Outline Bat Mitigation Strategy

Mitton Road,
Whalley,
Lancashire,
BB7 9JS

Prepared on behalf of:
Prospect (GB) Ltd

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CONTENTS

1.0 INTRODUCTION
1.1 Background
1.2 Outline Mitigation Strategy Overview

2.0 SURVEY AND SITE ASSESSMENT
2.1 Status of species present in the local/regional area
2.2 Objective(s) of survey
2.3 Survey area
2.4 Habitat description
2.5 Field survey
***Table 1**: Surveyors, dates and weather conditions*
2.6 Constraints
2.7 Survey results
2.8 Plans of survey area
***Plan 1**: Site location*
***Plan 2**: Site red line boundary*
***Plan 3**: Bat-roosting potential of buildings on site – land parcel A*
***Plan 4**: Bat-roosting potential of buildings on site – land parcel B*
***Plan 5**: Locations of bat roosts identified during 2020 surveys*
2.9 Photographs
***Photo 1:** Emergence points of B01 – dusk 1*
***Photo 2:** Emergence points of B01 – dusk 2*

3.0 MITIGATION AND COMPENSATION
3.1 Mitigation strategy
***Table 2**: Future survey requirements*
3.2 Replacement-roost site selection
3.3 Habitat creation, restoration and/or enhancement
3.4 Capture and exclusion
3.5 Post-development site safeguard
3.6 Timetable of works
***Table 3**: Programme of mitigation and demolition*
***Figure 1:** Bat box locations*
***Figure 2:** Standalone bat-structure: details*

REFERENCES

QUALITY MANAGEMENT

Quality Management Approved prior to Issue			
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This report is based on survey data gathered during August – October 2020 at this site at Mitton Road, Whalley, Lancashire BB7 9JS.

1 INTRODUCTION

1.1 Background

1.1.1 Measuring approximately 2.0 ha and situated in Clitheroe, the application site comprises two detached buildings and several blocks of residential terrace buildings, with associated domestic gardens, hardstanding driveways and car parking, and an amenity grass field. The site is bound by Mitton road to the east, and Pendle Drive cuts through the centre of the red-line boundary.

1.1.2 The site is centred on OS grid reference SD 72639 37342.

1.1.3 Biora were instructed in August 2020 to conduct bat presence/absence surveys following approval of the recommendation made in the Preliminary Ecological Appraisal Report for this site (SE0909-01_PEA_G01a_BP_ Mitton Road, Whalley - PEA, Sept20).

1.2 Outline Mitigation Strategy Overview

1.2.1 The following is a summary of the main issues to be addressed and the steps proposed to address them:

- The proposal redevelopment includes demolition of all buildings across the site – several of which have been confirmed bat roost sites.
- The buildings were originally identified as having a mix of 'low' and 'moderate' potential for roosting bats. The surveys of the 'moderate' buildings were undertaken in August and September and the 'low' buildings were undertaken in September.
- During these surveys, bats emerged from several of the buildings, changing their status to confirmed roosts. Additional surveys are required to be undertaken to fully understand the roosts. As the surveys started late on in the season 2020, the remaining surveys have been scheduled in for summer 2021, as otherwise they would be conducted at a sub-optimal time and would not follow BCTs Best Practice Guidelines.
- This outline mitigation strategy sets out the findings thus far and includes mitigation measures based on these findings. This strategy also details the survey effort, reporting and licence requirements that will follow next year.
- The strategy will need to be reviewed and updated when the surveys have been finalised.

2.0 SURVEY AND SITE ASSESSMENT

2.1 Status of species present in the local/regional area

2.1.1 Common Pipistrelle *Pipistrellus pipistrellus* is the most common species of British bat and is widespread across the UK. Brown Long-eared bat *Plecotus auritus* and Soprano pipistrelle *P. pygmaeus* are also common species, widespread across the UK.

2.2 Objective(s) of survey

2.2.1 The survey data collected in 2020 would currently not be adequate to support any Natural England licence application that would be required for the development of this site. To gather sufficient relevant seasonal data for a bat licence, several surveys still need to take place. This Outline Mitigation Strategy sets out a programme of survey to support the submission of a planning application for this site. Surveys to date were undertaken to evaluate the potential of all buildings within the application boundary to support bat roosts, followed by presence/absence surveys to confirm the status of these buildings.

2.3 Survey area

2.3.1 Preliminary Roost Assessment in 2020 covered all buildings within the application boundary. Bat emergence and re-entry surveys were conducted on the buildings assessed as having 'low' and 'moderate' roosting potential, which were all the buildings on site except a handful of standalone garages that were assessed as having negligible potential for roosting bats.

2.3.2 The site supported a handful of mature trees. However, upon closer inspection, these did not display any suitable features for bat roosting and will be retained for the development.

2.4 Habitat description

2.4.1 The site sits within a suburban location, with open fields and a cemetery to the east of the site, beyond Mitton Road. The site is set within an area of residential buildings and a hospital located to the southwest. Pockets of woodland and a public park present to the west, and a small corridor of woodland to the north which leads to a larger area of woodland to the northwest. The application site comprises two detached buildings and several blocks of residential terrace buildings, with associated domestic gardens, hardstanding driveways and car parking, and an amenity grass field. The site is bound by Mitton road to the east, and Pendle Drive cuts through the centre of the red-line boundary.

2.4.2 Full building and habitat descriptions can be found in the Preliminary Ecological Appraisal (ref: ref: SE0909-01_PEA_G01a_BP) and Bat Report (ref: SE0909-03_F01a_BAT_BP).

2.5 Field survey

Methods

2.5.1 All field surveys relating to bats followed appropriate methodologies and guidance set out in the current Bat Conservation Trust (BCT) *"Good Practice Guidelines"* (2016)[1]. In undertaking the preliminary roost assessment surveyors inspected the exterior of all buildings within the application boundary and the interiors of those that were accessible and in a condition safe enough to do so to identify any features, such as cracks or holes in brickwork, loose roofing tiles, gaps between the eaves, soffit board and outside walls etc, which could provide potential roosting sites for bats and any suitable entry points into internal roof voids around the eaves (including soffits, fascia and barge boarding and under tiles). Walls, windows (and ledges) beneath these features were examined for the presence of bat droppings. The potential of each of the buildings to support roosting bats was categorised as NEGLIGIBLE, LOW, MODERATE or HIGH based on the frequency of suitable roosting features.

2.5.2 The results of this assessment were used to inform the degree of survey effort required on each building to determine the presence or likely absence of roosting bats (Historic roost sites were automatically subject to a minimum of three survey visits):

- NEGLIGIBLE – no further survey required
- LOW – One dusk emergence **or** dawn re-entry survey
- MODERATE – Two separate survey visits. One dusk emergence **and** a separate dawn re-entry survey
- HIGH – Three separate survey visits. To include at least one dusk emergence and one dawn re-entry survey

2.5.3 Roost surveys were for a duration of 1.75 hours, emergence surveys starting 15 minutes before sunset and re-entry surveys commencing 1.5 hours before sunrise. Multiple survey visits were spread out to sample as much of the recommended survey period as possible (ie at least two weeks apart). Each survey was led by an experienced bat ecologist with an appropriate number of assistants experienced in bat surveys. Surveyor locations were selected to provide views of

[1] Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition)*. The Bat Conservation Trust, London.

potential roost sites (or roosts identified by earlier surveys) and clear sightlines down all elevations of the buildings subject to survey.

2.5.4 Surveyors used Bat Box Duets (with tuneable heterodyne frequency), Anabat Walkabout and Echo Meter Touch detectors to identify bat echolocation calls. The position of any bat(s) observed emerging from or entering a roost site was recorded on a survey sheet and marked on a plan with details of the time, the species, and the number of bats emerging/entering the roost and a description of the roost feature. All other bat activity seen or detected was also marked onto a site plan and recorded on the survey sheet making note of the time, location, activity and direction of flight.

Timing

2.5.5 Surveys were conducted during optimal season for bat roost presence/absence surveys. The surveys took place between August – September. The internal assessments of all accessible buildings were conducted on 7th & 8th October 2020. Full details can be found in the Bat Report (ref: SE0909-03_F01a_BAT_BP).

Weather conditions

2.5.6 Weather conditions on each of the survey visits were acceptable for this type of survey. Full details can be found in the Bat Report (ref: SE0909-03_F01a_BAT_BP).

Personnel

2.5.7 **Dr David Hackett** *BSc MLD PhD MCIEEM CEnv* is a founding Director and has been Technical Director at Biora for eleven years (previously under the name Solum Environmental). David is a highly-experienced ecologist and project manager with over 20 years' professional experience. David is a full member of the Chartered Institute of Ecology and Environmental Management, a Chartered Environmentalist and a member of Cheshire Bat Group. He is highly experienced in designing and conducting bat surveys and in preparing, overseeing and monitoring bat mitigation packages for licence applications.

2.5.8 **Bethany Phythian** *BSc GradCIEEM* is an Ecologist at Biora with over three years' experience of conducting ecological surveys, including bat surveys, Great crested newt surveys and trapping and National Vegetation Classification (NVC) surveys. She is also a member of South Lancashire Bat Group.

2.5.9 **Amy Stanley** *BSc PGD AIEEM* is a Senior Ecologist at Biora with over seven years' experience of leading ecological surveys. Amy is a class 1 licence holder for Bats and Great Crested Newts. Amy provides technical support to clients and training to other ecologists. Amy is an Associate Member of the Institute of Ecology and Environmental Management and a member of Cheshire Bat Group. She is highly experienced in conducting bat surveys and in preparing appropriate bat mitigation packages.

2.5.10 **Max Starr** *BSc MSc GradIEMA* is an ecological assistant and has a Masters' Degree in Environmental Science and Management. He has over two years' experience in environmental surveying, including bat survey.

2.5.11 **Gary Spriggs** *BSc* is an Ecological Assistant at Biora and is experienced in conducting habitat and protected species surveys. Gary also has six years' experience of surveying for bats, Preliminary Ecological Appraisal and Great crested newts. Gary also has six years' experience of assisting with the preparation and submission of mitigation packages and bat licence applications.

2.5.12 **Vicky Holden** is a skilled bat surveyor, with 15 years' experience volunteering for local bat groups, working in ecological consultancies and also conducting freelance work.

2.5.13 **John Bryers** BSc is a freelance ecological assistant, currently completing an MSc in Environmental Management. He has over 2 years of bat surveying experience. John completed a bachelors degree in Environmental Science with honours.

2.5.14 **Carol Edmondson** *FSc MSc* is a freelance ecologist, with 8 years' field survey experience, including 4 years private contract work and 8 years of voluntary bat care. Carol also holds a Natural England class 2 bat licence (number: 2015-12195 CLS-CLS).

2.5.15 **Catherine Wood** is a freelance ecologist and bat worker, with 13+ years survey experience. She is a registered injured bat rehabilitator and bat care co-ordinator for East Lancashire, and studies pipistrelle bat maternity roost behaviour. She also holds a Natural England class 2 bat licence (number: 2016-24176-CLS-CLS).

2.5.16 Details of survey dates, start and end times and weather conditions are presented in ***Table 1***.

Table 1: Surveyors, dates and weather conditions

SURVEY TYPE	DATE/ TIME	SURVEYORS PRESENT	WEATHER CONDITIONS
External assessment of buildings for BRP	7th August 2020 Start time: 11.00	Amy Stanley, Bethany Phythian	Air temperature: 19°C, Wind speed: 20 km/h, Wind direction: WNW, Cloud cover: 0% cloud, Precipitation: 0
Dusk survey on B01, B02, part of Block 4	26th August 2020 19:58 - 21:43 Sunset: 20:13	Amy Stanley (Lead surveyor), Daisy Hackett, David Hackett, Bethany Phythian, Gary Spriggs, John Bryers	Start: 13°C, 9 mph SW wind, 50% cloud cover, dry End: 12°C, 16 mph WSW wind, 50% cloud cover, dry
Dusk survey on remainder of Block 4	28th August 2020 19:55 – 21:40 Sunset: 20:10	Dr David Hackett (Lead surveyor), John Bryers, Ben Hackett, Daisy Hackett	Start: 15°C, 8 mph W wind, 60% cloud cover, dry End: 14°C, 9 mph NNE wind, 60% cloud cover, dry
Dusk survey on Block 3, Block 5	3rd September 2020 19:42 - 21:27 Sunset: 19:57	Beth Phythian (Lead surveyor), Daisy Hackett, David Hackett, Gary Spriggs, Catherine Wood, Max Starr	Start: 18°C, 20 mph W wind, 80% cloud cover, dry End: 16°C, 20 mph W wind, 80% cloud cover, dry
Dusk survey on Block 6	9th September 2020 19:25 - 21:10 Sunset: 19:39	Catherine Wood (Lead surveyor), Carol Edmondson	Start: 13°C, 12 mph NNW wind, 100% light cloud cover, dry End: 11°C, 15 mph NNW wind, 100% cloud cover, dry
Dusk survey on Block 1, Block 2	10th September 2020 19:20 - 21:05 Sunset: 19:36	David Hackett (Lead surveyor), Gary Spriggs, Steve Nixon, Catherine Wood, Carol Edmondson, Vicky Holden, John Bryers	Start: 13°C, 15 mph WSW wind, 100% cloud cover, dry End: 12°C, 16 mph WSW wind, 100% cloud cover, dry
Dawn survey on B02	14th September 2020 05:15 – 06:45 Sunrise: 06:42	Catherine Wood (Lead surveyor), Carol Edmondson	Start: 11°C, 5 mph E wind, 0% cloud cover, dry End: 9°C, 6 mph ESE wind, 0% cloud cover, dry
Dusk survey on B01	14th September 2020 19:15 - 20:50 Sunset: 19:27	Catherine Wood (Lead surveyor), Carol Edmondson, John Bryers	Start: 21°C, 5 mph SE wind, 80% cloud cover, dry End: 17°C, 8 mph SE wind, 80% cloud cover, dry
Dawn survey on Block 4	15th September 2020 05:30 - 07:00 Sunrise: 06:45	Bethany Phythian (Lead surveyor), Gary Spriggs, Catherine Wood, Carol Edmondson	Start: 15°C, 9 mph ESE wind, 20% cloud cover, dry End: 15°C, 6mph ESE wind, 50% cloud cover, dry
Internal assessment of buildings	7th October 2020/ 8th October 2020 10:30 – 15:00	Amy Stanley (Lead surveyor), Bethany Phythian	7th: 13°C, 9 mph ESE wind, 0% cloud cover, dry 8th: 12°C, 3 mph SE wind, 15% cloud cover, dry

2.6 Constraints

2.6.1 The surveys took place during the Covid-19 pandemic, with the restrictions of travel etc that followed.

2.6.2 The loft spaces were lined with thick insulation fibre and warning signs about being unsafe to enter due to the joists being concealed. Therefore, a large proportion of the loft spaces could only be inspected from ladders placed inside the loft hatch due to it being unsafe to enter.

2.7 Survey results

2.7.1 **B01 (Woodlands)** was found to hold moderate bat roosting potential, and initial survey requirements were 2 surveys to determine presence/absence of roosting bats. Internal inspection found bat droppings in roof voids 1 (roof apex) and 2 (southern void), which were sampled and tested, and found to be from Brown Long-eared bats.

2.7.2 Bat activity surveys found several Common Pipistrelles emerging from various locations around the building, on both surveys. **Further surveys will be necessary to characterise roosts during optimal bat survey season.**

2.7.3 **B02 (Trentbille)** was found to hold moderate bat roosting potential, and initial survey requirements were 2 surveys to determine presence/absence of roosting bats. Internal inspection was not possible, due to no entry access and no other access points were available for surveyors to enter building. During both activity surveys, no bats were seen emerging/re-entering the building, and no bat roosts were identified.

2.7.4 **Block 1 (House no. 1-6)** was found to hold low bat roosting potential, and the initial survey requirements were to carry out a single survey to determine presence/absence of roosting bats. Internal inspection of the voids in houses 1 – 6 found no evidence of roosting bats, but several access points were visible in the voids. The single bat activity survey observed emergence on the eastern aspect of Common Pipistrelle. However, due to high vegetation cover in the gardens, the exact exit point could not be identified. **Further surveys will be necessary to characterise roosts, in optimal season**.

2.7.5 **Block 2 (House no. 7-10)** was found to hold low bat roosting potential, and the initial survey requirements were to carry out a single survey to determine presence/absence of roosting bats. Internal inspection found no bat droppings, but some daylight holes were visible which could be access points. Bat activity survey found moderate levels of activity and several emergences from Common Pipistrelle (3) and Soprano Pipistrelle (7) bats around the north, south and (north)eastern aspects of the building. **Further surveys will be necessary to characterise roosts, in optimal season.**

2.7.6 **Block 3 (House no. 11-14)** was found to hold low bat roosting potential, and the initial survey requirements were to carry out a single survey to determine presence/absence of roosting bats. Internal inspection found no bat droppings, however some daylight holes were present and some draughty roof voids. The single bat-activity survey observed emergence of Common Pipistrelle around the southern aspect of the building. However, the exact exit point could not be identified. **Further surveys will be necessary to characterise roosts, in optimal season.**

2.7.7 **Block 4 (House no. 15-20)** was found to hold moderate bat roosting potential, and initial survey requirements were 2 surveys to determine presence/absence of roosting bats. Internal inspection found no bat droppings, but multiple daylight gaps were visible, which may provide access points (but none of the voids were particularly draughty). Most voids contained a large hole in the brickwork which led to the next roof void – however, some of these were boarded over. Surveyors did not have permission to access house number 15, and number 19 was boarded up so surveyors could not access. Bat activity surveys found no bats emerging during the first dusk survey, and a common pipistrelle recorded entering the building under a slipped tile on the north-eastern area of the building during the dawn survey. **Further surveys will be necessary to characterise roosts, in optimal season.**

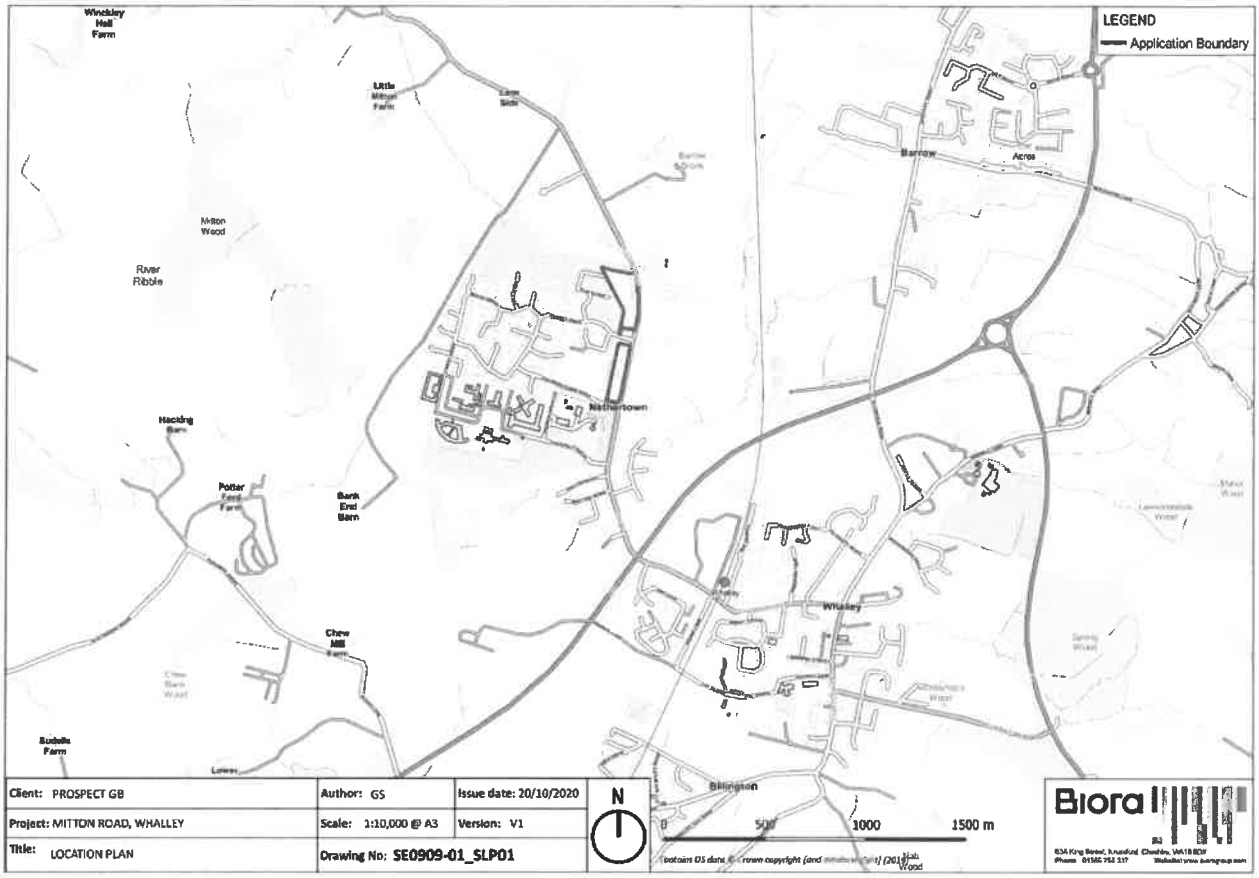
2.7.8 **Block 5 (House no. 21-26)** was found to hold low bat roosting potential, and the initial survey requirements were to carry out a single survey to determine presence/absence of roosting bats. Internal inspection found potential bat droppings near the chimney breast in house 21 (and mouse droppings confirmed present). However, surveyors could not safely access this location. Potential droppings were identified in number 24, and a sample was taken. Laboratory results found the eDNA to be from Brown Rat. Voids were generally pitch black, with no daylight gaps visible. The void on house number 25 could not be accessed by surveyors as the hatch was boarded over completely. Bat activity survey found three Common Pipistrelle bats emerge from the building – from the soffit on the eastern aspect (2) and from the western aspect (1). **Further surveys will be necessary to characterise roosts, in optimal season.**

2.7.9 **Block 6 (House no. 27-32)** was found to hold low bat-roosting potential, and the initial survey requirements were to carry out a single survey to determine presence/absence of roosting bats. Internal inspection found no bat droppings, and complete darkness in each roof void, with no daylight holes. A chimney was present in most of voids, with tear-shaped feature hole which did not lead to a cavity. There was no access to number 28, due to missing keys, and no access in number 31 and 32 due to residents being away and unable to grant permission. Activity survey identified a single emergence of Common Pipistrelle at the northern gable end and a single Common Pipistrelle emergence from the southern aspect. **Further surveys will be necessary to characterise roosts, in optimal season.**

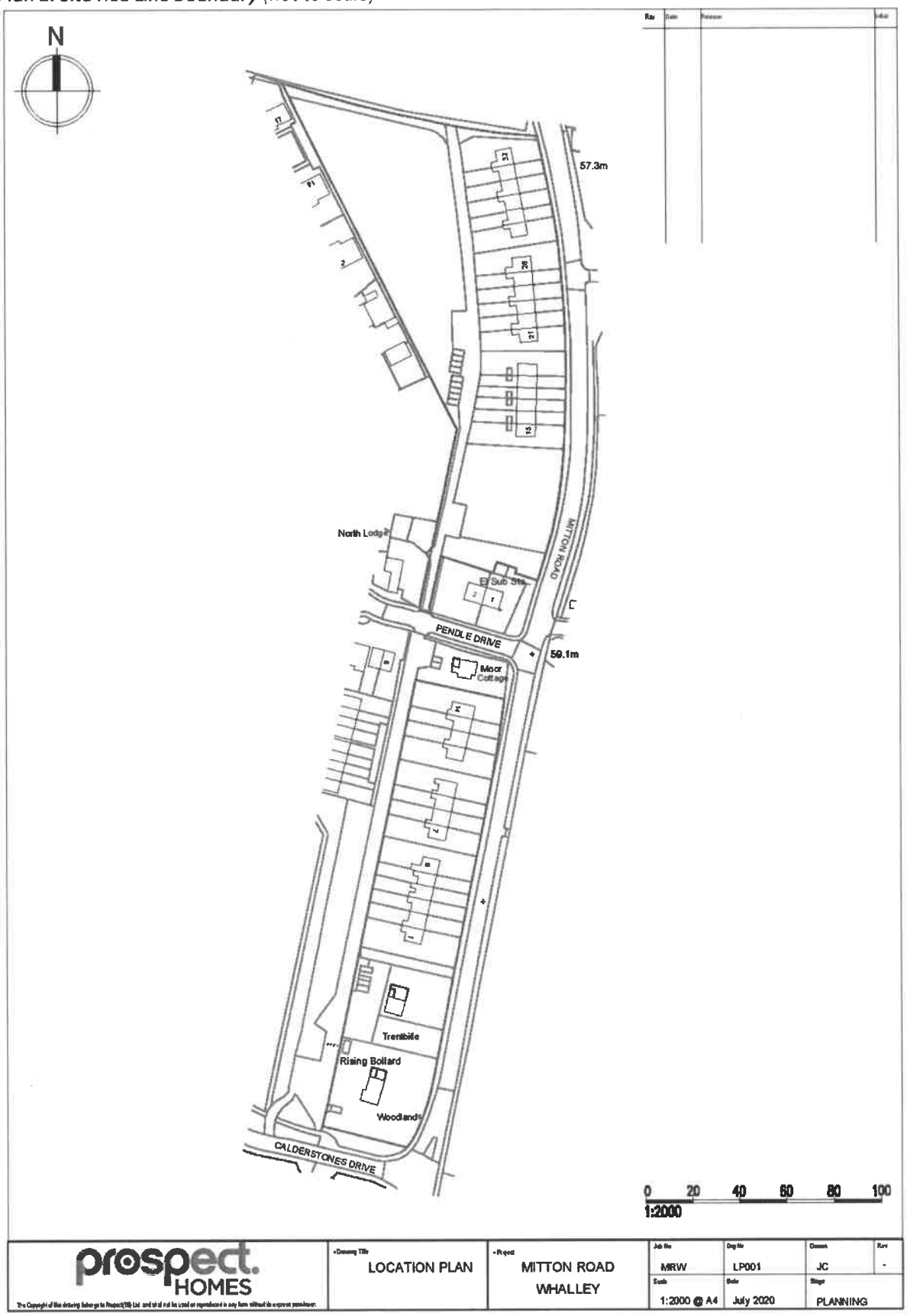
The approximate measurements of all the accessible loft spaces are detailed in the Bat Survey Report (ref: SE0909-03_F01a_BAT_BP).

2.8 Plans of Survey Area

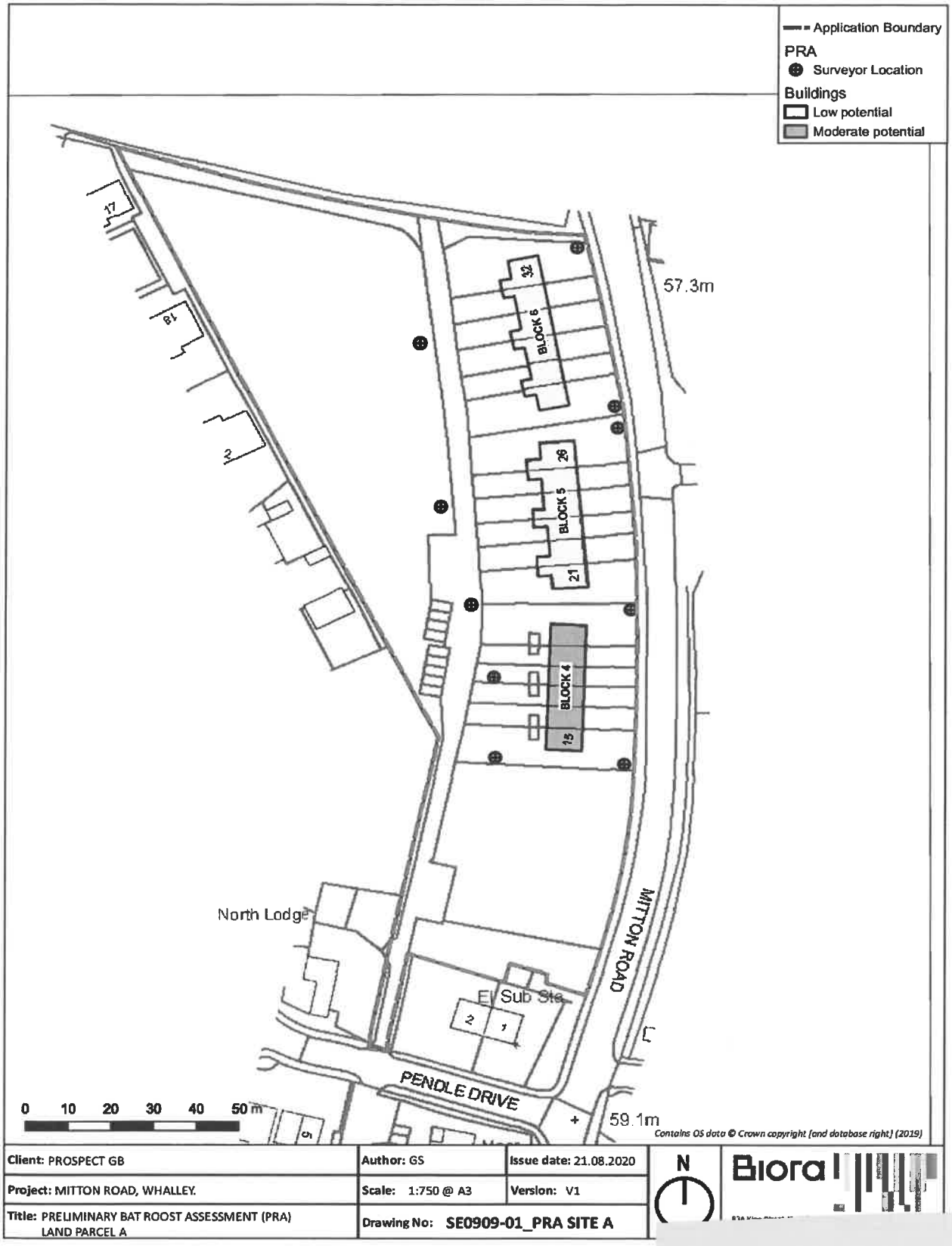
Plan 1: Site Location (not to scale)



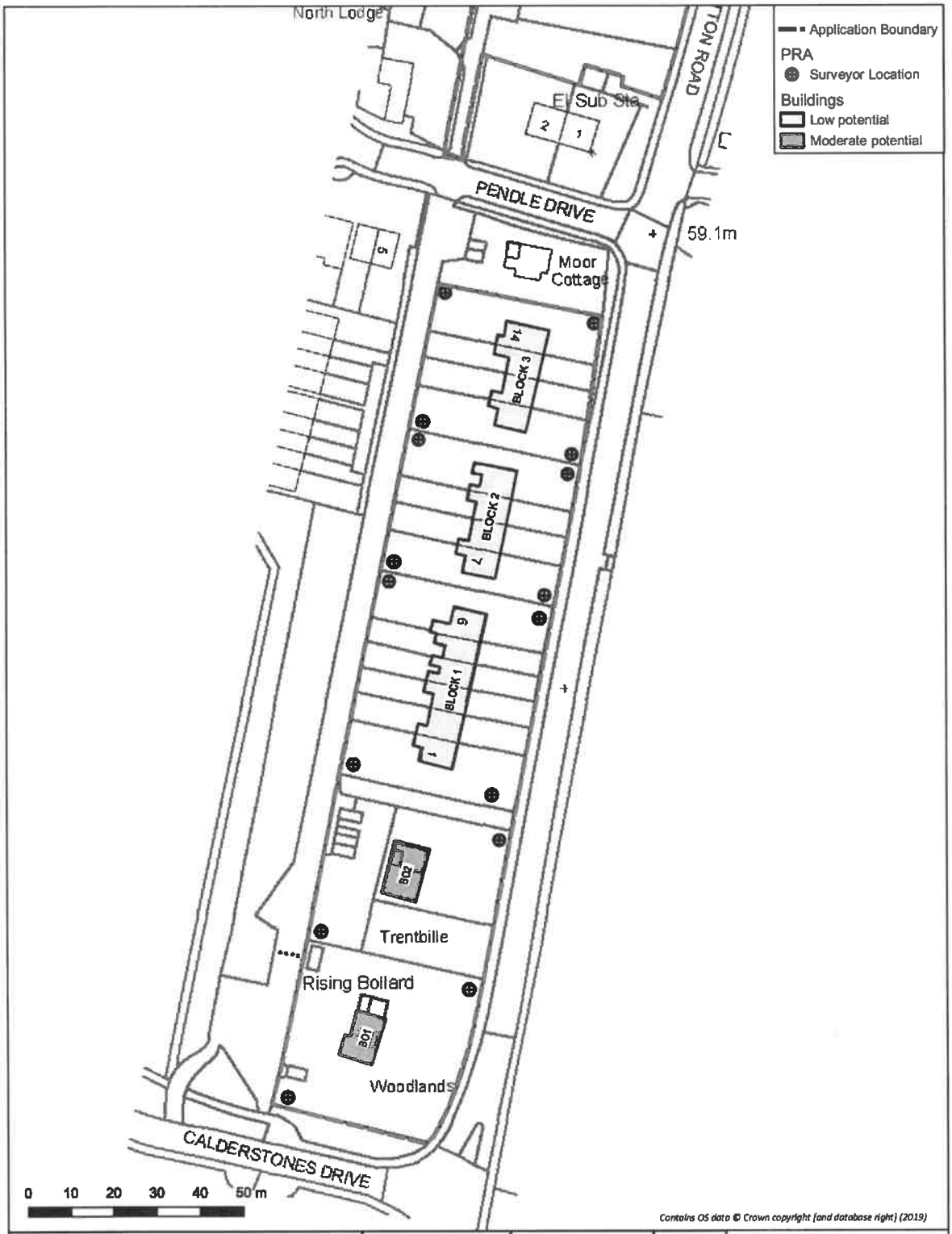
Plan 2: Site Red Line Boundary *(not to scale)*



Plan 3: Bat-roosting Potential of Buildings On site – Land Parcel A

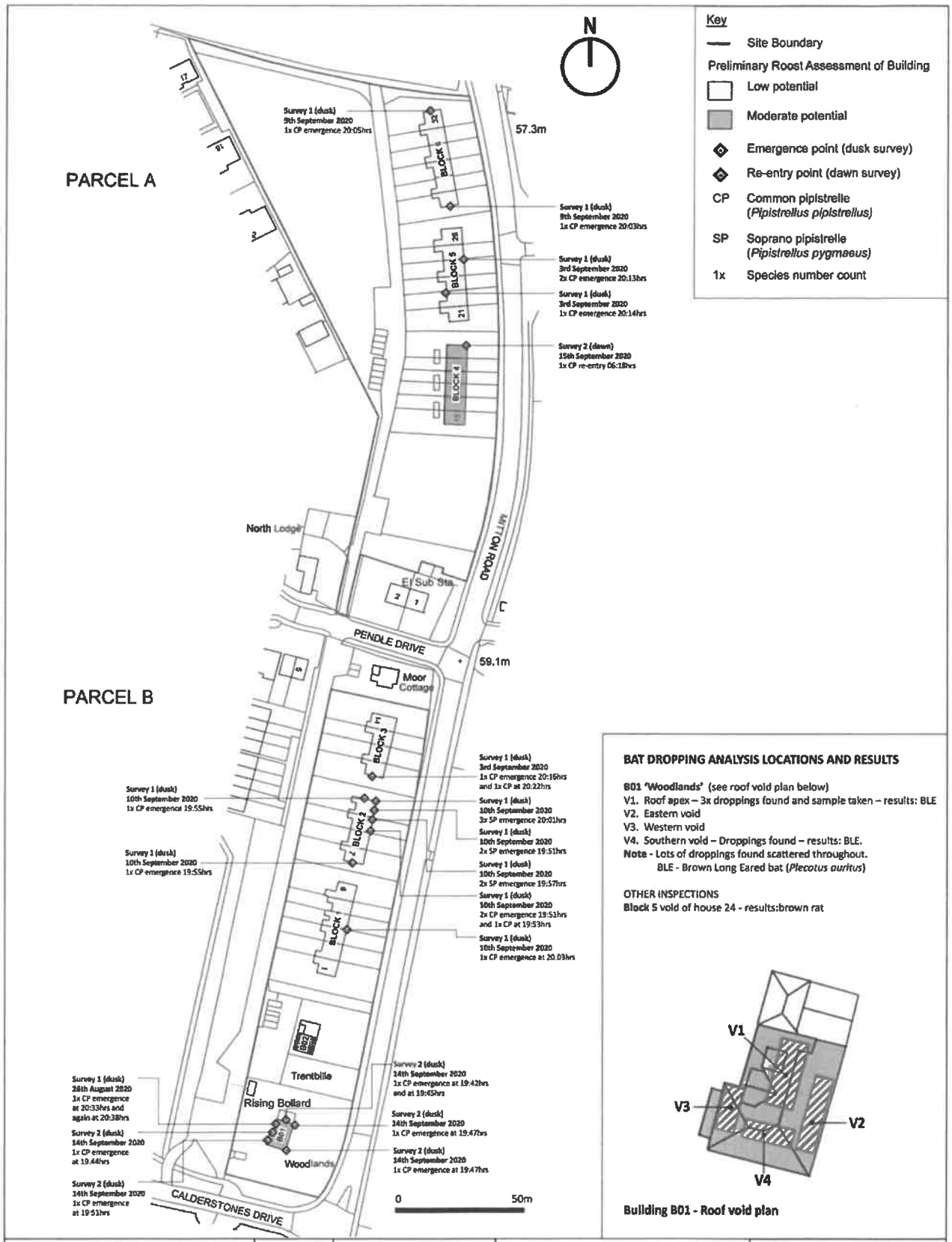


Plan 4: Bat-roosting Potential of Buildings On-site – Land Parcel B



Client: PROSPECT GB	**Author:** GS	**Issue date:** 21.08.2020	N
Project: MITTON ROAD, WHALLEY.	**Scale:** 1:750 @ A3	**Version:** V1	
Title: PRELIMINARY BAT ROOST ASSESSMENT (PRA) LAND PARCEL B	**Drawing No:** SE0909-01_PRA SITE		

Plan 5: Locations of bat roosts identified during 2020 surveys



2.9 Photographs

Photo 1: Emergence points of B01 – dusk 1

Photo 2: Emergence points of B01 – dusk 2

3.0 MITIGATION AND COMPENSATION

3.1 Mitigation strategy

3.1.1 The English Nature *Bat Mitigation Guidelines* (Mitchell-Jones, 2004) states that the level of mitigation must be proportional to the ecological impact of the development. This depends on the conservation significance of the roosting sites, which is determined by species, population size and roost status. This outline mitigation strategy is based on the worst-case scenario that one or more of the identified roost sites is a maternity roost for Common pipistrelle, Soprano Pipistrelles or Brown Long-eared bats. The further surveys that will be undertaken next year will confirm this.

3.1.2 This outline mitigation strategy has, therefore, been designed to address the loss of bat roosts on site. When the surveys are complete and approved by the Local Planning Authority, a European Protected Species Licence must be obtained from Natural England (NE) before works start on site. Proof will need to be provided that there is no satisfactory alternative to avoid destruction of the identified Common Pipistrelle, Soprano Pipistrelles and Brown Long-eared bat roosts in these buildings and that the work has over-riding public interest (signified by planning permission). The Natural England licence will detail the strategy and programme for the demolition.

3.1.3 To ensure that an equivalent population of Common Pipistrelles, Soprano Pipistrelles and Brown Long-eared bats are maintained at or near the site, the following strategy (or an approved, amended version) will be implemented (subject to completion of the further surveys which are detailed in the table below):

Table 2: Future survey requirements

Building/block reference	**Further survey requirements**
B01 (Woodlands)	1 survey x 2 surveyors
B02 (Trentbille)	None
Block 1 (House no. 1-6)	2 surveys x 4 surveyors
Block 2 (House no. 7-10)	2 surveys x 4 surveyors
Block 3 (House no. 11-14)	2 surveys x 4 surveyors
Block 4 (House no. 15-20)	1 survey x 5 surveyors
Block 5 (House no. 21-26)	2 surveys x 3 surveyors
Block 6 (House no. 27-32)	2 surveys x 3 surveyors

3.1.4 In the long term, roost replacements suitable for Common Pipistrelle, Soprano Pipistrelle and Brown Long-eared bats will be designed into a standalone structure location in the rear garden of plot 49 on site. The standalone structure will be constructed with the inclusion of access tiles, bat loft and appropriate building materials and designs.

3.1.5 In the short term, prior to the construction of the new buildings, the bats will be accommodated in four boxes on retained, mature trees of the site which will be mounted onto the trees prior to any demolition work. This will be followed by soft dismantling (by hand) of any roofs that support existing roosts under the supervision by a licensed bat handler to allow capture and removal to replacement roosts of any bats encountered and the briefing of site workers on bat ecology and procedure should they be found.

3.2 Replacement-roost site selection

Existing species status

3.2.1 Survey in 2020 confirmed the presence of Common Pipistrelle bat roosts in four of the blocks (numbers 2,4, 5 & 6) and possible Common pipistrelle roosts in block 1 & 3. B01 has been confirmed as a Brown-long eared roost, block 2 recorded Soprano Pipistrelle emergences and B02 showed no evidence of roosting bats beyond the emergence surveys. The details of the individual roost sites can be viewed in **Plan 5.**

3.2.2 The low number of Pipistrelle bats observed emerging and/or returning to roost sites indicates that they are summer roosts. However, as the surveys were conducted late on in the season it's possible that the roosts are significant, and the further surveys next year can confirm this, and maternity roosts have not been ruled out at this stage. A tenant within block 6 has described maternity roost behaviour and will be examined in more detail during the surveys next summer.

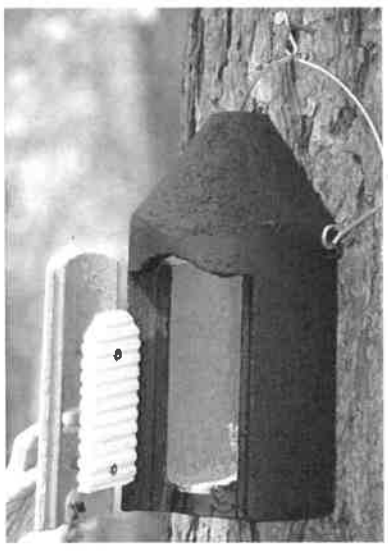
3.2.3 The bats present are common and widespread species and, given the proximity of residential housing close to the site it is probable that numerous roosts sites for this and other species of bat are readily available in the wider area. It is unlikely, therefore, that the importance of these roost sites extends beyond the boundaries of the site. When the surveys have been finalised, the data will be judged against the scale of conservation significance outlined in *Figure 4* on Page 39 of Natural England's *Bat Mitigation Guidelines* (2004).

Location, ownership and status

3.2.4 The locations for replacement roost sites have been selected to provide conditions of a similar nature to those of the roosts that will be lost, both in terms of structure, aspect, and proximity to (and/or connectivity with) noted foraging habitat and commuting routes.

Roost replacement details: Tree-mounted bat boxes

3.2.5 Four tree-mounted bat boxes will be sited on retained, mature trees close to the northeast boundary of the site prior to demolition works commencing. The boxes will be sited in trees at a height of 3-6 m in open sunny positions in group of three. The boxes will provide suitable alternative roost sites in the interim period between demolition and a safe site to place any bats discovered during the demolition process. Each of the boxes will be accompanied by a 32-mm entrance hole bird nest box in the same tree to avoid the bat boxes becoming occupied by birds and unusable by bats. The locations of these replacement roost sites are presented at ***Figure 1***.



TREE-MOUNTED BAT BOX

Example: 2F Schwegler Bat Box with Double Front Panel - designed as a summer roosting space for bats. The front panel has a has a simple entrance hole at the front and a second inner wooden panel fitted to it to create a cavity wall. This provides ideal quarters for bats that inhabit crevices, such as Common Pipistrelle.

The box is manufactured from Woodcrete and will last for at least 20-25 years, making it suitable for long-term mitigation projects. Woodcrete is breathable and maintains a stable temperature inside the box and the 2F is painted black to absorb warmth. It also provides a good rough surface for bats to cling on to and climb.

Stockist website:
http://www.nhbs.com/title/172271/2f-schwegler-bat-box-with-double-front-panel

Roost-replacement details: Standalone Structure

3.2.6 The standalone structure is purpose built to attract bats, particularly Common Pipistrelle and Brown-Long eared bats recorded at the site. The standalone structure has proven successful in previous cases and can be found in English Natures Bat Mitigation Guidelines (2004). The details can be found in the plan provided in ***Figure 2;*** further details will be provided when the survey effort has been finalised next year. The general specification for the structure is detailed below:

GENERAL SPECIFICATION
Gable cladding : European larch. EN Class 3, 16% moisture content, without sapwood. sustainability FSC.
150 x 30 sawn overalpping, (30mm) feather edge.
Gap at back of boards to prevent capillary action (see detail A)
Expansion gap at centre & each side behind rafter.
Provide 19mm cavity behind cladding for ventilation.
No end grain to show.
Treat boards with preservative using class 3.1/3.2 tanalised clear.
Fixings to be austentic grade 316 stainless steel.

Timber framed structure (Material to be confirmed)
150 sq post morticed into 120 x 200 eaves ring beam.
Bracings 120 x 100. 45°chamfer to all arriss.

3.3 Habitat creation, restoration and/or enhancement

3.3.1 An Ecological Constraints and Opportunities Plan (ECOP) was produced by Biora in November 2020 identifying enhancements on site. Feedback was also provided for the landscape plans to maximise biodiversity on site. Biodiversity Net Gain Uplift will also be achieved on site, which is likely to include off-site enhancements to include improving foraging habitat for roosting bats. Contact with the Local Planning Authority will be made in the near future to start discussions on achieving this.

3.4 Capture and exclusion

Timing, effort, methods, capture/exclusion methods

3.4.1 Prior to demolition works commencing the licence holder's ecologist or accredited agent will provide a "toolbox talk" to all site personnel involved with the demolition process. The talk will outline the legal protection of bats and their roosts, the status of bats at the site, and explanation of the requirement for a European Protected Species (EPS) licence and the conditions and responsibilities associated with it, where bats might be encountered and what to look for, the working approach and the requirement for attendance of a licenced bat ecologist to oversee the work.

3.4.2 Soft techniques will be employed to remove the roof around the identified bat roosts. Under the supervision of a licensed bat handler, roof tiles and/or sheets and any roofing felt will be dismantled by hand in a vertical rather than horizontal sliding motion checking for roosting bats. Soffit boards or other timber attached to the exterior wall, where present, will be taken apart by hand in sections.

3.4.3 The licensed bat handler would remove any bat(s) using gloves and a cloth bag relocating it to one of the bat boxes that had been fixed to nearby trees in advance of works commencing. Once the area is clear of bats then works can proceed again.

3.5 Post-development site safeguard

Roost management and maintenance

3.5.1 Post development the properties will be on sale to the public. The standalone structure has purposefully been located h

Mechanism for ensuring delivery

3.5.2 Tree mounted bat boxes will be fitted to existing trees before any demolition works commence. Immediately prior to completion of the installation of replacement roost features, these sites will be inspected by the licence holder/accredited agent to ensure that all specifications have been met and to identify the need for any corrections or remedial measures, as necessary.

3.5.3 The bat boxes, standalone structure and external lighting stipulations, will be conveyed to the relevant plots as part of the conveyance documentation and will include the strict "no-disturbance" policy to the roost features by not accessing the structure unless done so by a licenced bat holder.

3.6 Timetable of works

3.6.1 The following table sets out the proposed timetable of mitigation and demolition works.

Table 3: Programme of mitigation and demolition

	TASK		TIMING	
Proposed Activity	**Description**	**By Whom**	**Duration**	**Schedule**
Installation of tree-mounted bat boxes	To be located as per Figure 1	Developer under the supervision of licensed ecologist or agent.	1 day	Prior to demolition of buildings
Toolbox talk	Toolbox talk to all contractors undertaking demolition works.	Ecologist.	1 day	Immediately prior to commencement of demolition works.
Construction of standalone structure	As per details in Figure 2	Developer.	Unknown	Prior to the start of demolition. If it is not possible for the structure to be constructed prior to demolition then the bat boxes must be installed.
Demolition	Demolition of buildings	Developer under the supervision of licensed ecologist or agent.	Unknown	TBC

Figure 1: Locations of proposed bat boxes

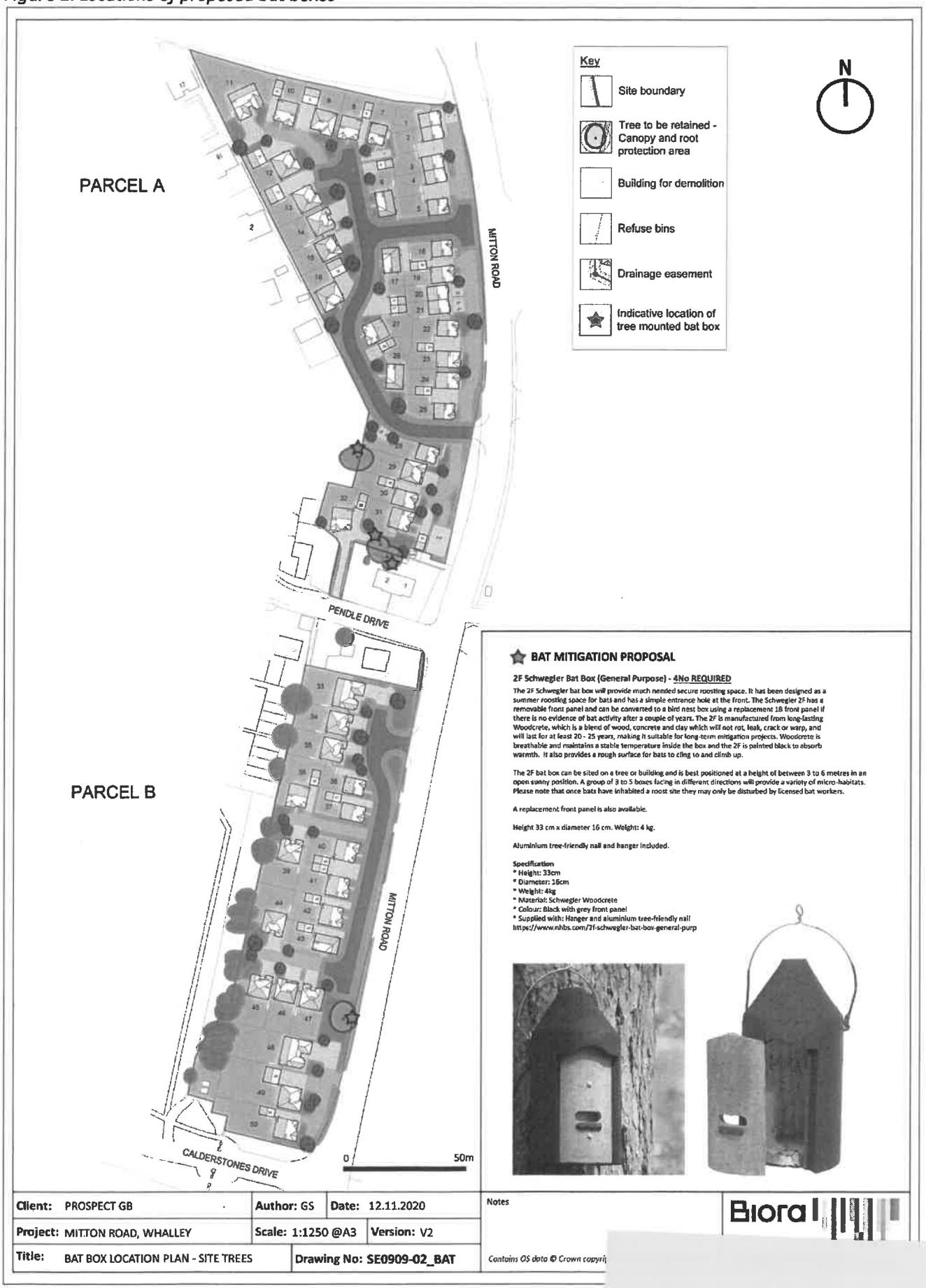
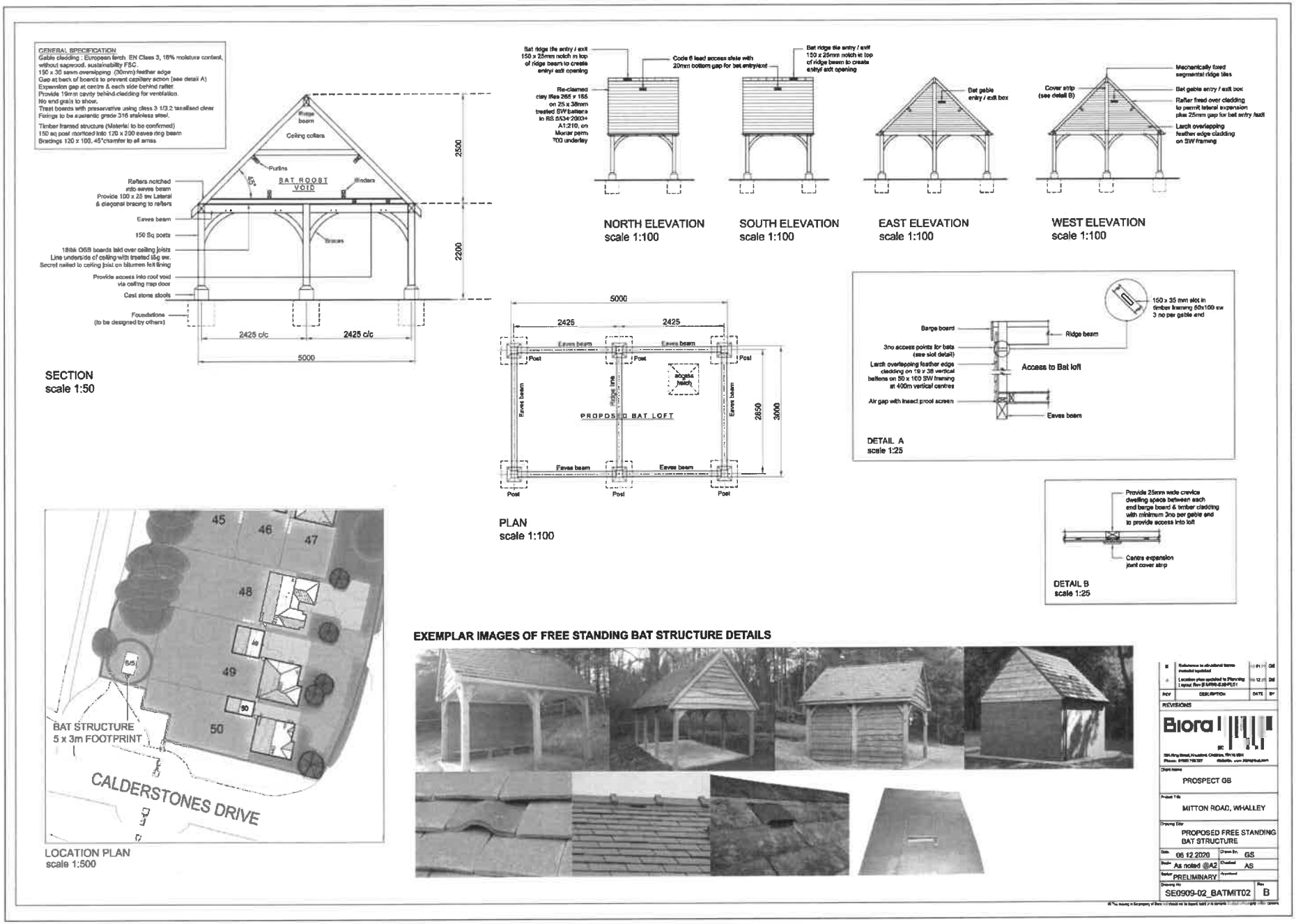


Figure 2: Standalone bat-structure: Details



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