-entry survey.						

RE-ENTRY SURVEY 1 RAW DATA – 16/06/15: Surveyor 2 (no fixed position – covering western side of annex, north and north-eastern stockyard)

Surveyor name	Tom Moore	**Date**	16/06/15	**Surveyor position**	Mobile across western annex, northern edge and north-eastern stockyard	**Surveyor No.**	2
Detector	Batbox Duet	**Survey type**	Re-entry	**Start time**	03:00	**End time**	04:33
Temperature	Start = 8°C Finish = 8°C	**Precipitation**	No	**Wind**	E 3 mph	**Cloud cover**	Overcast

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
No bats recorded during the course of the re-entry survey.						

EMERGENCE SURVEY 2 RAW DATA – 30/07/15: Surveyor 1 (positioned north-eastern corner opposite stockyard)

Surveyor name	Steven Bainbridge	**Date**	30/07/15	**Surveyor position**	North-eastern corner opposite stockyard	**Surveyor No.**	1
Detector	Anabat Express	**Survey type**	Emergence	**Start time**	20:35	**End time**	22:30
Temperature	Start = 12°C Finish = 11°C	**Precipitation**	No	**Wind**	NE 6 mph	**Cloud cover**	Overcast

Time	**Bat species**	**No. of bats**	**No. of passes**	**Behaviour**	**Direction of flight**	**Comments**
21:08	Cpip	1-2	10+	Foraging	N-S & W	1-2 bats foraging along treeline before both flew off west across stockyard and into eaves above the large metal doors on the eastern side of the asbestos-clad extension.
21:13	Cpip	1	1	Commuting	E	Cut across stockyard
21:16	Spip	1	3	Foraging	N-S	Along treeline.
21:18	Cpip	1	1	Commuting	W	Another pip seemed to disappear beneath the eaves above the garage doors.
21:20	Pip	1	1	Commuting	E	East across stockyard.
21:21	Cpip	1-2	10+	Foraging	N-S	Foraging along the treeline.
21:28	Cpip	1	8	Foraging	N-S	Foraging near the gable end of the modified barn – visual lost when it performed steep turn close to weather boarding.
21:30	Cpip	1	10+	Foraging	N-S	Foraging along the treeline.
21:39	Cpip	1	1	Foraging	S & NW	Flew south across stockyard before turning NW towards pond.
21:40	Cpip	1	1	Foraging	S & NW	Same as above.
21:43	Cpip	1	10+	Foraging	N-S	Foraging along treeline up until survey end.

EMERGENCE SURVEY 2 RAW DATA – 30/07/15: Surveyor 2 (positioned near north-west corner opposite pond)

Surveyor name	Nick Aldus	**Date**	30/07/15	**Surveyor position**	Northern edge opposite pond, beside north-western corner	**Surveyor No.**	2
Detector	Batbox Duet	**Survey type**	Emergence	**Start time**	20:35	**End time**	22:30
Temperature	Start = 12°C Finish = 11°C	**Precipitation**	No	**Wind**	NE 6 mph	**Cloud cover**	Overcast

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
21:08	Pip	1+	1	Unknown	Unknown	Faint calls from one, possibly two bats. No visual confirmation.
21:09	Cpip	1	10+	Foraging	NE	Flew from NE direction (from tennis court area) before circling above pond.
21:12	Cpip	1	1	Commuting	SE	Cut away form pond towards stock yard.
21:22	Cpip	1-2	10+	Foraging	Circling	Foraging above the pond, continuous for roughly 20 mins before flying S.
21:39	Cpip	1	1	Foraging	NW & E	Foraging whilst flying over the rear wall of the stockyard and arching back around towards the tree line.
21:40	Cpip	1	1+	Foraging	NW & E	Same as above.
21:44	Cpip	1	10+	Foraging	Circling	Foraging above the pond, with occasional forays towards the tennis courts.
21:59	Cpip	1	10+	Foraging	Circling	Same as above although activity centred upon pond.

EMERGENCE SURVEY 2 RAW DATA – 30/07/15: Surveyor 3 (positioned on south-west corner opposite western annex)

Surveyor name	Matthew White	**Date**	30/07/15	**Surveyor position**	South-west corner opposite western annex	**Surveyor No.**	3
Detector	Anabat Express	**Survey type**	Emergence	**Start time**	20:35	**End time**	22:30
Temperature	Start = 12°C Finish = 11°C	**Precipitation**	No	**Wind**	NE 6 mph	**Cloud cover**	Overcast

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
21:21	Pip	1	1	Unknown	Unknown	Brief pass – no visual confirmation.
21:32	Cpip	1	1	Commuting	S	Flew south from direction of pond along hardstanding edge parallel to western annex.
21:39	Pip	1	2	Commuting / Foraging	W-E	Flying near to the pond.

EMERGENCE SURVEY 2 RAW DATA – 30/07/15: Surveyor 4 (positioned south of main building)

Surveyor name	Tom Moore	**Date**	30/07/15	**Surveyor position**	South-western corner opposite roost	**Surveyor No.**	4
Detector	EM Touch	**Survey type**	Emergence	**Start time**	20:35	**End time**	22:30
Temperature	Start = 12°C Finish = 11°C	**Precipitation**	No	**Wind**	NE 6 mph	**Cloud cover**	Overcast

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
21:21	Cpip	1	1	Commuting	NW	NW across hardstanding, over roof in-between barn and western annex.
21:23	Cpip	1	2	Foraging	W-E	Flew west along barn frontage, circled then flew back foraging en-route.
21:30	Cpip	1	2	Foraging	W-E	Same as above.
21:32	Pip	1	1	Unknown	Unknown	Brief pass – no visual confirmation.
21:35	Cpip	1	2	Foraging	W-E	Flew east across hardstanding, circling at the end before returning feeding en-route.
21:36	Cpip	1	5+	Foraging	Circling	Single pip feeding near roost, no attempted landings.
21:38	Cpip	1	5+	Foraging	Circling	Same as above.

RE-ENTRY SURVEY 2 RAW DATA – 31/07/15: Surveyor 1 (positioned opposite roost near south-western corner)

Surveyor name	Matthew White	**Date**	31/07/15	**Surveyor position**	South-western corner opposite roost	**Surveyor No.**	1
Detector	Anabat Express	**Survey type**	Re-entry	**Start time**	03:45	**End time**	05:13
Temperature	Start = 11°C Finish = 11°C	**Precipitation**	No	**Wind**	NNW 2 mph	**Cloud cover**	Clear skies

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
No bats were recorded in this position during the course of the re-entry survey.						

RE-ENTRY SURVEY 2 RAW DATA – 31/07/15: Surveyor 2 (no fixed position – covering western side of annex, north and north-eastern stockyard)

Surveyor name	Tom Moore	**Date**	31/07/15	**Surveyor position**	Mobile across western annex, northern edge and north-eastern stockyard	**Surveyor No.**	2
Detector	EM Touch	**Survey type**	Re-entry	**Start time**	03:45	**End time**	05:13
Temperature	Start = 11°C Finish = 11°C	**Precipitation**	No	**Wind**	NNW 2 mph	**Cloud cover**	Clear skies

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
03:47	Cpip	1	2	Unknown	Unknown	No visual confirmation near to pond.
04:07	Cpip	1	10+	Foraging	N-S	Foraging along the eastern treeline and within stockyard.
04:11	Cpip	1	1	Unknown	Unknown	Brief pass, no visual confirmation.
04:21	Cpip	2	10+	Foraging	Circling	Foraging around pond.
04:37	Cpip	1	2	Foraging	N-S	Brief pass foraging N-S along the eastern treeline/
04:40	Cpip	1	5+	Foraging	Circling	One bat circling around pond – continuous up until approximately 04:50 – not seen leaving pond area.

EMERGENCE SURVEY 3 RAW DATA – 20/08/15: Surveyor 1 (positioned north-eastern corner opposite stockyard)

Surveyor name	Nick Aldus	**Date**	20/08/15	**Surveyor position**	North-eastern corner opposite stockyard	**Surveyor No.**	1
Detector	Batbox Duet	**Survey type**	Emergence	**Start time**	19:55	**End time**	22:10
Temperature	Start = 19°C Finish = 18°C	**Precipitation**	No	**Wind**	S 11 mph	**Cloud cover**	Overcast

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
20:31	Cpip	1	3	Foraging	E-W	Flying northwards along treeline, foraging back and forth before continuing on original path.
20:41	Pip	1	10+	Foraging	N	Brief forage along eastern treeline.
20:55	Cpip	1	10+	Foraging	N-S	Constant foraging until 21:18 along the treeline with occasional detours into the stockyard.
21:20	Cpip	1	10+	Foraging	N-S	Same as above until survey end.

EMERGENCE SURVEY 3 RAW DATA – 20/08/15: Surveyor 2 (positioned near north-west corner opposite pond)

Surveyor name	Steven Bainbridge	**Date**	20/08/15	**Surveyor position**	Northern edge opposite pond, beside north-western corner	**Surveyor No.**	2
Detector	Anabat Express	**Survey type**	Emergence	**Start time**	19:55	**End time**	22:10
Temperature	Start = 19°C Finish = 18°C	**Precipitation**	No	**Wind**	S 11 mph	**Cloud cover**	Overcast

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
20:27	Cpip	1	5	Foraging	Circling / SE-NW	Foraging in-between the pond and the stockyard.
20:30	Cpip	2	1	Foraging	Circling / W-E	W to east and above pond until 20:34 when second bat flew off south-west towards tennis courts
20:32	Cpip	1	10+	Foraging	E-W	East to west to east – over wall to tennis courts and back.
20:39	Cpip	1	10+	Foraging	Circling	Foraging above pond and immediate surrounds for approx. 20 mins
20:52	Spip	1	2	Foraging	N	Northwards across pond from along the western side of the western annex.
20:55	Spip	2	2	Foraging	Circling	Foraging above pond.
21:00	Cpip	1	5	Foraging	E-W	Five passes between 21:00 and 21:05
21:09	Cpip	4	8	Foraging	E-W-E	Flying on the northern side of the asbestos-clad extension and above pond.
21:10	Cpip	1	1	Foraging	Circling	Foraging above pond.
21:23	Cpip	1	10+	Foraging	Circling	Intermittent foraging above the pond until the survey end.

EMERGENCE SURVEY 3 RAW DATA – 20/08/15: Surveyor 3 (positioned on south-west corner opposite western annex)

Surveyor name	Tom Moore	**Date**	20/08/15	**Surveyor position**	South-west corner opposite western annex	**Surveyor No.**	3
Detector	EM Touch	**Survey type**	Emergence	**Start time**	19:55	**End time**	22:10
Temperature	Start = 19°C Finish = 18°C	**Precipitation**	No	**Wind**	S 11 mph	**Cloud cover**	Overcast

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
20:32	Pip	1	4	Commuting	NE-SW	Flying around the southern edge of the pond.
20:56	Cpip	1	1	Commuting	S	Flying south parallel to the edge of the western annex.
20:39	Pip	1	5+	Foraging	Circling	No calls heard – pip seen foraging near to pond.
20:52	Spip	1	1	Commuting	N	Flew northwards along edge of annex.
21:27	Cpip	1	1	Commuting	SE & E	Flew SE towards southern gable end of western annex before cutting east across hardstanding.

EMERGENCE SURVEY 3 RAW DATA – 20/08/15: Surveyor 4 (positioned south of main building)

Surveyor name	Matthew White	**Date**	20/08/15	**Surveyor position**	South-western corner opposite roost	**Surveyor No.**	4
Detector	Anabat Express	**Survey type**	Emergence	**Start time**	19:55	**End time**	22:10
Temperature	Start = 19°C Finish = 18°C	**Precipitation**	No	**Wind**	S 11 mph	**Cloud cover**	Overcast

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
20:31	**Cpip**	**1**	**1**	**Emergence**	**E**	**Emerged from eaves opposite the western annex, swooped down and circled before flying off in eastern direction.**
20:56	Pip	1	1	Commuting	Unknown	Brief call heard – no visual confirmation.
21:01	Cpip	1	1	Commuting	S	Flew south above barn roof.
21:03	Cpip	1	1	Foraging	E	Foraging whilst flying east along the barn frontage.
21:27	Cpip	1	1	Commuting	E	East across the stock yard from behind the corner of the western annex.
21:44	Pip	1	1	Commuting	Unknown	Brief call heard – no visual confirmation.

RE-ENTRY SURVEY 3 RAW DATA – 21/08/15: Surveyor 1 (positioned opposite roost near south-western corner)

Surveyor name	Matthew White	**Date**	21/08/15	**Surveyor position**	South-western corner opposite roost	**Surveyor No.**	1
Detector	Anabat Express	**Survey type**	Re-entry	**Start time**	04:20	**End time**	05:47
Temperature	Start = 8°C Finish = 8°C	**Precipitation**	No	**Wind**	E 8 mph	**Cloud cover**	Overcast

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
05:28	Cpip	1	1	Commuting	NE & SW	Cpip inspected roost from SW direction (from behind the western annex), circled several times beneath the eaves before flying off back in the same direction.

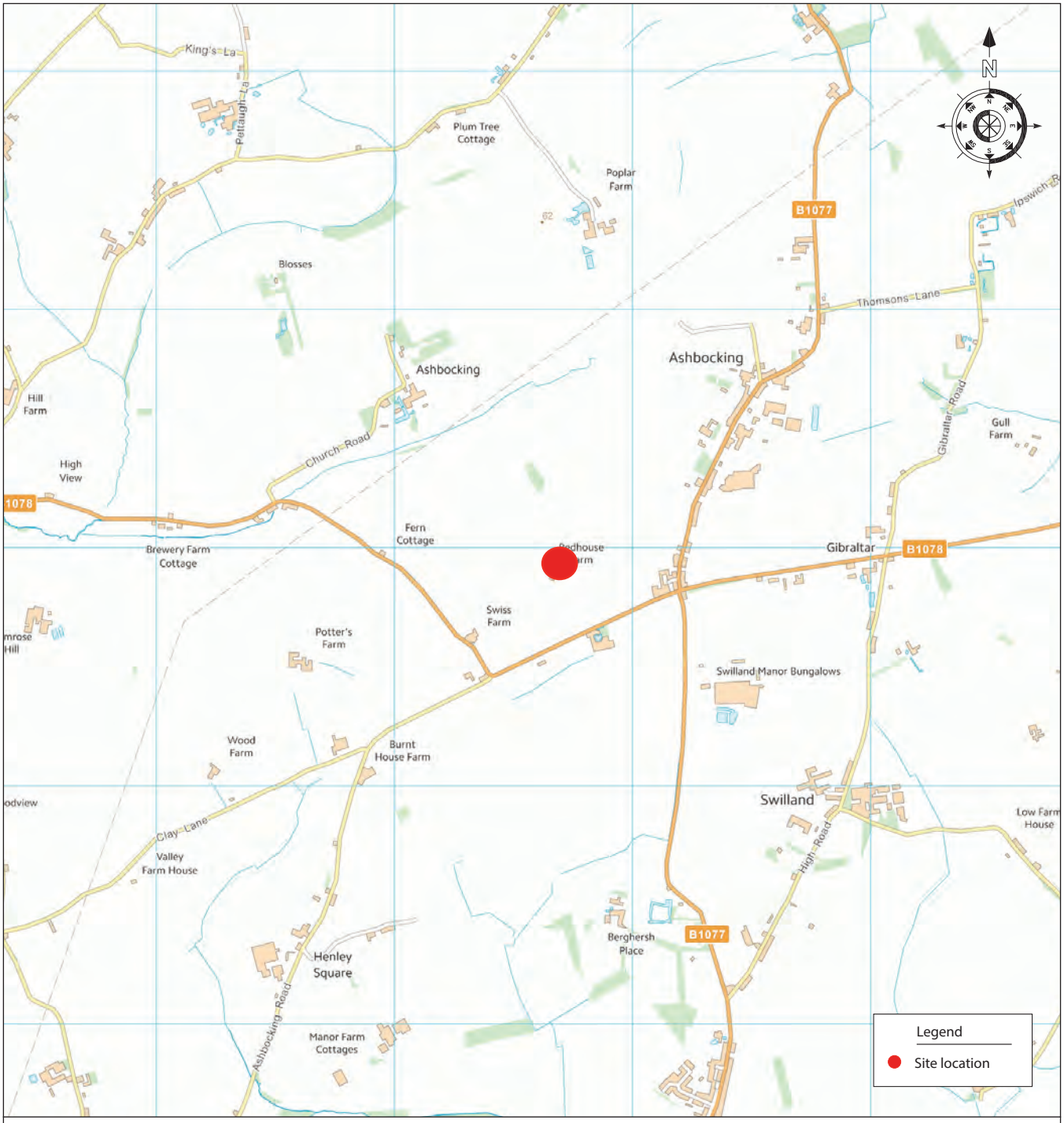
RE-ENTRY SURVEY 3 RAW DATA – 21/08/15: Surveyor 2 (no fixed position – covering western side of annex, north and north-eastern stockyard)

Surveyor name	Tom Moore	**Date**	21/08/15	**Surveyor position**	Mobile across western annex, northern edge and north-eastern stockyard	**Surveyor No.**	2
Detector	EM Touch	**Survey type**	Re-entry	**Start time**	04:20	**End time**	05:47
Temperature	Start = 18°C Finish = 18°C	**Precipitation**	No	**Wind**	E 8 mph	**Cloud cover**	Overcast

Time	Bat species	No. of bats	No. of passes	Behaviour	Direction of flight	Comments
04:43	Cpip	1	2	Foraging	Unknown	No visual confirmation
04:51	Cpip	1	10+	Foraging	Circling	Foraging around the pond.
05:00	Cpip	1	1	Commuting	E	Flew out of the stockyard towards the eastern treeline.
05:03	Cpip	1	5+	Foraging	NE & N-S	NE across stockyard then N-S foraging along the treeline.
05:12	Cpip	1	1	Commuting	S	Southwards from the pond area past the NW gable (down the western side of the western annex).
05:13	Cpip	1	10+	Foraging	Circling	Foraging around the pond.
05:26	Cpip	1	10+	Foraging	Circling	Foraging around stockyard and outbuildings.
05:30	Cpip	1	10+	Foraging	Circling	Foraging around the pond.
05:36	Cpip	1	1	Commuting	S	Flew away from pond.

APPENDIX C

FIGURES



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201504 Red House Farm, Ashbocking

Figure 01: Location Plan

September 2015

1:250000@A4

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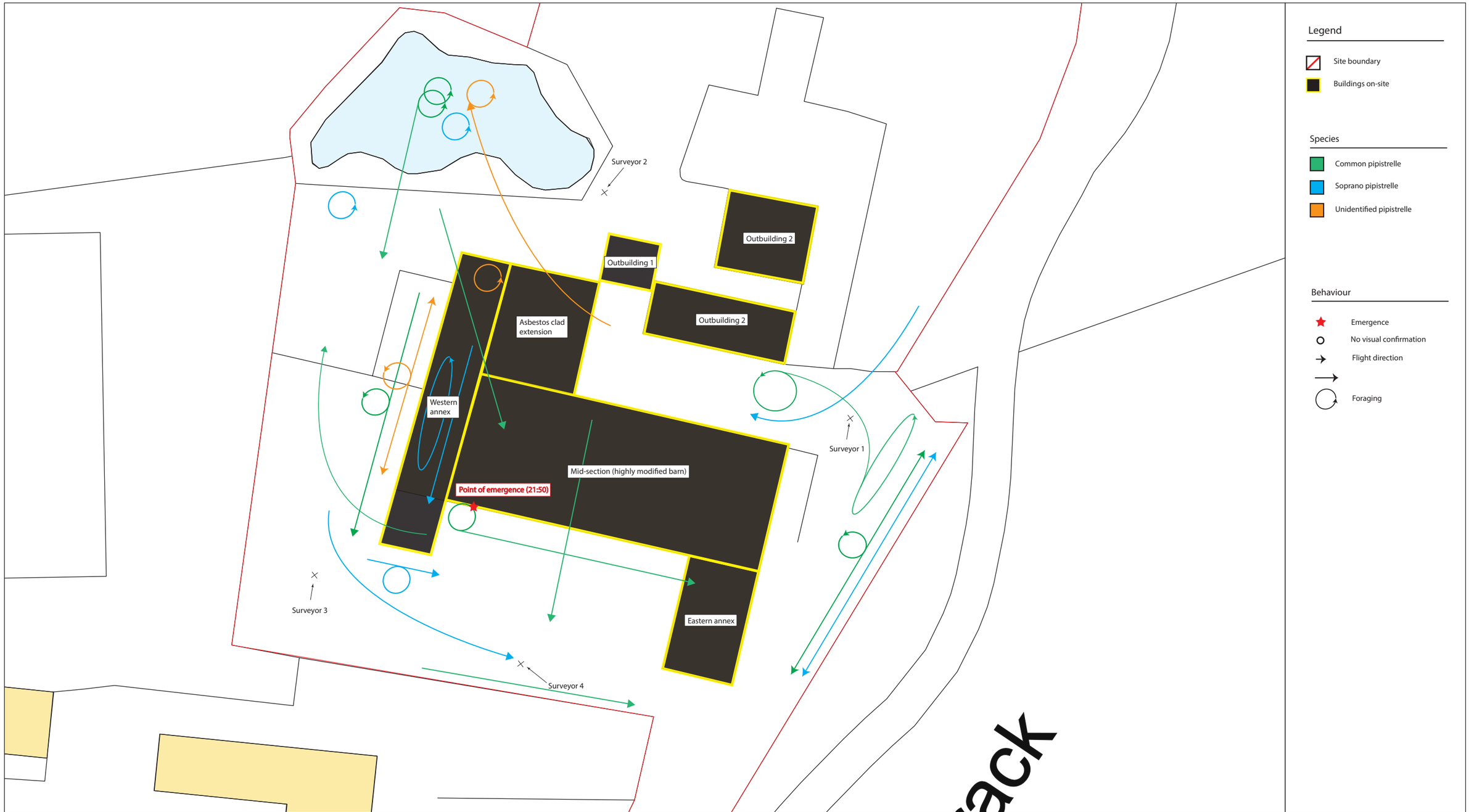
PRA Building Location

September 2015

1:1250 @A3



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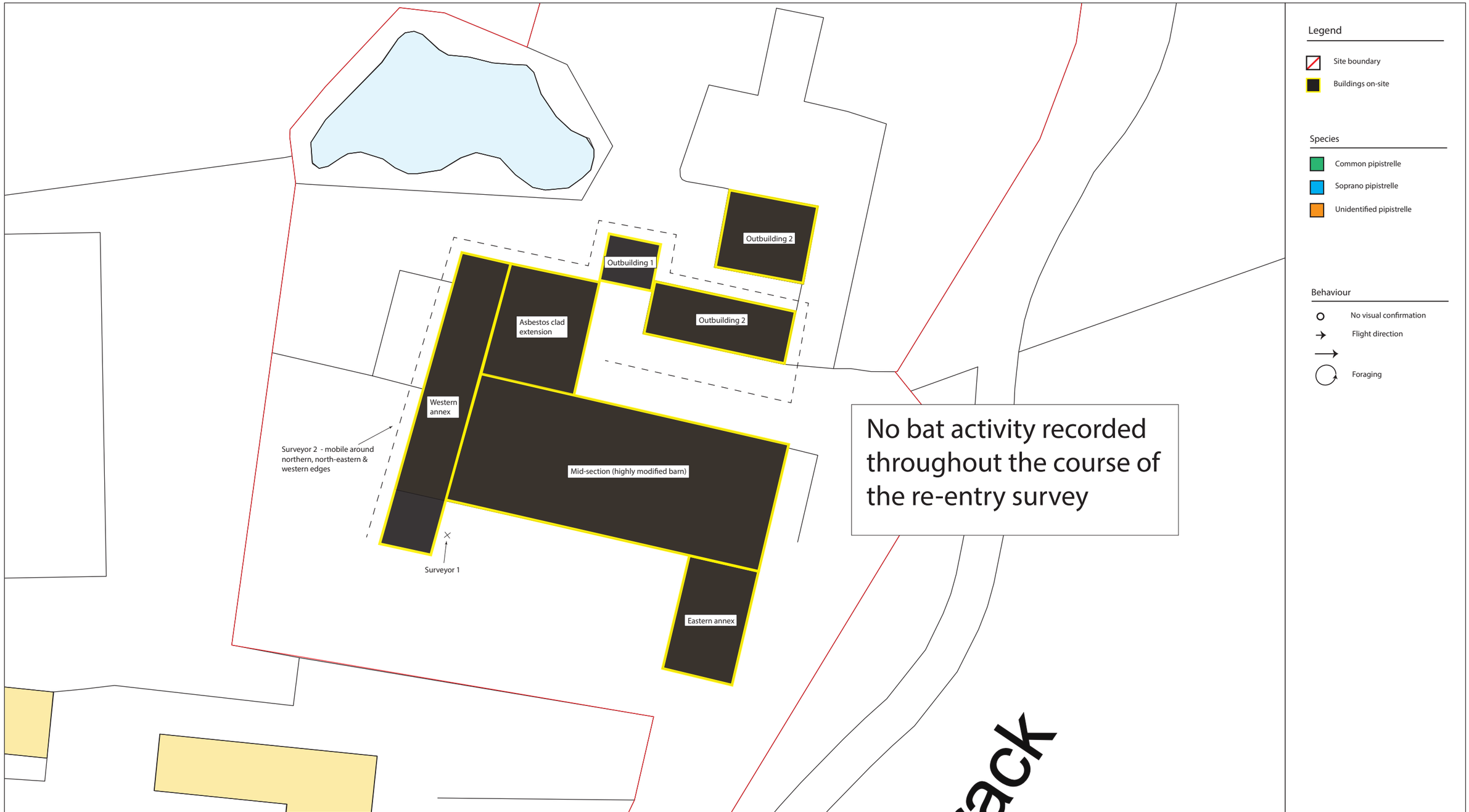
201504 Red House Farm, Ashbocking

Bat Emergence Survey 1 Results

September 2015

1:1250 @A3



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201504 Red House Farm, Ashbocking

Bat Re-entry Survey 1 Results

September 2015

1:1250 @A3

Legend

- Site boundary
- Buildings on-site

Species

- Common pipistrelle
- Soprano pipistrelle
- Unidentified pipistrelle

Behaviour

- Emergence
- No visual confirmation
- Flight direction
- Foraging

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201504 Red House Farm, Ashbocking

Bat Emergence Survey 2 Results

September 2015

1:1250 @A3

Legend

- Site boundary
- Buildings on-site

Species

- Common pipistrelle
- Soprano pipistrelle
- Unidentified pipistrelle

Behaviour

- No visual confirmation
- Flight direction
- Foraging

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201504 Red House Farm, Ashbocking

Bat Re-entry Survey 2 Results

September 2015

1:1250 @A3

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201504 Red House Farm, Ashbocking

Bat Emergence Survey 3 Results

September 2015

1:1250 @A3

Legend

- Site boundary
- Buildings on-site

Species

- Common pipistrelle
- Soprano pipistrelle
- Unidentified pipistrelle

Behaviour

- No visual confirmation
- Flight direction
- Foraging

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201504 Red House Farm, Ashbocking

Bat Re-entry Survey 3 Results

September 2015

1:1250 @A3