TATTON ARMS, BOAT LANE, NORTHENDEN, MANCHESTER, M22 4HR

Bat Emergence surveys



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Bat Emergence Surveys

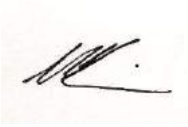
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Important Information to Readers

This report has been prepared for Mr Dan Arya of Urbanize Homes Ltd, 28 - 32 Greenwood Street, Altrincham, Cheshire WA14 1RZ in accordance with the terms and conditions of appointment for Emergence surveys. AMC Ecological cannot accept any responsibility for the use of or reliance on the content of this report by any third party.

The advice contained in this report is based on the information available and/or collected during the period of study. We cannot eliminate the possibility of important ecological features being found through further investigation and/or by survey at various times of the year or in different years.

Surveys and assessments are undertaken on the understanding that nothing in our reports will be omitted, amended, or misrepresented by the client or any other interested party.

This report and its contents remain the property of AMC Ecological until payment has been made in full.

1 Summary

AMC Ecological Limited was commissioned by Mr Dan Arya of Urbanize Homes Ltd to undertake a series of recommended Emergence bat surveys at the Tatton Arms, Boat Lane, Northenden, Manchester M22 4HR.

Previous survey work includes a Preliminary Ecological Appraisal (PEA) by Urban Green in 2019, emergence/re-entry surveys by ADK Environmental Limited in 2019 and a Bat Method Statement by Urban Green in 2022, the latter including an updated PEA for Bats. The Bat Method Statement made various recommendations including updating the emergence/re-entry survey effort.

In response and as instructed AMC Ecological Limited undertook two dusk emergence surveys. They were undertaken by four suitably experienced surveyors positioned to cover every aspect of the structure. The emergence surveys were undertaken on the 27th of August and 26th of September 2023.

Surveys were undertaken with reference to Collins 2016. Detectors used included all surveyors equipped with Wildlife Acoustics Echo Meter Touch 2 Pro for both surveys. A Titley Scientific Anabat Express was also used to record activity during the survey dated 26th September 2023. A Night Vision Aid was also used during the survey undertaken on the 26th of September 2023.

The predominant bat species observed and recorded was common pipistrelle *Pipistrellus pipistrellus*. However, soprano pipistrelle *Pipistrellus pygmaeus* and noctule *Nyctalus noctula* were also recorded and several observations of soprano pipistrelle noted. There was also a possible recordings of a brown long-eared *Plecotus auritus* during both surveys.

Common and soprano pipistrelle were observed foraging over and around the structure, occasionally repeatedly. One potential emergence was noted on the 26th of September 2023, however the surveyor commented that it was inconclusive.

Based on the 2023 emergence surveys and results, previous surveys and reports, the current state of the structure, the moderate bat activity encountered and the observations and recordings of 'common' bat species recommendations were made. These included but are not limited to, further appraisal of the structure prior to works commencing and the removal of potential bat roosting features in a controlled manner under the supervision of a licenced bat ecologist – see **Section 5** for further details.

With the 2023 emergence survey work and results, alongside a review of previous work undertaken by Urban Green and ADK Environmental Limited it is considered that recommendations are proportionate and should result in bat species remaining unharmed and their local distribution and abundance unaffected.

2 Introduction

2.1 Instruction

AMC Ecological Limited was commissioned by Mr Dan Arya of Urbanize Homes Ltd to undertake a series of recommended Emergence bat surveys at the Tatton Arms, Boat Lane, Northenden, Manchester M22 4HR (Central Grid reference: SJ83262 90205; What3Words: grain.wood.asset.); hereafter referred to as 'the site'.

British bat species are protected under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats & Species (Amendment) (EU Exit) Regulations 2019 (as amended). This makes it an offence to kill or injure bats or damage or destroy a place of shelter or protection. Deliberate or reckless disturbance of bats which could affect the ability to survive, breed, rear or nurture their young may also result in an offence.

2.2 Previous Surveys (Overview)

A PEA was undertaken by Urban Green in 2019 the details of which remained valid for a period of 18 months until the 4th of February 2021. The PEA identified the main habitats on site as a single structure, hardstanding, modified neutral grassland, dense scrub and an area of broadleaved woodland.

ADK Environmental Management Limited undertook a PEA for bats (external only) and emergence/re-entry surveys on the structure in 2019. ADK Environmental Management Limited judged the structure to provide a *moderate to high roosting potential* and further survey work was recommended.

In reference to Collins 2016 ADK Environmental Management Limited completed three separate bat surveys. However, it is understood the surveys were undertaken a week apart rather than the recommended (Collins 2016) two weeks. The surveys comprised two experienced bat surveyors patrolling the front and side elevations of the structure, noting any instances of echolocation.

Both surveyors recorded common pipistrelle activity. However, it was reported that it was not possible to observe bats emerging or re-entering the structure. The report concluded that the surveys were inconclusive regarding the presence/absence of bats in relation to the structure.

An updated PEA for bats undertaken by Urban Green in December 2022 comprised a methodical appraisal of the structure both externally and internally judging it to have *moderate potential* to support roosting bats. Urban Green summarised that due to the length of time that had elapsed since the ADK Environmental Limited surveys were undertaken (2019), updated nocturnal bat surveys are required.

As the structure was appraised as providing *moderate potential* to support roosting bats Urban Green recommended a minimum of two separate survey visits including one dusk emergence and a dawn re-entry survey.

Trees

AMC Ecological Limited was not requested to undertake a re-appraisal of the trees within the red-line boundary.

The PEA undertaken by Urban Green in 2019 identified 16No. trees with potential roosting features.

T64 and T78 were considered to have *moderate potential* roosting features. It is understood that T64 also has a bat box installed.

T2, T3, T45, T47, T49, T52, T53, T57, T59, T60, T62, T65, T74 and T75 were all assessed a providing *low potential* for roosting bats.

T13 has a bat box installed with no PRFs being identified.

Urban Green considered the assessment of trees as noted in the 2019 PEA as still valid after the updated PEA for bats was completed in 2022.

2.3 Proposals

It is understood proposals include the partial demolition/modification of the existing structure to create 28No. new residential dwellings with associated parking and landscaping.

2.4 Objectives

The objectives of the surveys are to investigate signs of bat presence/absence and provide recommendations for any further surveys, mitigation, and enhancement where necessary. This report provides known baseline ecological information with regards to bat species that will be submitted to inform the planning decision for this project. It includes the results of presence/absence surveys to watch, listen for and record bats emerging from potential roosting features and overall general bat activity.

2.5 Surveyors

Surveyors present on the 27th of August 2023 included Vanessa Singh BSc Hons, Rob Bithell, Fiona Bithell and Alistair Orton. Surveyors present on the 26th of September included Donald Kernott BSc Hons MCIEEM, Vanessa Singh BSc Hons, Graham Connolly and Geoff Hawkins.

Mr Kernott is a Level 2 Bat Licenced Ecologist (Licence No. 2015-16995) with a suitable level of experience in surveying for bats and the associated features that support them. Other surveyors are understood to have over five years' experience specifically in the field of bats, undertaking many surveys for AMC Ecological Limited

2.6 Site Context & Biological Data

The site is located in Northenden, Wythenshawe in south Manchester approximately 7.5 km from the city centre – see **Figure 1**. The property has a small block of broadleaved woodland adjacent to the south-east with residential properties present south and west of the site. The River Mersey forms a boundary to the north of the site. A caravan park is present to the east of the site. Green areas of land are present to the north of the site mainly consisting of golf courses opposite to the River Mersey. Wythenshawe Park and Gardens is approximately 1km west of the site beyond the M56. The site is also close to the A5103 Princess Parkway and M60 which are approximately 900m west and 150m east respectively.

MAGIC identified two statutory Local Nature Reserves (LNRs) and three non-statutory Sites of Biological Interest (SBIs) within 1km of the site;

- Rosehill Woods SBI approximately 650m south-east
- Stenner Woods & Millgate Field LNR approximately 660m south-east
- Wrengate Wood SBI approximately 820m north-east
- Loonts Lake SBI approximately 860m south-east
- Wythenshawe Park LNR approximately 1km west

Biological Records associated with the Urban Green 2019 PEA returned two records of bat roosts within 1km of the site boundary. Records are associated with an unidentified pipistrelle species *Pipistrellus* sp. and a further unidentified species. Both records are understood to be from 2011 and associated with Ashfield Lodge, approximately 850m north-east of the site. Both records comprise of adult mixed roosts under the tile cladding of the property.

Thirty other records of bat species were returned within 1km of the site boundary. Species included common pipistrelle, soprano pipistrelle, noctule and an unidentified bat species. All bats were associated with either commuting and foraging or were dead or released individuals.

A MAGIC Map search by Urban Green in December 2022 identified 19 European Protected Species Licence (EPSL) applications within 5km of the site boundary – see **Appendix A** for further detail.



Figure 1: Site location plan with indicative red line boundary.

3 Methodology

3.1 Emergence surveys

AMC Ecological Limited undertook two dusk emergence surveys. They were undertaken by four suitably experienced surveyors positioned to cover every aspect of the structure. The emergence surveys were undertaken on the 27th of August 2023 and 26th of September 2023. Each position of the surveyors is indicated by the red dot on **Figure 2**.

Surveys were undertaken with reference to Collins 2016. Detectors used included all surveyors equipped with Wildlife Acoustics Echo Meter Touch 2 Pro for both surveys. A Titley Scientific Anabat Express was also used to record activity during the survey dated 26th September 2023.

A Night Vision Aid (NVA) was used during the survey undertaken on the 26th of September 2023. This comprised a static SONY HD AVCHD Handycam camera supported by one IR Illuminator S1120B lighting unit. A snapshot of the camera view can be seen in **Figure 3** below. The snapshot was taken at approximately 35 minutes (19:19hrs) after the survey commenced (18:44hrs).



Figure 2: red dots showing the location of surveyors during the emergence surveys undertaken on 27th of August and 26th September 2023. Blue dot indicates the location of the Night Vision Aid used to support the survey on the 26th of September 2023.



Figure 3: snapshot of Night Vision Aid camera showing area to rear of structure that the camera was focussed on during emergence survey dated 26th of September 2023.

3.2 Limitations

Ecological surveys are limited by factors that affect species presence such as time of year, weather, migration patterns and behaviour or access to the survey site.

The surveys were undertaken towards the end of the recognised survey season. However, temperatures at the start of the surveys were 15°C and 16°C respectively and held up well to the end of the surveys. Bat activity on site also supported the judgement to undertake the surveys – see **Appendix B**.

There were limitations to the surveys due to the extent of potential roost features and the location of some of these features. The client disclosed to AMC Ecological Limited that in discussion with one of the previous companies instructed, they advised four surveyors would be adequate to undertake these bat surveys on the structure. AMC Ecological Limited were not instructed to undertake any preliminary overview of the structure or associated grounds but were specifically directed by the client to limit the number of surveyors to four.

Vegetation to the rear of the structure obscured some of the facades in particular the south-west corner, however, the majority of the structure could be observed from surveyor locations.

Urban Green (2022) recommended a minimum of two separate survey visits including one dusk emergence and a dawn re-entry survey. Two dusk emergence surveys were undertaken only. This is line with the 4th Edition Bat Conservation Trust (BCT) Good Practice Guidelines (Collins 2023) which was published in September 2023 and therefore the two dusk emergence surveys were considered appropriate.

Collins 2016 does not require the use of NVA equipment and therefore it was not used during the survey dated 27th of August 2023. However, NVA was used during the survey dated 26th of September 2023 as Collins 2023 indicates it is a requirement for bat survey work. Illumination of the structure towards the end of the survey, although visible on camera recordings, indicates that

additional IR lighting should be used during future surveys. In addition the camera stopped recording at 20:12 due to low battery power, survey due to finish at 20:28, however the key bat emergence period was captured.

4 Results and Evaluation

The results of the bat surveys can be found at **Appendix B**.

Weather conditions during both surveys were optimal with light winds and stable temperatures of 15°C and 16°C, respectively.

Over the two surveys the predominant bat species observed and recorded was common pipistrelle. However, soprano pipistrelle and noctule were also recorded and several observations of soprano pipistrelle noted. There were also possible recordings of brown long-eared bats during both surveys.

Common and soprano pipistrelle were observed foraging over and around the structure, occasionally repeatedly. One potential emergence was noted on the 26th of September 2023, however the surveyor commented that it was inconclusive.

The NVA recordings were reviewed back at the office but no bat emergence activity was recorded.

Nevertheless, despite the moderate bat activity observed during the surveys, it is recognised that a suite of emergence surveys may only provide a 'snapshot' with respect to actual bat activity in relation to the structure.

Further, as noted in this report and previous survey work, the structure is in a significant state of disrepair (ADK 2019; Urban Green 2022). Potential Roosting Features (PRFs) include slipped and missing tiles, damaged/weathered cladding, gaps between boarding and window frames, gaps under bargeboards and timber framing plus gaps between damaged brickwork. PRFs in most instances are visible but others may not be, irrespective of the number of surveyors deployed or survey applications used.

Urban Green (2022) do not appear to have found any evidence of roosting bats within the structure when updating the PEA for bats. It was also noted that temperatures are likely to fluctuate within the structure. Therefore, it is considered unlikely that the structure is used as a maternity of hibernation roost.

5 Recommendations

Based on the 2023 emergence surveys and results, previous surveys and reports, the current state of the structure, the moderate bat activity encountered and the observations and recordings of 'common' bat species, recommendations are as follows;

- Prior to partial demolition works commencing 2No. 2F Schwegler Bat Boxes be installed on mature trees within vegetation to the south-east of the site. Bat boxes shall be installed a minimum 4m height on a south-west facing aspect.
- Prior to partial demolition commencing on site a licenced bat ecologist will undertake a visual assessment of the structure, internally (where safe to do so) and externally to appraise the current status of the structure to support roosting bats. If bats or evidence of bats are encountered, further investigation will be undertaken and where needed a EPSL application may be required.
- Prior to works commencing, all site operatives will be briefed via a 'toolbox talk' by the licenced bat ecologist.
- Partial demolition of the structure will be undertaken outside of the summer period (November to March, inclusive) and that PRFs such as slipped and missing tiles, damaged/weathered cladding, gaps between boarding and window frames, gaps under bargeboards and timber framing plus gaps between damaged brickwork be removed in a controlled manner by hand/hand tools under the supervision of a suitably qualified ecologist.
- Once the aforementioned PRFs or other PRFs identified by the licenced bat ecologist have been removed, works can proceed in the absence of a licenced bat ecologist. During any unsupervised partial demolition/modification works, should any bats be encountered then all works will cease immediately, and a suitably qualified bat ecologist contacted.
- Construction Lighting – Urban Green (2022) commented that construction lighting follows protocols outlined in the Institution of Lighting Professionals (ILP) '*Guidance for the Reduction of Obtrusive Lighting*' (2021). Additional guidance from the BCT (2018) document '*Bats and Artificial Lighting in the UK*' is also cited and has been recently updated in 2023. Essentially, construction lighting is not to be directed towards retained and surrounding habitats including; scattered trees, woodland and the River Mersey.
- Post Construction Lighting – Urban Green (2022) stated that a lighting strategy will need to be produced to assess the pre and potential post development changes in lighting. It is recommended that the licenced bat ecologist is consulted during the design process to advise on an appropriate lighting specification.
- It is not anticipated that the modified roof space will provide integrated bat roost provision. However, should this change then the roof must be lined with Type 1F Bituminous felt. Breathable or Modern Roofing Membranes must not be used.

Trees

T64 and T78 have been classified (Urban Green 2019) as having a *moderate potential* for roosting bats. It is understood both will be retained as part of the current proposals. However, should removal be required then Urban Green (2022) advise the trees must be subjected to an aerial inspection by a Class 2 licenced bat ecologist.

Trees T13 and T64 are understood to have bat boxes installed. Both trees are scheduled to be retained as part of the current proposals. Should the trees later require removal Urban Green (2022)

recommended bat boxes shall be inspected by a Class 2 licenced bat ecologist to check for the presence of bats and then relocated between October and April.

Urban Green (2022) advise trees with a low potential for roosting bats and scheduled for removal shall either (where required) be inspected with an endoscope by a Class 2 licenced bat ecologist or soft felled under appropriate ecological supervision.

Based on the 2023 emergence survey work and a review of previous work undertaken by Urban Green and ADK Environmental Limited it is considered that recommendations are proportionate and should result in bat species remaining unharmed and their local distribution and abundance unaffected.

6 Potential Enhancements

Loss of potential roosting features should be considered when redeveloping the site. This should include the installation of bat bricks or the modification of ridge tiles – see **Appendix C**.

7 References

Bat Conservation Trust. (20230. *Guidance Note GN08/23 Bats and Artificial Lighting at Night*.

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

Collins, J. (ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edn). The Bat Conservation Trust, London.

Institute of Lighting Professionals. (2021). *Guidance Note GN01/21 The Reduction of Obtrusive Light*.

MAGIC Magic Map Application (defra.gov.uk) – accessed 23/11/23.

Urban Green. (2019). *Preliminary Ecological Appraisal*. UG_265_ECO_EA_01.

Urban Green. (2022) *Bat Method Statement* UG_265_ECO_BMS_01.

8 Appendix A. Magic Map Identified European Protected Species Licence Applications (December 2022).

3.1.4 Granted EPSLs within 5km

A MAGIC Map search (December 2022) detailed the presence of 19 granted European Protected Species Licences (EPSLs) within 5km of the site. More information regarding the individual licences can be found in Table 2.

Table 2. Granted EPSLs within 5km of the site.

Reference	Distance	Species	Details
EPSM2010-2098	830m north-east	Common pipistrelle	Allowed for the destruction of a resting place between 2010 and 2012.
EPSF2011-2990	1.55km north-east	Common pipistrelle and soprano pipistrelle	Allowed for the impact and destruction of a breeding a site and the destruction of a resting place between 2011 and 2013.
2020-50519-EPS-MIT	1.6km east	Common pipistrelle and brown long-eared	Allowed for the impact and destruction on a breeding site and the destruction of a resting site between 2021 and 2031.
2015-18385-EPS-BDX	1.6km north-east	Soprano pipistrelle	Allowed for the impact, damage, and destruction of a breeding site, and the destruction of a resting place in 2016.
EPSM2010-2649	1.8km north-east	Common pipistrelle and soprano pipistrelle	Allowed for the destruction of a resting place in 2011 and 2014.
2015-13055-EPS-MIT	2.2km north	Common pipistrelle	Allowed for the destruction of a resting place between 2015 and 2020.
2015-13055-EPS-MIT-1	2.2km north	Common pipistrelle	Allowed for the destruction of a resting place between 2015 and 2020.
2018-38076-EPS-MIT	2.7km north-east	Common pipistrelle	Allowed for the destruction of a resting place between 2018 and 2019.
2019-39813-EPS-MIT	2.7km south-east	Daubenton's bat	Allowed for the destruction of a resting place between 2019 and 2024.
2019-39813-EPS-MIT-1	2.7km south-east	Daubenton's bat	Allowed for the destruction of a resting place between 2019 and 2024.
2017-30722-EPS-MIT	270m north	Common pipistrelle and soprano pipistrelle	Allowed for the destruction of a resting place between 2017 and 2022.
2016-25864-EPS-BDX	3.3km south-east	Common pipistrelle and soprano pipistrelle	Allowed for the impact, damage, and destruction of a breeding site, and the destruction of a resting place in 2016.
EPSM2011-2983	3.6km west	Common pipistrelle	Allowed for the destruction of a resting place between 2011 and 2013.
2015-15443-EPS-MIT-1	3.9km north-west	Brown long-eared	Allowed for the destruction of a resting place between 2015 and 2020

2015-15443-EPS-MIT	3.9km north-west	Brown long-eared	Allowed for the destruction of a resting place between 2015 and 2016.
2015-9463-EPS-MIT	4.7km south	Common pipistrelle, soprano pipistrelle, and whiskered bat	Allowed for the destruction of a resting place between 2015 and 2020.
2015-9463-EPS-MIT-1	4.7km south	Common pipistrelle, soprano pipistrelle, natterers bat, and whiskered bat	Allowed for the destruction of a resting place between 2015 and 2020.
2015-9463-EPS-MIT-2	4.7km south	Common pipistrelle, soprano pipistrelle, natterers bat, whiskered bat, and noctule	Allowed for the destruction of a resting place between 2015 and 2020.
2018-35287-EPS-MIT	5km north	Common pipistrelle and soprano pipistrelle	Allowed for the damage and destruction of a resting place between 2018 and 2019.

9 Appendix B. 2023 Emergence Bat Survey Results.

Project: Tatton Arms, Northenden, Manchester M22 4HR			**Date:** 27/08/23		**Sunset:** 20:11		**Start Time:** 19:56	**Finish Time:** 21:41
Temp: 15°C	**Wind Speed:** Light <5mph/0mph		**Cloud Cover:** 6/8		**SURVEYOR:** V. Singh		**SURVEYOR LOCATION:** south-west	**Bat Detectors:** EMT 2 Pro
OBSERVATIONS								
Observation No.	**Time**	**Species**	**No. of Bats**	**Seen/Not Seen**	**Activity Type**	**Direction of Flight**	**Notes**	**Sound Analysis Result**
1	20:47	soprano pipistrelle	1	not seen	unclear	not observed	first recording of bat - no further soprano recordings	N/A
2	20:58	common pipistrelle	1	not seen	unclear	not observed	numerous recordings of common pipistrelle activity	N/A
3	21:24	noctule	1	not seen	likely commuting	not observed	four recordings of noctule from this survey point	N/A
4	21:30	brown long-eard	1	not seen	unclear	not observed	only brown long-eared	N/A
Additional Notes:								

Project: Tatton Arms, Northenden, Manchester M22 4HR			**Date:** 27/08/23		**Sunset:** 20:11	**Start Time:** 19:56		**Finish Time:** 21:41
Temp: 15°C	**Wind Speed:** Light <5mph		**Cloud Cover:** 6/8		**SURVEYOR:** F.Bithell	**SURVEYOR LOCATION:** north-east		**Bat Detectors:** EMT 2 Pro
OBSERVATIONS								
Observation No.	**Time**	**Species**	**No. of Bats**	**Seen/Not Seen**	**Activity Type**	**Direction of Flight**	**Notes**	**Sound Analysis Result**
1	20:56	common pipistrelle	1	Seen	unclear	north	flew from north face of structure - unclear if emerging	N/A
Additional Notes:								

Project: Tatton Arms, Northenden, Manchester M22 4HR			**Date:** 27/08/23		**Sunset:** 20:11		**Start Time:** 19:56	**Finish Time:** 21:41
Temp: 15°C	**Wind Speed:** Light <5mph		**Cloud Cover:** 6/8		**SURVEYOR:** R. Bithell		**SURVEYOR LOCATION:** north-west	**Bat Detectors:** EMT 2 Pro
OBSERVATIONS								
Observation No.	**Time**	**Species**	**No. of Bats**	**Seen/Not Seen**	**Activity Type**	**Direction of Flight**	**Notes**	**Sound Analysis Result**
1	20:44	common pipistrelle	1	Seen	likely foraging	not observed	further commom pipistrelle observed at 21:00 & 21:26	N/A
Additional Notes:								

Project: Tatton Arms, Northenden, Manchester M22 4HR			**Date:** 27/08/23		**Sunset:** 20:11	**Start Time:** 19:56	**Finish Time:** 21:41
Temp: 15°C	**Wind Speed:** Light <5mph		**Cloud Cover:** 6/8		**SURVEYOR:** A. Orton	**SURVEYOR LOCATION:** south-west	**Bat Detectors:** EMT 2 Pro
OBSERVATIONS							
Observation No.	**Time**	**Species**	**No. of Bats**	**Seen/Not Seen**	**Activity Type**	**Direction of Flight**	**Notes**	**Sound Analysis Result**
1	22:16	common pipistrelle	1	seen	foraging	not observed	Common pipistrelle flew in from the east and foraged around the public house at 20.44pm still present flying around northwest of property at 21.30pm	N/A
Additional Notes:								

Project: Tatton Arms, Northenden, Manchester M22 4HR			**Date:** 26/09/23		**Sunset:** 18:58	**Start Time:** 18:43	**Finish Time:** 20:28
Temp: 16°C	**Wind Speed:** <10mph		**Cloud Cover:** 6/8		**SURVEYOR:** V. Singh	**SURVEYOR LOCATION:** north-west	**Bat Detectors:** EMT 2 Pro
OBSERVATIONS							
Observation No.	**Time**	**Species**	**No. of Bats**	**Seen/Not Seen**	**Activity Type**	**Direction of Flight**	**Notes**	**Sound Analysis Result**
1	19:14	unknown	1	seen	commuting	south-west to east		N/A
2	19:20	common pipistrelle	1	seen	foraging	not observed		N/A
3	19:23	common pipistrelle	1	seen	inconclusive	north-east to south-west		N/A
4	19:25	common pipistrelle	1	seen	emergence?	not observed	potential emergence from eaves	N/A
Additional								

Project: Tatton Arms, Northenden, Manchester M22 4HR			**Date:** 26/09/23		**Sunset:** 18:58	**Start Time:** 18:43	**Finish Time:** 20:28
Temp: 16°C	**Wind Speed:** <10mph		**Cloud Cover:** 6/8		**SURVEYOR:** G. Connolly	**SURVEYOR LOCATION:** south-east	**Bat Detectors:** EMT 2 Pro
OBSERVATIONS							
Observation No.	**Time**	**Species**	**No. of Bats**	**Seen/Not Seen**	**Activity Type**	**Direction of Flight**	**Notes**	**Sound Analysis Result**
1	19:28	common pipistrelle	1	seen	commuting	not observed	flew from north of the site	N/A
2	19:36	noctule	1	not seen	likely commuting	not observed		N/A
3	19:44	common pipistrelle	1	not seen	unclear	not observed	several other common pipistrelle recordings between 20:08 & 20:19	N/A
Additional Notes:								

Project: Tatton Arms, Northenden, Manchester M22 4HR | **Date:** 26/09/23 | **Sunset:** 18:58 | **Start Time:** 18:43 | **Finish Time:** 20:28

Temp: 16°C | **Wind Speed:** <10mph | **Cloud Cover:** 6/8 | **SURVEYOR:** D. Kernott | **SURVEYOR LOCATION:** south-west | **Bat Detectors:** EMT 2 Pro & Anabat Express

OBSERVATIONS

Observation No.	Time	Species	No. of Bats	Seen/Not Seen	Activity Type	Direction of Flight	Notes	Sound Analysis Result
1	19:13	soprano pipistrelle	1	not seen	unclear	not observed		yes
2	19:25	common pipistrelle	1	not seen	unclear	not observed		yes
3	19:35	noctule	1	not seen	likely commuting	not observed	also recordings at 19:39 & 19:45	yes
4	19:46	common pipistrelle	1	seen	foraging	east to south	observed again at 19:50	yes
5	20:01	soprano pipistrelle	1	seen	foraging	east to west	from over roof to west	yes
								yes

Additional Notes: further soprano & common pipistrelle activity throughout survey (recordings)

Project: Tatton Arms, Northenden, Manchester M22 4HR			**Date:** 26/09/23		**Sunset:** 18:58	**Start Time:** 18:43		**Finish Time:** 20:28
Temp: 16°C	**Wind Speed:** <10mph		**Cloud Cover:** 6/8		**SURVEYOR:** Geoff Hawkins	**SURVEYOR LOCATION:** north-east		**Bat Detectors:** EMT 2 Pro
OBSERVATIONS								
Observation No.	**Time**	**Species**	**No. of Bats**	**Seen/Not Seen**	**Activity Type**	**Direction of Flight**	**Notes**	**Sound Analysis Result**
1	19:10	Soprano pipistrelle	1	seen	commuting	north towards river		N/A
2	19:14	Soprano pipistrelle	1	seen	foraging	not stated	flying north-east around corner of structure	N/A
3	19:20	brown lon-eared	0	not seen	unclear	N/A	detected but not seen	N/A
4	19:23	Soprano pipistrelle	1	seen	foraging	not stated		N/A
5	19:25	common pipistrelle	2	seen	unclear	not stated	observed chasing eachother	N/A
6	19:28	common pipistrelle	1	seen	foraging	not stated	froraging rear of structure then over roof	N/A
7	19:45	noctule	1	not seen	likely commuting	N/A		N/A
8	20:12	Soprano pipistrelle	1	seen	foraging	not stated	rear of structure	N/A
Additional Notes:								

Project: Tatton Arms, Northenden, Manchester M22 4HR			**Date:** 26/09/23		**Sunset:** 18:58		**Start Time:** 18:43	**Finish Time:** 20:12
Temp: 16°C	**Wind Speed:** <10mph		**Cloud Cover:** 6/8		**SURVEYOR:** NVA		**NVA LOCATION:** south-east	**Bat Detectors:** NVA
OBSERVATIONS								
Observation No.	**Time**	**Species**	**No. of Bats**	**Seen/Not Seen**	**Activity Type**	**Direction of Flight**	**Notes**	**Sound Analysis Result**
							NO OBSERVATIONS	
Additional Notes:								

10 Appendix C. Potential Enhancements.

Ibstock Enclosed Bat Box 'C'

Available from NHBS or similar approved suppliers

http://www.nhbs.com/title/193867/ibstock-enclosed-bat-box-c-smooth-red-large?bkfno=208936&ca_id=1495&gclid=Cj0KEQjw2KyxBRCi2rK11NCDw6UBEiQAO-tIjZctPMbjq-y5DOpUkPgotqbLNL5IrsVkAqiHySEL_IYaArNt8P8HAQ





A simple enhancement is the modification of standard ridge tiles by leaving gaps in the mortar – gaps should be 20mm x 100mm.