Taxal Edge

Bat Survey Report

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Project No: NLG

Title: **Taxal Edge**
Bat Survey Report

Client: **Treville Properties**

Date: August 2020

Status	Date	Prepared by	Reviewed by	Approved by
V1	18/08/2020	Kelly Lomas Senior Ecologist	Neil Lee-Gallon Principal Ecologist	Neil Lee-Gallon Principal Ecologist
V2				

SUMMARY

NLG Ecology Ltd. was commissioned by Treville Properties to undertake an Extended Phase 1 Habitat Survey to describe the baseline wildlife interest of a large residential building and associated outbuildings and grounds at Taxal Edge, Whaley Bridge, SK23 7EJ, along with some of the associated land. The survey was required in reference to a planning application for a proposed residential development within the grounds, with the aim of identifying at an early stage any ecological constraints that may exist. It is Treville Properties' intention to submit outline planning permission for a residential development comprising of seven dwellings and additional garage and workshop for residential use. The design plan for the proposed works is included in Appendix 1, Figure 1, and photographs of the existing buildings on site are provided in Appendix 2.

The Extended Phase 1 Habitat Survey was undertaken on 4th March 2020 by Neil Lee Gallon (Principal Ecologist, CEnv, MCIEEM, Natural England Level 2 Class Licence holder for bats ref: 2015-10739-CLS-CLS and Natural England Class licence holder for barn owl ref: CL29/00163), Catrin Watkin (Ecologist, Natural England Class Level 1 survey licence holder for bats 2019-39208-CLS-CLS) and Ewa Tomalak (Assistant Ecologist, QCIEEM), all of NLG Ecology at the time of the survey.

The survey included detailed internal and external inspections of the main building (and surrounding buildings) with respect to its potential for roosting bats. The main building was assigned 'high' bat roosting potential, largely due to the ideal habitat available both within, and connecting to, the site, and the multiple features of value to roosting bats present on the exterior of the building. The barn and shed were assigned respectively as having moderate and low bat roosting potential. Therefore, in line with best practice guidance (Collins 2016), a suite of three bat emergence/re-entry surveys was recommended, to confirm the presence or absence of roosting bats within the building. The surveys also incorporated the barn and shed outbuildings. This report presents the findings of the surveys, which were undertaken in May, June and July 2020 – for the results of the Extended Phase 1 Habitat Survey and all other ecological advice pertaining to the proposals on site, refer to the 'Taxal Edge Extended Phase 1 Habitat Survey Report' (NLG, April 2020).

In summary, the bat surveys confirmed the location of one common pipistrelle (*Pipistrellus pipistrellus*) summer day roost for a peak count of one bat and one pipistrelle (*Pipistrellus sp.*) occasional summer day roost, with one further occasional summer day roost location possible, also for a single common pipistrelle bat. These roosts were all associated with the main building, with no bats recorded to emerge from the outbuildings.

Due to the small number of roosts of relatively low conservation value (Mitchell-Jones, 2004) for common bat species, the site is eligible for for a 'Low Impact Class Licence' (LICL) application rather than a full EPS mitigation licence application. Low Impact Class Licences (LICL) can only be applied for in certain circumstances, including where the works to the roosts are relatively short-term (ideally no more than six months), and any necessary mitigation measures must be installed within two months of the site's registration for the licence. If these timescales are not possible, then a full EPS mitigation licence application to lawfully destroy the roost areas will be required.

The data provided in this report are valid for 18 months from the date of the last survey on site, i.e. until 29/01/2020.

CONTENTS

1 INTRODUCTION

1.1 Background

1.1.1 NLG Ecology Ltd. was commissioned by Treville Properties to undertake an Extended Phase 1 Habitat Survey to describe the baseline wildlife interest of a large residential building at Taxal Edge, Whaley Bridge, SK23 7EJ, OS grid reference SK 00234 80449, along with some of the associated land. The survey was required in reference to a planning application for a proposed residential development within the grounds, with the aim of identifying at an early stage any ecological constraints that may exist. It is Treville Properties' intention to submit outline planning permission for a residential development comprising of seven dwellings and additional garage and workshop for residential use. The design plan for the proposed works is included in Appendix 1, Figure 1 and photographs of the existing buildings on site are provided in Appendix 2.

1.1.2 The Extended Phase 1 Habitat Survey was undertaken on 4th March 2020 by Neil Lee Gallon (Principal Ecologist, CEnv, MCIEEM, Natural England Level 2 Class Licence holder for bats ref: 2015-10739-CLS-CLS and Natural England Class licence holder for barn owl ref: CL29/00163), Catrin Watkin (Ecologist, Natural England Class Level 1 survey licence holder for bats 2019-39208-CLS-CLS) and Ewa Tomalak (Assistant Ecologist, QCIEEM), all of NLG Ecology at the time of the survey.

1.1.3 The survey included detailed internal and external inspections of the main building (and surrounding buildings) with respect to its potential for roosting bats. The main building was assigned 'high' bat roosting potential, largely due to the ideal habitat available both within, and connecting to, the site, and the multiple features of value to roosting bats present on the exterior of the building. The barn and shed were assigned respectively as having moderate and low bat roosting potential. Therefore, in line with best practice guidance (Collins 2016), a suite of three bat emergence/re-entry surveys was recommended, to confirm the presence or absence of roosting bats within the building. The outbuildings were also incorporated into the survey effort.

1.1.4 This report presents the findings of the surveys, which were undertaken in May, June and July 2020 – for the results of the Extended Phase 1 Habitat Survey and all other ecological advice pertaining to the proposals on site, refer to the 'Taxal Edge Extended Phase 1 Habitat Survey Report' (NLG, April 2020).

1.1.5 Relevant legislations that have informed the bat survey effort are detailed in Appendix 3. Please note that the text provides a brief summary of the legislation in relation to bats in England and Wales and the original Acts, Regulations and any amendments should be referred to for the precise wording.

1.2 Bat Biology

1.2.1 Within the British Isles there are 17 resident (i.e. breeding) species of bat. Bats are nocturnal and feed entirely on insects. They use echolocation, a complex system similar to sonar, to navigate around their surroundings and to forage.

1.2.2 Depending on the species of bat, habitat requirements vary widely although features such as traditional pasture, woodland edges, parkland, and wetland are particularly good for bats as insects are abundant within these areas (Mitchell-Jones 2004). Linear features such as hedgerows, tree lines and watercourses are important for commuting, as they assist navigation.

1.2.3 Bats utilise different roosts at different times of the year, and roost requirements vary between species. Typical roost sites include caves, mines, trees, and buildings. Bats hibernate between October and March and usually within a damp, unexposed roost which can maintain a relatively stable temperature such as thick stone walls, caves, cellars and mines. Around March, bats emerge from hibernation and gradually move to their summer roosts - during spring females gather together to form maternity colonies to give birth and rear their young. Summer and maternity roosts are typically found within man-made structures or suitable crevices in trees.

1.2.4 Birthing usually occurs late June – mid July, with the young able to fly within three to five weeks (Altringham 2003). By the end of August, most of the young bats are independent and the colony begins to break up. Mating takes place between August and December either at autumn swarming sites or winter hibernation sites. Bat roost sizes can vary from individual bats found within summer roosts, to hundreds of bats found within maternity colonies or hibernation sites.

2 METHODOLOGY

2.1 Emergence/Re-entry Surveys for Bats

2.1.1 Due to the assessment of the main building as having **'high'** bat roosting potential, three emergence/re-entry surveys were recommended in accordance with best practice guidance (Collins, 2016). The dusk emergence surveys were undertaken on 21st May and 18th June, 2020, whilst the dawn re-entry survey was undertaken on 29th July 2020.

2.1.2 For the dusk surveys, surveyors adopted their positions at least 15 minutes prior to sunset and continued for 1.5 to 2 hours after sunset. The purpose was to observe and record any emerging bats from the main building, and note any wider bat commuting and foraging activity.

2.1.3 For the dawn survey, surveyors adopted their positions at least 90 minutes prior to sunrise, surveying until sunrise or just after, depending on light levels.

2.1.4 For each survey, three to five surveyors were positioned strategically around the main building, and outbuildings when necessary, in order to gain the best vantage points possible of any suitable exterior features for bats and general roof structure.

2.1.5 Species identification was aided by Echometer (EM3) Touch, Echometer 3+, Magenta and Batbox Duet detectors. The dates and weather conditions for the surveys are presented in Table 2.1, below.

Table 2.1: Dates and Weather Conditions for the Bat Surveys 2020

Date	Dusk / Dawn	Sunset /Sunrise	Cloud	Wind	Weather
21/05/2020	Dusk	21:09	8/8	2/12	20°C, dry and warm.
18/06/2020	Dusk	21:40	4/8	2/12	12.6°C, cool, damp ground but dry overhead.
29/07/2020	Dawn	05:20	5/8	3/12	11.4 °C, mild, dry. Light wind. Overcast.

2.2 Constraints

2.2.1 Good visibility of all areas of the roof structure was difficult during the bat surveys, due to the size and elevation (from ground level vantage points) of the main building walls and complex roof structure.

2.2.2 Very light rain was experienced for approximately 30 minutes during the second bat survey on site, although this did not seem to hinder bat activity.

2.2.3 Overall, the surveys were carried out to the best possible standard and the results are considered to be robust.

3 SURVEY FINDINGS

3.1 Emergence/Re-entry Surveys for Bats

3.1.1 Detailed results for the emergence and re-entry surveys undertaken are provided in Appendix 1 (Figure 2) and Appendix 4, with a summary of the findings below. No bats were recorded to emerge from the barn or shed outbuildings; the following text therefore focuses on the main building only.

3.1.2 Prior to the first bat survey on site, a dusk emergence survey undertaken on 21st May, several droppings (10+) were found beneath a crevice that extends behind cladding on a north-facing wall close to the eastern elevation of the building (Photographs 1 to 3). This indicated the likely presence of a pipistrelle (*Pipistrellus sp.*) roost, however, no bats were recorded during the surveys as emerging from, or re-entering, the feature. The roost has therefore been classed as an occasional summer day roost for a small number of (possibly just one) pipistrelle bats, and its location is shown as roost area 'A' on Figure 2.

3.1.3 During the first dusk survey, bat activity was heavily dominated by common pipistrelle bats, with a small number of myotis (*Myotis sp.*) and soprano pipistrelle (*Pipistrellue pygmaeus*) passes. One likely emergence was recorded from roost area 'B' (see Figure 2); this comprised a single common pipistrelle appearing from the roof line area, close to the apex of the main eastern gable (Photograph 1), at 21:23, 14 minutes after sunset.

3.1.4 During the second bat survey, a dusk emergence survey on 18th June, bat activity was again dominated by common pipistrelle bats, with single soprano pipistrelle and myotis bat passes also recorded. One common pipistrelle bat was recorded emerging from roost area 'C' (see Figure 2). The exact roosting feature in this area is considered most likely to be a long vertical gap behind cladding on the flat-roofed extension that forms the south-eastern part of the building (Photographs 4 and 5). The bat appeared at 21:55, 15 minutes after sunset.

3.1.5 During the final bat survey on site, a dawn re-entry survey on 29th July, bat activity comprised mostly common pipistrelle bats, with a small number of soprano pipistrelle and myotis passes, and possible noctule (*Nyctalus noctula*) and brown long-eared (*Plecotus auritus*) bat passes also. A single bat, which was not echolocating, was seen to re-enter roost area 'C', although the exact feature could not be determined. It is highly likely that this was the same common pipistrelle as was previously recorded emerging from the cladding gap during the dusk survey on 18th June.

3.1.6 A second possible re-entry was recorded along the eastern aspect of the building; however, the bat disappeared over the roof line towards the south-facing pitch of the main roof (see Figure 2 and Photograph 1). The bat was a common pipistrelle, recorded at 04:26 (54 minutes prior to sunrise); this is considered to be early for this species, which typically re-enters the roost within the 30 minutes prior to sunrise during normal weather conditions, and with only two passes, the bat was less likely to be swarming ahead of re-entry. Due to the level of bat activity recorded as individuals commuted west to east during the first dusk survey in particular, it is likely that a larger common pipistrelle roost is located nearby, to which this individual was likely returning. The possible re-entry therefore has not been counted as such.

3.2 Other

3.2.1 A barn owl (*Tyto alba*) was seen flying to the north of the building, close to the adjacent woodland, during the first bat survey on site (21st May, 2020). No barn owl roosts or nest sites have been identified with the house at Taxal Edge and outbuildings, the structures having no suitable access available for barn owl.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 Bats

4.1.1 The main building at Taxal Edge was classified during the Extended Phase 1 Habitat Survey in March 2020 as having high bat roosting potential. Subsequently, and in line with best practice guidance (Collins, 2016), a suite of three emergence/re-entry surveys for bats have been conducted in May, June and July 2020 to inform proposals for the re-development of the site, most importantly whether or not a European Protected Species Mitigation (EPSM) licence will be required to allow works to the building to lawfully go ahead.

4.1.2 The emergence/re-entry surveys identified up to four pipistrelle roosts, which have been summarised in Table 4.1, below.

Table 4.1 – Taxal Edge Bat Roosts

Roost Reference	Species	Peak Count	Classification	Details
A	Pipistrelle sp.	Likely 1, up to 2	Occasional summer day roost	Pipistrelle droppings identified beneath a cladding gap, confirming roost site, although no bats recorded to use this feature during the bat surveys (see Figure 2 and Photographs 1 to 3). The horizontal gap measures approximately 30 cm in length by an average 1.5 cm in width, approximately 2.5 m above ground level.
B	Common pipistrelle	1	Occasional summer day roost	Likely emergence from a gap close to the apex of the eastern main, pitched gable end (see Figure 2 and Photograph 1).
C	Common pipistrelle	1	Summer day roost	Emergence from a long vertical gap, measuring approximately 200 cm by 2 cm, behind cladding on the flat-roofed extension that forms the south-eastern part of the building (see Figure 2 and Photographs 4 and 5).

4.1.3 The results mean that to allow the re-development of the building and lawful removal of the identified bat roosts, a EPSM licence will be required from Natural England. This can only be applied for once full planning permission is in place.

4.1.4 Due to the nature of the roosts (i.e. for small numbers of common, non-breeding bat species) and their relatively low conservation value (Mitchell-Jones 2004), the site is eligible for a 'Low Impact Class Licence' (LICL) application rather than a full EPSM licence application.

4.1.5 Low Impact Class Licences can only be applied for in certain circumstances, including where the works to the roosts are relatively short-term (ideally no more than six months). This could be achieved if roost removal is completed in this time frame, and the mitigation measures are installed within two months of the site's registration for the licence. If these timescales are not possible, then a full EPS mitigation licence application to lawfully destroy the roost areas will be required.

4.1.6 Natural England usually take at least 30 working days from receipt of a licence application to issue, if the application is successful; for a bat LICL the turnaround is a minimum of 10 working days from receipt of application to site registration.

4.1.7 The building, along with the identified bat roosting features, has very limited hibernation potential for bats; it is therefore considered most appropriate to undertake works to the identified roost areas during the months that the summer roosting bats are least likely to be there, which is October to March inclusive.

4.1.8 The licence application would need to include these timing constraints and a detailed mitigation strategy to compensate for the roost loss, which would include supervised works (by a licensed bat ecologist) across the identified and possible roost areas and installation of suitable, like-for-like roosting features within the new development and tailored to the proposal plans (Figure 1, Appendix 1). These features would need to include a minimum of three suitable bat boxes, integrated into the new buildings if possible (see http://www.habibat.co.uk/category/bat-boxes for examples). Intermediate roosting features, such as bat boxes installed on nearby suitable trees, will be required until the new buildings have been built, and should remain in-situ as post-works enhancement for bats.

The data recorded in summer 2020 will remain valid until 29/01/2022 (18 months from the date of the last survey on site) – please see the Extended Phase 1 Habitat Survey report (NLG, April 2020) for any further ecological recommendations.

4.2 Other

4.2.1 The site is ecologically well-connected, and the immediate surroundings are relatively well-used by foraging and commuting common pipistrelle bats in particular; the woodland edge/tree line to the north of the building seemed to be especially well used as a flight route during the surveys. A barn owl was also sighted flying through the site, close to this woodland/tree line, during the first dusk bat survey on 21st May 2020. During the construction works, care should be taken not to disturb the adjacent woodland areas and trees surrounding the site in terms of direct impact and also any illumination at night.

4.2.2 It is recommended that any planting schemes for the site make use of the 'Perfect for Pollinators' lists provided by the Royal Horticultural Society (https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/plants-for-pollinators) so that the site offers value to invertebrate species, and in turn, other wildlife. It would also be beneficial to either leave any communal grass areas unmown, or to sow them with a wildflower mix to be mown as per supplier instructions (generally twice a year). Similarly, consideration should be given to any trees planted on site – suggested general species include apple (*Malus sp.*), rowan (*Sorbus sp.*) and hawthorn (*Crataegus sp.*), which can be both beneficial to wildlife and hold aesthetic value to humans.

5 REFERENCES

Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

Google Maps (https://www.google.co.uk/maps/ - accessed 12/08/20)

Habibat: Housing Nature (http://www.habibat.co.uk/category/bat-boxes - accessed 18/08/2020)

Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

NLG Ecology (April, 2020). Taxal Edge: Extended Phase 1 Habitat Survey Report.

RHS. Plants for Pollinators (https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/plants-for-pollinators - accessed 13/08/20)

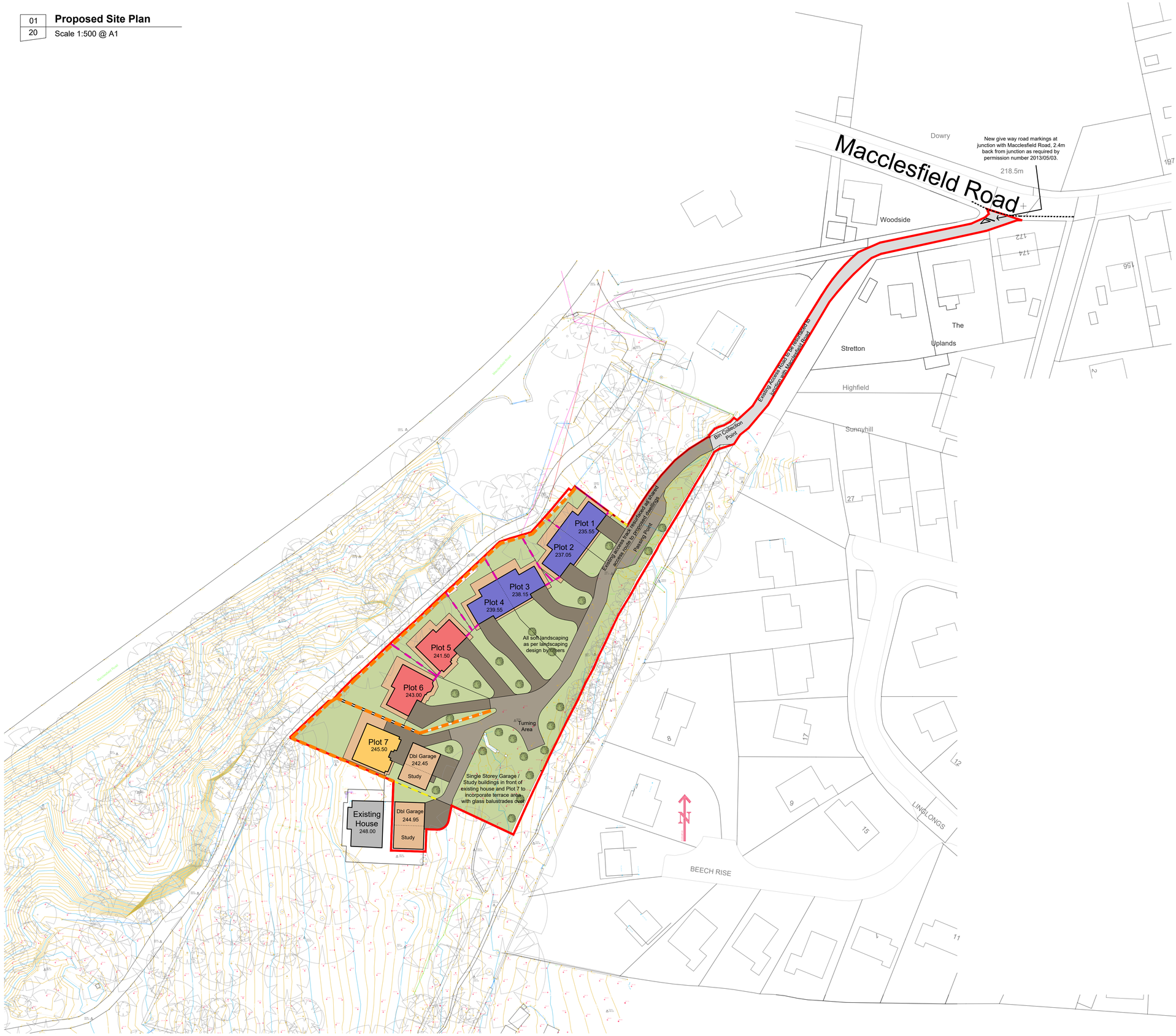
APPENDIX 1 - FIGURES

Figure 1 – Proposed Design Plan (see next page)

01
20

Proposed Site Plan

Scale 1:500 @ A1



General Notes
01: Ensure drawing is printed to accurate scale before scaling any dimensions, the scale bar below is to assist. If in doubt, contact TADW Archtiects.
02: All dimensions are in millimetres unless noted otherwise.
03: All dimensions should be verified on site before proceeding with the work.
04: TADW Architects shall be notified in writing of any discrepancies.
05: © TADW Limited (UK) 2020

Legend

Schedule of Accommodation:

4 no. 4 bedroom houses with integral garage
House Type A

2 no. 4 bedroom detached houses with integral garage House Type B

1 no. 6 bedroom detached house with detached garage House Type C

Boundary Types

Type A (Rear Boundary Retaining)
New and extended retaining wall faced in natural stonework re-using existing materials where possible and supplemented with new to match existing. To be 1.1m high above retained land

Type B (Boundary Fence)
1500mm high close boarded timber fence with pc concrete posts and 300mm high pc concrete gravel boards for first 2m from rear face of buildings (1.8m overall height). Beyond first 2m, 1200mm high close boarded timber fence with 300mm high timber trellis, pc concrete posts and 300mm pc concrete gravel boards (1.8m overall height above any retained land). Note, to be sited on top of stone faced retaining wall where necessary to party fence lines to suit site levels.

Type C (Boundary Fence)
1200mm high hit and miss timber fence with pc concrete posts and 300mm pc concrete gravel boards (1.5m overall height above any retained land).

NOTE, front boundaries are to be open and defined by soft landscaping - plants shrubs etc.

Issue	Description	Date	Drawn	Checked
P14	General notes amended	17.06.20	AM	GN
P13	Tree planing added to suit amended landscaping plan	10.06.20	AM	GN
P12	Garage FFLs to plot 7 and existing house garage amended	09.06.20	AM	GN
P11	4m landscaping strip introduced opposite plots 3-4	02.06.20	AM	GN
P10	Layout revised following client comments	29.05.20	AM	GN
P9	Revised to suit landscaping plan PR/20/GC04/GA/01	15.05.20	AM	GN
P8	Plot levels amended	12.05.20	AM	GN
P7	Access road entry route revised	29.04.20	AM	GN
P6	Spot levels, boundary treatments added	27.04.20	AM	GN
P5	Detached house to plot 7	27.03.20	AM	GN
P4	Plots 5 and 6 detached	25.02.20	AM	GN
P3	Turning area amended	24.02.20	AM	GN
P2	Turning area amended	27.01.20	AM	GN
P1	Drawn for comments	17.01.20	AM	GN

Drawing Status
P - Planning | **T** - Tender | **C** - Construction | **R** - As Record

For Approval

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Client	Treville Properties Ltd.
Job	Taxal Edge, Whaley Bridge
Title	Proposed Site Plan
Scale	1:500 @ A1

Note - Prints from PDF files may not be to scale, check accuracy against scale

10 20 30 50m 1:500

Job Number	Drawing Number	Issue
411179	20	P14

Figure 2 – Taxal Edge Bat Roosts

Roost area 'A' - confirmed pipistrelle occasional summer day roost (droppings only)

Roost area 'B' - possible common pipistrelle occasional summer day roost

Roost area 'C' - confirmed common pipistrelle summer day roost

Screenshot from Google Maps (https://www.google.co.uk/maps?hl=en&tab=wl – accessed 12/08/2020).

APPENDIX 2 – PHOTOGRAPHIC PLATES

Photograph 1. The eastern elevation of the building, with roost areas ‘A’ (red), ‘B’ (orange).

Photograph 2. Roost area ‘A’.

Photograph 3. Close-up of roost area ‘A’.

Photograph 4. The building’s southern elevation, with roost area ‘C’ highlighted by the yellow circle.

Photograph 5. Close-up of roost area ‘C’.

APPENDIX 3 - LEGISLATION

Bats

All UK bat species receive full protection (Schedule 5 species) under the Wildlife and Countryside Act 1981, which is further amended by the Countryside and Rights of Way Act 2000 and the Conservation of Habitats and Species Regulations 2010. Taking these Acts together, it is an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection (S9:4b).

- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a bat (S9:4c).

- The term 'reckless' is defined by the case of Regina v Caldwell 1982. The prosecution has to show that a person either deliberately took an unacceptable risk, or failed to notice or consider an obvious risk.

A bat roost has been interpreted to mean any structure or place which is used for shelter or protection whether or not bats are present at the time. Bat roosts may be defined (Hunt, L, 2012) as either (i) Transition Roosts, (ii) Maternity roosts, (iii) Satellite Roosts, (iv) Mating Roost, (v) Hibernation roosts, (vi) Night Roost, (vii) Day Roost, (viii) Feeding Roost or (ix) Swarming Sites.

Bats are listed under Annexes IIa and IVa of the EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora, or the 'Habitats Directive'. Inclusion on Annex IVa means bats are a European Protected Species (EPS) and protected under the Conservation of Habitats and Species Regulations 2010, thus it is an offence to:

- (a) deliberately capture, injure or kill any wild animal of an EPS,

- (b) deliberately disturb wild animals of any such species, in such a way as –

    - (i) to impair their ability to survive, to breed or reproduce, or to rear their young, or

    - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate, or

    - (iii) to affect significantly the local distribution or abundance of the species to which they belong;

A licence to disturb or take bats can be issued for certain purposes under Section 16 of the Wildlife and Countryside Act 1981 and under Regulation 44 of the Conservation of Habitats and Species Regulations 2010 permitting activities that would otherwise be illegal under the legislation. Licences can take up to thirty working days to be issued by Natural England. Where impacts on bats are unavoidable, mitigation will be required to maintain and enhance the favourable conservation status of bats. Losses of bat roosts must be compensated for by the provision of new roosting sites and planting of new foraging habitat. Mitigation measures will need to be designed on a site specific basis and only in consultation with an expert. All mitigation proposals must be agreed with Natural England and put in place prior to the commencement of works.

APPENDIX 4 - BAT SURVEY RESULTS

Survey Visit 1 – Dusk - 21st May

Ewa Tomalak was positioned to the north-west of the surveyed house, using an EM Touch bat detector and iPad.

Time	Species	No. of Passes	Description of Activity
21:12	Common pipistrelle	3	Heard on the EMTouch but not seen.
21:15	Common pipistrelle	2	Heard but not seen.
21:16	Common pipistrelle	5	Heard and seen, flying from the north western side (the house side).
21:20	Common pipistrelle	1	Possibly seen, but not heard. Flying from the northern side (where the storage building is).
21:23	Common pipistrelle	3	Flying along the woodland side.
21:24	Common pipistrelle	1	Heard not seen
Barn owl seen, see flying from the woodland. Flew in front of ET.			
21:25	Common pipistrelle	2	Heard and seen. Flew around the house side.
Constant activity of common pipistrelles flying east to west and back.			
21:42	Myotis sp.	1	Heard not seen.
21:50	Myotis sp.	1	Heard not seen..
22:00	Myotis sp.	3	Heard not seen

Laura Kershaw was positioned to the south-west of the house using EM3+ bat detector and Magenta heterodyne.

Time	Species	No. of Passes	Description of Activity
21:20	Common pipistrelle (not detected)	1	Foraging up the tree line to car park (from NLG) towards the new house.
21:24	Common Pipistrelle	1	Detected, not seen, continuous foraging.
21:27	Common Pipistrelle	1	Detected, not seen- distant.
21:28	Bat	1	Bat seen flying from Ewa's side (not detected).
21:31	Common Pipistrelle	1	From drive side and car park towards new house.
21:39	Common Pipistrelle	1	Detected not seen.
21:47	Myotis sp.	1	Detected but not seen. Distant.
21:47	Common Pipistrelle	1	Foraging at the tree line and at the back of the car park.
21:51	Common Pipistrelle	1	Foraging at the tree line and at the back of the car park.
21:56	Common Pipistrelle	1	Foraging along the trees towards woodland and in from of the house.
21:59	Common Pipistrelle	3	Detected but not seen.
22:03	Common Pipistrelle	1	Two common pipistrelles foraging at car park and around the building (from drive to woodland). Flying from new

			house drive trees to woodland.

Neil Lee-Gallon was positioned to the south-east of the house using EM3+ bat detector and with a vantage point of the barn and shed also.

Time	Species	No. of Passes	Description of Activity
21:20	Common pipistrelle	1	Flew from behind along tree line.
21:21	Common pipistrelle	1	Foraging along tree line.
21:22	Common pipistrelle	2	Flew along tree line to side of house.
21:23	Common pipistrelle	1	**Possible emergence near apex of gable end** - roost area 'B'.
21:26	Common pipistrelle	1	Foraging alone the treeline and over house.
Continuous	Common pipistrelle/ single bat	Continuous	Continual for duration of survey.
21:31	Soprano pipistrelle	1	Flew from rear across car park.
21:33	Soprano pipistrelle	1	Flew from behind.
21:34	Common pipistrelle	1	Flew from rear along tree line.
21:41	Myotis sp.	1	Flew from rear towards woods.

Survey Visit 2- Dusk- 18/7/2020

Ewa Tomalak was positioned to the north-west of the house, using an EM Touch bat detector and iPad.

Time	Species	No. of Passes	Description of Activity
21:24	Common pipistrelle	2	Heard and seen, flying from the house side (north to south).
21:27	Common pipistrelle	1	Heard and seen. Flying along the tree line- woodland.
21:28	Common pipistrelle	5	Heard and not seen at first, then seen commuting from above the house.
21:31	Common pipistrelle	1	Second bat appearing from the woodland to the west.
21:39	Common pipistrelle	1	Flying from east to west and then north.
21:47	Common pipistrelle	3	Heard and seen. Flying from above the house.
21:51	Common pipistrelle	2	Flying towards the house from south.
21:56	Common pipistrelle	Continuous	High activity of common pipistrelle bats foraging around the house.
21:59	Common pipistrelle	3	Heard not seen.
22:03	Common pipistrelle	1	Heard not seen- wet sound.

Laura Kershaw was positioned to the north-east of the house using EM3+ bat detector and Magenta heterodyne.

Time	Species	No. of Passes	Description of Activity
21:49	Common Pipistrelle	1	Across rear of the building from side of house (car park side).
21:54	Common Pipistrelle	1	Travelling along woodland edge towards Ewa. Foraging at Ewa's side/woodland.

22:00	Common pipistrelle	1	Another pipistrelle foraging from the same direction.
22:03	Common pipistrelle	1	Two more bats flying from the same location, foraging towards the same place.
22:14			Shower lightly.
22:15	Common pipistrelle	1	Seeing pipistrelle passing towards Ewa's side along building.
22:16	Common pipistrelle	1	Seeing pipistrelle passing towards Ewa's side along building.
22:18			Rain.
22:22	Myotis sp.	1	Detected not seen.
22:28	Common pipistrelle	1	Detected not seen.
22:36	Common pipistrelle	1	Detected not seen.
22:54	Common pipistrelle	1	Detected not seen.

Neil Lee-Gallon was positioned to the south-east of the house using EM3+ bat detector and with a vantage point of the barn and shed also.

Time	**Species**	**No. of Passes**	**Description of Activity**
21:54	Common pipistrelle	1	Flew from west towards barn. Foraging and commuting.
21:55	Common pipistrelle	1	Flew from west towards barn. Foraging and commuting.
21:55	Common pipistrelle	2	Flew from west towards barn. Foraging and commuting around the house and also over the trees.
21:56	Common pipistrelle	1	Flew from west towards barn. Foraging and commuting.
21:59	Common pipistrelle	2	Flew from west towards barn. Foraging and commuting.
22:00	Common pipistrelle	1	Flew from west towards barn. Foraging and commuting.
22:01	Common pipistrelle	1	Flew from west towards barn. Foraging and commuting.
22:02	Common pipistrelle	3	Flew from west towards barn. Foraging and commuting. One bat foraging near barn.
22:03	Common pipistrelle	1	Flew from west towards barn. Foraging and commuting.
22:05	Common pipistrelle	2	Flew from west towards barn. Foraging and commuting.
22:06	Common pipistrelle	1	Flew from west towards barn. Foraging and commuting.
22:09	Common pipistrelle	3	Flew from west towards barn. Foraging and commuting.
22:11	Common pipistrelle	1	Flew from west towards barn. Foraging and commuting.
22:34	Common pipistrelle	1	Flew east to west. Rain stopped by 22:40.
22:47	Common pipistrelle	1	Heard but not seen.

Kelly Lomas was positioned to the south-west of the house using a Batbox Duet, iPad + EMTouch.

Time	Species	No. of Passes	Description of Activity
21:55	Common Pipistrelle	1	**Emergence from roost area 'C'** - suddenly appeared against stonework and flew south-west.
21:56	Common pipistrelle	1	Faint/distant commuting pass. Heard not seen.
21:57	Common pipistrelle	1	Seen and heard faintly – foraging near south-west gable (no emergence recorded by ET).
21:58	Common pipistrelle	1	Commuting pass- Heard not seen.
22:04	Common pipistrelle	1	Fairly faint, commuting pass - Heard not seen.
22:06-22:10	Common pipistrelle	c.15	Faint foraging passes - along and around tree line to south-west of building. Heard and seen.
22:11			Light rain spots until about 22:40.
22:12	Common pipistrelle	1	Loud/nearby commuting pass. Heard but not seen.
22:15	Common pipistrelle	1	Loud/nearby commuting pass. Heard but not seen.
22:17	Common pipistrelle	1	Loud/nearby commuting pass. Heard but not seen.
22:22	Common pipistrelle	1	Faint commuting pass- Heard not seen.
22:25	Common pipistrelle	1	Loud/nearby commuting pass. Heard but not seen.
22:36	Common pipistrelle	1	Loud/nearby commuting pass. Heard but not seen.
22:37	Common pipistrelle	1	Possible same bat- foraging/commuting, pass - heard not seen.
22:47	Common pipistrelle	1	Slightly distorted - distant commuting, pass, heard not seen.
22:48	Common Pipistrelle	1	Possibly the same bat, but closer/commuting and foraging, heard but not seen.

Rowena Tylden-Pattenson was positioned to the front of the house (north east), using a Magenta 5 bat detector.

Time	Species	No. of Passes	Description of Activity
21:55	Common pipistrelle	1	Commuting over the car park.
21:58	Common pipistrelle	1	Commuting from trees, past house again at 22:01.
22:11	Common Pipistrelle	1	Following edge of the house, commuting from car park.
22:17	Soprano pipistrelle	1	Passing over the house.
22:22	Common pipistrelle	1	Flying over the house, similar to previous.
22:35	Soprano pipistrelle	1	Heard not seen.
22:46	Common pipistrelle	1	Heard not seen.

Survey Visit 3- Dawn- 29/07/2020

Laura Kershaw was positioned to the south-west of the house, using an EM3+ bat detector and Magenta heterodyne.

Time	Species	No. of Passes	Description of Activity
03:45	Common pipistrelle	Continuous	Continuous foraging along woodland edge to west of building.
04:11	Common pipistrelle	1	Foraging along woodland edge to west of building.
04:13	Common pipistrelle	1	Heard not seen.
04:20	Common pipistrelle	Continuous	Continuous foraging along woodland edge to west of building.
04:49	Pipistrelle		**Re-entry to roost area 'C'** (same general location as KL observed during previous dusk.
04:57	Common pipistrelle	Continuous	Two common pipistrelle bats foraging along woodland to west of building.
05:03	Common pipistrelle	2	Foraging, then leaving and heading north.

James Smith was positioned to the north-west of the house, using EM3+ bat detector.

Time	Species	No. of Passes	Description of Activity
03:50	Common pipistrelle	10	Heard not seen.
04:02	Common pipistrelle	2	Heard not seen foraging.
04:12	Common pipistrelle	2	Heard not seen.
04:21	Common pipistrelle	12	Two more bats flying from the same location, foraging Heard not seen.
04:31	Soprano pipistrelle	1	Heard not seen.
04:32	Common pipistrelle	14	Heard not seen.
04:43	Common pipistrelle	1	Passed over house north to south.
04:47	Noctule?		Heard not seen.
04:48	Common pipistrelle	1	Heard not seen.
05:01	Common pipistrelle	1	Pass south to north.
05:03	Common pipistrelle	1	Heard not seen.
05:08	Common pipistrelle	1	Pass south to north.

Rowena Tylden-Pattenson was positioned to the south-east of the house, using an EM Touch.

Time	Species	No. of Passes	Description of Activity
03:53	Common pipistrelle	2	Heard not seen.
04:18	Common pipistrelle	1	Three bats foraging near building.
04:26	Common pipistrelle	2	Foraging and commuting.

Rebecca Ratcliffe was positioned to the east of the house using EM Touch and Magenta.

Time	Species	No. of Passes	Description of Activity
03:51	Common pipistrelle	Continuous	Common pipistrelle passes.
04:05	Myotis sp.	Continuous	Distant calls. No ID on EM Touch.
04:07	BLE?	1	Heard throughout survey until this time. Not identified on EM Touch.
04:30	Common pipistrelle	Continuous	Seen commuting overhead past the south side of the building.
04:41	Noctule	Continuous	Heard not seen. Recorded on EM Touch. Multiple passes.