

Rider Levett Bucknall

# Bradford College Future Technologies Centre (FTC)

Bat Survey Report

2484981

AUGUST 2023

## RSK GENERAL NOTES

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## EXECUTIVE SUMMARY

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This report presents the results of dusk emergence and dawn return surveys for bats carried out on the Bradford College campus, Great Horton Road, BD7 1AY, specifically covering the Junction Mills and Garden Mills buildings adjacent to Thornton Road (Grid Ref SE 15851 33011).

The surveys were carried out between 25 May and 26 June 2023 by RSK Biocensus on behalf of Rider Levett Bucknall. The objective of the surveys was to establish whether bats are using the buildings to roost, and if so to assess the type and importance of roosts to inform the proposed redevelopment of the site, which includes the construction of the new Bradford College Future Technologies Centre (FTC).

There are two buildings present on the site, Junction Mills, which is due to be demolished to accommodate the new FTC building and Garden Mills which will be internally refurbished as part of the proposals. During the preliminary roost assessment undertaken on 10 September 2021, the buildings were assessed externally and internally for their suitability to support roosting bats, (see RSK Biocensus, 2021 for further information). The quality of bat roosting habitat within Junction Mills was assessed as moderate while the quality of roosting habitat within Garden Mills was assessed as low. Due to access limitations, an assessment of the Westholme Street Bridge over the Bradford Beck and the stone retaining walls of the beck was not possible, these were assessed later during the PEA of the site completed on 2 February 2023, with both structures considered to offer low potential for roosting bats (RSK Biocensus, 2023).

No evidence of roosting bats was recorded during the internal inspections, but features were present externally which are suitable for roosting bats. Therefore, Junction Mills was subject to two emergence surveys, later increased to three surveys including a dawn return survey, following a recorded emergence. Garden Mills and the Westholme Street Bridge and Beck retaining wall were subject to one emergence survey each.

Two species of bat were recorded during the surveys: common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*). Activity levels during the surveys were 'moderate' throughout with most passes comprising of bats foraging along the Bradford Beck and along the western aspects of the Junction Mills and Garden Mills buildings. Common pipistrelles were most abundant, with almost all activity attributed to this species.

Up to three common pipistrelles were observed emerging from beneath a wooden fascia board on the western aspect of the Junction Mills building during the dusk survey on the 25 May 2023. A single common pipistrelle was later observed returning to a roost site beneath a wooden fascia board on the southern aspect of the Junction Mills building during the dawn survey on the 9 June 2023. No emergences were recorded from the Garden Mills building, the Westholme Street Bridge or the Bradford Beck retaining wall.

**Due to the presence of roosting bats within Junction Mills, the proposed development will need to be registered under Natural England's Earned Recognition (ER) scheme or Bat Mitigation Class Licence (BMCL) system. Natural England aim to process ER and BMCL applications within 10 working days of receipt.**

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# 1.0 INTRODUCTION

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## 1.1 Purpose of this report

- 1.1.1 This report presents the results of dusk emergence and dawn return surveys carried out between 25 May and 26 June 2023 on the Bradford College Campus. These surveys included the Junction Mills and Garden Mills buildings, the Westholme Street bridge which crosses the Bradford Beck between the two buildings and the stone retaining wall of the beck. The site is located off Thornton Road in Bradford city centre at (Grid Ref SE 15851 33011).
- 1.1.2 The surveys were completed to assess the potential impacts of the proposed demolition of the Junction Mills building and internal refurbishment and replacement of windows in the Garden Mills building, as part of the Bradford College Future Technologies Centre (FTC) development, details of the proposal are discussed below in section 1.3. The Westholme Street bridge and beck retaining wall were assessed as these may be impacted by increased noise and vibration from construction traffic and during the demolition of the Junction Mills building.
- 1.1.3 A preliminary roost assessment of the Junction Mills and Garden Mills buildings was completed by RSK Biocensus on 10 September 2021 (RSK Biocensus 2021). This was followed by a preliminary ecological appraisal of the site inclusive of an additional PRA of the Westholme Street bridge and the stone retaining wall of the Bradford Beck on 2 February 2023 (RSK Biocensus 2023).
- 1.1.4 The Junction Mills building was assessed as offering moderate potential for roosting bats; the Garden Mills building low potential for roosting bats; and the Westholme Street Bridge and Bradford Beck retaining wall also low potential for roosting bats. Therefore, further surveys to determine the presence or likely absence of bats from these buildings and structures were recommended.

## 1.2 Landscape context

- 1.2.1 The site is within Bradford city centre, immediately adjacent to the B6145 Thornton Road. The site's immediate surroundings are heavily urbanised, however there are small areas of green space nearby both within the college campus itself and in the surrounding area. The nearest large green space is Horton Park, situated approximately 1.5km to the southwest of the site. Between the Junction and Garden Mills buildings runs a small, culverted watercourse, the Bradford Beck, a shallow and fast flowing stream. Along its length between the two buildings the Bradford Beck runs un-culverted and is one of only a limited number of accessible open water sources within the city centre.

## 1.3 Development proposals

- 1.3.1 The proposal will involve the demolition and re-development of the Junction Mills building, which will be replaced by the new Bradford College Future Technologies

Centre. The new FTC building will be situated within the existing footprint of the Junction Mills building. The Garden Mills building is to be retained and will be subject to internal refurbishment, as part of this refurbishment the building's windows are to be replaced. The stone retaining walls of the Bradford Beck are not expected to be modified significantly, however small modifications such as the installation of safety handrails are planned to be completed. There are no plans for any modifications to the Westholme Street bridge.

## 1.2 **Validity of data**

- 1.4.1 According to the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance (CIEEM, 2019), survey data are valid for a period of 12 to 18 months from the date of the first survey. Between 18 months and 3 years a professional ecologist will need to undertake a site visit and may also need to update desk study information (effectively updating the PEA / PRA) and review the validity of the reports.

## 2.0 METHODS

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### 2.1 General

- 2.1.1 The Bat Conservation Trust (BCT) provides guidance for bat survey work in the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016). In addition, the interim Guidance Note (Bat Conservation Trust, 2022) was also used to support the emergence and re-entry survey methodologies. The survey reported here complied with these guidelines.
- 2.1.2 The new interim Guidance Note from the Bat Conservation Trust provides clarification on the transition away from the standard use of dawn surveys, particularly as a method for presence/absence surveys, in favour of dusk surveys supported by night vision aids (NVAs). The Guidance Note supersedes the 3rd edition (Collins, 2016) and provides technical information in lieu of the publication of Bat Surveys for Professional Ecologists Good Practice Guidelines 4th edition.
- 2.1.3 Whilst the Interim Guidance Note from the Bat Conservation Trust (Bat Conservation Trust, 2022) indicates a move away from the use of dawn surveys, such surveys can still be used as a tool to provide additional data to inform roost characterization and identify additional roost locations. This approach was used with the Junction Mills building.
- 2.1.4 The emergence and re-entry surveys were undertaken between 25 May and 26 June 2023 by RSK Biocensus Ecologists Ben Lappage (holds a Class 1 NE bat licence (licence number: 2022-10715-CL17-BAT)), Jonathan Scragg (holds a Class 1 NE bat licence (licence number: 2019-41337-CLS-CLS)), Lewis Wright (holds a Class 2 NE bat licence (licence number: 2016-19937-CLS-CLS)), Emily Shaw (holds a Class 2 NE bat licence (licence number: 2019-39350-CLS-CLS)), Claire Hesketh, Paige Forester, Lance Rudge and Joseph Mould.

### 2.2 Emergence surveys and re-entry surveys

- 2.2.1 Surveyors were positioned with a good view of likely roost-access points, ensuring that all identified features were also covered. Surveys were completed in line with the Bat Conservation Trust (BCT) guidance as highlighted in the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016). The Junction Mills building was subject to two dusk emergence surveys and one dawn re-entry survey, Garden Mills was subject to one dusk emergence survey and the Westholme Street Bridge and beck retaining wall was subject to one dusk emergence survey.
- 2.2.2 The dawn re-entry survey was completed on the Junction Mills building due to the occasional difficulties noted with tracking bats caused by changes in lighting associated with passing traffic on Thornton Road. The dawn survey allowed the roost site and the wider building to be monitored during quieter traffic conditions. Dawn re-entry is also frequently marked by swarming behaviour where bats will circle a roost entry point several times before re-entry. This often makes it easier for surveyors to accurately

- pinpoint the exact roost location and more accurately determine the number of bats present.
- 2.2.3 Dusk emergence surveys commenced 15 minutes before sunset and continued for 90 minutes after sunset. Dawn re-entry surveys started 90 minutes before sunrise and continued for 15 minutes after.
  - 2.2.4 Electronic equipment capable of detecting and recording the ultrasonic echolocation calls of bats in flight was used to record bat activity (Elekon Batlogger M and M2 bat detectors). Species were identified from the characteristics of their calls (including peak frequency, minimum and maximum frequency, call duration, and inter-pulse interval). In addition, infra-red cameras (Panasonic 4K infra-red video cameras with additional Nightfox XB5 infra-red torches) were used to monitor difficult to see areas and the most suitable bat roosting features, in line with the most recent interim good practice guidance (Bat Conservation Trust, 2022). Cameras were positioned with surveyors for the surveys.
  - 2.2.5 Bat calls were analysed using Elekon BatExplorer Pro (v2.1.10.1), whilst IR camera footage was reviewed using VLC media player (V3.0.17). The IR footage was analysed by Joseph Mould and bat sound data was analysed by Erika Dahlberg.
  - 2.2.6 The surveys were conducted in weather suitable for bats to be active i.e., no rain, no strong wind and sunset air temperature 10°C or above. See *Table 1* for survey dates and associated weather conditions.

**Table 1: Survey weather conditions**

Date	Survey type/location	Sunset/sunrise time	Start/end time	Temperature (°C) start/end	Wind (Beaufort) start/end	Cloud (Octas) start/end	Precipitation
25.05.23	Dusk emergence, Junction Mills (No.1 of 3)	04:51 21:17	21:02 23:00	18°C / 15°C	1 / 1	2 / 2	None
30.05.23	Dusk emergence, Westholme Street Bridge and Beck Wall (No. 1 of 1)	04:45 21:24	21:09 22:54	15°C / 13°C	0 / 1	7 / 7	None
05.06.23	Dusk emergence, Garden Mills (No. 1 of 1)	04:40 21:31	21:16 23:02	16°C / 12°C	0 / 0	2 / 2	None
09.06.23	Dawn re-entry, Junction Mills (No. 2 of 3)	04:38 21:34	03:07 04:52	12° C / 12°C	2 / 1-2	4 / 8	None
26.06.23	Dusk emergence, Junction Mills (No. 3 of 3)	04:37 21:42	21:27 23:12	18° C / 16° C	1 / 1	4 / 4	None



## 2.3 Constraints and limitations

- 2.3.1 In the north west corner of the Junction Mills building there was a significant amount of Butterfly-bush (*Buddleja davidii*) growing out of the stonework on both the northern extension and the southern section of the building. This obscured the view of any potential features which may lay behind, for example cracks and fissures in the stonework.
- 2.3.2 It was not possible to gain a suitable view of potential bat roosting features on the roof of the lower northern extension of the Junction Mills building from street level. Due to a lack of safe access to the Junction Mills building internally at night it was not possible to position a surveyor in the higher southern section of the building overlooking the roof top features (missing tiles and damaged/missing lead flashing) on the northern extension.
- 2.3.3 Due to high volumes of traffic on Thornton Road, with passing cars resulting in alterations in light and shadow on the building, when surveying the northern, western and eastern aspects of the Junction Mills building it was difficult at times to discern bat activity and resulted in temporary visual losses of bats in flight where lighting suddenly changed. Passing traffic on Thornton Road was also noted to create some interference on the ultrasonic bat detectors, however any such interference was effectively filtered out at the data analysis stage. Considering the low numbers of bats present, neither of these factors are considered to have had a significant impact upon the results, or the recommendations made.
- 2.3.4 During the first survey of the Junction Mills building an IR camera was not deployed on the north western corner of the building when an emergence was observed. This was the first visit to site and due to concerns over security of equipment and staff it was decided to avoid situating a camera on the footpath adjacent Thornton Road, due to the distance of this surveyor from other staff and site security. A camera was deployed at this location on the following two surveys once it was determined it was safe enough to do so. Whilst this did pose as a constraint it is not determined to have significantly impacted the final categorisation of the Junction Mills roost.
- 2.3.5 Low lighting conditions from torches have reduced the visibility of bat activity in some of the infrared (IR) footage. All cameras were manned by a surveyor who visually observed the building throughout the survey for any activity, therefore this is not considered to be a significant limitation.

## 3.0 RESULTS

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### Dusk emergence and dawn return surveys

- 3.1.1 Two species of bat were recorded during the emergence and re-entry surveys: common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*). Almost all activity was attributed to common pipistrelles and it is possible that registrations of soprano pipistrelle, which echolocate at higher frequency than common pipistrelle (c. 55 KHz as opposed to c. 45 KHz), may actually have been common pipistrelles altering their echolocation when foraging in groups to reduce frequency overlaps. Activity levels during the surveys were generally 'moderate' throughout with most passes comprising of bats foraging along the Bradford Beck and the western aspects of the Junction and Garden Mills buildings.
- 3.1.2 On several occasions bats were seen crossing over Thornton Road travelling north to south towards the Junction Mills building, often shortly after dusk, with a number of bats also seen travelling in the opposite direction from Junction Mills to the opposite side of Thornton Road as surveys progressed. This suggests there are other roosts in proximity to Junction Mills and that bats are commuting to and from these roosts to forage along the Bradford Beck. However, the number of individual bats seen at any one time was typically no more than three. The Bradford Beck is therefore considered likely to be of local importance for small numbers of foraging bats.

### Identified roosts

- 3.1.3 An emergence of up to three common pipistrelle (*Pipistrellus pipistrellus*) was recorded from beneath the wooden fascia on the western aspect of the Junction Mills building during the first survey. The location of the roost entrance is shown in (Appendix B, Plate 1 and Figure 1). The first bat emerged, circling several times immediately outside the roost before re-entering in the same place underneath the fascia. This emergence was followed by at least two others, including the likely re-emergence of the same bat, however as discussed in the limitations, changes in lighting because of passing traffic made it difficult to keep track of the flight paths of individual bats in the vicinity of the emergence site.
- 3.1.4 A single common pipistrelle bat was observed returning to a roost site beneath a wooden fascia on the southern aspect of the Junction Mills building during the dawn re-entry survey on 9 June 2023. This single bat was observed circling the roost for 1-2 minutes prior to re-entry, briefly landing on the wall and taking off again several times before finally settling on the building beneath the fascia, after which it was not seen in flight again. The roost location is shown in the IR camera screen capture in (Appendix B, Plate 2 and Figure 1).

## 4.0 EVALUATION

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### Foraging bats

- 4.1.1 Two species of bat were recorded during the emergence and return surveys, common pipistrelle and soprano pipistrelle. Common pipistrelle was the most abundant species with soprano pipistrelle recorded very infrequently. Activity was 'moderate' with the main area of interest being the Bradford Beck.
- 4.1.2 The Bradford Beck provides suitable habitat for foraging and commuting bats, which is likely to be of local importance, particularly as it is one of the few areas of open river corridor within the city centre. Foraging activity was also noted along the southern and western aspects of the Garden Mills building, along the woodland edge and amongst scrub which has developed in these areas.
- 4.1.3 Precautionary measures are required during the works to prevent disturbance to foraging bats during the demolition and construction phases of the development. It will be of particular importance to maintain a dark commuting and foraging corridor along the beck. This will need to be considered in any future lighting scheme, including the use of temporary lighting or security lighting during demolition and construction.

### Roosting bats

- 4.1.4 During the surveys, two separate roost locations were identified on the Junction Mills building, both beneath wooden fascia boards at roof level, one on the western aspect and the other on the southern aspect. Up to three common pipistrelles were observed emerging from the roost situated on the western aspect, and a single common pipistrelle was observed returning to the roost situated on the southern aspect.

### Roost assessment

- 4.1.5 Bat activity and field signs recorded during the survey suggest that Junction Mills is used as a transitional roost by single or low numbers of common pipistrelles. The bats present are likely to be males, non-breeding females or juveniles. The building is unlikely to be used as a maternity roost, given the low number of bats recorded and the potential roosting features only being suitable for individual or low numbers of bats.
- 4.1.6 Within the vicinity of Junction Mills are several other buildings of a similar age and construction some of which are in a state of disuse or poor repair, offering a number of potential roosting opportunities for bats. The roosts identified within the Junction Mills building were not seen to be used consistently, indicating they are likely to be transitional and may be one of several different roosts used by bats in the local area.
- 4.1.7 The environmental conditions (humidity, temperature etc.) and roosting features within the buildings on the site are of poor suitability to support hibernating bats. It is considered unlikely that bats are using the buildings for hibernation purposes.

### Mitigation and compensation

- 4.1.8 The measures below outline the mitigation and compensation measures required to safeguard bats throughout the duration of development. They form a method statement

which the contractor's undertaking works on site must adhere to and will be a condition of the ER or EPS licence:

The project ecologist will deliver a toolbox talk to the contractors responsible for the destructive works, prior to commencement. The talk will cover bat ecology, bats, and the law, and what to do if bats or field signs of bats are found during the works.

As per the requirements of the ER and BMCL applications, an updated building inspection must be undertaken by an appropriately licensed ecologist within three months prior to submission of the licence application to ensure that conditions on site have not changed.

To reduce the risk of bats being present, destructive works to remove potential roosting features and confirmed roosting features should only be completed between October and March, during the bat hibernation period.

Prior to the destructive works to Junction Mills, one Schwegler 2F (or similar model if not available) bat box will be fitted to a mature tree (which will be retained) within the proposed site boundary, as specified by the supervising ecologist. The bat box will be located on a southerly aspect, where it will receive the maximum amount of sunlight. It will be sited at a height of between four and six metres and away from any potential disturbance (including external lighting). Once bats have occupied a bat box, they may only be disturbed by a licensed bat ecologist. The bat box will be left *in situ* as an enhancement.

Prior to the start of destructive works of Junction Mills, the known roosting areas will be inspected by a licensed bat ecologist. The ecologist will use an endoscope where necessary to examine inside the roost access points, to further confirm the presence or absence of bats and direct works accordingly.

Sensitive areas of Junction Mills, such as end roof tiles and wooden fascia boards, are to be removed by hand, under the direct supervision of a licensed bat ecologist. If a bat is discovered during the works, the bat will be captured by hand by the supervising ecologist and transported to the bat box. If the bat is harmed or emaciated, it will be taken to the nearest animal hospital or bat carer if deemed necessary by the onsite ecologist.

If works cannot be carried out in the winter months (November to April inclusive), a pre-commencement emergence / re-entry survey of Junction Mills is to be undertaken immediately prior to the destructive works. The survey will monitor the current activity on site and occupied roosting locations to direct works accordingly.

As part of the scheme and in addition to the bat box erected in a suitable nearby retained tree, one external bat box will be sited on the western aspect of the Garden Mills building following the completion of work on this structure and after demolition of Junction Mills has been completed. It will be sited at a height of between four and six metres and away from any potential disturbance (including external lighting).

## REFERENCES

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- Bat Conservation Trust (2022), *Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys*. Bat Conservation Trust, London
- Chartered Institute of Ecology and Environmental Management (CIEEM) (2019), *Advice Note on the Lifespan of Ecological Reports & Surveys*. CIEEM, Winchester, Hampshire.
- Collins, J. (ed) (2016), *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> edn)*. The Bat Conservation Trust, London.
- RSK Biocensus (2021), *Bradford College Bradford – Preliminary Roost Assessment Report*. RSK Biocensus, Leeds.
- RSK Biocensus (2023), *Bradford College FTC – Preliminary Ecological Appraisal*. RSK Biocensus, Helsby.



- Legend:**
- Site Boundary
  - Bat Roost Location

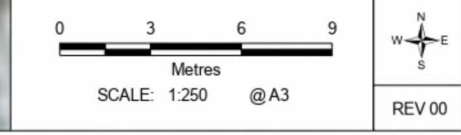


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**PEA Bradford College FTC**



TITLE: Figure 1:  
Confirmed Bat Roost Locations  
- Junction Mills



## APPENDIX A – LEGISLATION

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### Bats

All species of British bat are protected by The Wildlife and Countryside Act 1981 (as amended) extended by the Countryside and Rights of Way Act 2000. This legislation makes it an offence to:

- intentionally kill, injure or take a bat;
- possess or control a bat;
- intentionally or recklessly damage, destroy or obstruct access to a bat roost; and
- intentionally or recklessly disturb a bat while it occupies a bat roost.

Bats are also European Protected Species listed on The Conservation of Habitats and Species Regulations 2017. This legislation makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats, including in particular any disturbance which is likely (a) to impair their ability - (i) to survive, to breed or reproduce, or to rear or nurture their young; or (ii) hibernate or migrate, where relevant; or (b) to affect significantly the local distribution or abundance of the species to which they belong.
- damage or destroy a breeding site or resting place of a bat; and
- possess, control, transport, sell, exchange a bat, or offer a bat for sale or exchange.

All bat roosting sites receive legal protection even when bats are not present.

## APPENDIX B - PLATES

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Plate 1: Roost location on western aspect of the Junction Mills building

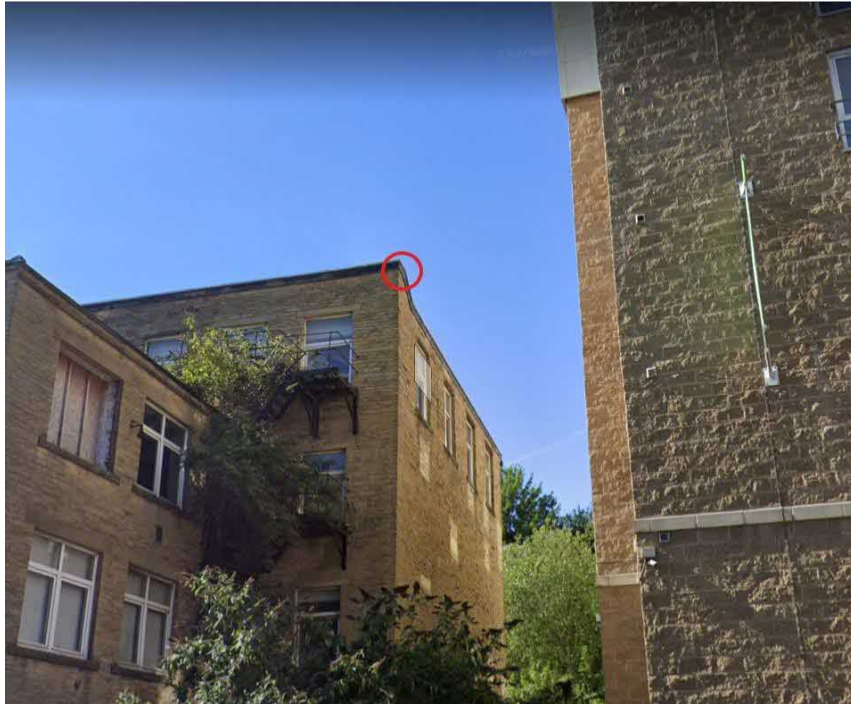


Plate 2: Roost location on southern aspect of the Junction Mills building showing returning bat during dawn re-entry survey on 9 June 2023

