

**Bat Survey Report
Bird and Protected Species Assessment
Kingswells House,
Kingswells, Aberdeen**

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AUTHOR

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EXECUTIVE SUMMARY

Bat surveys were undertaken at Kingswells House in 2020 where five non-breeding roosts, containing four Soprano pipistrelles and three Common pipistrelles were confirmed. A bat survey update was requested in 2023. A preliminary bat roost assessment to assess the likelihood of bats roosting at the property prior to renovation, demonstrated a moderate potential for the presence of bat roosts. There were small numbers of individual pipistrelle species bat droppings internally and on external walls, and potential roost locations were identified including gaps at the wall head, under the roof ridge, under slates, around windows and roof apexes, and within the roof space. The survey took place in favourable conditions with all areas accessible. The hibernation assessment demonstrated a low potential for hibernating bats.

Bats are a protected species, and it is an offence to intentionally, or recklessly, disturb a bat in a shelter or resting place; or to damage or destroy a breeding or resting site. All bats and their roosts are legally protected because bats return to the same places every year, a bat roost is protected even if there are no bats there. The proposed work would impact on any bat roosting there, therefore, following the Bat Conservation Guidelines, one emergent (dusk) and one re-entrant (dawn) survey between May to September was recommended. No further hibernation surveys are required.

Emergent dusk and re-entrant dawn surveys were carried out in August and September 2023. On the dusk and dawn survey two Common and three Soprano pipistrelles were recorded emerging from three roost locations on the west and east elevations. A total of five roost locations were in use across the two surveys which were the same as those used in 2020. Common and Soprano pipistrelles were recorded foraging around the property. The number of bats and pattern of use of the roosts indicate that the roosts are non-breeding roosts. The activity surveys took place in favourable conditions and results are accurate as to the species, numbers, and locations of bats in the area.

A bat licence is required before work commences, to permit the disturbance and/or destruction of the roosts with appropriate mitigation and compensation methods in place. This site can be licensed on a Bat Low Impact Licence for non-breeding pipistrelle roosts. No further surveys are required this time, and bat surveys are valid for twenty-four months when licensing under a low impact licence. As bats are mobile creatures there is always the possibility that a bat could be found at a different location once renovation commences, in this eventuality appropriate action should be taken. There are no timing restrictions for working at sites with non-breeding roosts and low winter hibernation potential, though for work commencing during the winter months (November to March inclusive) it is recommended that extra care should be taken in case hibernating bats are found.

The proposed work is not expected to have a long-term detrimental impact on the bat population provided that the bat roosts are retained in situ or compensated for with replacement roosts. Installing bat boxes on easterly through to westerly elevations will provide alternative roosting opportunities for bats. During works three woodcrete bat boxes should be placed on nearby trees; and a combination of bat slates, external wall and/or integrated bat boxes are recommended to be included as part of works to provide new or replacement roosts where existing roosts are lost.

There was evidence of birds nesting including house sparrows at the site. For any works commencing during the breeding bird season where an active nest site is found, this must be suitably protected until the chicks have fledged. All wild birds and their nests, eggs and dependent young are legally protected, and it is an offence to disturb a wild bird when it is nesting. No evidence of any other protected species was identified during the survey.

1. INTRODUCTION

1.1 Site location

Kingswells House is located north of the A944 on the western edge of the City of Aberdeen. The property is located at NJ 86221 06408 at an altitude of 140m above sea level. Figure 1 Site Location.

1.2 Site description

Kingswells is a manor house dating from 1666, it was restored in 1713 with 19th century additions on the north, south and west sides when the building was restored in 1854. It is harled with a slate roof on timber sarking. Figure 2 Aerial View and Figure 3 Existing Elevations

1.3 Proposed works

It is proposed to renovate the property.

Figure 1 Site Location

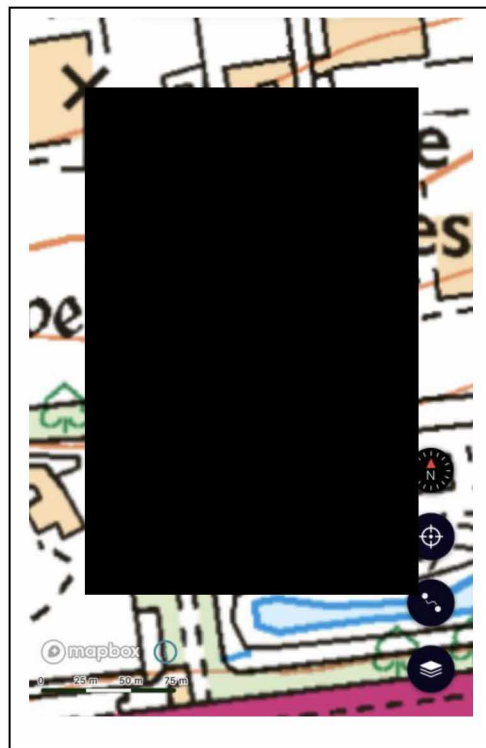
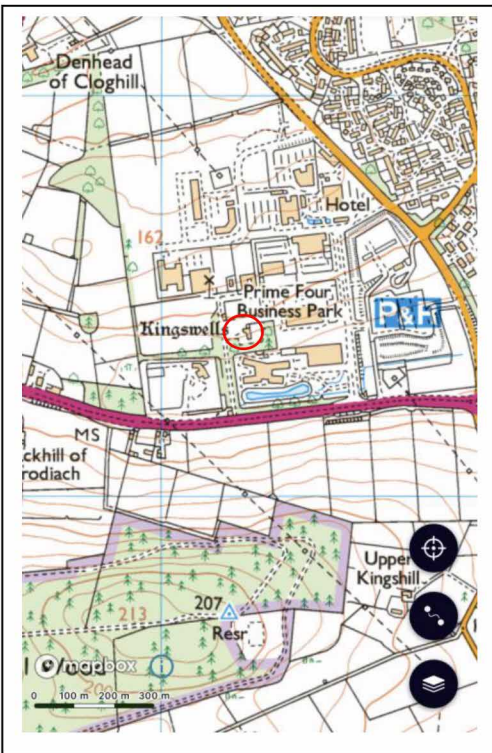


Figure 2 Aerial View

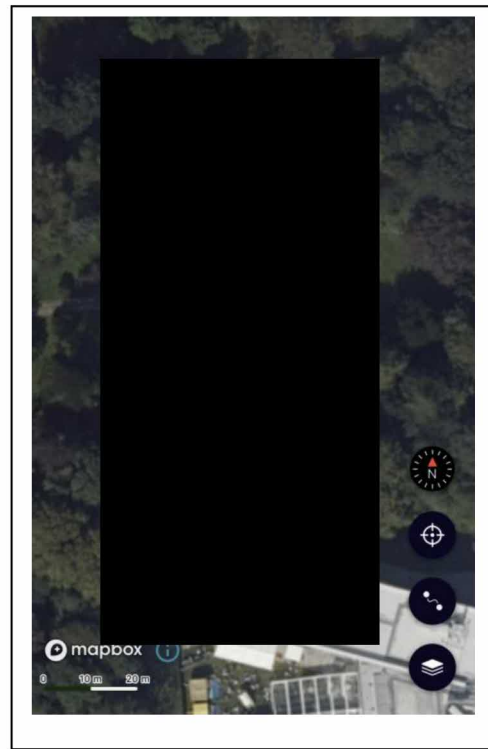
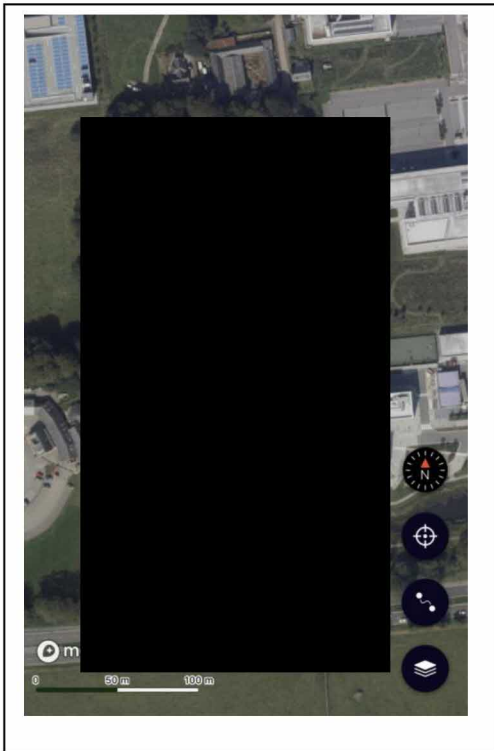
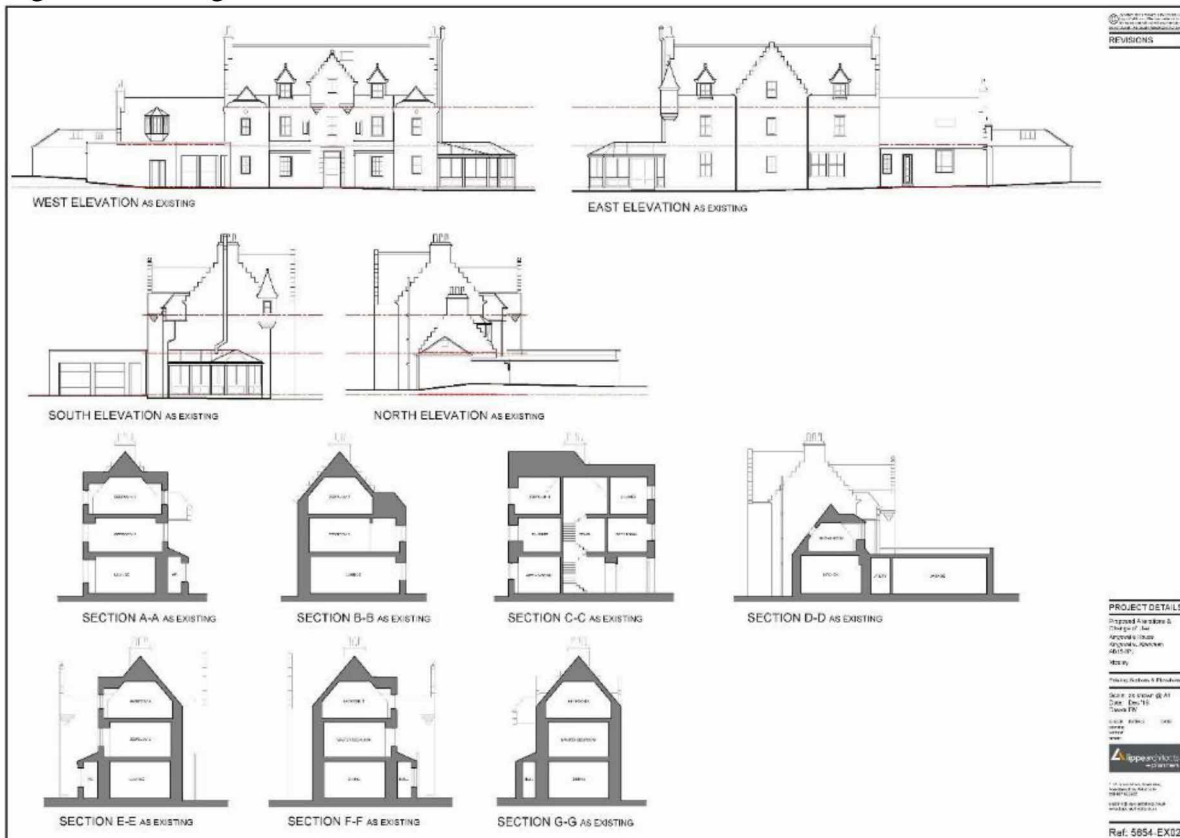


Figure 3 Existing Elevations



2. SURVEY AND SITE ASSESSMENT

2.1 Objectives

The survey aims to make an appraisal of the presence and/or absence of any species of bat and/or bird or other protected species which may be affected by the development at the proposed site. The survey specifically looked for evidence of bats and their roosts, birds and their nests, and any other protected species with a preliminary roost assessment focused on a structural survey and bat activity surveys.

2.2 Methods

2.2.1 Pre-survey data search

Web-based sources of information were examined, principally the National Biodiversity Network (NBN) Gateway (<http://data.nbn.org.uk/>) where a radius of 5km from the centre of the proposed development was searched to provide suitable coverage of the area. Nature designation classifications were obtained from NatureScot Site Link (<https://sitelink.nature.scot/home>).

Other websites searched include Bat Conservation Trust (<http://www.bats.org.uk/>). Positive records for species present in the survey area can be used to inform the assessment of biodiversity on the site but the lack of records clearly cannot be taken to imply that the species in question is absent.

2.2.2 Survey methodology

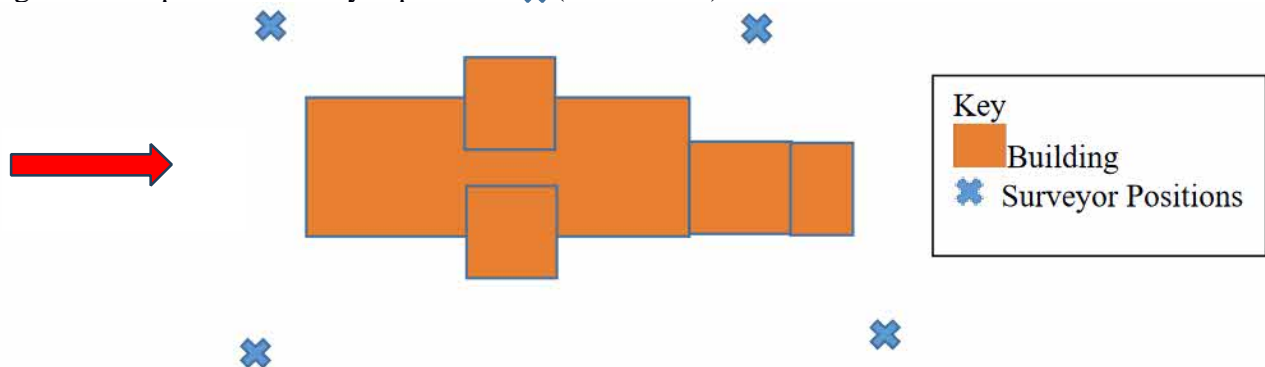
A site visit and habitat assessment were carried out after receiving information from Andrew Mosley, Property Owner. The survey was carried out incorporating an ecological appraisal, roost assessment and a hibernation survey. The property was surveyed following best practice guidelines: Good Practice Guidelines, 3rd Edition. Bat Conservation Trust (BCT), Collins, J (2016). Equipment used included a ladder, endoscope, thermal monocular, powerful torch, and binoculars.

A dusk emergence, dawn re-entrant and bat activity surveys were carried out following the format identified in the guidelines. Equipment included four Anabat Walkabout, two Anabat Express passive bat detectors and recorders, and four hand-held BatBox Duet detectors. Data was analysed using analook software. Two XA60 Canon camcorder with infra-red capability and supplementary IRLamp 7 floodlighting systems were set-up on sight together with two Hik Micro Lynx thermal monoculars which have photographic and recording functions.

2.2.3 Survey area

All elevations of the property.

Figure 4 Site plan and surveyor positions ✕ (not to scale)



2.2.4 Timings, types, and weather conditions of Field Surveys

28/08/2023 Bat roost assessment, hibernation survey, building survey – Temperature 14 degrees Celsius; wind speed 5mph; cloud cover 100%; no precipitation; good visibility.

28/08/2023 Emergence (Dusk)/ Activity Survey – Sunset 20.15 - Time 19.55 – 21.55; temperature 14 degrees Celsius; wind speed 5mph; cloud cover 100%; no precipitation; good visibility.

13/09/2023 Re-entrant (Dawn)/ Activity Survey – Sunrise 06.34 - Time 04.50 – 06.50; temp 7 degrees Celsius; wind speed 2mph; cloud cover 0%; no precipitation; good visibility.

2.2.5 Limitations

Survey data is accurate on the dates the surveys took place.

2.2.6 Personnel

Emma O'Shea, Ecological Consultant, Tay Ecology, Bat Licence Number 200952. Emma has worked in the environmental sector for nineteen years, during which time she has gained a wealth of experience and expertise. During the last nine years she has worked as an ecological consultant for Tay Ecology with lead responsibility for development projects requiring protected mammal species surveys and species licensing. Emma has been surveying for bats since 2004 and she trained for her bat licence under Neil Middleton, Echoes Ecology on the Bat Skills Development Programme. Emma has a Nature Scot bat survey licence with hibernacula, and a low impact bat licence. Emma has a Postgraduate Diploma in Environmental Management from the Open University and is a member of the Chartered Institute for Ecology and Environmental Management, and the Institute of Environmental Management and Assessment.

Gary Flynn, Ecologist/Bat Surveyor, Tay Ecology

Gary first volunteered as a bat surveyor with the National Trust for Scotland in 2006. He has worked in wildlife management and conservation in Aberdeenshire and Tayside for over 20 years and trained with Tay Ecology during the 2019 season and has subsequently undertaken bat and protected species surveys across a wide variety of sites across Scotland.

Rosemary O'Shea, Bat Surveyor, Tay Ecology

Rosemary has been surveying bats since 2004 and has a wide range of experience, she has surveyed a wide range of buildings from castles in the North-east of Scotland to farm steadings in West Perthshire. Rosemary has attended several Bat Conservation Trust training courses and is passionate about conserving natural environment.

Ross Flynn, Bat Surveyor, Tay Ecology

Archie has a background in environmental education and has worked in land management in Scotland since 2019. Ross trained with Tay Ecology for bat surveys during the 2020 season, he attended a BCT training course in 2021 and has experience of surveying a range of building types and ages.

Archie Flynn, Bat Surveyor, Tay Ecology

Archie has a background in environmental education and has worked in land management in Scotland since 2017. Archie trained with Tay Ecology for bat surveys during 2020, he attended a BCT training course in 2021 and has experience of surveying a range of building types and ages.

3. LEGISLATION AND POLICY GUIDANCE

Bats: All bats and their roosts are legally protected in Scotland by the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) - "the Habitats Regulations". A bat roost is any structure or place which a bat or group of bats use for shelter or protection, because bats return to the same places every year, a bat roost is protected even if there are no bats there.

It is an offence to deliberately or recklessly: capture, injure or kill a wild bat; harass a wild bat or group of bats; disturb a wild bat in a roost (any structure or place it uses for shelter or protection); disturb a wild bat while it is rearing or otherwise caring for its young (this would be a 'maternity' roost); obstruct access to a bat roost or to otherwise deny the animal use of the roost; disturb such a wild bat in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of that species; disturb a wild bat in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or care for its young.

It is also an offence to damage or destroy a breeding site or resting place of such an animal (note: this does not need to be deliberate or reckless to constitute an offence); keep, transport, sell or exchange or offer for sale or exchange any wild bat or any part or derivative of one.

4. BAT ECOLOGY

In this part of Scotland there are 5 species of bat generally found: Common Pipistrelle *Pipistrellus pipistrellus*; Soprano Pipistrelle *Pipistrellus pygmaeus*; Brown Long-eared *Plecotus auritus*; Daubenton's *Myotis daubentonii*; and Natterer's *Myotis nattereri*. The 2 species of pipistrelle use man-made structures to roost and can be found in both a rural and urban setting. Brown long-eared bats often roost in old buildings with large attics, preferring buildings associated with mature woodland in which they can forage. Daubenton's bats roost close to still or running bodies of water, either in trees or structures such as bridges. Natterer's bats have a similar habitat to brown long-eared bats but are less common.

Female bats roost together in a colony from May until the autumn. Bats usually have one baby in June which is reliant on its mother for 2 months and will remain in the roost whilst the mother feeds. In the autumn, the colony will move from their warm summer roost, often in buildings, to a cooler winter roost which may be in trees, unheated buildings with thick stone walls, caves, and similar places. In their winter roost they become torpid as the weather cools, and they hibernate. Male bats live in smaller groups or individually in cooler roosts such as steadings or tree holes but can be found in maternity colonies in the early autumn when mating takes place. Whilst bats are hibernating, they are particularly vulnerable to disturbance. Each time they wake it uses up their energy stores and with repeated disturbance the result can be their death.

5. RESULTS

5.1 Pre-survey data search

NatureScot Sitelink indicated that there are no national or international nature designations within 2km.

Local Nature Conservations Sites within 5km include Bucksburn, Denwood – Hazlehead, Den of Moss-side, Hazlehead Park, River Don corridor, Rubislaw, Three Hills and Den of Maidencraig which is also a Local Nature Reserve (Aberdeen City Council, 2013).

National Biodiversity Network confirmed presence Common pipistrelle *Pipistrelle pipistrellus*, Soprano pipistrelle *Pipistrellus pygmaeus*, Nathusius’s pipistrelle *Pipistrellus nathusii*, Daubenton’s bat *Myotis daubentonii*, Natterer’s bat *Myotis nattereri*, and Brown Long-eared bat *Plecotus auritus* within 5km of the proposed location. Brown Long-eared bat, Common and Soprano pipistrelle have been recorded within 2km.

5.2 Field surveys

5.2.1 Description of Habitats of potential value to bats

The property is set within 8 acres of grounds, this includes mature deciduous and coniferous trees, gardens and parkland which are of value to local wildlife. In the wider area the local nature conservation sites identified in 5.1 will be of value to local wildlife.

5.2.2 Bat Surveys

5.2.2.1 Roost assessment of structures

North and west elevations



West elevation



South and east elevations



East elevation



Table 5.1 Description of potential roost features

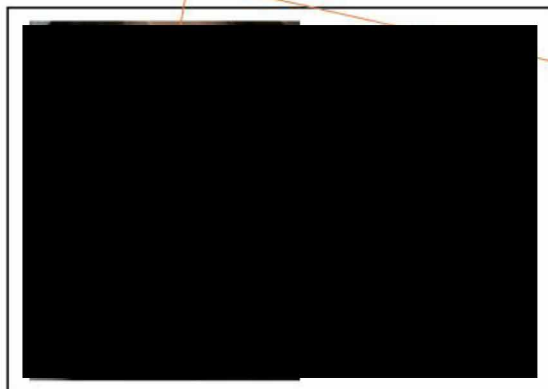
Structure	Descriptions of potential roost features	Evidence of bats	Areas not surveyed/why
Kingswells House	Gaps at the wall head, gaps under and between slates, gaps under roof ridge and under roof flashing, gaps around chimneys and windows.	Small numbers of pipistrelle droppings on west elevation external wall. Small pile of pipistrelle droppings at north end of upper storey attic.	n/a

Table 5.1 shows that potential roost features suitable for bats include gaps at the wall head, gaps under and between slates, gaps under roof ridge and under roof flashing, gaps around chimneys and windows. There were small numbers of pipistrelle species droppings on the west elevation external wall and a small pile of pipistrelle droppings at north end of the upper storey attic.

Examples of potential roost locations



Evidence of bats



Description and assessment of suitability of features for foraging

The trees, grassland and walled garden are suitable for foraging.

Description and assessment of suitability of features for commuting

The treelines have suitability for commuting.

Description and assessment of suitability of features for roosting.

Table 5.2 Description, proposed works, assessment, and suitability of features for roosting, with assessment adapted from Collins (2016, pp.35, 51, 52)

Description	Assessment	Suitability	Proposed Works	Implications for Proposed Works
Kingswells House	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland, or water.	Moderate	Convert, and renovate	1 dusk, 1 dawn survey between May – Sep. with 14 days minimum interval between surveys.

Table 5.1 shows that there are potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status (Collins, 2016, p.35). The habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland, or water (Collins, 2016, p.35), and 1 survey at dusk or 1 at dawn between May-September is recommended (Collins, 2016, p.52).

5.2.2.2 Winter hibernation assessment

Table 5.3 Description of winter hibernation potential and evidence of bats

Descriptions of potential hibernation roost features	Evidence of bats found	Areas not surveyed/ why
Low potential limited to opportunistic bats in the roof.	None	n/a

Table 5.3 shows that the potential hibernation roost features are low limited to opportunistic bats in the roof.

5.2.2.3 2020 Results

05/08/2020 Emergence (Dusk)/ Activity Survey – Sunset 21.12 - Time 20.50 – 22.50

The first bat was recorded at 21.17, 5 minutes after sunset, it was a Soprano pipistrelle which emerged from Roost 1, a gap between [REDACTED] [REDACTED] 2 Soprano pipistrelles emerged from Roost 1 in total, 1 at 21.17 and 1 at 21.18.

At 21.20 1 Common pipistrelle emerged from Roost 2, underneath the [REDACTED] [REDACTED]. At 21.23 2 Common pipistrelles emerged from Roost 3, underneath the [REDACTED] [REDACTED]. At 21.29 1 Soprano pipistrelle emerged from Roost 4, a gap between the [REDACTED] [REDACTED] [REDACTED]. At 21.35 1 Soprano pipistrelle emerged from Roost 5, [REDACTED] [REDACTED] [REDACTED].

Foraging Soprano and occasional Common pipistrelles were recorded around property with the preferred areas to the west and east. Bat activity continued until the survey end. No bat emerged from any other elevation during the survey and no other species of bat was recorded.

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29/08/2020 Re-entrant (Dawn)/ Activity Survey – Sunrise 06.05 - Time 04.30 – 06.25

The first bat was recorded at 04.30, it was a Soprano pipistrelle foraging around the building. Soprano pipistrelles were recorded foraging throughout the survey with occasional Common pipistrelle calls at 04.56, 05.12, 05.25 and 05.49.

At 05.47 one Soprano pipistrelle entered Roost **1**, a gap between the [REDACTED] elevation. At 05.49 two Common pipistrelles entered Roost **3**, by the [REDACTED] elevation. At 05.51 one Soprano pipistrelle entered Roost **3**. At 05.54 two Soprano pipistrelles entered Roost **5**, a [REDACTED] elevation.

No bat re-entered any other elevation of Kingswells during the survey and no other species of bat was recorded.

Roost **1**, **2**, **4** & **5** locations on west elevation



Roost **3** east elevation



5.2.2.4 2023 Emergence, Re-entrant and Activity Surveys

28/08/2023 Emergence (Dusk)/ Activity Survey – Sunset 20.15 - Time 19.55 – 21.55

The emergence and activity survey recorded a Soprano pipistrelle from 20.39, 24 minutes after sunset. This bat emerged from Roost **2**, underneath the [REDACTED]. A second Soprano pipistrelle emerged from Roost **2** at 20.41.

At 20.42 one Soprano pipistrelle emerged from Roost **1**, a gap between [REDACTED]. At 20.42 two Common pipistrelles emerged from Roost **3**, underneath the roof ridge adjacent to the northern chimney on the east elevation.

Bat passes were occasional throughout the survey, the preferred foraging area was to the south and west of the building.

No bat emerged from any other elevation or location and no other species of bat was recorded.

Roost Locations – 3 roosts, 2 Common pipistrelles, 3 Soprano pipistrelles

13/09/2023 Re-entrant (Dawn)/ Activity Survey – Sunrise 06.34 - Time 04.50 – 06.50

The re-entrant and activity survey recorded Soprano pipistrelles from 05.08 and Common pipistrelles from 05.26. During the survey a maximum of five pipistrelles were visible foraging amongst the trees around the property.

At 05.54 one Soprano pipistrelle entered Roost 4, a [REDACTED]. A second Soprano pipistrelle entered Roost 5 at 05.55.

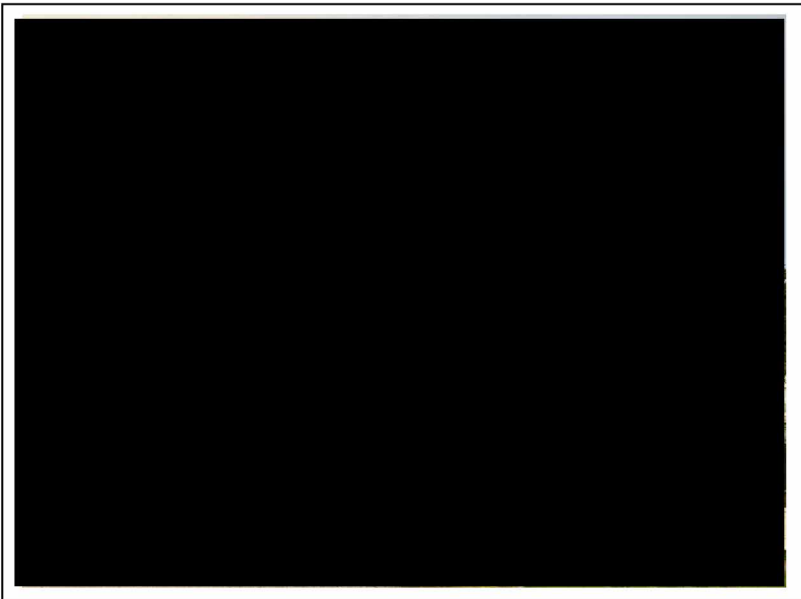
At 05.56 one Soprano pipistrelle entered Roost 5, a gap between [REDACTED] elevation.

At 05.57 two Common pipistrelles entered from Roost 3, underneath [REDACTED]

No bat re-entered any other elevation or location and no other species of bat was recorded.

Roost Locations – 3 roosts, 2 Common pipistrelle, 3 Soprano pipistrelles

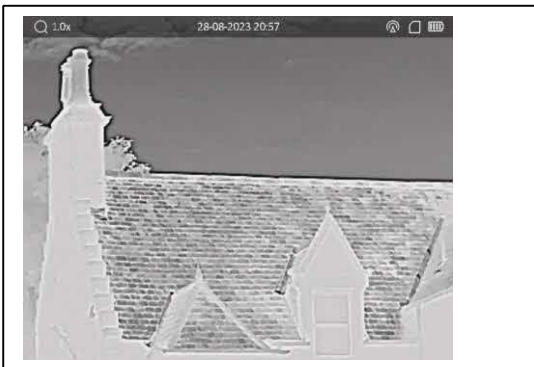
Roost 1, 2, 4 and 5 west elevation



Roost 3 west elevation



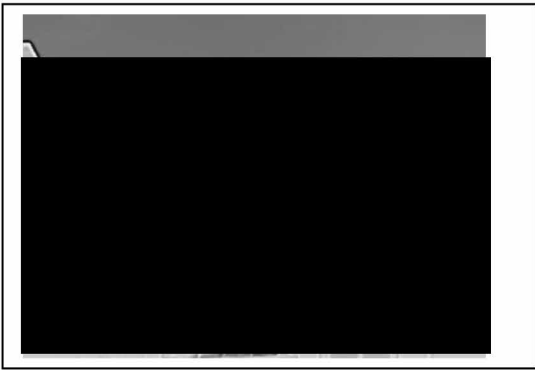
Thermal imaging view west elevation



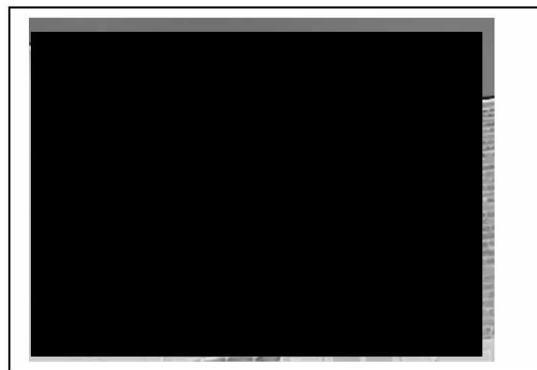
Thermal imaging view east elevation



Soprano pipistrelle approaching Roost 4 at dawn



Soprano pipistrelle entering Roost 4 at dawn



6. ASSESSMENT

6.1 Constraints on survey information

The survey data is accurate on the dates that it was recorded.

6.2 Discussion

Bat surveys were undertaken at Kingswells House in 2020 where five non-breeding roosts, containing four Soprano pipistrelles and three Common pipistrelles were confirmed. A bat survey update was requested in 2023. A preliminary bat roost assessment to assess the likelihood of bats roosting at the property prior to renovation, demonstrated a moderate potential for the presence of bat roosts. There were small numbers of individual pipistrelle species bat droppings internally and on external walls, and potential roost locations were identified including [REDACTED] under the [REDACTED]. The survey took place in favourable conditions with all areas accessible. The hibernation assessment demonstrated a low potential for hibernating bats.

Bats are a protected species, and it is an offence to intentionally, or recklessly, disturb a bat in a shelter or resting place; or to damage or destroy a breeding or resting site. All bats and their roosts are legally protected because bats return to the same places every year, a bat roost is protected even if there are no bats there. The proposed work would impact on any bat roosting there, therefore, following the Bat Conservation Guidelines, one emergent (dusk) and one re-entrant (dawn) survey between May to September was recommended. No further hibernation surveys are required.

Emergent dusk and re-entrant dawn surveys were carried out in August and September 2023. On the dusk and dawn survey two Common and three Soprano pipistrelles were recorded emerging from three roost locations on the west and east elevations. A total of five roost locations were in use across the two surveys which were the same as those used in 2020. Common and Soprano pipistrelles were recorded foraging around the property. The number of bats and pattern of use of the roosts indicate that the roosts are non-breeding roosts. The activity surveys took place in favourable conditions and results are accurate as to the species, numbers, and locations of bats in the area.

A bat licence is required before work commences, to permit the disturbance and/or destruction of the roosts with appropriate mitigation and compensation methods in place. This site can be licensed on a Bat Low Impact Licence for non-breeding pipistrelle roosts. No further surveys are required this time, and bat surveys are valid for twenty-four months when licensing under a low impact licence. As bats are mobile creatures there is always the possibility that a bat could be found at a different location once renovation commences, in this eventuality appropriate action should be taken. There are no timing restrictions for working at sites with non-breeding roosts and low winter hibernation potential, though for work commencing during the winter months (November to March inclusive) it is recommended that extra care should be taken in case hibernating bats are found.

6.3 Potential impacts of development

The proposed work is not expected to have a long-term detrimental impact on the bat population provided that the bat roosts are retained in situ or compensated for with replacement roosts. Installing bat boxes on easterly through to westerly elevations will provide alternative roosting opportunities for bats. During works three woodcrete bat boxes should be placed on nearby trees; and a combination of bat slates, external wall and/or integrated bat boxes are recommended to be included as part of works to provide new or replacement roosts where existing roosts are lost.

6.4 Licensing

Activities that may result in offences taking place can in some instances be permitted, for example roofing repairs to a house which has a bat roost. However, a strict process of licensing must be observed and followed for this to be lawful. In this case a licence from NatureScot will be required before any work can commence, and any condition imposed must be met. There is no guarantee that such a licence will be granted.

Three tests from the Conservation Regulations must be satisfied before NatureScot can grant a licence:

1. the licence relates to one of the specified purposes, including preserving public health or public safety or other imperative reasons of overriding public interest; preventing the spread of disease; preventing serious damage to the property. Supporting evidence for any assertions about the significance of the project, such as its social or economic importance will be required by the licensing authority.
2. there is no satisfactory alternative to carrying out work which will affect bats or their roosts.
3. the work will not adversely affect the local bat population.

An application for a licence will fail if these 3 tests are not met.

7. NESTING BIRDS

There was evidence of birds nesting including house sparrows. All wild birds and their nests, eggs and dependent young are legally protected, and it is an offence to disturb a wild bird when it is nesting. All nesting birds receive legal protection therefore, work would not be able to start in any area when nesting birds are present. Where work is scheduled to take place during the breeding bird season, which is defined as April to August inclusive, then a breeding bird check must be carried out prior to works commencing by a suitably experienced ecologist. In the event, that the pre-works survey discovers any nesting birds, or that after work has begun an active nest site is identified the nest site should be protected. An appropriate buffer zone depending on the species concerned should be maintained and works suspended in that area until the nest is no longer active. It is recommended that house sparrow nest boxes should be provided as part of works.

8. OTHER PROTECTED SPECIES

No evidence of any other protected species was identified during the survey.

9. RECOMMENDATIONS and MITIGATION

Mitigation licences: a bat licence from NatureScot will be required before work can commence. Non-breeding pipistrelle bat roosts are confirmed can be licensed under a Bat Low Impact Licence. Bat surveys are valid for a period of 24 months for non-breeding roosts, after which a survey update is required. A bat licence will be applied for on the grounds for an imperative (urgent) reason of overriding (long-term) public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment. This must include roost compensation. There are no timing restrictions for working at sites with non-breeding roosts and low winter hibernation potential, though for work commencing during the winter months (November to March inclusive) it is recommended that extra care should be taken in case hibernating bats are found.

Table 9.1 Impact timescale and mitigation/compensation measures

Impact Timescale	Mitigation/compensation measures
Short term impact	<ul style="list-style-type: none"> • Within 100m of the site the erection of 3 suitable bat boxes (e.g., Schwelger 2F or Schwelger 1FD woodstone bat boxes suitable for pipistrelles) in adjacent trees before work commences, to relocate any bats be found during work. • If small numbers of bats (five or less) are found during the survey or at any time during works they must be removed and placed in a purpose-built bat box. If more than 5 bats are found at a single location work must cease and NatureScot should be contacted. • Contractors to be briefed about the likelihood of bats being found on site, and on what to do if a bat is found. • Roofing materials to be removed carefully by hand within five metres of a known bat roost or other potentially suitable roosting location (e.g., loose flashing). A licensed bat worker present on site at the start of works, until the bat worker is satisfied that bats are unlikely to be present.
Medium term impact	<ul style="list-style-type: none"> • Roosts to be retained in situ or replaced with a combination of tree bat boxes, integrated bat boxes, bat slates and/or external wall bat boxes. • Retain bat boxes in trees or structures.
Long-term impact	<ul style="list-style-type: none"> • If the above is followed there will not be a long-lasting negative impact on the bat population and no further mitigation measures will be required.

9.1 Bat Species Protection Plan Summary

1. A NatureScot bat mitigation licence will be required before work can commence; this can be a Bat Low Impact Licence for non-breeding pipistrelle roosts.
2. A full species protection plan is required as part of the licence application.
3. Within 100m of the site the erection of three suitable bat boxes, such as Schwelger 1FD Woodstone bat boxes, in nearby trees before work commences, so that should any bats be found during work they can be safely relocated.
4. Contractors should be made aware of the potential for the presence of bats and what to do in the event a bat is found. Work where it directly impacts bat roosts should not commence in the winter months unless the roosts have been excluded in the autumn.
5. Work carried out carefully and by hand within five metres of a known bat roost. A licensed bat worker present on site at the start of works, to undertake a pre-works survey, and to supervise the roost destruction. The bat worker will remain on site until satisfied that bats are not present in the building.
6. Original roosts to be retained in situ or replaced as part of works to include a combination of bat slates and/or integrated or external wall bat boxes.
7. External lighting must not shine on bat roost locations or be permanently directed towards the preferred foraging habitat.
8. Where bat slates are the preferred compensation Bitumen Felt or an approved Bat Safe Membrane must be installed on the roof such as TLX Insulation. Standard BRM act as bat traps killing bats as the fibres unwind over time.

9.1.1 Bitumen Vs. Breathable Roofing Membrane (BRM)

Where bats are present internal roof spaces must be insulated with bitumen lining rather than breathable membranes* which should not be used. BRMs are made from tiny filaments which bats hang onto, however, over time, the long fibres start to unwind causing entanglement and entrapment of the bats. Consequently, it is essential to use bitumen 1F felt inside bat lofts rather than BRM to avoid creating a bat trap. A combination of breathable membrane and bitumen felt in different areas of a loft is not advisable, as it is difficult to completely isolate the areas with BRM from the parts with bitumen felt.

* In September 2022 one Bat Safe Membrane which was approved for use by Nature Scot and the Bat Conservation Trust. This is TLX Bat Safe Membrane and this can be used in areas where bats are present.

9.2 Bird Species Protection Plan Summary

1. For work commencing between April to August inclusive, a breeding bird check is required.
2. Where any active nests are identified these must be suitably protected until chicks have fledged.
3. Renovation work cannot take place where active nests are found.
4. Nest boxes for house sparrows and house martins are recommended to be provided as part of works. This includes integrated or external wall bird boxes including a house sparrow terrace.
5. Providing bird boxes for a wider range of species such as common birds would provide a range of nesting opportunities and increase biodiversity in the area.

10. REFERENCES

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

11.0 APPENDICES

11.1 Example Bat Boxes

- Provision of bat boxes by installing bat boxes on trees, woodcrete bat boxes are more durable. Three bat boxes can be placed on larger trees with boxes facing different aspects, ideally positioned three or more metres in height.
- Use bat slates or bat vents to provide access to roof space.

The Bat Access Slate provides a discreet and uninterrupted path from the roof exterior to the interior. The Bat Access Slate comprises of an external vacuum formed weathering cowl showing through a natural roofing slate, this is combined with an injection moulded underbase unit which has a factory applied non-slip surface to aid access for the bats into the roof space. The Bat Access Slate is available to suit 500mm long slates (UK Slate, 2023). Leadworx bat access vents are an alternative (Leadworx, 2023).

- Install integrated or external wall bat boxes as part of works such as Schwelger 1FR bat tube or 2FE wall mounted bat shelter.

- Example bat boxes

a. Schwelger 2F Bat Box

Specifications: Height 33 cm; diameter 16 cm; weight 4 kg; Schwegler Woodcrete; black with grey front panel (NHBS, 2023a).

b. Schwelger 1FD Bat Box

Specifications: Height 36 cm; diameter 16 cm; weight 4.8 kg; Schwegler Woodcrete; black with grey front panel (NHBS, 2023b).

c. Schwelger 1FR Bat Tube

Specifications: Height 47.5cm; width 20cm; depth 12.5cm; weight: 9.8kg; Woodcrete with integrated wooden panel (NHBS, 2023c)

d. Schwelger 2FE Wall Mounted Shelter Bat Box

Specification: Height: 30cm; Width: 25cm; Depth: 3-5cm; Weight: 2.5kg; Woodstone (NHBS, 2023d).

11.2 Example Bird Boxes

- Provide nest boxes for birds on trees, to include a range of entrance hole sizes such as 25 mm for blue and coal tits; 28 mm for great tits; 32 mm for house sparrows; 100 mm high open front for robins; 140 mm high front panel for wrens. Position of bird boxes 2-4m up trees, utilise nearby trees for shade and tilt box slightly forward.
- Install integrated or external wall bird boxes for house sparrows and house martins.

- Example bird boxes

a. Woodstone Seville Nest Box 28mm and 32mm

28mm hole nest boxes will be used by Tree Sparrows, Blue Tits, Coal Tits and Great Tits. 32mm hole nest boxes will be used by Great Tits, Pied Flycatchers, Tree Sparrows. Specifications: Hole Size: Oval, 28 or 32 mm; Width: 20.5cm; Height: 31cm; Length: 20cm; Weight: 6.6Kg (Garden Nature, 2023a).

b. Woodstone Barcelona Open Fronted Nest Box

Angle between northeast to southeast, ensuring it is not in the sun all day. Suitable Bird Type: Robin, Wren, Pied Wagtail, Spotted Flycatcher. Specifications: Width: 19 cm; Height: 24 cm; Length: 17.5 cm; Weight: 3.8 kg (Garden Nature, 2023b).

c. Schwegler 1SP Sparrow Terrace

Site 2 metres or more above ground level as either surface installation or within brick or concrete wall. Specifications: Height: 240mm; Width: 430mm; Depth: 220mm; Weight: 15kg approx. (Ark Wildlife, 2023).

d. Eco House Martin Nest Box

Artificial cup made from a moulded resin/concrete fixed to an LDPE backing plate, can be installed in groups to encourage colonies. DIMENSIONS (MM): 130 x 270 x 100; WEIGHT (KG): 0.9; SITING: positioned beneath the eaves at a minimum height of 2m. House martins prefer to nest on the east or north-facing walls but any direction may be used (Wildcare, 2023).

11.3 References for Bat and Bird Boxes

Ark Wildlife, 2023, “*Schwegler 1SP Sparrow Terrace*” [Online]. Available at <https://www.arkwildlife.co.uk/product/schwegler-1sp-sparrow-terrace-brown> (accessed 27th September 2023)

Garden Nature, 2023a, “*Woodstone Seville Nest box*” [Online]. Available at <https://gardenature.co.uk/collections/garden-bird-boxes/products/product-woodstone-seville-nest-box> (accessed 27th September 2023)

Garden Nature, 2023b, “*Woodstone Barcelona Open Fronted Nest box*” [Online]. Available at <https://gardenature.co.uk/collections/garden-bird-boxes/products/product-woodstone-barcelona-open-nest-boxes> (accessed 27th September 2023)

Leadworx, 2023, “*Bat Access Vents - Sheet Lead Flashing Supplies*” [Online]. Available at <https://www.leadworx.co.uk/shop/lead-roof-vents/bat-access-weathering> (accessed 27th September 2023)

NHBS, 2023a, “*Schwegler 2F Bat Box (General Purpose)*” [Online]. Available at <https://www.nhbs.com/2f-schwegler-bat-box-general-purpose> (accessed 27th September 2023)

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NHBS, 2023d, “*2FE Schwegler Wall-Mounted Bat Shelter*” [Online]. Available at <https://www.nhbs.com/2fe-schwegler-wall-mounted-bat-shelter> (accessed 27th September 2023)

UK Slate, 2023, “*Bat Access Slate – Natural*” [Online]. Available at <https://www.slate.uk.com/product/bat-access-slate-natural/> (accessed 27th September 2023)

Vincent Wildlife Trust, 2023, “*Fabrication and fitting of a Batslate in a Plain tile roof*” [Online]. Available at <https://www.vwt.org.uk/wp-content/uploads/2015/04/fitting-a-morris-batslate.pdf> (accessed 27th September 2023)

Wildcare, 2023, “*Eco House Martin Nest Box*” [Online]. Available at <https://www.wildcare.co.uk/10697-eco-house-martin-nest-nbc.html> (accessed 27th September 2023)