

Ecological Survey Report

***18 Granny Lane, Lower Hopton,
WF14 8LA***

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access**Ecology**

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A Contents

B	INTRODUCTION	4
B.1	Background to the Survey	4
B.2	Building and Habitat Description Summary	4
C	LEGISLATION	6
D	INVESTIGATION, SURVEYS, SITE ASSESSMENT AND RESULTS	8
D.1	Field Survey Methodologies	8
D.1.1	Desktop Study	8
D.1.2	Flora	8
D.1.3	Fauna	8
D.2	Results	13
D.2.1	Desktop Study	13
D.2.2	Flora	14
D.2.3	Fauna	15
E	INTERPRETATION/EVALUATION OF SURVEY RESULTS	18
E.1	Desktop study	18
E.1.1	Ecological Records Search	18
E.1.2	Designated Wildlife Sites	18
E.2	Flora	18
E.2.1	Phase 1 Habitat Survey	18
E.2.2	Controlled Invasive Species	18
E.3	Fauna	18
E.3.1	Bats – Internal and External Visual Assessment	18
E.3.2	Bats – Ground Based Risk Assessment of Trees	19
E.3.3	Bats – Nocturnal Surveys	19
E.3.4	Other Protected and Notable Species	19
F	CONCLUSIONS AND RECOMMENDATIONS	20
F.1	Desktop Study	20
F.1.1	Ecological Records Search	20
F.1.2	Designated Wildlife Sites	20
F.2	Flora	20
F.2.1	Phase 1 Habitat Survey	20
F.2.2	Controlled Invasive Species	20
F.3	Fauna	20

F.3.1	Bats.....	20
F.3.2	Other Protected and Notable Species	21
F.4	Survey validity	21
G	BAT METHOD STATEMENT	22
G.1	Assessment of Site proposals and Associated Risk to Species.....	22
G.2	Method Statement for 18 Granny Lane, Lower Hopton, WF14 8LA.....	23
G.2.1	Pre-construction Preparation Works	23
G.2.2	Construction Phase	23
H	REFERENCES.....	27
A	APPENDIX.....	29
B	APPENDIX – VEGETATIVE SPECIES	36
C	APPENDIX.....	45
	46	

TABLES

TABLE 1: FEATURES TYPICAL OF BUILDINGS WITHIN THE DIFFERENT POTENTIAL CATEGORIES	9
TABLE 2: FEATURES TYPICAL OF TREES WITHIN THE DIFFERENT RISK CATEGORIES	10
TABLE 3: NOCTURNAL SURVEYORS	11
TABLE 5: DESIGNATED WILDLIFE SITES WITHIN A 2KM RADIUS OF THE SITE	14
FIGURE 1: ROOF BOX DESIGN (NOT TO SCALE)	24
26	

APPENDIX A

FIGURE 1. LOCATION PLAN
FIGURE 2. BUILDING AND TREE ID PLAN
FIGURE 3. PHASE 1 HABITAT PLAN
FIGURE 4. SITE IMAGES
FIGURE 5. NOCTURNAL SURVEY – DUSK EMERGENCE PLAN – 17 TH JUNE 2015
FIGURE 6. NOCTURNAL SURVEY – DUSK EMERGENCE PLAN – 1 ST JULY 2015

APPENDIX B

VEGETATIVE SPECIES LIST

B INTRODUCTION

- 1 This report presents the results of investigations and surveys relating to the building and land at 18 Granny Lane, Lower Hopton, WF14 8LA (OS Grid Reference: SE 20509 19092) undertaken in May, June and July 2015.
- 2 The building on site, a 1970s two storey dormer bungalow, was subject to an Internal and External Visual Assessment for roosting bats and the immediate and wider habitat was assessed for its suitability for bat foraging and commuting activity. A single tree within the curtailment of the site was subject to a Ground Based Risk Assessment for roosting bats. The building and land were also assessed for their suitability to support other protected and notable species.
- 3 The assessments were undertaken by Paul Liptrot, an experienced field surveyor and graduate member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and Jon Goodrick, an experienced field surveyor and Natural England Bat Class 2 Bat Licence holder (Licence No.: CLS0652) on the 8th May 2015.
- 4 During the above assessment, the building was classified as having moderate potential to support roosting bats. As a result, further survey effort in the form of summer nocturnal bat activity surveys was recommended.
- 5 Two nocturnal surveys (in line with *Bat Surveys: Good Practice Guidelines* (Hundt, 2012)) were undertaken to determine the presence absence of bat roosts within the building. The nocturnal survey work was undertaken by Belinda Wiggs (MCIEEM and Bat Licence No: CLS00983), Paul Liptrot, Louisa Molloy (Ecologist; Grad CIEEM), Donna Tubridy, David Gash and Lucy Brookfield (Assistant Ecologists). The nocturnal surveys, two dusk emergence surveys were carried out on the 17th June 2015 and 1st July 2015.
- 6 This report presents an assessment of potential ecological constraints to development, based on the results of the survey. Preliminary recommendations for possible mitigation measures or potential nature conservation enhancements are also provided.

B.1 Background to the Survey

- 7 Access Ecology Ltd was commissioned on the 7th May 2015 by Mr Jim Grainger on behalf of Mark Smith to undertake an ecological survey of the building and land at 18 Granny Lane, Lower Hopton, WF14 8LA (Appendix A, Figure 1)
- 8 The ecological survey was commissioned in relation to the proposal to demolish the existing building, and redevelop the land for a larger residential dwelling.

B.2 Building and Habitat Description Summary

- 9 The site covers an area of approximately 0.1ha and is located to the south of Granny Lane in the village of Lower Hopton, approximately 1km south west of the town of Mirfield, West Yorkshire. The site is comprised of a two storey dormer bungalow, hardstanding, and a garden which includes overgrown lawn, shrubs and trees.

- 10 In the immediate vicinity the site is surrounded by residential houses and gardens to the south, east and west and Granny Lane to the north.
- 11 Beyond this is the River Calder, a tree lined section of which passes the site approximately 50m to the north. There is also a notable area of open green space to the south which includes a large connective woodland resource, interspersed by arable and pasture fields, cloughs and becks. More woodland and open greenspace is present to the north (approx. 433m north east) as is the Calder and Hebble Navigation Canal (approx. 700m north) and a tree lined railway line (approx.. 481m north east). Large open waterbodies in the form of reservoirs are present approximately 1.2km north east and 1.8km south east.

Connectivity between the site and habitats in the wider landscape is excellent and is provided by residential gardens, woodland, open water, lines of trees and hedgerows and other open greenspaces.

C LEGISLATION

- 12 This legal information is a summary and intended for general guidance only. It is recommended that the original documentation is referred to for detailed and definitive information. Web addresses are located in the References and Bibliography section of this report.

Habitat Regulations

- 13 The Conservation of Habitats and Species Regulations 2010 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is absent at the time).

Wildlife & Countryside Act 1981

- 14 The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006 (which also places a duty on authorities to have due regard for biodiversity and nature conservation) consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:
- 15 Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- 16 Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- 17 Pick or uproot any wild plant listed under Schedule 8 of the Act.

National Planning Policy Framework

- 18 The NPPF outlines government planning policies and how they should be applied within local authorities. The framework places an emphasis on sustainable development, encouraging the re-use of land that has previously been developed over using land that has a higher environmental value and by minimising impacts on biodiversity. The NPPF states that developments should aim to conserve or enhance biodiversity and encourages opportunities to incorporate biodiversity in and around developments.

Biodiversity Action Plans

- 19 The original objective of the UK Biodiversity Action Plan (UKBAP) was to fulfil the requirements of the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. A list of national priority species and habitats has been produced with specific action plans defining the measures consider necessary to ensure their conservation. Regional and local BAPs have also been developed for species/habitats of nature conservation importance both regionally and locally.

Local Structure Plans

- 20 County, District and Local Councils have Structure Plans and other policy documents that include targets and policies which aim to maintain and enhance biodiversity through the planning system.

D INVESTIGATION, SURVEYS, SITE ASSESSMENT AND RESULTS

D.1 Field Survey Methodologies

D.1.1 Desktop Study

D.1.1.1 Ecological Records Search

21 A desktop study has been undertaken as part of this study. Species information for the site and surrounding area (up to two kilometres) was requested from West Yorkshire Bat Group and West Yorkshire Ecology.

D.1.1.2 Designated Wildlife Sites

22 The Multi-Agency Geographic Information for the Countryside (MAGIC) internet resource was examined to find out the locations of areas designated for nature conservation in the area surrounding the surveyed land.

D.1.2 Flora

D.1.2.1 Phase 1 Habitat Survey

23 The survey was carried out in accordance with the standard Phase1 Habitat Survey Methodology (JNCC, 2010). Dominant plant species were noted, as were any uncommon species or species indicative of particular habitat types.

D.1.2.2 Controlled Invasive Species Assessment

24 The site was investigated for the presence of controlled invasive species including Japanese knotweed *Fallopia japonica*, Himalayan balsam *Impatiens glandulifera*, giant hogweed *Heracleum mantegazzianum* and Australian swamp stonecrop *Crassula helmsii*.

D.1.3 Fauna

D.1.3.1 Bats – Building and Habitat Suitability Assessment

25 An Internal and External Visual Assessment was undertaken on the building (Appendix A Figure 2). Both the internal and external inspections were undertaken on the 8th May 2015 by Jon Goodrick (Bat Licence: CLS00652) and Paul Liptrot.

26 Features such as small gaps in barge/soffit/fascia boards, raised or missing ridge tiles and gaps at gable ends, which have potential as access points were sought. Evidence that potential access points were actively used by bats includes staining within gaps and bat droppings or urine staining under gaps; any marks such as these were recorded. Indicators that potential access points were likely to be inactive included the presence of cobwebs and general detritus within the access (Hundt, 2012).

27 The interior of the building, including roof void (where accessible), was visually assessed for evidence of bat activity and/or for the potential to be used by bats where accessible. Evidence of a roost was determined as the presence of a dead or live bat, concentrated piles or scattered droppings, food remains such as insect wing fragments as well as scratch marks and/or staining.

- 28 When a roost is positively identified during an Internal and External Visual Assessment the building within which the roost is located is classified within the category Roost Present. Other buildings are classified as having High, Moderate, Low, Negligible potential to contain bat roosts based upon the number and quality of features present, and the buildings position in relation to the surrounding environs. Table 1 gives the features considered when attributing a potential classification to a building.
- 29 A High Potential building would typically be an older building situated close to high quality bat foraging habitats such as woodland, water features or substantial hedgerows. Buildings falling within this class will usually offer a variety of roosting opportunities suitable for use by a range of bat species.
- 30 Conversely a Negligible Potential building will typically be well sealed and of modern construction, offering no or few clear access points or roosting opportunities. The risk of a building housing a bat roost is further reduced if located within an area of poor quality habitat such as hard standing or amenity grassland.

Table 1: Features typical of buildings within the different potential categories

Negligible	Low Potential	Moderate Potential	High Potential
Geographic location poor species diversity (i.e.: extensive arable areas, upland sites)	Geographic location moderate species diversity	Geographic Location moderate species diversity	Geographic location with moderate or high species diversity (i.e.: Welsh valleys, southern counties)
No easily identifiable access points such as gaps within stonework or between tiles.	Limited number of access points	Some access points. Typically obscured by cobwebs or detritus.	Several possible access points. Some clean showing potential use.
No roof void	No roof void	Small or cluttered roof void	Large roof void with unobstructed flying spaces
No external cavities such as crevices within wall or behind fascia boards	Few external cavities with cavities present of low suitability	External cavities present suitable for small numbers of bats	A variety of external features offering a range of roosting locations. Crevices potentially suitable for larger colonies
Constructed from less suitable materials for roosting e.g.: metal or concrete fibre board sheeting	Constructed from a mixture of unsuitable and suitable materials (i.e. Stone barn with concrete fibre board roof).	Constructed from suitable materials (stone, brick, timber, slate, clay tile etc)	Constructed from suitable materials (stone, brick, timber, slate, clay tile etc) and over 100 years old
Located within areas of poor quality habitat, away from bat foraging or commuting routes	Area offering some habitat features likely to be used by bats	Area offering some habitat features likely to be used by bats	Good connectivity to high quality habitats
Unstable internal temperature and humidity conditions	Temperature and humidity conditions vary but conditions within potential roosting areas stable	Temperature and humidity conditions vary but conditions within potential roosting areas stable	Stable temperature and humidity conditions throughout building.
Not part of a group of buildings	Part of a group of buildings, all offering similar roosting opportunities	Part of a group of buildings, all offering similar roosting opportunities	Part of a group of buildings offering a range of different conditions and potential roost locations

Negligible	Low Potential	Moderate Potential	High Potential
Heavily disturbed	Potential roosting locations suffering little disturbance	Potential roosting locations suffering little disturbance	Building disused or little used, largely undisturbed

D.1.3.2 Bats – Ground Based Tree Risk Assessment

- 31 Suitable trees within the curtailment of the site were visually assessed for potential bat roosting opportunities from ground level by Mr Jon Goodrick (Bat Licence: CLS00652) and Paul Liptrot
- 32 Each tree was inspected using binoculars for features which may be used by roosting bats including natural holes, woodpecker holes, cracks/splits in major limbs, loose bark, dense thick stemmed ivy, hollows/cavities and birds or bat boxes. Signs indicating use of tree features by roosting bats include scratches and/or staining around entry points, bat droppings in/around/below entrance, audible squeaking at dusk or in warm weather, flies around entry points, the distinctive smell of bats and the smoothing of surfaces around cavities.
- 33 When a roost is positively identified during the inspection the tree within which the roost is located is classified within the category Roost Present. Other trees are classified as having High, Moderate, Low or Negligible potential to contain bat roosts based upon the number and quality of features present, and the trees position in relation to the surrounding environs. Table 2 gives the features considered when attributing a potential classification to a tree.

Table 2: Features typical of trees within the different risk categories

Negligible	Low Potential	Moderate Potential	High Potential
Geographic location poor species diversity (i.e.: extensive arable areas, upland sites)	Geographic location moderate species diversity	Geographic Location moderate species diversity	Geographic location with moderate or high species diversity (i.e.: Welsh valleys, southern counties)
Isolated tree	Located within coniferous plantation or within groups of young trees with simple growth forms	Located within an area offering some habitat features likely to be used by bats	Located within ancient woodland or parkland
Immature or semi mature tree with no evidence of disease or damage	Immature or semi mature tree with evidence of disease or damage. Mature tree in good condition	Mature tree or over mature tree with signs of disease or damage	Mature tree, over mature or dead tree with obvious signs of disease or damage
No cracks or crevices	Few small cracks and crevices	Cracks/crevices suitable for small numbers or individual bats	Cracks/crevices potentially suitable for larger colonies
No flaking bark	Limited flaking bark	Loose or Flaking bark with suitability to support small numbers or Individual bats	Loose or Flaking bark with areas deep enough to support larger colonies
Low/no ivy cover	Low ivy cover	Medium-Dense Ivy cover	Medium-Dense ivy cover
No epicormic growth	Limited epicormic growth	Thick epicormic growth	Thick epicormic growth
No Woodpecker holes	No Woodpecker holes	Woodpecker holes	Woodpecker holes

Negligible	Low Potential	Moderate Potential	High Potential
No deadwood in canopy or stem	Limited deadwood in canopy or stem with no obvious holes	Deadwood in canopy or stem with shallow cracks or holes	Deadwood in canopy or stem with obvious cracks and holes
No snagged branches	No snagged branches	Snagged branches	Snagged branches
No hollow areas	Majority of limbs and stem solid	Hollow stem or limb suitable for small numbers or individual bats	Hollow stem or limb with areas deep enough to support larger colonies
Buttresses intact	Buttresses intact	Hole between buttresses with areas deep enough small numbers or individual bats	Hole between buttresses with areas deep enough to support larger colonies
Core Solid	Core solid	Hollow core with areas deep enough small numbers or individual bats	Hollow core with areas deep enough to support larger colonies

D.1.3.3 Bats – Nocturnal Surveys

34 In line with guidance set within *Bat Surveys: Good Practice Guidelines 2nd Edition* (Hundt, 2012) two nocturnal surveys were undertaken on the building within the curtailment of the site in June and July 2015 in the form of:

- 17th June 2015 – Dusk Emergence Survey
- 1st July 2015 – Dusk Emergence Survey

35 The surveys focused on the building and the habitats immediately surrounding the surveyed buildings by the surveyors shown in Table 3 below.

Table 3: Nocturnal Surveyors

Survey Date	Surveyor 1	Surveyor 2	Surveyor 3
17/06/2015	Belinda Wiggs <i>Licensed</i>	Paul Liptrot	Lucy Brookfield
01/07/2015	Louisa Molloy	Donna Tubridy	David Gash

36 All surveyors were equipped with BatBox Duet bat detectors and positioned to give a clear view of all sides of the building being surveyed. A minimum of 3 surveyors was considered necessary to ensure full coverage of the building.

37 Emergence surveys commence 30 minutes prior to sunset and continue until 1.5 hours after sunset. Weather conditions during the nocturnal survey were conducive to bat activity with little or no rain, low wind and temperatures above 10°C (Hundt, 2012).

38 During the nocturnal surveys the main objective is to record any bats entering or leaving the surveyed property, and the location of any entry/exit points. IN addition surveyors record any other bat activity detectable from their survey position. Where possible the time of recording, species, number of bats, type of activity, and flight path of observed bats are

recorded. Bats entering or leaving a building or tree are considered evidence of bat roost presence within that entity.

D.1.3.4 Other Protected and Notable Species

39 Any field signs of other protected and notable species were noted by the surveyors during the surveys.

D.2 Results

D.2.1 Desktop Study

D.2.1.1 Ecological Records Search

40 Several records were returned from West Yorkshire Bat Group (WYBG) and West Yorkshire Ecology (WYE). Only those considered most relevant to the proposal and to the habitats on the site and in the immediate landscape have been extracted and are summarised in Appendix B.

41 The records considered most relevant include those of bats (64 records), amphibians (47 records) and controlled invasive plant species (1 record). None of the records supplied are from within the surveyed site.

42 Of the bat records supplied, the closest record to the site is of a common pipistrelle *Pipistrellus pipistrellus* roost approximately 130m south of the site. An additional 13 bat records are from within 500m of the site. These appear to be field records of common pipistrelle, Leisler's (or lesser noctule bat) *Nyctalus leisleri* and noctule bat *Nyctalus noctula*, with a single record of a roost of an unspecified bat species from 500m north/north west of the site. A further 14 roost records are provided in the data, with one of these being a pipistrelle species *Pipistrelle sp.* maternity roost approximately 1.33km north of the site. Other bat species recorded in the data include brown long-eared *Plecotus auritus*, soprano pipistrelle *Pipistrellus pygmaeus* and Natterer's bat *Myotis nattereri*.

43 Of the 47 amphibian records supplied one record is within 1km of the site of a great crested newt *Triturus cristatus*, approximately 0.98km east/north east, with the remainder being between 1 and 2km from the site. A further 18 records of great crested newt were supplied in the data the majority of which are located between 1.93km and 1.98km south west of the site.

44 One record of Japanese knotweed was returned in the data from approximately 1.41km west of the site.

D.2.1.2 Designated Wildlife Sites

45 The search of the MAGIC database revealed that there is one Ancient and Semi-Natural Woodland and seven Ancient Replanted Woodlands within a 2km radius of the site. The closest of these is Briery Bank Ancient Replanted Woodland, covering 6.6ha, which is located approximately 300m south/south west of the site. The remaining seven woodlands, covering a total area of 66.47ha, are all located to the south of the site and form part of the large connected woodland resource in that area.

46 The search revealed that there is no Local or National Nature Reserves, Areas of Outstanding Natural Beauty, National Parks, Important Bird Areas, Special Areas of Conservation, Special Protection Areas or Ramsar Sites within a 2km radius of the site.

Table 5: Designated Wildlife Sites within a 2km radius of the site

Site Name	Designation	Grid Reference	Distance from Site (km)	Bearing	Size (ha)
Briery Bank	Ancient Replanted Woodland	SE204187	0.3	198	6.6
Newhall Wood	Ancient Replanted Woodland	SE208188	0.4	124	4.07
Hepworth Wood	Ancient & Semi-Natural Woodland	SE199183	0.9	221	1.4
Whitley Wood/Hagg Wood	Ancient Replanted Woodland	SE214189	0.9	96	29.4
Hepworth Wood	Ancient Replanted Woodland	SE202182	0.9	201	5.0
Gregory Spring	Ancient Replanted Woodland	SE206179	1.1	175	19.7
Oliver Wood	Ancient Replanted Woodland	SE220187	1.5	101	4.5
Hutchin Wood	Ancient Replanted Woodland	SE196173	1.9	208	2.4

D.2.2 Flora

D.2.2.1 Phase 1 Habitat Survey

47 The Phase 1 Habitat Survey was carried out at the site on the 7th May 2015. A Phase1 Habitat Plan is included as Appendix A Figure 2 and an indicative species list for the site is included as Appendix B.

48 The habitat on site is essentially an overgrown garden which has been untended for an unknown period of time and as a result is more semi-natural in structure. The garden can be separated into four habitat types:

- Semi-improved grassland
- Trees
- Introduced/Ornamental Shrubs
- Buildings/hardstanding/gravel

D.2.2.1.a Semi-improved Grassland

49 Semi-improved grassland covers approximately 426m² of the site. The grassland has a dense tall sward composed mainly of grasses, such as perennial rye grass *Lolium perenne*, fescue *Festuca sp.* and meadow grass *Poa sp* species and Yorkshire fog *Holcus lanatus*. Common herbs species notes in the sward include white clover *Trifolium repens*, creeping buttercup *Ranunculus repens*, dandelion *Taraxacum sp.* and ragwort *Jacobaea vulgaris*.

50 Within the grassland it was noted that a former pond, now containing gravel, is present (Target Note 1).

D.2.2.1.b Trees

51 Ten scattered trees are present on the site, three along the western boundary and the remaining along the eastern boundary. Five of the trees along the eastern boundary are sycamores *Acer pseudoplatanus*, with the remaining five being single specimens of oak *Quercus sp.*, Rowan *Sorbus aucuparia*, silver birch *Betula pendula*, Scots pine *Pinus sylvestris* and an undetermined conifer.

D.2.2.1.c Introduced/Ornamental Shrubs

52 On the peripheries of the site to the north, west and south are overgrown beds covering approximately 293.2m² containing introduced/ornamental shrubs.

D.2.2.1.d Buildings/Gravel/Hardstanding

53 Buildings, gravel and hardstanding account for approximately 293m² of the site area.

54 Ivy *Hedera helix* is present on the wall and chimney on the northern elevation of the building.

55 No other vegetative species were recorded in association with the building, gravel or hardstanding during the survey.

D.2.2.2 Controlled Invasive Species Assessment

56 No controlled invasive species were observed within the site boundary during the survey.

D.2.3 Fauna

D.2.3.1 Bats – Internal and External Visual Assessment

57 The assessment was carried out on the building subject to the proposal (Building 1) on the 7th May 2015.

58 A site plan for the building and site images are included as Figure 3 and 4 within Appendix A. A summary of the building assessment results can be found in Table 2 in Appendix B.

D.2.3.1.a Surrounding Habitat

59 The habitat immediately surrounding Building 1 is a combination of hardstanding and overgrown garden containing a mixture of native and ornamental grasses, shrubs and trees. Beyond this is the River Calder to the north, and residential houses and gardens to the south, east and west, all of which provide suitable foraging and commuting habitat for bats.

60 In the wider landscape, particularly to the south, is a large woodland resource with cloughs and brooks running through them, which is considered to offer excellent foraging, and possible roosting, habitat for bats. This area is interspersed with arable and pasture fields and the site is well connected to these woodlands and open green spaces by a network of hedgerow field boundaries and lines of trees.

61 The habitats to the north of the site also include good foraging and commuting habitat in the form of the River Calder; a tree-lined railway line; and the Calder and Hebble Navigation Canal, along with some smaller pockets of woodland and greenspace.

D.2.3.1.b Building 1

62 Building 1 is a mid to late 20th Century (1970s) two storey brick built dormer bungalow with a pitched clay pan tile covered roof with PVC soffit boxes and fascia boards present on all elevations. PVC dormer windows are present on both pitches of the roof, both of which have timber fascias and hanging tiles. Two chimneys are present, which along with the dormer windows, are sealed into the building with lead flashing.

63 The building was accessed internally and was found to have a large unobstructed roof void and it was observed that the roof has a bitumen felt lining.

64 Externally, Building 1 is relatively well sealed; however, there are some gaps around the soffit boxes on the eastern and western elevations, under the tiles on both roof pitches, along with gaps under the hanging tiles on both dormers, particularly on the northern dormer which appears to be in a more dilapidated condition.

65 No evidence of bat activity was found during the Internal and External Visual Assessment of Building 1.

D.2.3.2 Bats – Ground Based Tree Risk Assessment

66 The assessment was carried out on a single tree (Tree 1) at the south of the site 7th May 2015.

67 A site plan showing the location of the tree is included as Figure 2 within Appendix A. A summary of the tree assessment results can be found in Table 7 below.

68 Tree 1, a single over mature heavily pruned oak *Quercus sp.* tree was assessed for its potential to supporting roosting bats.

69 The tree which has fresh regrowth and which splits into two stems at approximately 2m up the trunk was found to contain two obvious cavities visible from ground level. One is a shallow cavity in the central trunk, approximately 2m off the ground and the other is a split caused by a lightning strike that continues upwards into the remaining limb.

70 It was also noted that there is a smaller limb present on the south side with split and peeling bark creating a cavity. There is also a wooden bird box present in the tree.

D.2.3.3 Bats – Nocturnal Surveys

71 Full results and survey plans for each nocturnal survey are included within Appendix A Figures 5 and 6.

D.2.3.3.a 17th June 2015 – Dusk Emergence Survey

72 No conclusive roosting activity was determined in association with the building during the survey.

- 73 Activity indicative of roosting bats, in the form of a common pipistrelle bat foraging in close proximity to the western elevation of the building, was observed by two of the surveyors at 22:14, 24 minutes after sunset.
- 74 Moderate levels of foraging and commuting activity were recorded from 22:01 (36 minutes after sunset) until the end of the survey. Species recorded were noctules along with common and soprano pipistrelles. Concentrations of foraging activity appeared to be in association with the boundaries of the site, particularly with the trees and shrubs on the eastern and western boundaries.

D.2.3.3.b 1st July 2015 – Dusk Emergence Survey

- 75 No conclusive roosting activity was determined in association with the building during the survey.
- 76 Activity indicative of roosting bats, in the form of a common pipistrelle bat observed commuting away from the southern elevation of the building at 22:00 (19 minutes after sunset) by one surveyor, and similar activity by a common pipistrelle bat commuting away from the building at 22:14 (23 minutes after sunset).
- 77 High levels of foraging and commuting activity were recorded from 21:57 until 22:50 when an electrical storm began and all bat activity ceased. The majority of the foraging activity was recorded in close proximity to the building and was mainly over the grassland areas and in association with the trees and shrubs on the boundaries of the site.
- 78 Peaks of foraging activity occurred between 22:28 and 22:30, when at least 3 common pipistrelle bats were observed foraging in close proximity to the southern elevation of the building; and between 22:30 and 22:42 when up to 4 common pipistrelle bats were observed foraging along the tree line on the eastern boundary of the site and in the tree canopy and over the grassland to the south of the site.

D.2.3.3.c Anecdotal Information

- 79 Anecdotal information provided by a local resident during the survey on the 1st July 2015 indicates that local residents are aware of a maternity roost (count of approx 40 and a grounded baby bat) in a residential building approximately 100m south of the surveyed building.

D.2.3.4 Other Protected and Notable Species

- 80 The building, trees and shrubs on the site are considered to offer suitable habitat for building and tree nesting birds.
- 81 A former pond was recorded during the survey, however it was noted that it is gravel filled and no longer holds water.

E INTERPRETATION/EVALUATION OF SURVEY RESULTS

E.1 Desktop study

E.1.1 Ecological Records Search

82 The search of WYBG and WYE records returned no roost records for the surveyed building, with the closest record being of a common pipistrelle bat roost approximately 130m south east of the surveyed building.

83 Anecdotal information provided by a local resident suggests that this roost may be a maternity roost and due to the proximity of this potential maternity roost to the surveyed building (approx. 130m) the proposals may have an impact on the this previously recorded roost, particularly if the surveyed building is used occasionally as a transitory or satellite roost to this possible maternity roost.

E.1.2 Designated Wildlife Sites

84 The surveyed building is not directly connected to any designated wildlife sites, with the closest and only designated site within 2km of the surveyed building being an Ancient Replanted Woodland approximately 300m south of the site.

85 However, due to the relatively restricted nature of the proposal and the distance between the surveyed building and the closest designated site, it is considered unlikely that the proposal will have any direct effect on these areas.

E.2 Flora

E.2.1 Phase 1 Habitat Survey

86 All of the habitat and species recorded on the site are common and the site was found to contain limited floral diversity.

E.2.2 Controlled Invasive Species

87 No controlled invasive species were recorded within the curtailment of the site during the survey.

E.3 Fauna

E.3.1 Bats – Internal and External Visual Assessment

E.3.1.1 Surrounding Habitat

88 The habitats immediately surrounding the surveyed building were found to offer suitable foraging and commuting habitat for bats. Residential gardens, single mature trees, rivers, woodland and hedgerows provide good foraging and commuting habitats for bats across and between the site and the wider landscape.

89 However, due to the relatively restricted nature of the proposal which will result in minor changes to the surrounding garden landscaping it is considered that the proposal will have no significant effect on the available foraging and commuting habitat for bat species.

E.3.1.2 Building 1

- 90 No evidence of the presence of roosting bats was found during the daytime assessment of Building 1.
- 91 The building was found to be relatively well sealed. However, limited features capable of supporting summer roosts of bats were noted, namely hanging tiles and wooden fascias on the dormers, in small gaps between the wall and the PVC soffit boxes and fascia boards, and under some of the clay pantiles, leading to the bitumen felt lining.
- 92 Given the location and type of features identified as having bat roost potential, Building 1 is considered to have **moderate potential** to support roosting bats.

E.3.2 Bats – Ground Based Risk Assessment of Trees

- 93 An over mature oak tree (Tree 1) within the curtailment of the site was assessed for its potential to support roosting bats.
- 94 Obvious potential bat roosting features in the form of two cavities, peeling bark and a wooden bird box were observed from ground level.
- 95 As a result of these findings, this tree is considered to have **moderate to high potential** to support roosting bats.

E.3.3 Bats – Nocturnal Surveys

- 96 No conclusive evidence of roosting bats was observed during the nocturnal surveys, however common pipistrelles were seen to be foraging and commuting close to the surveyed building within the typical emergence time (within 30 minutes of sunset) during both manned surveys.
- 97 Additionally, moderate to high levels of commuting and foraging activity were observed during both surveys, but particularly during the second survey on the 1st July 2015 when up to 4 common pipistrelle bats were recorded constantly foraging and commuting across the site, and close to the surveyed building, during the survey.

E.3.4 Other Protected and Notable Species

- 98 The building, trees and shrubs on site are considered to offer suitable habitat for nesting birds and the demolition and/or removal of these features at an unsuitable time of year is likely to have an adverse impact on nesting birds.
- 99 A former pond was recorded during the survey, however it was noted that it was gravel filled and no longer holds water and so is highly unlikely to provide suitable habitat for any aquatic species.

F CONCLUSIONS AND RECOMMENDATIONS

F.1 Desktop Study

F.1.1 Ecological Records Search

101 Due to the nature of the proposal, the distance between the proposed development site and the closest bat roost record, it is possible that the proposal may have an indirect impact on this existing roost.

102 No further desk studies or surveys are required at this stage; however, the recommendations in Section F.3.1.1 below with regards to the presence/absence of bats will be followed during the development works.

F.1.2 Designated Wildlife Sites

103 Due to the nature of the proposal and the distance between the proposed development site and the identified designated site, it is highly unlikely that development will have any effect on these areas.

104 As a result, no further surveys or desk studies are required at this stage.

F.2 Flora

F.2.1 Phase 1 Habitat Survey

105 There are no constraints to the current proposals with regards to vegetative species, with all species and habitats recorded being common and of limited floral diversity.

106 However, the trees and semi-natural grassland will be retained where possible and the trees adequately protected in accordance with British Standards BS 5837:2012 during all clearance and construction works on the site.

F.2.2 Controlled Invasive Species

107 There are no constraints to the current proposals with regards to controlled invasive species.

F.3 Fauna

F.3.1 Bats

F.3.1.1 Building – Presence/Absence

108 No bat roosts have been confirmed within building 1. However due to the level and timing of activity observed, the close proximity of roosts within the local area and the building level of perceived potential, there is the possibility that the building may be used by bats later within the year; when the maternity colonies begin to disperse.

109 As such, as confirmed with Jeff Keenlyside (Conservation Officer, Kirklees Council) via email on the 10th July. It is recommended that the works can be carried out under the control of a strict method statement/ pre-works dawn return survey (see Section G.2).

F.3.1.2 Tree

110 The single oak tree in the south eastern corner of the site was found to have High potential to support roosting bats.

111 This tree is to remain as part of the proposals; however if the plan for the site change and any work is to be undertaken on this tree as part of the proposals or at a later date, further survey should be commissioned to determine if bats are present within its structure.

F.3.2 Other Protected and Notable Species

F.3.2.1 Nesting Birds

112 Building 1 (Bungalow) and the trees and shrubs on site include suitable features and habitat for nesting birds. As a result of this it is recommended that the works to the building and habitats on site be carried out outside the main bird nesting period which runs from March to August, inclusive.

113 Should works need to be carried out within this period, a suitable method statement for the protection of nesting birds would have to be put in place which should include:

- Pre-works inspections of suitable nesting habitat in and around the work area by a suitably qualified ecologist.
- If at any point during works nesting birds are found, works should be suspended and Access Ecology Ltd contacted for further advice (Tel: 0114 258 7819).

114 To maintain and enhance the ecological value of the site and in accordance with the aims of The National Planning Policy Framework, it is suggested that the developer may wish to include suitable replacement features for nesting birds within the new development. Please refer to Appendix C for illustrated examples.

F.3.2.2 Pond

115 During the Phase 1 habitat survey a former pond was recorded on the site, which appears to have been recently filled in with gravel.

116 Ponds are a Biodiversity Action plan habitat. As such, to enhance the ecological value of the site and in accordance with the aims of The National Planning Policy Framework, it is suggested that the developer may wish to include a wildlife pond within the development plans. A pond will have a cumulative effect on biodiversity if its adequately well maintained, providing a shelter and a foraging source for amphibians, as well as foraging opportunities for terrestrial mammals and birds.

F.4 Survey validity

117 The relevance of any ecological survey work degrades with time. Therefore, if the development works have not been completed within one year of the publication date of this report (July 2015), further surveys will be required to re-establish the ecological status of this site.

G BAT METHOD STATEMENT

G.1 Assessment of Site proposals and Associated Risk to Species

118 The following are thought to be the main risks to bats associated with the proposed development. The actions listed within section Method Statement for 18 Granny Lane, Lower Hopton, WF14 8LA are designed to minimise the risk to bats and bat roosts.

Killing or Injury of Individual Bats

119 Although no roosts have been confirmed as present within Building 1, a limited number of features suitable for supporting small summer roosts of bats were noted during the Preliminary Roost Appraisal.

120 If bats are present within the building at the time of construction works the proposed works would pose a significant risk of killing or injury to any individual bats which may be present.

Roost Destruction

121 Although no roosts have been confirmed as present within the building, a limited number of features suitable for supporting small summer roosts of bats were noted during the Preliminary Roost Appraisal.

Breathable Roofing Membranes

122 Recent research by the Bat Conservation Trust (BCT, 2013b; Waring et al 2013) has found that modern breathable roofing membranes (BRM) pose a significant risk to roosting bats. This is due to bats becoming entangled in the fine plastic fibres that make up BRM. In addition, the effectiveness of BRMs is significantly reduced by inadvertent damage caused by bats, and by the accumulation of droppings and urine. In these cases the life span of the BRM material is significantly reduced.

123 Currently, there are no BRMs that can be considered safe for use in bat roosts. However, no issues have been found with traditional bitumen felt and ventilation measures.

G.2 Method Statement for 18 Granny Lane, Lower Hopton, WF14 8LA

124 Those in charge of the development must ensure that clear instructions are given to the entire workforce with regards to this method statement. Care and due diligence should be taken when carrying out each of the methods and protective measures listed.

G.2.1 Pre-construction Preparation Works

G.2.1.1 Timing of Works

125 If planning is agreed in time and the works are commissioned before November 2015, the works to areas identified as having potential for roosting bats (gaps in the expansion joints around the soffits and gaps in association with the hanging tiles on the dormer windows) will be undertaken immediately preceding a dawn return survey under the supervision of a licenced ecologist. However, if planning permission is delayed and suitable weather conditions are not available (due to the time of year) the works will be undertaken without a dawn return survey under the supervision of a licenced ecologist.

G.2.1.2 Prior to Works

126 A suitably licensed ecologist will conduct a pre-works inspection of the building for any evidence of bat (and bird nesting) activity.

127 A suitably licensed ecologist will provide a toolbox talk regarding bats for the contractors involved in the construction works.

G.2.1.3 During Works

128 If at any point during the pre-construction preparation works it is suspected that bats are within the development area, works should be suspended and the advice of Access Ecology Ltd sought (Tel: 0114 258 7819).

129 If bats are confirmed as present within the buildings the pre-construction preparation works will have to be suspended until a Natural England European Protected Species Mitigation Licence can be obtained to legitimise the works.

130 A suitably licensed ecologist will supervise the controlled strip of all areas with potential for bat roosts within the building (gaps in the expansion joints around the soffits and gaps in association with the hanging tiles on the dormer windows).

131 Once the suitably licensed ecologist is happy that the areas likely to support bat roosts are clear he will hand over the building for the pre-construction preparation works to be completed.

G.2.2 Construction Phase

G.2.2.1 Modern Breathable Roofing Membranes

132 Modern breathable roofing membranes must not be used on the new extension or existing building. Bitumen felt lining with appropriate roof ventilation is the recommended alternative.

G.2.2.2 Replacement Roost Features

- 133 At least 1 replacement roost feature should be fitted into each aspect of the new building.
- 134 In order to replicate the existing features identified by the survey (gaps in the expansion joints around the soffits and gaps in association with the hanging tiles on the dormer windows) the bat boxes for roofs and walls for crevice dwelling bats, shown in Figures 1 and 2 below are the preferred design. The designs shown in Figure 2 are also included in Appendix B.

Figure 1: Roof Box Design (not to scale)

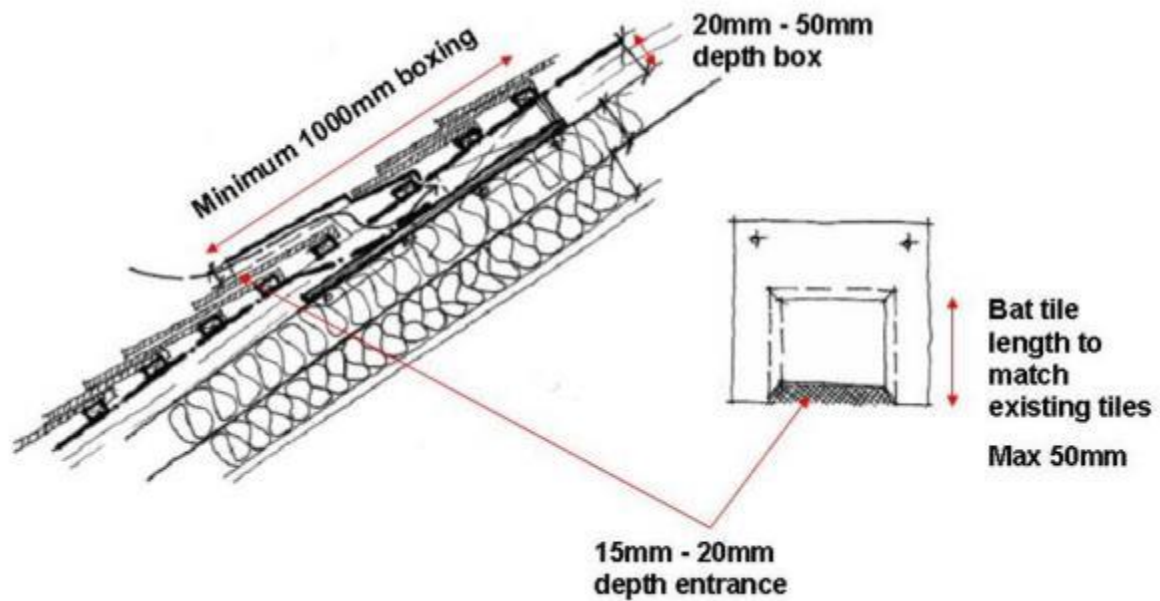


Figure 1 Crevice Dwelling Bat Boxes for Roofs and Walls



Crevice-dwelling bats (roofs and walls)

Crevice-dwelling bats are those species which choose crevices or narrow gaps within which to roost. These species are pipistrelle's, brandt's, whiskered, noctule, serotine, leisler's, daubenton's, barbastelle and bechstein's.

To provide artificial roosting space for crevice-dwelling bats boxes can either be incorporated into the building, attached to external walls or attached to trees, this leaflet deals with built in features.

Considerations when choosing a crevice-dwelling bat box:

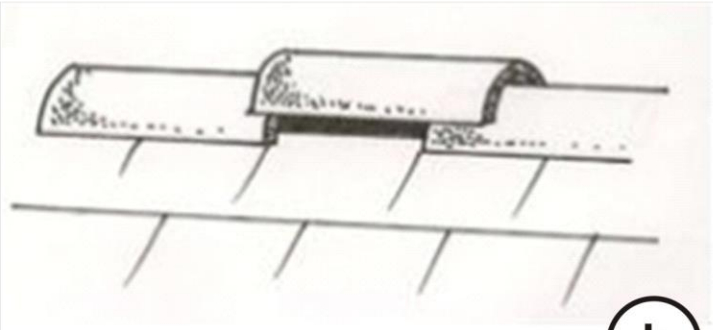
Materials - Rough (for grip), non-toxic and non-corrosive. We recommend wood-concrete (woodcrete)

Access dimensions - 15-20mm (h) x 20-50mm (w)

Dimensions - any size as long as it includes crevices of 20-30mm

Ridge tiles

Access for bats can be provided by installing raised ridge tiles as below which allow access to the tunnel beneath.



b

Externally-mounted boxes

Externally-mounted boxes are easy to install and access. They can be mounted on external or internal walls and should be at a height of at least 3m from the ground facing south-southeast.



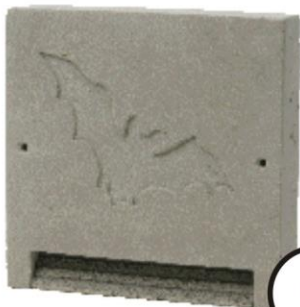
a

Boxes incorporated into walls

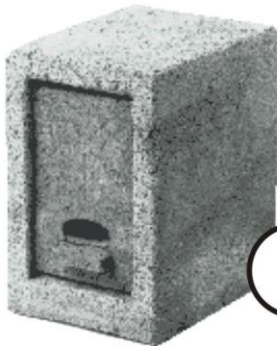
Bat boxes can be incorporated into internal, external or cavity walls and roofs by replacing bricks (d, g, h), facia boards/soffits (f) or roof tiles (e).

Boxes should be installed on the most southerly or westerly aspect, for use as summer maternity roosts, and on northerly aspects, for use during the winter and by males all year round.

The access point should not be illuminated by artificial lights and the box should be positioned at least 2-7m above the ground.



c



e



d



f



g

Legend

a	Treble Crevice Bat Box
b	Raised ridge tiles
c	Schwegler Bat Access panel 1FE
d	Tudor Roof Tile Co. Bat Access Tile Set
e	Schwegler Brick Box Type 27
f	RoofBLOCK Bat Roost
g	Schwegler Bat Tube 1FE

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Project	
Title	
Client	
Date	
Ref	

H REFERENCES

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http://www.bats.org.uk/pages/existing_buildings.html accessed September 2013

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(Waring et al 2013) Double Jeopardy: The Potential for Problems when Bats Interact with Breathable Roofing Membranes in the United Kingdom, Architecture and Environment Journal
http://manuscript.sciknow.org/uploads/ae/pub/ae_1361785788.pdf accessed September 2013

UK legislation and policy web address:

Conservation of Habitats and Species Regulations 2010:

http://www.opsi.gov.uk/si/si2010/uksi_20100490_en_1

Habitats Directive:

www.europa.eu.int/eur-lex/en/lif/dat/1992/en_392L0043

Wildlife and Countryside Act 1981:

www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1981/cukpga_19810069_en_1

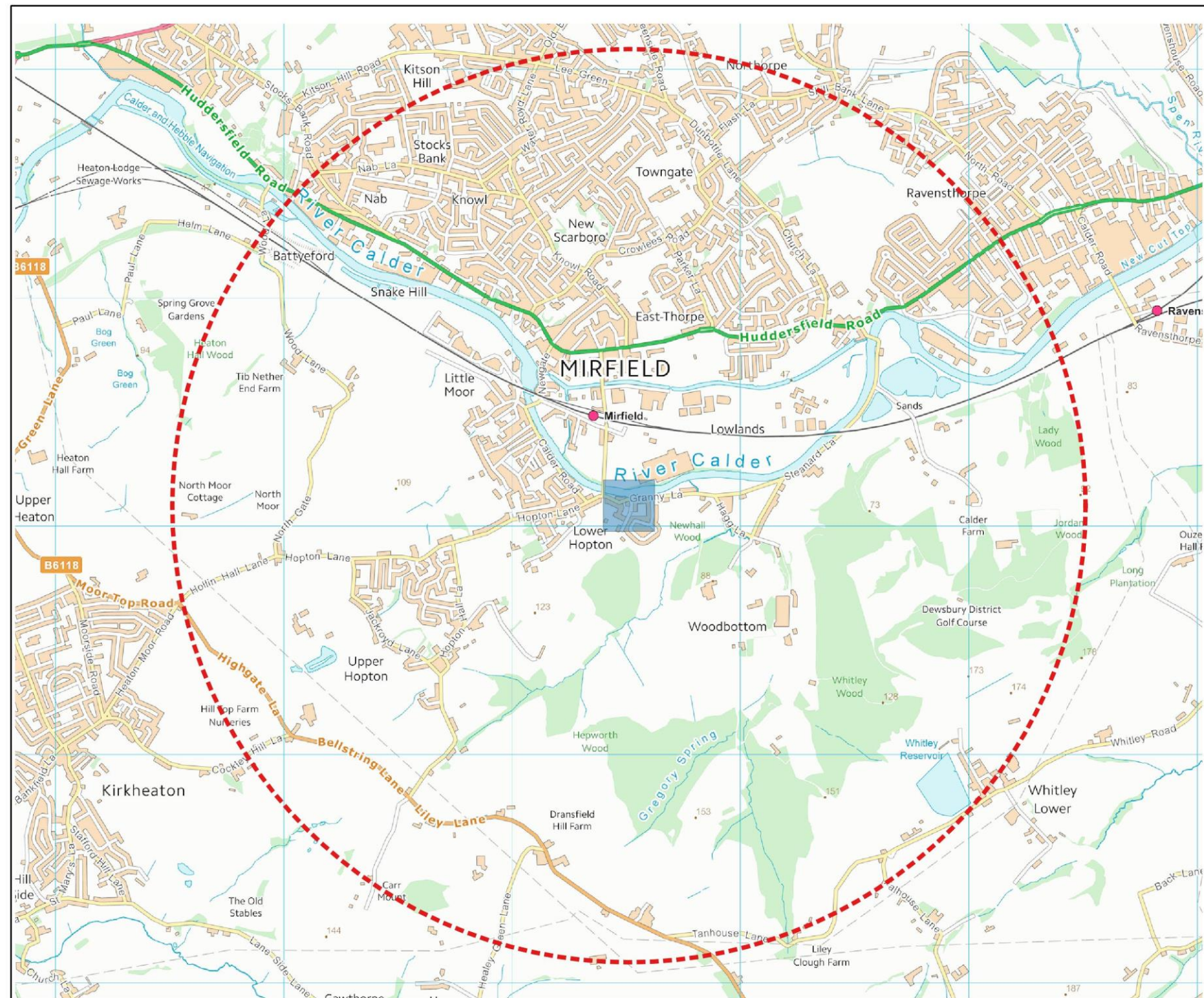
National Parks and Access to the Countryside Act 1949:

http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1949/cukpga_19490097_en_1

National Planning Policy Framework:

<http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf>

A **Appendix**



Produced using open source OS maps (2014)



Legend

-  2km buffer
-  Site

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Project no:0881
 Project Name Granny Lane
 Title: Location Plan
 Client Mark Smith
 Date: June 2015



Legend

Trees

- High Potential
- Negligible Potential

Minor Roads

Road

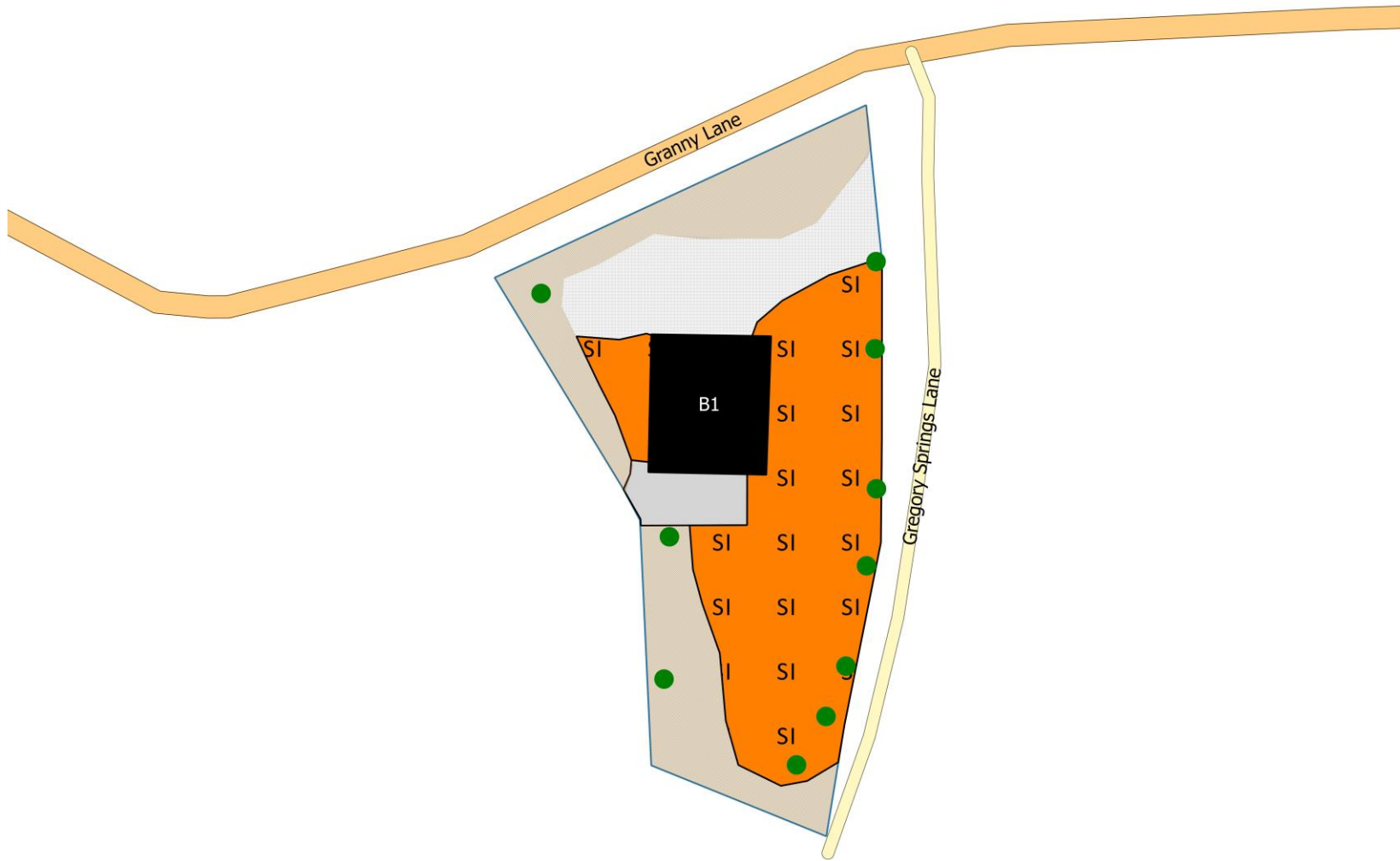
Buildings

Moderate Potential

Site Boundary



Project no:0881
Project Name Granny Lane
Title: Building and tree Plan
Client Mark Smith
Date: June 2015



Legend

Habitats

- Trees
- Hardstanding
- Buildings copy
- gravel
- SI SemiImprovedGrassland
- IntroducedShrubs

Other items

- MinorRoads
- Road
- Site Boundary



Project no:0881
Project Name Granny Lane
Title: Phase 1 Plan
Client Mark Smith
Date: June 2015

Front aspect



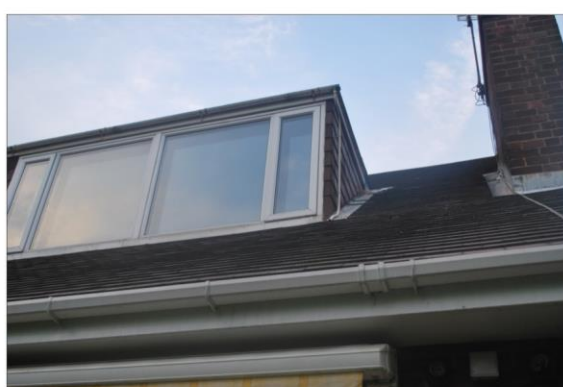
Rear aspect



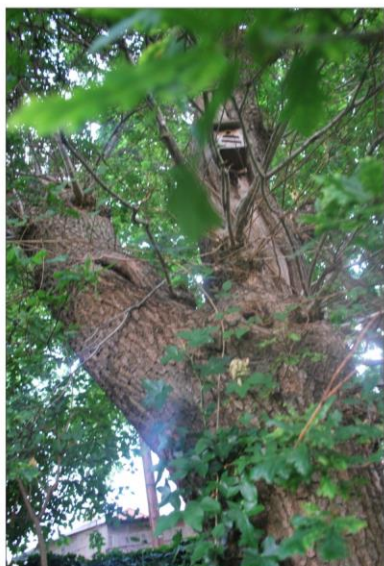
Former pond



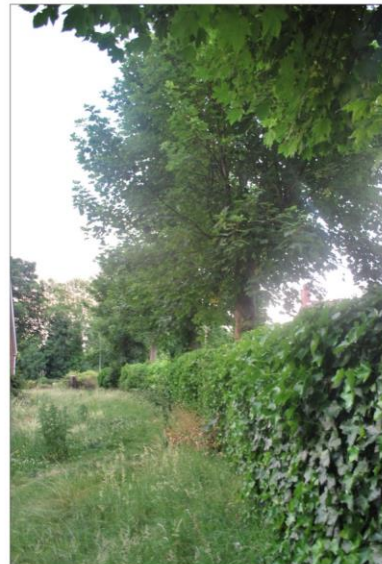
Dormer window



High potential tree



Semi-Improved grassland



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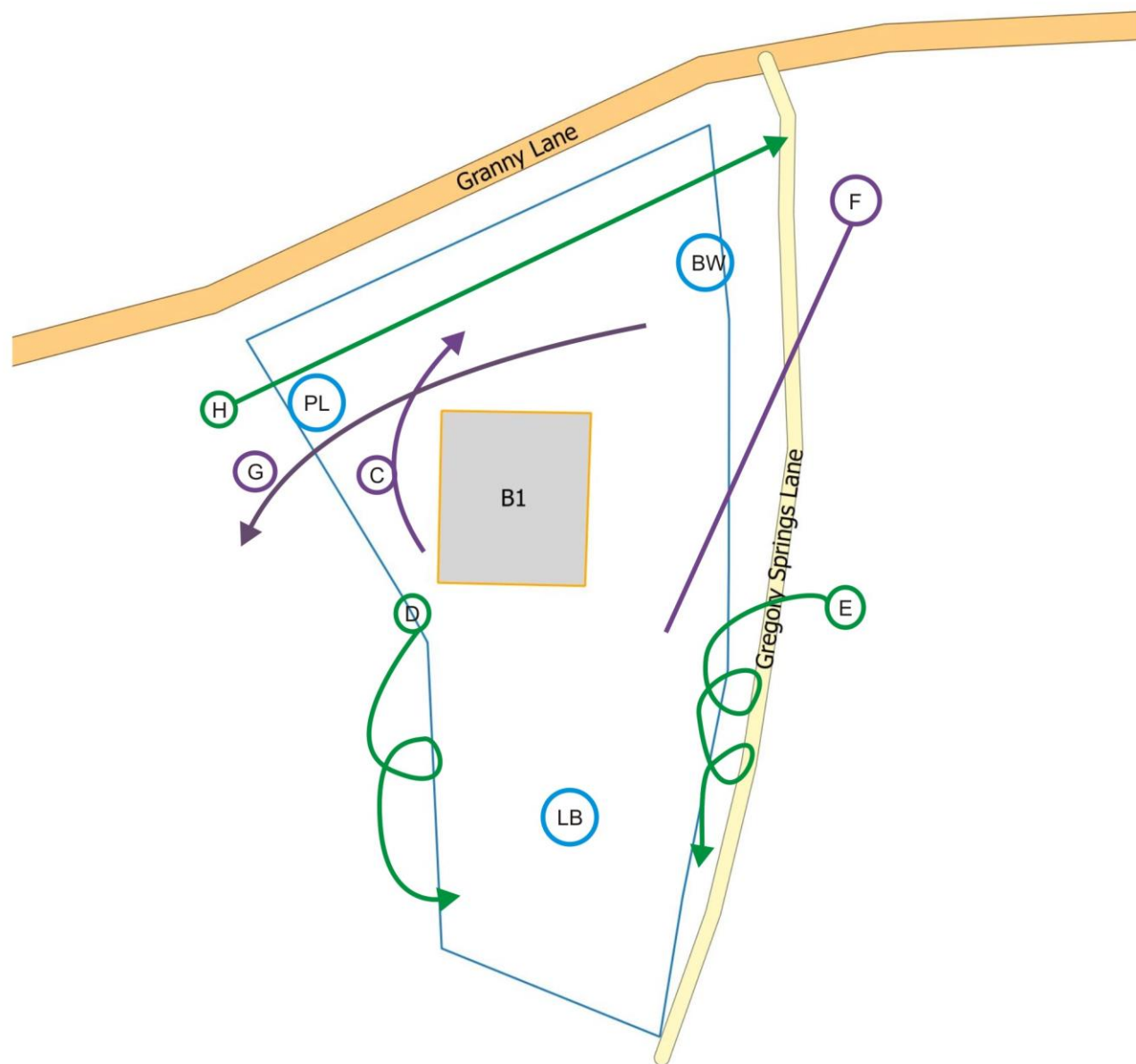
Project 0881

Title Site Images

Client Mark Smith

Date May 2015

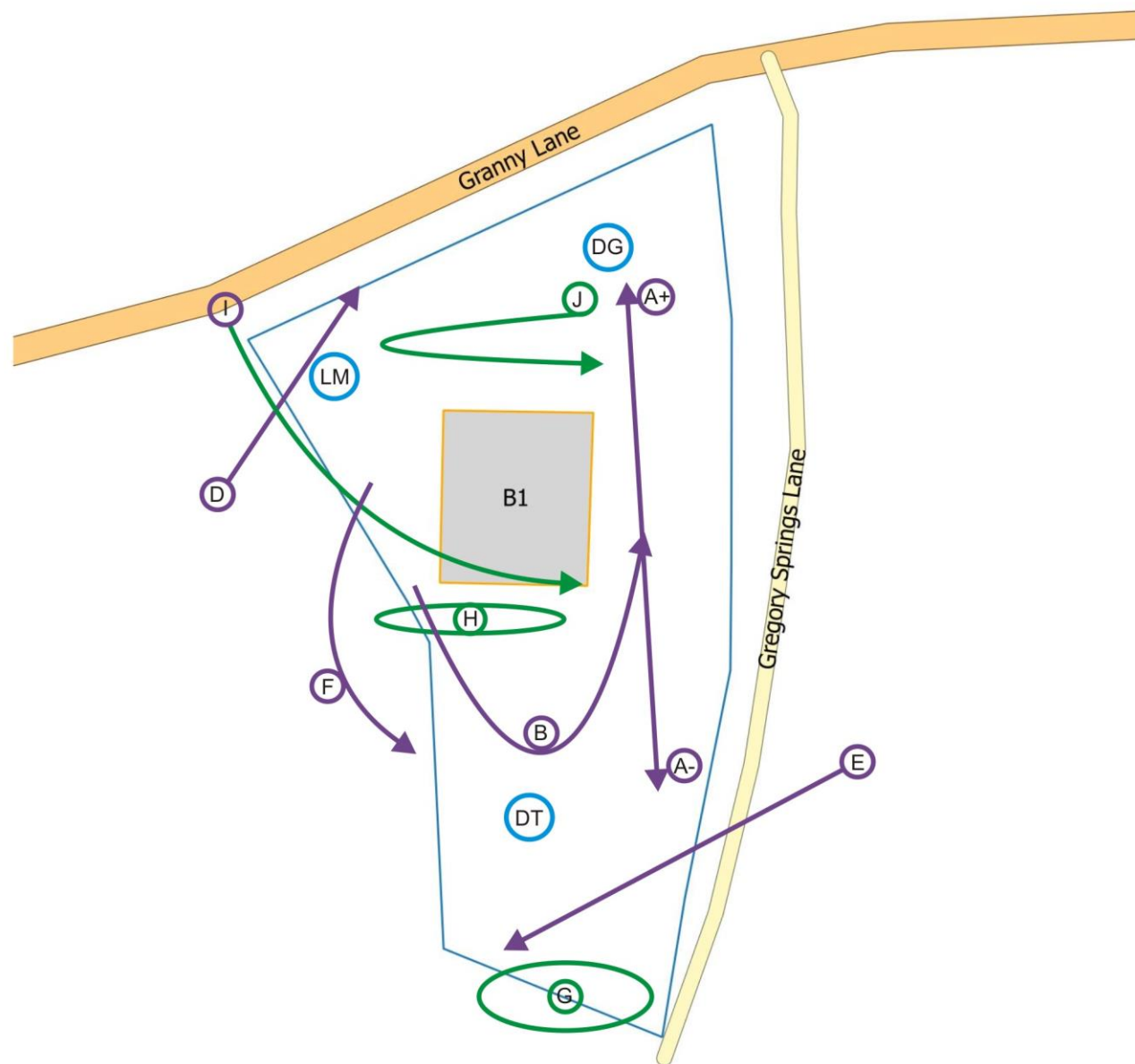
Ref



N
↑
Do not scale from

Date		17/06/2015		Survey Type	Bat Emergence survey	
Licensed surveyors		Belinda Wiggs				
Additional surveyors		Lucy Brookfield, Paul Iptrot				
Temp (Celsius)		14	Humidity	medium	Cloud Cover %	50
Wind speed (Beaufort)		4	Precipitation	none		
Record ID	Time	Species		Num. Bats	Event	Surveyor Initials
START	21:09	-		-	-	-
Non Visual	22:01	Nyctalus noctula		1	commuting	PL
A	22:02-22:07	Nyctalus noctula		5	commuting	LB,PL
B	22:10	Pipistrellus pipistrellus		1	Commuting	LB
C	22:14	Pipistrellus pipistrellus		1	Commuting	PL
B,D	22:16	Pipistrellus pipistrellus		1	Foraging	LB
E	22:18	Pipistrellus pipistrellus		1	Foraging	BW
D	22:20	Pipistrellus pipistrellus		1	commuting	LB,PL
Non Visual	22:29	Pipistrellus pipistrellus		1	commuting	LB
B,D	22:33	Pipistrellus pipistrellus		1	Foraging	LB
F,B	22:34	Pipistrellus pipistrellus		1	Foraging	PL,BW
C	22:37	Pipistrellus pipistrellus		1	commuting	LB,PL
Non Visual	22:38	Pipistrellus pipistrellus		1	commuting	BW
D	22:39	Pipistrellus pipistrellus		1	Foraging	LB
Non Visual	22:40	Pipistrellus pipistrellus		1	commuting	BW
G	22:41	Pipistrellus pipistrellus		1	commuting	LB,PL,BW
Non Visual	22:47	Pipistrellus pipistrellus		1	commuting	PL
Non Visual	22:54	Pipistrellus pygmaeus		1	commuting	PL
Non Visual	22:55	Pipistrellus pipistrellus		1	commuting	BW
D	23:01	Pipistrellus pygmaeus		1	Foraging	PL
D	23:03	Pipistrellus pygmaeus		1	Foraging	PL,BW
FINISH	23:03	-		1	-	-

accessEcology Unit R1b Riverside Block Sheaf Bank Business Park Sheffield S2 3EN www.accessecology.co.uk Tel: 0114 258 7819 Email: Info@accessecology.co.uk	Legend	??	Surveyor location		Foraging Activity	Project	0881-Granny Lane		
		PR	Potential unconfirmed roost location		Commuting Activity	Title	Fig. 4. Bat Survey Results		
			Swarming activity		Target note	Client	Mark Smith		
		Flight paths are shown as an indication only. The point where routes are shown to start and terminate are where the bats come into, and are lost from the view of the surveyor.						Date	17/06/15
		Please Note: Commuting and Foraging routes shown to start at the building are where bats are seen flying above the roof or around the building unless otherwise indicated. On routes where more than one type of activity is recorded the following order of priority is observed: Roosting>Swarming>Foraging>Commuting						Ref	[0881]Fig4[TS]survey[2015.06.17]



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Legend

	Surveyor Location		Foraging Activity
	Roost Location		Commuting Activity
	Swarming activity		Target note
Flight paths are shown as an indication only. The point where routes are shown to start and terminate are where the bats come into, and are lost from the view of the surveyor.			
Note: Commuting and Foraging routes shown to start at the building are where bats are seen flying above the roof or around the building unless otherwise indicated.			
On routes where more than one type of activity is recorded the following order of priority is observed: Roosting>Swarming>Foraging>Commuting			

Date		01/07/2015		Survey Type	Bat Emergence Survey	
Licensed surveyors						
Additional surveyors		Dave Gash,Louisa Molloy,Donna Tubridy				
Temp (Celsius)		26	Humidity	High	Cloud Cover %	55
Wind speed (Beaufort)		0	Precipitation	None		
Record ID	Time	Species		Num. Bats	Event	Surveyor Initials
START	21:15	-		-	-	-
Non Visual	21:57	Pipistrellus pipistrellus		1	Commuting	DG,LM
A+	21:59	Pipistrellus pipistrellus		1	Commuting	DG
B	22:00	Pipistrellus pipistrellus		1	Commuting	DT,DG
A+	22:02	Pipistrellus pipistrellus		1	Commuting	DT
C-,A	22:03	Pipistrellus pipistrellus		1	Commuting	DT
A-		Pipistrellus pipistrellus		1	Foraging	DG
D	22:04	Pipistrellus pipistrellus		1	Commuting	LM
Non Visual	22:07	Pipistrellus pipistrellus		1	Commuting	LM
A-	22:09	Pipistrellus pipistrellus		1	Commuting	DG,LM,DT
Non Visual	22:09	Pipistrellus pipistrellus		1	Commuting	LM
E	22:10	Pipistrellus pipistrellus		1	Commuting	DT
A+	22:11	Pipistrellus pipistrellus		1	Commuting	DT
A+	22:12	Pipistrellus pipistrellus		1	Foraging	DG,DT
Non Visual	22:12	Pipistrellus pipistrellus		1	Foraging	LM
A-,C	22:13	Pipistrellus pipistrellus		1	Commuting	DT
F	22:14	Pipistrellus pipistrellus		1	Commuting	LM
G	22:14	Pipistrellus pipistrellus		1	Foraging	DT
A+	22:15	Pipistrellus pipistrellus		1	Commuting	DT
G	22:17	Pipistrellus pipistrellus		2	Foraging	DT
H,A-	22:19	Pipistrellus pipistrellus		1	Foraging	LM,DG
Non Visual	22:19	Pipistrellus pipistrellus		1	Commuting	DT
H	22:21	Pipistrellus pipistrellus		1	Commuting/Foraging	LM,DT
Non Visual	22:21	Pipistrellus pipistrellus		1	Foraging	DG
A+-	22:22	Pipistrellus pipistrellus		1	Foraging	LM,DT
Non Visual	22:22	Pipistrellus pipistrellus		1	Commuting/Foraging	LM
A+-	22:24	Pipistrellus pipistrellus		1	Foraging	DT,DG
Non Visual	22:24	Pipistrellus pipistrellus		1	Commuting	LM
A+	22:25	Pipistrellus pipistrellus		2	Foraging	DT,DG
A+-	22:26	Pipistrellus pipistrellus		2	Foraging	DT,DG
Non Visual	22:26	Pipistrellus pipistrellus		1	Foraging	LM
H	22:28-22:30	Pipistrellus pipistrellus		3	Foraging	DT
Non Visual	22:28	Pipistrellus pipistrellus		1	Commuting	DG
I	22:29	Pipistrellus pipistrellus		1	Commuting	LM
J	22:29	Pipistrellus pipistrellus		2	Foraging	DG
A+-	22:30-22:41	Pipistrellus pipistrellus		3	Unknown Activity	DT
I	22:31	Pipistrellus pipistrellus		1	Foraging	LM
H	22:31	Pipistrellus pipistrellus		2	Unknown Activity	LM
H,A+	22:32	Pipistrellus pipistrellus		2	Foraging	DG
I	22:34	Pipistrellus pipistrellus		1	Foraging	LM
F,H	22:35	Pipistrellus pipistrellus		2	Foraging	LM,DT
I	22:36	Pipistrellus pipistrellus		3	Foraging	LM,DT
H	22:39	Pipistrellus pipistrellus		2	Foraging	DT
A-	22:41	Pipistrellus pipistrellus		1	Foraging	DG
J	22:42	Pipistrellus pipistrellus		1	Foraging	DG
G	23:42	Pipistrellus pipistrellus		4	Foraging	DT
Non Visual	22:45	Myotis sp.		1	Foraging	DG
		Pipistrellus pipistrellus			Foraging	
I	22:49			1		LM
A+	22:50	Pipistrellus pipistrellus		1	Foraging	DG
FINISH	23:10	-		-	-	-

Project	0881-Granny Lane
Title	Fig. 4. Bat Survey Results
Client	Mark Smith
Date	01/07/2015
Ref	[0881]Fig4[TS]survey[2015.07.01]

B Appendix

Compartment	Common Name	Scientific Name
Planted Bed	Sycamore	<i>Acer pseudoplatanus</i>
	Cotaneaster	<i>Quince</i>
	Scots pine	<i>Pinus sylvestris</i>
	Virginia creeper	<i>Parthenocissus quinquefolia</i>
	Ornamental heather	<i>Calluna vulgaris</i>
	Honey suckle	<i>Lonicera</i>
	Ivy	<i>Hedera</i>
	Forget-me-not	<i>Myosotis</i>
	Dog violet	<i>Viola riviniana</i>
	Bluebell	<i>Hyacinthoides non-scripta</i>
	Pansy	<i>Viola tricolor subsp. tricolor</i>
	Willowherb	<i>Epilobium</i>
	Clematis	
	Foxglove	<i>Digitalis</i>
	Geranium	<i>Geraniaceae</i>
	Cleavers	<i>Galium aparine</i>
	Bamboo	<i>Bambuseae</i>
	Common nettle	<i>Urtica dioica</i>
	Bramble	<i>Rubus</i>
	Herb robert	<i>Chrysopogon zizanioides</i>
	Ragwort	<i>Jacobaea vulgaris</i>
	Daffodil	<i>Narcissus</i>
	Dandelion	<i>Taraxacum</i>
	Broadleaved dock	<i>Rumex obtusifolius</i>
	Leylandii	<i>Leylandii</i>
	Hawthorn	<i>Crataegus</i>
	Variegated holly	<i>Ilex aquifolium</i>
	Rowan	<i>Sorbus</i>
	Oak	<i>Quercus</i>
	garlic mustard	<i>Alliaria petiolata</i>
	Elder	<i>Sambucus</i>
	Fir	<i>Abies</i>
	Hyacinth	<i>Hyacinthus</i>
SI Grassland	Perennial rye-grass	<i>Lolium perenne</i>
	Fescue	<i>festuca</i>
	Poa	<i>Poa</i>
	Yorkshire fog	<i>Holcus lanatus</i>
	Cleavers	<i>Galium aparine</i>
	Dandelion	<i>Taraxacum</i>

Compartment	Common Name	Scientific Name
	Ragwort	<i>Jacobaea vulgaris</i>
	Moss	<i>Bryophyta</i>
	White clover	<i>Trifolium repens</i>
	Creeping buttercup	<i>Ranunculus repens</i>
	Lady smock	<i>Cardamine pratensis</i>
	Spear thistle	<i>Cirsium vulgare</i>
	Ground sorrel	<i>Rumex acetosa</i>
	Wood avens	<i>Geum urbanum</i>
	Ornamental poppy	<i>Papaver somniferum</i>
	Prickley sow thistle	<i>Sonchos</i>
	Buddleia	<i>Buddleja</i>

Table 1 Relevant WYBG and WYE records from within a 2km radius of the site

Species Name	Latin	Record Date	Record type	OS	Distance (km)	Bearing (°)	Supplied by
Terrestrial Mammals							
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	Apr-14	Roost, 1 Count	SE2050918965	0.13	180	WYE
Lesser Noctule Bat	<i>Nyctalus leisleri</i>	31/07/2003	1 Count of Adult	SE20281916	0.24	287	WYBG
Lesser Noctule Bat	<i>Nyctalus leisleri</i>	31/07/2003	Field Record	SE20281916	0.24	287	WYE
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	Jun-14	Foraging	SE2016019147	0.35	279	WYE
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	01/05/2010	Field record	SE2012419230	0.41	290	WYE
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	13/09/2013	Field record, 1 count	SE205195	0.41	359	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	13/09/2013	Field Record, 1 count	SE204195	0.42	345	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	18/09/2013	Field Record, 1 count	SE204195	0.42	345	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	16/07/2008	Aural bat detector	SE206195	0.42	13	WYE
Noctule	<i>Nyctalus noctula</i>	Sep-13	Field Record	SE2046019559	0.47	354	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	Sep-13	Foraging	SE2046019559	0.47	354	WYE
Noctule	<i>Nyctalus noctula</i>	01/09/2013	Field Record, 1 count	SE2046119569	0.48	354	WYE
Common Pipistrelle	<i>Pipistrellus</i>	01/09/2013	Field Record	SE2046119569	0.48	354	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	09/07/2008	Field record	SE2046119569	0.48	354	WYE
Vesper Bat Species	<i>Vespertilionidae</i>	07/01/2005	Roost	SE2019119480	0.50	321	WYE
Noctule	<i>Nyctalus noctula</i>	13/09/2013	Roost, 1 count	SE205196	0.51	359	WYE
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	13/09/2013	Field record, 1 count	SE205196	0.51	359	WYE

Species Name	Latin	Record Date	Record type	OS	Distance (km)	Bearing (°)	Supplied by
Noctule	<i>Nyctalus noctula</i>	01/05/2012	Field record	SE2101218959	0.52	105	WYE
Vesper Bat species	<i>Vespertilionidae</i>	07/01/2005	Roost	SE2017319492	0.52	320	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	28/09/2011	Field record	SE2004119347	0.53	299	WYE
Noctule	<i>Nyctalus noctula</i>	01/05/2012	Foraging	SE21081897	0.58	102	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	01/05/2012	Field Record	SE21081897	0.58	102	WYE
Pipistrelle Bat species	<i>Pipistrellus</i>	06/08/2007	1 Count of Adult	SE2109018990	0.59	100	WYBG
Pipistrelle Bat species	<i>Pipistrellus sp.</i>	06/08/2007	Casualty, 1 count of adult	SE2109018990	0.59	100	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	Jul-14	Foraging, 1 count	SE2005019500	0.61	312	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	Jul-14	Roost, 2 counts	SE2003819510	0.63	312	WYE
Brown Long- Eared Bat	<i>Plecotus auritus</i>	01/07/2010	Field record	SE2020819667	0.65	332	WYE
Natterer's Bat	<i>Myotis nattereri</i>	30/08/2013 - 22/09/2013	Possible roost, 1 count	SE2115218909	0.67	106	WYE
Noctule	<i>Nyctalus noctula</i>	30/08/2013 - 17/09/2013	Field Record	SE2115218909	0.67	106	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	30/08/2013 - 22/09/2013	Roost, 1 count	SE2115218909	0.67	106	WYE
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	30/08/2013 - 17/09/2013	Foraging	SE2115218909	0.67	106	WYE
Myotis species	<i>Myotis sp.</i>	01/07/2010	Roost, 1 Count	SE2020919700	0.68	334	WYE
Brown Long- Eared Bat	<i>Plecotus auritus</i>	Jul-10	Aural bat detector, 7 counts of adults	SE2020819701	0.68	334	WYE
Pipistrelle species	<i>Pipistrellus sp.</i>	11/07/2005	Possible roost	SE2099618485	0.78	141	WYE
Brown Long- eared Bat	<i>Plecotus auritus</i>	11/07/2005	Roost, 3 counts of adult	SE2099618485	0.78	141	WYE
Pipistrelle species	<i>Pipistrellus sp.</i>	10/08/2007		SE1958418813	0.97	253	WYBG
Pipistrelle species	<i>Pipistrellus sp.</i>	10/08/2007	Roost	SE1958418813	0.97	253	WYE
Bats	<i>Vespertilionidae</i>	29/06/1905	Roost	SE1958418811	0.97	253	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	02/06/2008	Injured, 1 count of adult male	SE21231996	1.13	40	WYE
Leisler's Bat	<i>Nyctalus leisleri</i>	01/06/2013	Grounded, 1 count	SE1941918683	1.16	249	WYE

Species Name	Latin	Record Date	Record type	OS	Distance (km)	Bearing (°)	Supplied by
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	01/06/2013	Field record	SE1941918683	1.16	249	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	Aug-14	Foraging	SE2115720082	1.18	33	WYE
Vesper Bat species	<i>Vespertilionidae</i>	18/08/2003	1 Count of Adult	SE20352038	1.30	353	WYBG
Vesper Bat species	<i>Vespertilionidae</i>	18/08/2003	Grounded, 1 count	SE20352038	1.30	353	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	Jun-14	Foraging	SE2032320393	1.31	352	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	Jun-14	Foraging	SE2153019914	1.31	51	WYE
Pipistrelle species	<i>Pipistrellus</i>	18/06/2007	not recorded Range	SE2032320398	1.32	352	WYBG
Pipistrelle species	<i>Pipistrellus sp.</i>	18/06/2007	Maternity roost	SE2032320398	1.32	352	WYE
Pipistrelle species	<i>Pipistrellus</i>	30/06/2004	1 Count of Adult	SE2033020410	1.33	352	WYBG
Vesper Bat species	<i>Vespertilionidae</i>	27/06/2005	1 Count of Juvenile	SE2033020410	1.33	352	WYBG
Pipistrelle species	<i>Pipistrellus sp.</i>	30/06/2004	Maternity roost, 1 count	SE2033020410	1.33	352	WYE
Brown Long- Eared Bat	<i>Plecotus auritus</i>	Jun-14	Roost	SE2032920410	1.33	352	WYE
Vesper Bat species	<i>Vespertilionidae</i>	27/06/2005	Maternity roost, 1 count of juvenile	SE2033020410	1.33	352	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	Jun-14	Foraging	SE2156319981	1.38	50	WYE
Vesper Bat species	<i>Vespertilionidae</i>	24/07/2003		SE20472063	1.54	359	WYBG
Vesper Bat species	<i>Vespertilionidae</i>	24/07/2003	Roost	SE2047620632	1.54	359	WYE
Noctule	<i>Nyctalus noctula</i>	15/09/2011	Field Record	SE2124920710	1.78	25	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	15/09/2011	Field Record	SE2124920710	1.78	25	WYE
Vesper Bat species	<i>Vespertilionidae</i>	03/06/2003		SE2109320781	1.79	19	WYBG
Vesper Bat species	<i>Vespertilionidae</i>	03/06/2003	Roost	SE2109320781	1.79	19	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	19/07/2007	Aural bat detector	SE203209	1.82	353	WYE
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	14/06/2011	Roost, 1 count	SE2220718150	1.94	119	WYE
Vesper Bat species	<i>Vespertilionidae</i>	15/07/2003		SE19612084	1.97	333	WYBG
Vesper Bat species	<i>Vespertilionidae</i>	15/07/2003	Field record	SE19612084	1.97	333	WYE
Vesper Bat species	<i>Vespertilionidae</i>	19/01/2005	Possible roost	SE1917320568	1.99	318	WYE
Amphibians							
Great Crested	<i>Triturus cristatus</i>	29/07/2005	field record	SE214195	0.98	65	WYE

Species Name	Latin	Record Date	Record type	OS	Distance (km)	Bearing (°)	Supplied by
Newt							
Common Toad	<i>Bufo bufo</i>	01/05/2012	Torching	SE2141519533	1.01	64	WYE
Great Crested Newt	<i>Triturus cristatus</i>	01/08/2005 - 16/08/2006	field record, 2 counts of adult	SE215195	1.07	68	WYE
Smooth Newt	<i>Triturus vulgaris</i>	01/08/2005 - 16/08/2006	field record	SE215195	1.07	68	WYE
Smooth Newt	<i>Triturus vulgaris</i>	Jun-07	field record	SE21671912	1.16	89	WYE
Palmate Newt	<i>Triturus helveticus</i>	Jun-07	field record	SE21801876	1.33	104	WYE
Palmate Newt	<i>Triturus helveticus</i>	24/05/2008	Bottle trap, 4 counts of adult	SE21002042	1.42	20	WYE
Smooth Newt	<i>Triturus vulgaris</i>	24/05/2008	Bottle trap, 3 counts of adult; 3 counts of female	SE21002042	1.42	20	WYE
Common Toad	<i>Bufo bufo</i>	06/07/1905	field record, 1 count of larvae	SE1923617644	1.93	221	WYE
Common Frog	<i>Rana temporaria</i>	06/07/1905	field record, 1 count of larvae	SE1923617644	1.93	221	WYE
Great Crested Newt	<i>Triturus cristatus</i>	18/04/2014	Torching, 1 count of larvae, 11 count	SE1923617644	1.93	221	WYE
Great Crested Newt	<i>Triturus cristatus</i>	07/04/2014	Bottle trap, 3 counts of male; 4 counts of female	SE1923617644	1.93	221	WYE
Great Crested Newt	<i>Triturus cristatus</i>	05/04/2014	Torching, 35 counts	SE1923617644	1.93	221	WYE
Great Crested Newt	<i>Triturus cristatus</i>	27/05/2014	Bottle trap, 11 counts of male; 6 counts of female	SE1923617644	1.93	221	WYE
Great Crested Newt	<i>Triturus cristatus</i>	09/06/2014	Bottle trap, 3 countsof female; 6 counts of male	SE1923617644	1.93	221	WYE
Great Crested Newt	<i>Triturus cristatus</i>	06/05/2014	Bottle trap, 2 counts of female; 3 counts of male	SE1923617644	1.93	221	WYE
Great Crested Newt	<i>Triturus cristatus</i>	25/05/2014	Torching, 12 counts	SE1923617644	1.93	221	WYE
Great Crested Newt	<i>Triturus cristatus</i>	20/04/2014	Bottle trap, 1 count of female; 1 count of male	SE1923617644	1.93	221	WYE
Great Crested Newt	<i>Triturus cristatus</i>	22/04/2014	Bottle trap, 7 counts of female	SE1923617644	1.93	221	WYE
Smooth Newt	<i>Triturus vulgaris</i>	18/04/2014	Torching, 12 counts	SE1923617644	1.93	221	WYE

Species Name	Latin	Record Date	Record type	OS	Distance (km)	Bearing (°)	Supplied by
Smooth Newt	<i>Triturus vulgaris</i>	07/04/2014	Bottle trap, 3 counts of male; 7 counts of female	SE1923617644	1.93	221	WYE
Smooth Newt	<i>Triturus vulgaris</i>	27/05/2014	Bottle trap, 1 count of male; 3 counts of female	SE1923617644	1.93	221	WYE
Smooth Newt	<i>Triturus vulgaris</i>	09/06/2014	Bottle trap, 3 counts of female	SE1923617644	1.93	221	WYE
Smooth Newt	<i>Triturus vulgaris</i>	06/05/2014	Bottle trap, 2 counts of male; 4 counts of female	SE1923617644	1.93	221	WYE
Smooth Newt	<i>Triturus vulgaris</i>	25/05/2014	Torching, 2 counts	SE1923617644	1.93	221	WYE
Smooth Newt	<i>Triturus vulgaris</i>	20/04/2014	Bottle trap, 2 counts of male; 3 counts of female	SE1923617644	1.93	221	WYE
Smooth Newt	<i>Triturus vulgaris</i>	22/04/2014	Bottle trap, 2 counts of male; 4 counts of female	SE1923617644	1.93	221	WYE
Common Toad	<i>Bufo bufo</i>	04/05/2001	field record, 1 count of larvae	SE1918317629	1.97	222	WYE
Great Crested Newt	<i>Triturus cristatus</i>	07/06/2014	Torching, 2 counts	SE1918317629	1.97	222	WYE
Great Crested Newt	<i>Triturus cristatus</i>	09/06/2014	Bottle trap, 5 counts of male; 6 counts of female	SE1918317629	1.97	222	WYE
Great Crested Newt	<i>Triturus cristatus</i>	25/05/2014	Torching, 24 counts	SE1918317629	1.97	222	WYE
Great Crested Newt	<i>Triturus cristatus</i>	27/05/2014	Bottle trap, 16 counts of male; 6 counts of female	SE1918317629	1.97	222	WYE
Great Crested Newt	<i>Triturus cristatus</i>	04/05/2014	Torching, 21 counts	SE1918317629	1.97	222	WYE
Great Crested Newt	<i>Triturus cristatus</i>	06/05/2014	Bottle trap, 1 range of eggs, 2 counts of female; 4 counts of male	SE1918317629	1.97	222	WYE
Great Crested Newt	<i>Triturus cristatus</i>	22/04/2014	Bottle trap, 1 count of female; 1 count of male	SE1918317629	1.97	222	WYE
Great Crested Newt	<i>Triturus cristatus</i>	18/04/2014	Torching, 1 count	SE1918317629	1.97	222	WYE
Smooth Newt	<i>Triturus vulgaris</i>	07/06/2014	Torching, 2 counts	SE1918317629	1.97	222	WYE
Smooth Newt	<i>Triturus vulgaris</i>	09/06/2014	Bottle trap, 1 count of female; 5 counts of male	SE1918317629	1.97	222	WYE
Smooth Newt	<i>Triturus vulgaris</i>	25/05/2014	Torching, 3 counts	SE1918317629	1.97	222	WYE
Smooth Newt	<i>Triturus vulgaris</i>	27/05/2014	Bottle trap, 1 counts of male	SE1918317629	1.97	222	WYE

Species Name	Latin	Record Date	Record type	OS	Distance (km)	Bearing (°)	Supplied by
Smooth Newt	<i>Triturus vulgaris</i>	04/05/2014	Torching, 5 counts	SE1918317629	1.97	222	WYE
Smooth Newt	<i>Triturus vulgaris</i>	06/05/2014	Bottle trap, 1 count of female	SE1918317629	1.97	222	WYE
Smooth Newt	<i>Triturus vulgaris</i>	20/04/2014	Bottle trap, 4 counts of male	SE1918317629	1.97	222	WYE
Smooth Newt	<i>Triturus vulgaris</i>	20/04/2014	Torching, 6 counts	SE1918317629	1.97	222	WYE
Smooth Newt	<i>Triturus vulgaris</i>	22/04/2014	Bottle trap, 1 range of eggs, 2 counts of male	SE1918317629	1.97	222	WYE
Smooth Newt	<i>Triturus vulgaris</i>	07/04/2014	Bottle trap, 3 counts of male; 4 counts of female	SE1918317629	1.97	222	WYE
Smooth Newt	<i>Triturus vulgaris</i>	18/04/2014	Torching, 3 counts	SE1918317629	1.97	222	WYE
Plants							
Japanese Knotweed	<i>Fallopia japonica</i>	14/10/2013	None	SE21671990	1.41	55	WYE

Table 2 Building assessment summary

Project No:	0881	Date:	08/05/2015	Visit No.	Time Start	Time Finish	Temp °C	Rain	Beaufort	Cloud Cover	IEVA	Linoscope	Thermal	Static Hand Net	Other Techniques Used	Surveyor Initials
Site Name:	18. Granny Lane			1	10:30			None	0	10 %						JG PL

Building Ref No.	Building Construction/Description.	Structural Features Present							Other External Structural Features	Potential Bat Access Points	Internal Features / Bat Evidence	Bat Potential
		Gables	Barge boards	Soffit boards	Fascia boards	Flashing	Roof void	Under felt				
1	(1970) Two storey dormer bungalow with clay pan tiled roof, PVC soffit boxes and bitumen under felt. Roof in compartment with 2 voids along north and south margins and 1 void along the main ridge.	✓	X	✓	✓	✓	✓	✓	Bungalow with two squared dormer windows to the north and south. The bungalow incorporates a dual pitched tiled roof with UPVC soffit boxes with fascias on all aspects. The building also contains two chimneys, one on the north and one on the eastern aspect. Both the chimneys and the dormer window are	Limited access around soffit boxes, on eastern aspect. Gap under hanging tiles and in association with north dormer. Gaps found in association with soffit on eastern and western aspect and in association with	Large unobstructed roof void. No bat droppings found	

Building Ref No.	Building Construction/Description.	Structural Features Present							Other External Structural Features	Potential Bat Access Points	Internal Features / Bat Evidence	Bat Potential
		Gables	Barge boards	Soffit boards	Fascia boards	Flashing	Roof void	Under felt				
									integrated into the structure with lead flashing. The dormer windows are constructed of a mix of timber effect hanging tile, timber fascia and UPVC windows.	hanging tiles		

Table 3 Tree assessment Summary

Tree ID/ Tag No.	GPS WP	Photo ID	Species	DBH (m)	Height (m)	Crown width (m)	Natural hole	Woodpecker hole	Cracked/ Split limb	Loose bark	Dense ivy	Hollow/ Cavity	Dense epicormic	Bird/Bat box	Signs of bat use?	BCT Category
1	N/A	N/A	Oak (<i>Quercus sp.</i>)	0.75	9	N/A	✓	X	✓	?	X	✓	X	✓	?	Mod - High
Comments: Over mature heavily pruned oak with fresh re growth, trunk splits into two at approx 2m. Two cavities visible from ground level. Shallow cavity in central trunk at 2m, split caused by lightning strike, continues upwards into remaining limb. Small limb on south side with split and peeling bark and cavity																

c Appendix

Swallows

Considerations when choosing a swallow nest box:

Design - Either a nest platform/ledge or a ready-made bowl shaped nest
Example A

Material - Wood-concrete

Dimensions - Platform must be 260mm (w) x 100mm (d)

Access dimensions - Minimum 50 mm (h) 70 mm (w)

Considerations when installing a swallow nest box:

Where - Inside a cold roof space with permanent access, preferably in outbuildings or under deep eaves.

Height - At least 5m

How many - Nests should be placed at intervals of at least 1m

Other - Dropping will occur below the nest so provide a ledge below to catch them.



Swifts

Considerations when choosing a swift nest box:

Material - Wood-concrete or brick

Design - Preferably integral to the building example C and D. Can be integrated with a bat box example B.

Dimensions - 400mm (w) x 200mm (d) x 150 mm (h) or slightly smaller

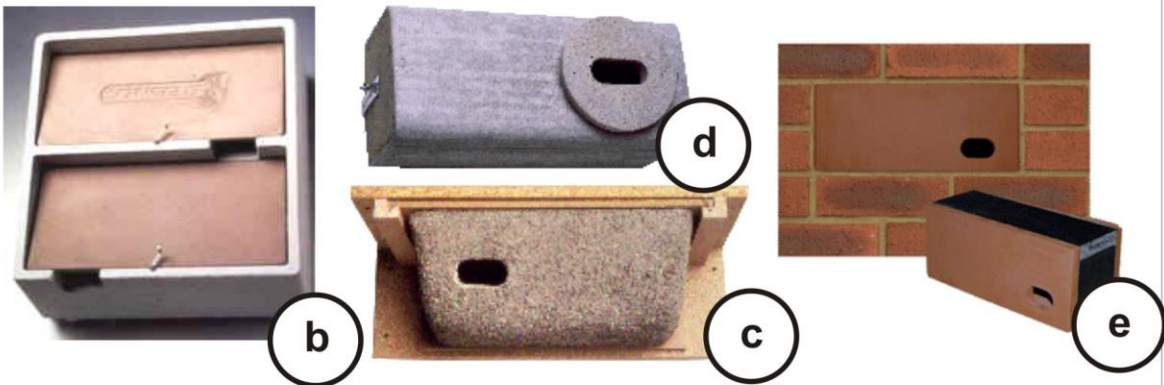
Access dimensions - 30mm (h) x 65 mm (w) oval or rectangle

Considerations when installing a swift nest box:

Where - Anywhere away from direct sunlight and disturbance, preferably under the eaves

Height - At least 5m

How many - Swifts are colonial nesters so ideally 1-4 on a house or 10-20 on a larger building



House Sparrows

Considerations when choosing a house sparrow nest box:

Design - Either singly, which can be used by many small bird species example G, or in a terrace example F.

Material - Wood-concrete

Dimensions - 150mm (w) x 150mm (d) x 350 mm (h)

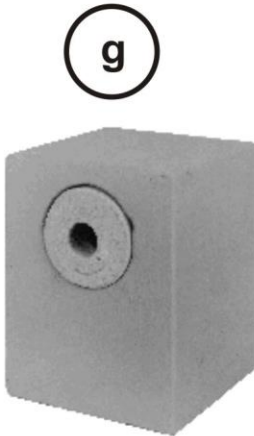
Access dimensions - A 32 mm round hole

Considerations when installing a house sparrow nest box:

Where - Ideally within the structure at eaves level, example H, otherwise externally at the same location

Height - At least 3 m

How many - House sparrows nest in large colonies so fix 10-20 boxes together, 20-30 cm apart.



House Martins

Considerations when choosing a house martin nest box:

Design - Bowl shaped nest attached to a board in groups. Examples I and J.

Material - Air-permeable wood-concrete with a 75% wood content

Dimensions - 180mm in diameter

Access dimensions - A semi-circular hole 25mm (h) x 60-65mm (w)

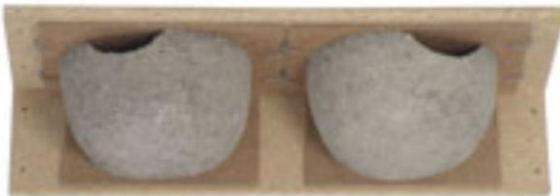
Considerations when installing a house martin nest box:

Where - Externally under overhanging eaves on north and east facing walls

Height - At least 5m

How many - Fix nests in groups to increase the likelihood of use

Other - Dropping will occur below the nest so provide a ledge below to catch them.



a Schwegler Swallow Nest No. 11

b Schwegler Swift & Bat Box 1MF

c Schwegler Swift Box No. 18

d Schwegler Swift Box Type 25

e Ibstock swift box

f Schwegler Sparrow Terrace 1SP

g Schwegler Brick Box Type 24

h Boxes under eaves

i Schwegler House Martin Nest No. 9A

j Schwegler House Martin Facade No. 11

All pictures have been taken from the websites of Schwegler, Ibstock, Habitat Aid and Wild About Britain.

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Project

Title

Client

Date

Ref