

Bat Surveys

At

23 Mansionhouse Road

Langside

Glasgow

G41 3DB

August - September 2019

Prepared for DTA Architects

by

Baker Ecology

## **Executive Summary**

Baker Ecology was commissioned in August 2019 to carry out a daylight external and internal bat roost potential inspection of a former residential building at 23 Mansionhouse Road, Langside, Glasgow prior to demolition and site redevelopment. The survey included an external and internal (loft not accessible) assessment of the building and a ground-based inspection of mature trees adjacent to it. The survey identified a number of features on the building that were of potential value for use by roosting bats as well as two trees to the north (outwith site but close to it that had ivy coverage and so also had bat roost potential but there was no evidence of direct use by bats of any of these features on either building or trees. The daylight inspection classed the building and adjacent trees as having high bat roost potential, so based on these findings we recommended that a series of follow-up dusk emergence and pre-dawn return to roost surveys were appropriate to provide a high due regard for the potential for the site to be used by roosting bats as these would confirm any actual presence of/or the absence of roosting bats. These surveys were completed in August and September 2019 during the active bat season.

The dusk bat emergence surveys and pre-dawn return to roost survey determined that no bats were using the building or the two trees for roosting therefore bats are not an ecological constraint for the redevelopment of the building and need no further regard in the planning process.

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## 1. Introduction

Baker Ecology was commissioned in August 2019 to carry out a daylight external and internal bat roost potential inspection of a former residential building at 23 Mansionhouse Road, Langside, Glasgow (NS 57625 61601) prior to demolition and site redevelopment. The survey included an external and internal (loft not accessible) assessment of the building and a ground-based inspection of mature trees adjacent to it. The survey identified a number of features on the building that were of potential value for use by roosting bats as well as two trees to the north (outwith site but close to it that had ivy coverage and so also had bat roost potential but there was no evidence of direct use by bats of any of these features on either building or trees. The daylight inspection classed the building and adjacent trees as having high bat roost potential, so based on these findings we recommended that a series of follow-up dusk emergence and pre-dawn return to roost surveys were appropriate to provide a high due regard for the potential for the site to be used by roosting bats as these would confirm any actual presence of/or the absence of roosting bats. These surveys were completed in August and September 2019 during the active bat season, and this report contains the findings of the surveys.

## 2. Relevant Policy and Guidance

This ecological assessment has been undertaken with regard to the legislative requirements given in the following:

- The Conservation (Natural Habitats &c.) Regulations 1994 (The Habitats Regulations);
- The Conservation (Natural Habitats &c.) Amendment (Scotland) Regulations as amended (2004, 2007, 2008, 2011, and 2012);
- Nature Conservation (Scotland) Act, 2004;
- Wildlife and Countryside Act 1981 (and subsequent amendment through The Conservation (Natural Habitats &c.) Amendment (Scotland) Regulations 2007, 2009, & 2011);
- Wildlife & Natural Environment (Scotland) Act (2011);
- Wild Mammals (Protection) Act, 1996;
- The Convention on the Conservation of European Wildlife and Natural Habitats (The Berne Convention), 1979;
- The Land Reform (Scotland) Act, 2003;
- Scottish Planning Policy (June 2014) replaces NPPG14 and SPP (February 2010);
- The Glasgow Local Biodiversity Action Plan – revision 2017 - 2027 (LBAP);
- The UK Biodiversity Action Plan (UK BAP), revised priority list 2007; and the
- Scottish Biodiversity List 2007

### 2.1. Biodiversity Status

The UK Biodiversity Action Plan (BAP) is the UK Government's commitment to the Convention on Biological Diversity signed in 1992. It is comprised of two types of Action Plans developed to set priorities for nationally and locally important habitats and wildlife:

### Species Action Plans

- Produced for UK BAP Priority Species: information on the threats facing 382 species and action plan targets to achieve a positive conservation status;
- Grouped Species Action Plans - common policies, actions and targets for similar species, for example for Eyebrights, or Commercial Marine Fish. There are nine grouped action plans; and
- Species Statements - overview of the status of species and broad policies developed to conserve them for two groups of species.

Several bat species are UK BAP priority species with action plans. Soprano Pipistrelles are a UK Biodiversity Action Plan priority species but Common Pipistrelle bats have now been removed from the list (2007).

### Habitat Action Plans

- Broad Habitat Statements - summary descriptions of 28 natural, semi-natural and urban habitats and the current issues affecting the habitat and broad policies to address them; and
- UK BAP Priority Habitat Action Plans - detailed descriptions for 45 habitats falling within the Broad Habitat classification and detailed actions and targets for conserving these habitats.

### Local Biodiversity Action Plans

Each Local Biodiversity Action Plan (LBAP) partnership, usually but not always at the local authority level identifies and establishes actions to conserve local priorities and also link this action to the delivery of national Species and Habitat Action Plan targets wherever possible. Grouped action plans at this level include bats, and Waders, for example.

The Soprano Pipistrelle and the Common Pipistrelle are both are still key species in the Glasgow LBAP, despite the removal of the Common Pipistrelle from the UK Biodiversity Action Plan priority species list in 2007.

## **2.2. *The Conservation (Natural Habitats &c.) Regulations 1994 (The Habitats Regulations)***

Full consideration of European Protected Species (EPS) must be given as part of the planning application process, not as an issue to be dealt with at a later stage. The European Protected Species of potential relevance to this survey area were bats.

European Protected Species are protected in Annex IVa in the EC Habitats and Species Directive, which is transposed into UK legislation by the Conservation (Natural Habitats &c.) Regulations 1994 (Schedule II of The Habitats Regulations). The full details of this legislation can be viewed at:

[http://www.opsi.gov.uk/SI/si1994/Uksi\\_19942716\\_en\\_4.htm](http://www.opsi.gov.uk/SI/si1994/Uksi_19942716_en_4.htm)

This legislation was amended on the 14th February 2007 (The Conservation (Natural Habitats &c.) Amendment (Scotland) Regulations 2007.), and explanatory guidance on this was published by the Scottish Government in April 2007. The amendment removed all EPS from Schedule 5 of the Wildlife & Countryside Act 1981. There are therefore now no defences in the WCA 1981 whatsoever for any actions impacting on EPS, and protection is afforded by the following legislation only:

Under Regulation 39 of the Conservation (Natural Habitats &c.) Regulations 1994 (The Habitats Regulations) it is now a criminal offence (subject to specific exceptions) to:

(a) deliberately or recklessly to capture, injure or kill a wild animal of a European protected species; (only defences are mercy killing, capture for tending a disabled animal or circumstances where the animal is captive bred and lawfully held).

(b) deliberately or recklessly-

(i) to harass a wild animal or group of wild animals of a European protected species;

(ii) to disturb such an animal while it is occupying a structure or place which it uses for shelter or protection;

(iii) to disturb such an animal while it is rearing or otherwise caring for its young;

(iv) to obstruct access to a breeding site or resting place of such an animal, or otherwise to deny the animal use of the breeding site or resting place;

(v) to disturb such an animal in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species to which it belongs; or

(vi) to disturb such an animal in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young;

(c) deliberately or recklessly to take or destroy the eggs of such an animal; or

(d) to damage or destroy a breeding site or resting place of such an animal.

It should be noted that only the offence of damaging or destroying a breeding site or resting place of an EPS is a strict liability offence. The remaining offences are offences only where they are carried out "deliberately" or "recklessly".

In Scotland licenses may be granted by Scottish Natural Heritage (SNH) to permit certain activities that would otherwise be illegal due to their potential impact on EPS or their places of shelter/breeding, whether or not they are present in these refuges. This includes for developmental work. Under Regulation 44 of The Habitats Regulations, the provisions in Regulation 39 (protection of animals) do not apply to anything done for any of the purposes defined in Regulation 44 provided that any action is carried out "under and in accordance with the terms of a licence granted by the appropriate authority".

Three tests must be satisfied before a development licence for disturbance of an EPS or damage to a site/destruction of a site used by EPS will be granted. Note: A license application will fail unless all three tests are satisfied.

- Test 1 - the licence application must demonstrably relate to one of the purposes specified in Regulation 44(2). This regulation states that licences may be granted by Scottish Natural Heritage where the activities to be carried out under any proposed licence are for the purpose of "preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment";
- Test 2 - Regulation 44(3)(a) states that a licence may not be granted unless Scottish Natural Heritage is satisfied "that there is no satisfactory alternative"; and

- Test 3 - Regulation 44(3) (b) states that a licence cannot be granted unless Scottish Natural Heritage is satisfied “that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range”.

Note: Breach of Licensing Conditions

A new regulation 46A came into force on 15th May 2007. This now makes it an offence to breach any conditions attached to a licence. Licence conditions should therefore be adhered to at all times.

### **2.3. Additional Legal Protection**

- Additional protection is afforded through the Bern Convention (1979), enacted in Scotland through the Nature Conservation Act (Scotland) 2004;
- Appendix III, the Convention on the Conservation of Migratory Species of Wild Animals (Bonn, 1980), Appendix 2; and
- The Bonn Convention’s Agreement on the Conservation of Bats in Europe (London, 1991).

It is also a legal obligation in Scotland to consult with SNH before you do anything that might affect bats or their roosts such as:

- Removal of hollow, old, or decaying trees;
- Blocking, filling, or installing grilles over old mines or caves; and
- Building, alteration, maintenance, or re-roofing

In all cases where bats are found to occupy trees or buildings and there is a developmental issue, SNH must be informed before any development takes place. A licence to permit development may then be obtained from SNH if appropriate.

## **3. Background Information**

### **3.1. UK Bat Population Status and Roost Significance**

There are 18 species of bat in the UK of which 10 are known to occur in Scotland.

Five species of bat are relatively widespread in Central Scotland:

- Common Pipistrelle Bat (*Pipistrellus pipistrellus*) 45 kHz;
- Soprano Pipistrelle Bat (*Pipistrellus pygmaeus*) 55 kHz;
- Daubenton’s Bat (*Myotis daubentonii*);
- Brown Long-eared Bat (*Plecotus auritus*); and
- Natterer’s Bat (*Myotis nattereri*).

Another four species occur in Central Scotland but tend to have restricted distributions, or less is known about their distribution:

- Noctule Bat (*Nyctalus noctula*) (recorded in West Lothian and East Dunbartonshire);
- Nathusius's Pipistrelle Bat (*Pipistrellus nathusii*) 38 kHz –(Stirlingshire and Midlothian);
- Whiskered Bat (*Myotis mystacinus*) – within the Lanarkshire and Midlothian areas; and
- Leislers Bat (*Nyctalus leisleri*) (more of a southern Scottish distribution but known southwest of Glasgow).

The 10<sup>th</sup> Scottish species Brandt's Bat (*Myotis brandtii*) is rare with only a few records and roosts known, and is limited to southern Scotland.

**Table 3.1. Population estimates for the 10 species of UK bats found in Scotland (from Wray et al. 2010)**

Status in the UK	Scotland
Common (>100,000 bats)	Common Pipistrelle Soprano Pipistrelle
Rare (10,000 – 100,000 bats)	Natterer's Bat Brown Long-eared Bat Daubenton's Bat
Rarest (<10,000 bats)	Noctule Bat Leisler's Bat Nathusius' Pipistrelle Whiskered Bat Brandt's Bat

### 3.2. Bat Roost Types

Nine main types of roost have been identified (Collins 2016). These are:

- Day roosts (March – November but more-so in the summer): used for resting during the day, and may be occupied daily by solitary or small numbers of males, or may be used infrequently as part of a chain of roost sites alternated daily but are rarely occupied at night. Whole colonies of some species such the Leisler's bat will change roost during the day including taking young with them;
- Night roosts (March – November): a place where bats rest or shelter during the night but are rarely present during the day. Can be used by solitary bats or entire colonies, and are often indicated by large accumulations of insect remains and some droppings;
- Feeding roosts (May – November): a place where individual bats or small groups may rest or feed during the night between bouts of foraging, in times when weather changes, or just for a temporary rest. May be used by solitary bats to whole colonies but are rarely used during the day;
- Transitional/occasional roosts (spring or autumn generally but may be used April-October): Some roosts may be transitional, when small numbers are present for a limited period, usually during the spring and autumn.



- Swarming sites (August – November) tend to be around caves and mines and may be used for hibernation as well as being important for mating, with large numbers of male and female bats gathering from late summer to autumn.
- Mating roosts (September – October): where mating takes place from late summer and may continue through the winter;
- Maternity roosts (May - August): the most obvious roost type. These consist almost exclusively of females, most of which give birth and raise a single young but sometimes may include males in some species of bats. These colonies usually disperse by the autumn, although some species may remain in one roost all year round;
- Hibernation roosts (October – March); roost sizes may vary from individual to groups but must have a high humidity and constant cool temperature above freezing but generally less than 4°C; and
- Satellite roosts (May – August): alternative roosts near to maternity roosts used by a few breeding females or small groups of females throughout the breeding season;

Note: swarming sites (August – November) tend to be around caves and mines and may be used for hibernation as well as gathering for mating.

**Table 3.2. Determination of level of importance of bat roost type (from Wray et al. 2010)**

Geographic Frame of Reference for Roost Importance	Roost Type
Local	Feeding perches Individual bats of common species Small numbers of common species (non-maternity) Mating sites of common species
County	Feeding perches of rare/rarest species Small numbers of rare/rarest species (non-maternity) Hibernation sites for small numbers of common/rarer species Maternity sites of common species
Regional	Large swarming sites Mating sites for rarer/rarest species Maternity sites of rarer species Significant hibernation sites for rarer/rarest species or all species assemblages
National	Sites meeting SSSI guidelines Maternity sites of rarest species
International	SAC sites

In Scotland, most species of bats roost by concealing themselves in crevices and are not easy to find. The presence of droppings is a key sign to their presence but numbers of droppings vary widely and even some large roosts have little evidence of droppings to indicate their presence. Hibernating bats however leave little or no trace of their presence. Other possible signs are a characteristic odour like ammonia. In addition, a clean or polished area at a place through which light can enter may suggest an entrance/exit hole.

Roosts may occur in a wide variety of places, particularly temporary roosts during dispersal and migration but can be categorised into three main groups:

- Those in quarries, caves, mineshafts, tunnels, and bridges;
- Those in buildings; and
- Those in trees

This study focused on potential roosting in trees and the building:

### ***3.3. Bats and Trees: Potential Roost Features (PRF)***

Trees may provide safe dry places for bats to roost, although some bats prefer to roost in buildings when suitable buildings are present. Some bats remain roost faithful for prolonged periods, while others may have several alternate roost sites, and others may range much further using roosts several kilometres apart as weather conditions, food availability, and seasons change. Potential roost sites in trees may include:

- Crevices in bark;
- Gaps under loose bark on dead branches or trunks;
- Rotted knot holes;
- Hollow trunks;
- Cracks, splits etc. in stems and branches;
- Rotted-out branches;
- Growth deformities, compression forks, cankers;
- Gaps between overlapping branches;
- Dense ivy coverage;
- Woodpecker and Squirrel holes;
- Bird nesting boxes/bat boxes already present; and
- Crow, Magpie, and Buzzard nests.

### ***3.4. Bats and Buildings: Potential Roost Features (PRF)***

Buildings may provide safe dry places for bats to roost, although some bats prefer to roost in trees even when suitable buildings are present. Some bats remain roost faithful for prolonged periods, while others may have several alternate roost sites in a steading or housing estate, and others may range much further

using roosts several kilometres apart as weather conditions, food availability, and seasons change. Outbuildings and barns are often used as night roosts and shelters.

Potential locations for either access for roosting or for actual roosts in houses and outbuildings include:

Walls:

- Behind cladding, external tiles or weatherboarding;
- Gaps in mortar/stonework allowing access inside the cavity wall spaces;
- At the top of solid walls;
- In window frames or windowsills;
- Behind loose render;
- Behind loose wall slates; and
- Potentially in any existing bat boxes already present on the building

Note Bat droppings may be found on the ground, garden furniture or other external objects such as bins and cars, or on windows and stuck to walls may also serve to focus attention on specific areas of a building to look for a roost.

Eaves:

- Between soffit and bargeboard; and
- Behind bargeboards or fascias

Roofs and lofts:

- Space under ridge tiles;
- Between under-felt or boards and tiles or slates;
- Inside roof space at ridge ends or roof junctions;
- Inside roof space in gaps between timber and brickwork of chimneys;
- The junction of roof timbers, especially where ridge and hip beams meet;
- The top of gable end or dividing walls;
- Lower corners of the eaves;
- Between loft insulation and ceiling; and
- Space between joist and ceiling.

- The top of chimney breasts;
- Ridge and hip beams and other roof beams;
- Mortise and Tenon joints;
- All beams (free-hanging bats);
- Behind purlins; and
- Under lead/tin flashing

Within rooms in residential buildings

- The floor and surfaces of any furniture or other objects;
- Behind wooden panelling;
- In lintels above doors and windows;
- Behind window shutters and curtains;
- Behind pictures, posters, furniture, peeling paintwork,
- Peeling wallpaper, lifted plaster and boarded-up windows; and
- Inside cupboards and in chimneys accessible from fireplaces.

In agricultural buildings

- Gaps in mortar/stonework allowing access inside the rubble-filled cavity of the walls from inside the building;
- Wall top;
- Between exposed roofing tiles at the ridge where no sarking is present;
- Crevices between timbers or between timbers and walls/roof; and
- In lintels above doors and windows

*Note: The above lists are not exhaustive – the surveyor should use professional judgement based on experience to decide where inspection is necessary.*

#### 4. Survey Methods

All methodology for bat survey work followed Bat Conservation Trust Bat Surveys: Good Practice Guidelines (Collins 2016). Note on the Bat Survey Guidelines from Bat Conservation Trust (January 2016):

*“Professional judgement and surveyor experience: The guidelines are not a prescription for professional bat work. They do not aim to override professional judgement and cannot be used to replace experience. Deviations from the methods described are acceptable providing the ecological rationale is clear and the ecologist is suitably qualified and experienced. In some cases it may be necessary to support such decisions with evidence, particularly if they may lead to legal challenge.”*

##### 4.1. Preliminary Ground Level Assessment of Trees for Bat Roost Potential

The aim of this survey was to determine if any trees within 30m of the building/proposed development site had potential value for use by roosting bats or evidence of any actual bat presence by a detailed inspection of the exterior of the tree from ground level. The survey looked for features that bats could use for roosting (PRFs) and categorised the trees according to their individual potential value for use by roosting bats (Table 4.1. below). Mature trees adjacent to the works area (none present within the works area) were checked for PRFs such as crevices, holes, splits, tears, and ivy that could be used by bats to enter roosting sites such as those listed above, along with field signs of bat occupancy such as urine streaking, grease marks, smooth or worn surfaces, or droppings caught on bark or on webs. Where appropriate, inspections were made using binoculars. Trees with no bat roost potential were not recorded individually. Note: all assessment was made from within the proposed development site.

**Table 4.1. Building/tree suitability assessed according to the Categories listed in the BCT Guidelines (Collins 2016)**

Suitability	Description of Roosting Habitats
<b>Negligible</b>	Negligible habitat features on site likely to be used by roosting bats.
<b>Low</b>	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions <sup>a</sup> and / or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation <sup>b</sup> ). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential <sup>c</sup>
<b>Moderate</b>	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions <sup>a</sup> and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
<b>High</b>	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions <sup>a</sup> and surrounding habitat.

*a For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.*

*b Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et al., 2015). This phenomenon requires some*

*research in the UK but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.*

*c This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015).*

## **4.2. Assessment of Building for Use by Bats**

### **4.2.1. External Assessment of Building**

The building was assessed externally during daylight on 13<sup>th</sup> August 2019 to look for PRF such as access points that could potentially be used by bats to enter crevices that could be used as roosting sites such as under loose or missing panels or cracks and crevices, loose flashing etc. on the building. Each potential access point was examined with binoculars for signs indicative of use by bats such as droppings, urine streaking, polished, or worn surfaces, or staining marks at the potential entry point. The ground along the walls was also checked for dropping accumulations, and brickwork and windows were also checked for the presence of occasional droppings. The building was scored according to Table 4.1. above to grade it by its suitability for use by roosting bats.

### **4.2.2. Internal Assessment of Building for Use by Bats**

No access was possible to the loft for health and safety reasons: several active wasp nests present, as well as rotted timbers. At ground and first floor levels the internal survey accessed all rooms and looked for evidence of bats having been present such as single droppings, accumulations of droppings under roosting perches, smell of ammonia from damp droppings, moth wings and other prey remains, and dead bats, as are occasionally found in roosts or where bats have entered and become trapped. In addition to the visual search, the bat worker carried an SSF2 Bat Detector, which picks up any bat social chatter as is often found in larger roosts in particular. The SSF2 is ideal for this purpose as it constantly scans all frequencies between <20kHz and >65kHz and so any bat “noise” will be picked up on the spot without reviewing recordings later.

## **4.3. Bat Presence/Absence Surveys**

### **4.3.1. Bat Emergence Surveys**

The surveys were targeted at locations of PRF identified during the survey work completed for 4.1. & 4.2. above: where features had been identified that could potentially be used by bats for roosting. The dusk surveys commenced from a half hour before sunset and continued for a minimum of 1.5 hours after sunset on 13<sup>th</sup> August and 23<sup>rd</sup> & 25<sup>th</sup> September 2019 (two surveyors and three surveyors respectively on 23 & 25<sup>th</sup> to provide the five surveyor full coverage for the September survey). The survey was completed using five survey positions in suitable weather conditions for bat activity (temperatures 10°C or greater, light wind or no wind, and dry).

Note: SSF Bat -2 and Batbox Duet detectors were used during the survey, with SSF Bat-2 detectors scanning all frequencies for echolocating bats, and allowing immediate switching to that frequency for identification purposes.

### **4.3.2. Bat Pre-dawn Return to Roost Survey**

The pre-dawn return to roost survey was completed using five survey positions in suitable weather conditions for bat activity on 31<sup>st</sup> August 2019 and took place from 1.5 hours before dawn until 15 minutes after sunrise (Collins 2016).

## **4.4. Limitations of Surveys**

There were no significant constraints on the surveys.

## 5. Results

### 5.1. Preliminary Ground Level Assessment of Trees for Bat Roost Potential

All trees in the grounds were sound and had nil value for use by roosting bats: generally they were shrubs or small landscaping tree species rather than tall mature trees. Outwith the site, two lime trees (T1 at NS 57624 61626, and T2 at NS 57627 61626) on the edge of adjacent woodland to the northeast of the proposed development site had dense ivy coverage (PRF) considered as high roost potential.

### 5.2. Assessment of Building for Use by Bats

#### 5.2.1. External Assessment of Building for use by Bats

The building was a two-story stone block structure with pitched slate roof and although in an urban setting with flats to the southwest and southeast, was in close proximity to a strip of mature trees to the rear of the property and a small pocket of mature deciduous woodland to the northeast of the property. Potential Roost Features (PRF) included raised tin ridging, gaps under ends of tin ridges, missing and raised slates, east gable crevices near wall head, and gaps at the rear right corner of the building. Also a large hole and other crevices in the right side of the frontage, gaps around wall head along frontage, and missing mortar in the upper central wall section to the rear. No evidence of use by bats was detected. Overall, the building was considered externally to have **High roost potential**.

#### 5.2.2 Internal Assessment of Building for use by Bats

Initially no access was possible to assess the inside of the building. Access internally was only possible during mid-September, at which time it was taken - no access was possible to the loft for health and safety reasons: several active wasp nests present, as well as rotted timbers. The first floor internal inspection found evidence of damage to ceilings due to water ingress in many of the rooms suggesting the roof was in poor condition and not weather proof. No evidence of use by bats was found. Internal assessment was **Low roost potential**.

### 5.3. Presence/Absence Survey Conditions and Timings

**Table 5.3. Weather Conditions and Times of Presence/Absence Surveys**

Date	Temp start °C	Temp finish °C	Cloud cover (Oktas)	Dry/ rain	Wind speed	Wind direction	Start time	End time
13/08/2019	12	12	2/8	Dry	1	SW	2029	2229
31/08/2019	15	15	8/8	Dry	2	SW	0449	0634
23/09/2019	16	15	4/8	Dry	1	ESE	1844	2044
25/09/2019	11	11	6/8	Dry	0	-	1839	2039

### 5.4. Dusk Bat Emergence Surveys

No bats were detected emerging either from the adjacent ivy-clad trees or the building during either dusk survey. A total of two pipistrelle bats were detected: a lone Soprano Pipistrelle and a Common Pipistrelle. These bats both approached the site from the south with the line of flight from a group of mature trees (NS 57605 61520) in the grounds of a property at least 85m away. This pattern of flight was confirmed during the repeat visits made during September 2019 as only the general direction had been previously confirmed during August. These bats repeated the same pattern during each survey, flying up the southwestern side of the house, round the garden, and along the woodland edge to the northeast of the property before heading off either south or northwest.

### **5.6. Pre-dawn Bat Return to Roost Survey**

No bats were detected returning to roost either in the adjacent ivy-clad trees or the building. No bats were detected at all during this survey.

## **6. Conclusions**

The building and tree inspection determined that PRF were present but there was no evidence of any past or present use by roosting bats and bats may never have used the site for roosting at all. The dusk bat emergence survey and pre-dawn return to roost survey determined that no bats were using the building or nearby trees for roosting therefore bats are not an ecological constraint for the redevelopment of the site and need no further regard in the planning process.

## **7. References/relevant reading**

Bat Conservation Trust. 2014. Artificial lighting and wildlife.

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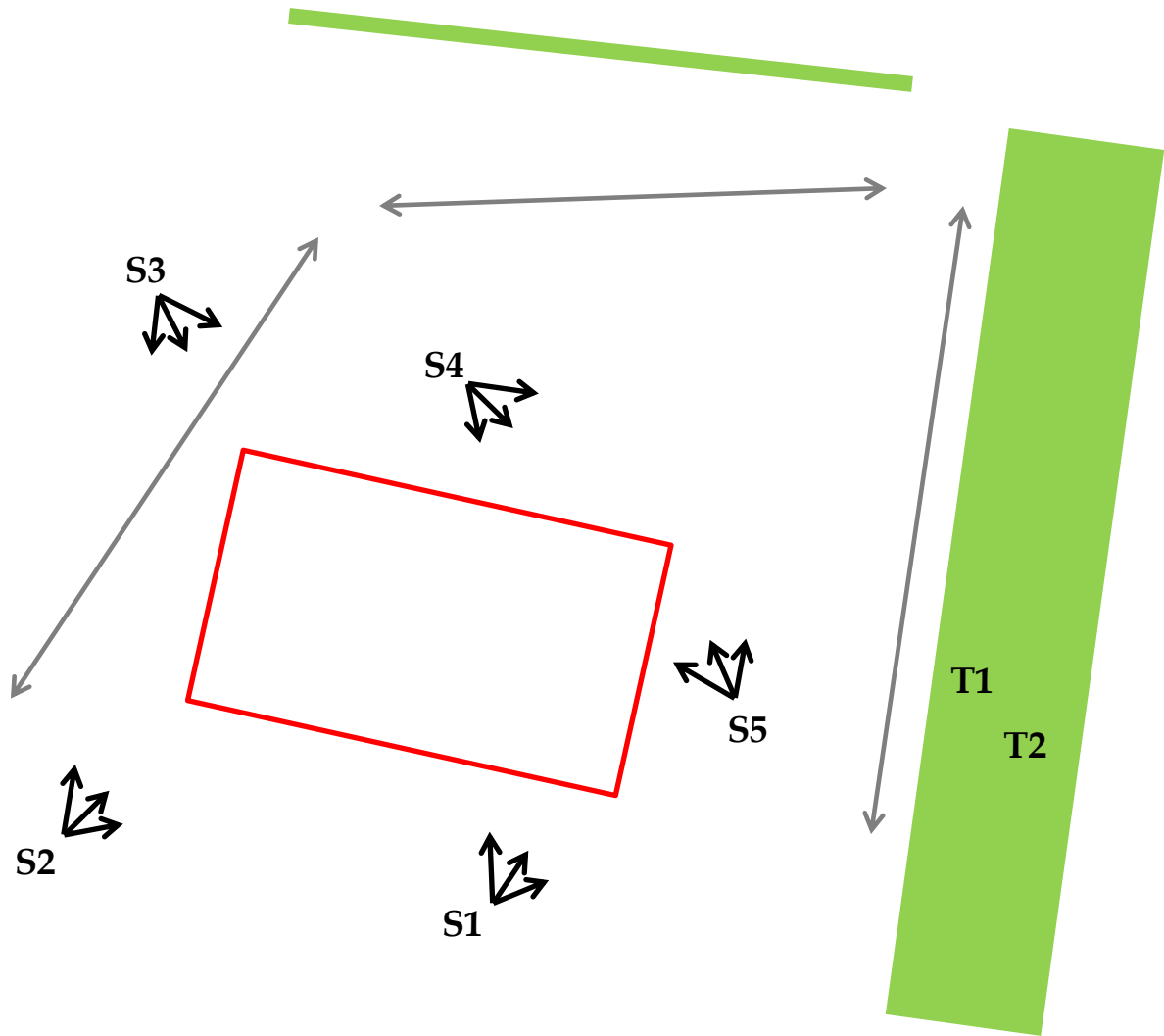
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Figure 1. Development site, surveyor locations and indicative key bat flightlines



Key	
	Building boundary
S1 - S5	Surveyor positions
	Direction viewed (main)
	Indicative bat flightlines
	Treeline

**Plates**

Plate 1. Front aspect



Plate 2. Gaps by soffit box front of building, northern end

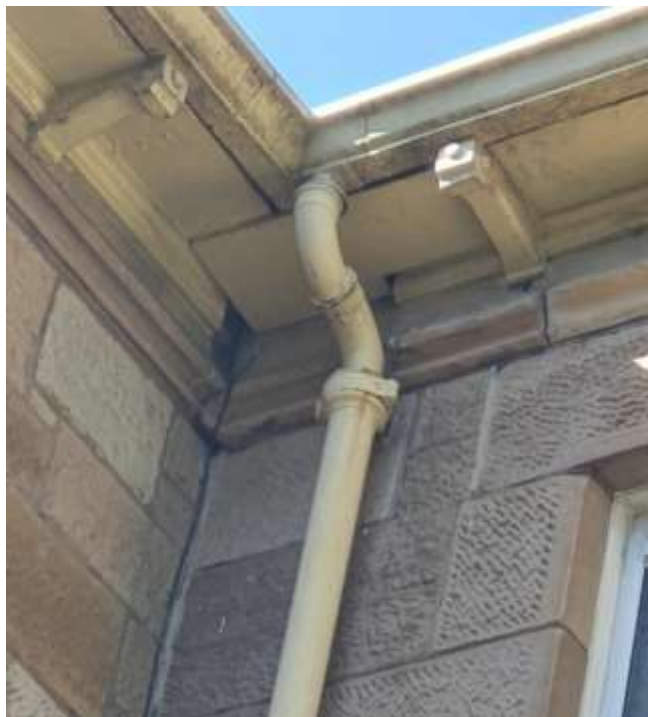


Plate 3. Gap along wall head and behind drainpipe



Plate 4. Rear of building (northern end by chimney) gaps under flashing and crevice to rear of soffit



Plate 5. Northeastern gable of building – gaps in soffit and behind it



Plate 6. Roof at front of building (northern end), missing slates, gap under ridge etc.





Plate 7. Roof at front of building (southern end), gap under ridge end etc.



Plate 8. Rear of building (façade facing northwest)

