Bat Assessment

Preliminary Roost Assessment & Roost Characterisation Surveys

of

Coventry Stadium
Rugby Road
Binley Woods
Warwickshire

for

Brandon Estates Ltd

(2nd July 2021)

2020-01(08)

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PROTECTED SPECIES

This report contains sensitive information relating to protected species. The information contained herein should not be disseminated without the prior advice of Ecolocation.

Survey dates: 10th June 2020, 15th July 2020, 4th August 2020 & 24th August 2020

Report Version	Date	Author:	Quality check by:	Approved by:
Original	08/01/18	Jeff Grant BSc (Hons) MSc MCIEEM Senior Ecologist	Anna Scott-Swift BSc (Hons) MSc MCIEEM Technical Director	George Burton, MCIAT, CEnv., ACIEEM, Director

This report has been prepared in accordance with the CIEEM Guidelines for Ecological Report Writing Second Edition (2017) and is compliant with the CIEEM Code of Professional Conduct.

Summary

- An initial walkover survey for bats was carried out at Coventry Stadium in Binley Woods on the 10th June 2020 by licensed bat surveyor, Jeff Grant.
- The proposed development included the erection of a number of residential dwellings, and a floodlit spots pitch and pavilion as shown on drawing 27510-001 titled Illustrative Landscape Masterplan, Rev I, dated 01.07.2021
- There were a number of potential access points for bats into all buildings within the site.
- Foraging opportunities for bats nearby were considered above average and a number of roosting bats were recorded within a 1km radius of the site.
- Buildings 1 and 6 had negligible bat potential. Buildings 2, 3 and 7 all had low potential for crevice-dwelling bats. Buildings 5 and 8 had low-moderate bat potential. Building 4 had moderate potential for hibernating bats.
- Two bat activity surveys of all buildings (except 1 and 6) were undertaken on July 15th 2020 and August 4th 2020. Bat activity across the southern and western areas of the site was low with no bats recorded near building 8. 2 common pipistrelles were considered to have possibly entered building 5.
- A single further bat activity survey was undertaken on 24th August 2021 concentrating on the south-eastern area of buildings with two possible emergences from the main grandstand of soprano and common pipistrelle.
- Previous surveys and reports by Ecolocation in 2014 and 2017 also identified small numbers of common bat species using the buildings site to roost and potentially hibernate (building 4). The results of the 2020 surveys demonstrate that this remains the case
- Appropriate bat mitigation is required for roosting pipistrelle sp., and brown long-eared bat at the site. Outline mitigation measures are provided at section 10.

Contents

1 Introduction

1.1 Instruction

Ecolocation were commissioned by Brandon Estates Ltd., to undertake a preliminary roost assessment and bat characterisation surveys of Brandon Stadium, Binley Woods, Warwickshire (hereafter referred to as the 'Site'), which was understood would be subject to a future planning application for residential development and sports ground.

1.1.1 Site location

The Site (grid ref: SP 40713 77299), indicated by the red line boundary below, was situated some 4.5km to the east of the city of Coventry in the West Midlands and included a large area for car parking together with a stadium used for greyhound racing and speedway and all of its associated buildings.

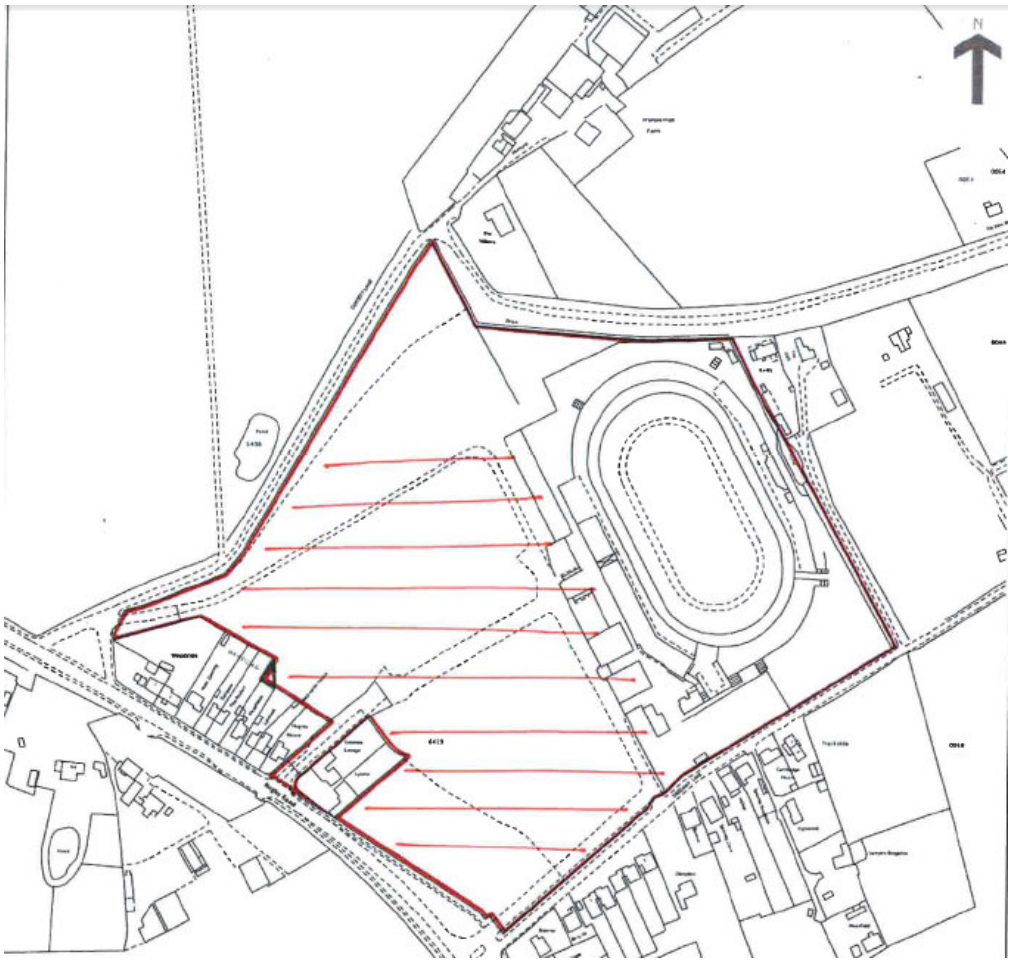

Figure 1: Survey boundary

1.1.2 Proposed Plans

The proposed plans for the Site detail a residential development of approximately 125 units with outdoor sports facilities. The following drawing was used to support this report:

- 27510-001, Illustrative Landscape Masterplan, Rev I, dated 01.07.2021

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1.2 Survey Purpose

The purpose of the survey and report was to:

- Identify presence/absence of bat roosts at the Site;
- If bat roosts are present, determine species, access and egress points, roost type and size;
- Assess the impact of the proposed works on bats;
- If bat roosts are present, provide details of a bat mitigation strategy to maintain the favourable conservation status of the bat species in question;
- Determine the need for a bat mitigation licence from Natural England; and
- Determine the need for any further bat surveys to inform a mitigation scheme or a bat mitigation licence.

1.3 Legislation & Planning Policies

A number of UK and European legislation and policies deal with the conservation of biodiversity. This section briefly outlines the legal and policy protection afforded to bats and their habitats.

Bats and their roost sites are protected under UK and European legislation including the Wildlife and Countryside Act 1981 (as amended), Countryside Rights of Way Act 2000, the Conservation of Habitats and Species Regulations 2010 and the Habitats Directive. The legislation makes it an offence for any person to:

- Deliberately capture, injure or kill a bat.
- Intentionally or recklessly disturb bats, where that disturbance may affect the ability of those bats to survive, breed, rear or nurture their young, or is likely to significantly affect the local distribution or abundance of any bat species, whether in a roost or not.
- Damage or destroy a place of shelter (roost) of a bat, be that a resting or breeding place.
- Possess a bat, whole or in part, alive or dead.
- Intentionally or recklessly obstruct access to a roost
- Sell or offer for sale or exchange whole or parts of bats, alive or dead.

All species of birds are protected from disturbance under the Wildlife and Countryside Act 1981 (as amended) from the time when they begin nest construction until all of the young have naturally fledged. Barn owls benefit from additional protection under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), making it an offence to capture or kill barn owls at all times or disturb them whilst nesting.

The ODPM Circular 06/05 makes the presence of a protected species a material consideration within the planning process. It states that it is essential for the presence of protected species and the extent they may be affected by proposed development be established through appropriate surveys before the planning permission is granted and encourages the use of planning conditions to secure the long-term protection of the species.

The National Planning Policy Framework (NPPF) section 15 outlines how applications need to conserve and enhance the natural environment. Paragraphs 174 to 177 state that sites with biodiversity value should be protected and enhanced, minimising impacts on biodiversity and establishing ecological connectivity. Furthermore, the protection of priority sites and species through developments is outlined and states where significant harm is unavoidable through alternatives or mitigation, planning permission should be refused. Finally, this section concludes that developments with aims to conserve or enhance biodiversity should be supported and any improvement around developments should be encouraged to achieve net gains for biodiversity.

In Policy NE1 in the Rugby Borough Council Local plan (adopted 2019) it is stated *(inter alia*), "*Development will be expected to deliver a net gain in biodiversity and be in accordance with the mitigation hierarchy below. Planning permission will be refused if significant harm resulting from development affecting biodiversity cannot be:*

- *Avoided, and where this is not possible;*
- *Mitigated, and if it cannot be fully mitigated, as a last resort;*

- *Compensated for.*

All development proposals in the proximity of ancient woodland shall have buffers having regard to Natural England's standing advice."

2 Methodology

2.1 Desk Study

Prior to the site visit a desk-top data gathering exercise was undertaken. The MAGIC website was accessed to search for statutory designated sites within a 1km radius of the Site. The Warwickshire Biological Records Centre was contacted for information on bat species records within a 2km radius of the Site.

2.2 Preliminary Roost Assessment

The Site was visited by suitably experienced and licensed surveyor Jeff Grant (Senior Ecologist, MCIEEM, Class Licence 2017-25813-CLS-CLS Level1) on Wednesday 10th June 2020. The survey took approximately 4 hours and weather conditions at the time of survey were recorded.

The daytime inspection was carried out in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition (BCT, 2016). The survey comprised two parts: an evaluation of suitability for roosting and a search for evidence of bats. The inspection was aided by a one million candlepower torch. Extendable ladders, binoculars and a 'Seesnake' rigid endoscope were available for detailed inspections of accessible areas.

Bat evidence:

The interior and exterior of the building was systematically searched for evidence of bats including:

- Live or dead bats
- Droppings
- Staining from bat urine
- Feeding remains, such as moth wings
- An absence of cobwebs on suitable flight lines or access points

Evaluation of roosting suitability:

This comprised a detailed external and internal assessment of the building to determine the suitability for bats and the likely species, type of roost and numbers of bats the building could support. A number of factors were considered including:

- Surrounding habitats – connectivity for flight lines to the building and areas for foraging
- Internal light levels and temperature
- Weather-proof properties
- Building construction
- Potential access into the building (e.g. into a roof void, cavity in brickwork, between tiles and lining)
- Roosting features in roof void (e.g. roof timbers, ridge, wall plate)

Following a systematic survey of the building and consideration of possible factors each building was assessed as having negligible, low, moderate or high suitability for roosting bats, in accordance with the BCT guidelines.

2.3 Nocturnal Bat Activity Surveys

Three nocturnal bat activity surveys were carried out in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition (BCT, 2016). These comprised two dusk emergence and one dawn re-entry survey. Surveyors were positioned to give full coverage of the buildings and potential access points to observe bat activity in the area and identify any bats emerging from or re-entering a roost. The timings of the survey and weather conditions at the start and end of the survey were recorded on each occasion. Dusk surveys were started 15mins before sunset and continued until 1.5-2hrs after sunset. Dawn surveys were started 1.5-2hours before sunrise and continued until 15mins after sunrise.

2.3.1 Dusk Emergence Survey

The dusk emergence survey was undertaken on 15th July 2020 by the following surveyors, led by Jeff Grant:

Table 01: Survey personnel and qualifications

Map ID	Personnel	Relevant licences held	Relevant survey experience (years)	Equipment used
JG	Jeff Grant MCIEEM Senior Ecologist	Bat (level 1)	7	Pettersson 240x
AR	Alex Robinson ACIEEM Acting Ecologist		4	Pettersson 240x
LC	Laura Carter Assistant Ecologist	Bat (level 1)	3	Pettersson 240x
CG	Charlotte Green Field Ecologist		2	Magenta Bat5
TH	Tamsin Harper Field Ecologist		2	Magenta Bat5
HB	Harvey Burton Field Ecologist		2	Magenta Bat5
JG	James Green Field Ecologist		1	Magenta Bat5

Locations of surveyors are shown with the results of the survey in Figure 4 with results.

A camera was used to focus on the ladies toilets (see location in Figure 4). At 21:21hrs this was set to record in night vision mode for 90 minutes.

A static bat detector (SM4) was placed at the same time location as the camera and set to record in full spectrum mode for the full length of the survey. Sound recordings were analysed using BatSound software. The data was gathered to confirm and consolidate the corresponding bat activity results of the camera and surveyors, as well as detecting any additional bat species in the vicinity.

2.3.2 Dawn Re-entry Survey

The pre-dawn re-entry survey was undertaken on 4th August 2020 by the following surveyors, led by Laura Carter:

Table 2: Survey personnel and qualifications

Map ID	Personnel	Relevant licences held	Relevant survey experience (years)	Equipment used
JG	Jeff Grant MCIEEM Senior Ecologist	Bat (level 2)	7	Pettersson 240x
AR	Alex Robinson ACIEEM Acting Ecologist		4	Pettersson 240x
LC	Laura Carter Assistant Ecologist	Bat (Level 1)	3	Pettersson 240x
CG	Charlotte Green Field Ecologist		2	Magenta Bat5
TH	Tamsin Harper Field Ecologist		2	Magenta Bat5
HB	Harvey Burton Field Ecologist		2	Magenta Bat5
JG	James Green Field Ecologist		1	Magenta Bat5

The surveyors were in the same locations as for the dusk emergence survey (15th July 2020) and are shown on Figure 5

A camera was used to focus on the ladies toilets (see location in Figure X). At 05:31hrs this was set to record in night vision mode for 90 minutes.

A static bat detector (SM4) was placed at the same location and set to record in full spectrum mode for the full length of the survey. Sound recordings were analysed using BatSound software. The data was gathered to confirm and consolidate the corresponding bat activity results of the camera and surveyors, as well as detecting any additional bat species in the vicinity.

2.3.3 Dusk Emergence Survey

The further targeted dusk emergence survey was undertaken on 10th September 2020 by the following surveyors, led by Laura Carter:

Table 3: Survey personnel and qualifications

Map ID	Personnel	Relevant licences held	Relevant survey experience (years)	Equipment used
TH	Tamsin Harper Field Ecologist		2	Magenta Bat5
HB	Harvey Burton Field Ecologist		2	Magenta Bat5

Locations of surveyors are shown with the results of the survey in Figure 6

2.4 Limitations

There were no significant limitations at the time of survey.

3 Results & Evaluation

3.1 Desk Study

3.1.1 Habitat Connectivity

Overall, the connectivity of this site was considered good. Hedgerows connected the Site to the wider agricultural land to the east whilst deciduous woodland pockets of varying sizes and structures were located within 1km of the Site and were likely to have offered roosting and foraging opportunities to a variety of bat species. New Close and Birchley Wood to the north of the site; both designated Local Wildlife Sites for their ancient woodland habitat were considered to support potential roosting and forging opportunities for many bat species. This woodland also covered a stream running southward towards the Site from a network of steams associated with Coombe Pool a SSSI located 2km north-west of the Site's boundary. This was thought to have offered a commuting route between Coombe Pool and the woodland surrounding the Site's north-western boundary.

Immediately adjacent the site to the west was the A428 trunk road which may have created a barrier to the free movement of species from this direction.

Adjacent the site to the north, beyond Gossett Lane, stretched New Close and Birchley Wood, both designated a Local Wildlife Site for their ancient woodland habitat. The habitats created by such woodlands may have provided good shelter and forage habitat for a number of species, particularly bats.

The increased human influences, such as noise and light pollution, created by the site's current use and its close proximity to residential properties and the A428 to the west may have deterred a number of species.

Figure 2: Habitat connectivity features within a 1km radius of the Site

3.1.2 Bat Records

A total of 47 records were returned, of these, 1 soprano (*Pipistrellus pygmaeus*) maternity roost 0.91km south of the Site and 1 indeterminate pipistrelle roost 0.83km south of the Site were identified within the returned records between 2007-2008. In addition, a single potential brown long-eared (*Plecotus auritus*) maternity record was recorded within 0.91km south of the Site in 2014. A further 5 records of brown long-eared bat droppings were identified all within 0.77km of the Site as recent as 2018. Over all 540 individuals were recorded, 182 of these were common pipistrelle (*Pipistrellus pipistrellus*) recorded between 2000-2017, the closest of which was 0.46km from the Site in 2017. 2 records were of multiple Daubenton's (*Myotis daubentoniid*) located 0.51km from Site in 2017 and 3 separate records of up to 10 noctule (*Nyctalus noctula*) individuals were recorded within 0.83km of the Site, the most recent of which were from 2015. Further records of foraging indeterminate bats were also noted within 1km of the Site

3.2 Preliminary Roost Assessment

3.2.1 Weather

The weather conditions during the Site visit on 10th June 2020 were as follows:

Table 04: Weather conditions during preliminary roost assessment

Parameter	Recorded Figure
Temperature	14ºC
Cloud cover	80%
Precipitation	None
Wind speed (Beaufort scale)	1 – light air

3.2.2 Site Description

A total of eight buildings were present at the Site, all of which had been subject to vandalism since the Site was closed. The majority of the site comprised open species-poor grassland with large area of hard standing. Habitats unlikely be attractive to commuting or foraging bats. There was an area of semi-natural broad-leaved woodland (New Close and Birchley wood) adjacent to the northern boundary of the site which extended into the northwest corner of the site. There was another strip of plantation woodland along the southwest boundary and linear trees were present along the southeast boundary of the site. These woodland strips or woodland edges provided corridors along which bats may have commuted or foraged. Mature residential gardens with shrubs and trees abutted the southern boundary and part of the western boundary of the site. This habitat would have been attractive to foraging bats, particularly pipistrelle species.

3.3 Building

For ease of reference, each building was given a number, indicated on the following map (Figure 3) and is described below in detail.

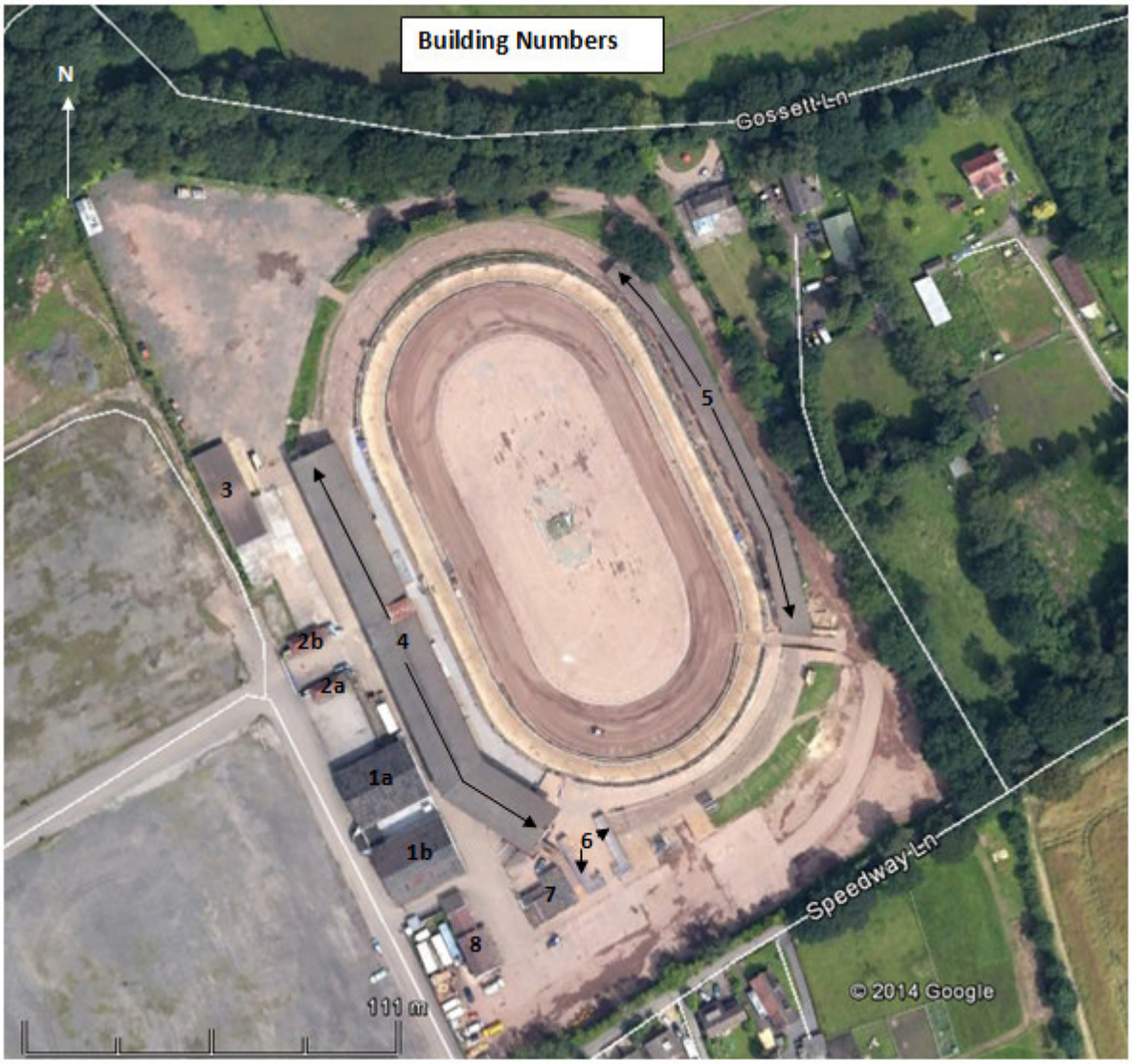


Figure 3: Building locations and numbers used in this report.

Building 1

This building comprised two discrete areas 1a and 1b linked by the existing turnstiles. Each hangar building was at least two-storey high and neither had a separate roof void. They were steel-framed, with a pitched roof of profiled metal sheeting with integrated roof lights and were, in part, clad with blockwork. Building 1a benefited from some deteriorating linen cloth stretched across the eaves creating a makeshift roof void (possibly to prevent pigeon, and the like, from nesting or to offer protection from droppings) whilst building 1b was fully vaulted, although this building did have some dividing walls creating separate cells and some areas of the building were, therefore, darker than others.

The turnstiles were open to their eastern elevation with a mono-pitch roof and a flat roof beyond this. Internally, a suspended ceiling was present beneath the flat roof, possibly resulting in a void between the ceiling tiles and the approx. 0.5m deep flat roof above.

Building 1a - eastern external elevation

Building 1a - internal

Building 1a and 1b -western external elevation

Building 1b - internal

Turnstiles between 1a and 1b

Building 2

This comprised the former turnstile buildings, of which there were two: 2a and 2b. These were small single-storey structures, each with a separate roof void. 2a was timber clad whilst 2b was constructed in blockwork and both had a hipped roof finished with concrete interlocking tiles. In 2a, the loft hatch was open but access to this area by the surveyor, was hindered by the presence of stored barrels, although a roof underlining of bituminous felt was visible and appeared to be torn in places. In 2b, the roof void was accessible and was of a traditional purlin and rafter construction but with an underfelt to the roof of black plastic. The height of the roof void was approx. 1m from ceiling to ridge board.

Building 2a - northern elevation

Building 2a - internal; access to loft hatch was hindered

Building 2b - southern elevation

Building 2b - roof space

Building 3

This comprised a large single storey building that was in use as holding kennels for greyhounds during the race days. It was constructed in blockwork and was partly timber clad. Its shallow pitched roof appeared to be finished with bituminous felt and internally a suspended ceiling meant no access to any roof void for the surveyor. However, removal of a ceiling tile revealed a timber deck to the underside of the roof and a maximum height of roof void of 0.4m.

Building 3 - southern elevation

Building 3 - internal

Building 3 - sarking visible to underside of roof

Building 4

This comprised the main grandstand as well as the 'under stand'. The grandstand was an area of covered terraced steps with an enclosed glass viewing gallery with a flat roof and walls clad in asbestos cement. The monopitch roof over spanning the above was supported by a steel frame and finished with profiled sheeting. The 'under stand' area was located beneath the terraced steps and comprised a single enclosed space (accommodating seating and dining areas). It was constructed partly in brickwork and partly blockwork with an exposed soffit comprising a prestressed concrete beam & block floor above, and no windows. To access the main grandstand there were steps leading into corridors at the western elevation of building 3. The corridors were constructed in brickwork with a similar beam and block soffit above

Building 4 - western elevation and stairs leading to corridor

Building 3 - corridor and ceiling

Building 4 - eastern elevation showing terrace, steps and under stand below

Building 4 - soffit of under stand

Building 5

This comprised a covered terrace opposite the grandstand on the opposite side of the race track. A part timber and part steel-framed structure supported a monopitch roof of profiled sheeting, whilst blockwork cells housed separate male and female toilets. A boarded ceiling was present including below the monopitch roof over the terrace) and over the w.c. cubicles such that no roof void was present in this area, although in the area adjacent to the toilets, no ceiling existed, but fascia boards were present against internal blockwork walls.

Building 5 - viewed looking south

Building 5 – internal - ceiling in toilet cubicles

Building 6

This comprised an area of single storey, monopitch, profiled perspex and profiled cladding construction with steel frames for use as cycle storage or similar.

Building 6 - cycle storage

Building 7

This comprised an office unit and first aid station and was only accessible in part to the surveyor at the time of survey. It was constructed in solid brickwork with a flat corrugated roof and its roof height was greater in the central area of the building. Internally, there was a boarded ceiling with no accessible roof void. Any void was likely to extend only to the depth of the roof joists.

Building 7 - north elevation

Building 7 - internal

Building 8

This comprised three adjoining buildings more akin to dwellings and containing stored materials, motorcycle learning centre office and a bike shop. All buildings were constructed in solid brickwork with a pitched roof finished with felt tiles in a diamond pattern. Lean-to elements were present to building 8a (housing a utility area) and internally there were boarded ceilings with no access to the small void above (likely to be no more than 0.3m deep). Building 8a was the two-storey element that housed a sub-station and a learning to ride office on the ground floor. Whilst an upper floor was present, this was not accessible as there were no stairs and the sub-station was locked at the time of survey. It was not known whether the upper floor was open to the ridgeboard or whether there was a separate roof void present.

Building 8b housed a bike shop, again with no access to the upper floor/roof void, although the roof line of this building was subservient to Building 8a.

Building 8c was used as storage and access was gained via a loft hatch to the roof void above. The roof of this building was mono-pitched and timber rafters were present but with no lining to the roof. No insulation was present at ceiling level or between the rafters and the maximum headroom within the void was approx.1.6m where it adjoined building 8b.

Building 8 - a, b, c from left to right

Building 8c - roof void

Overall suitability for roosting bats: LOW/MODERATE

3.4 Bat Activity Surveys

Following the results of the initial bat survey three bat activity surveys were carried out to encompass all buildings on Site.

3.4.1 Dusk Emergence Survey

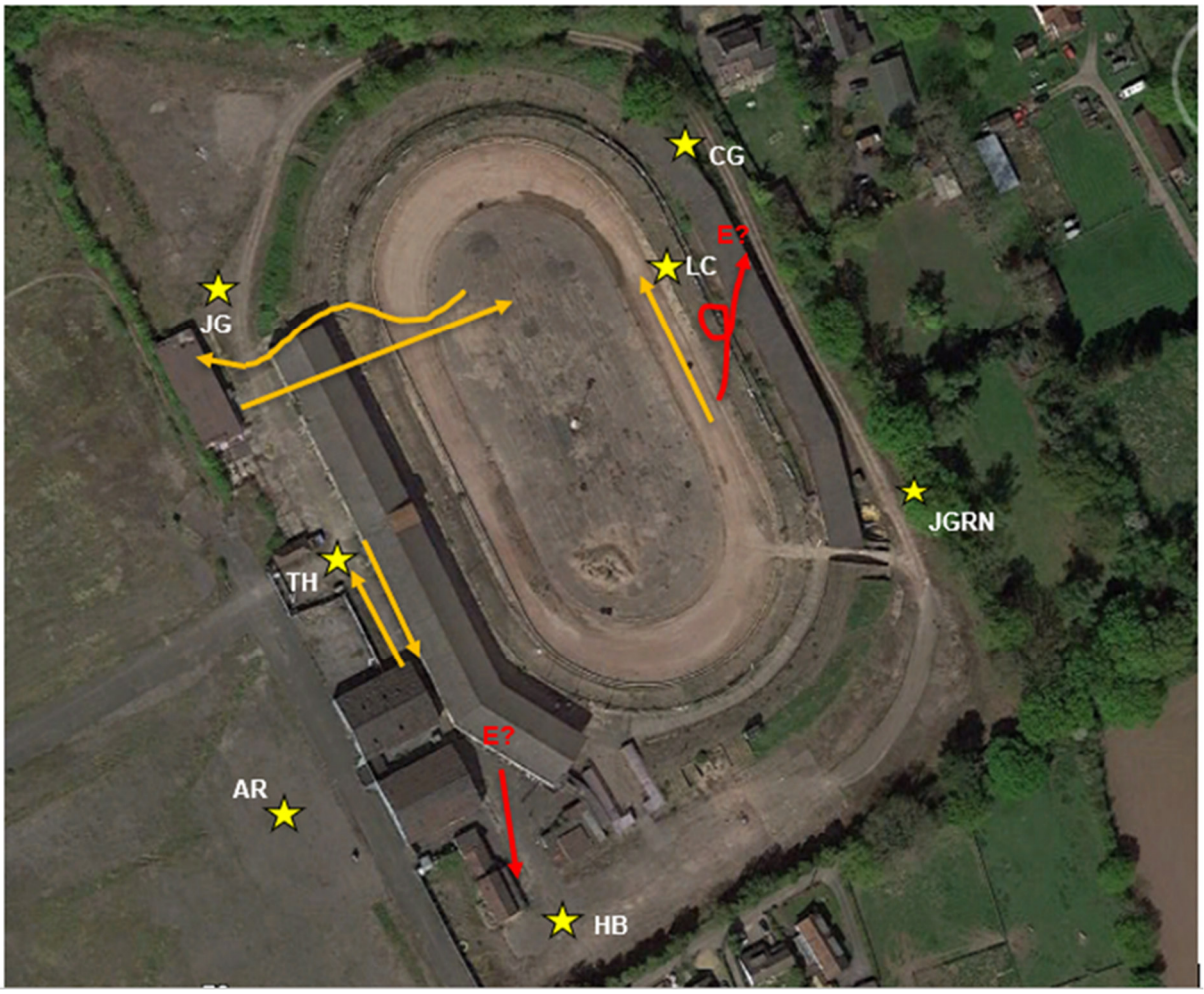
The dusk emergence survey was undertaken on 15th July 2020, using 7 surveyors. Sunset was at 21:21hrs.

Table 05: weather conditions during Dusk survey on 15th July 2020.

Parameter	Start	End
Time	20:35	23:00
Temperature	15ºC	12ºC
Cloud cover	100	100
Precipitation	Dry	Dry
Wind speed (Beaufort scale)	3 (Gentle breeze)	2 (Light breeze)

Two common pipistrelle bats were noted as possible emergences adjacent buildings 4 and 8 but precise locations could not be determined. No other bats were seen to emerge from any of the buildings. The static bat detectors only recorded common pipistrelles which were noted to foraging and passing building 5 at the Site.

Please refer to the following inserts for survey results.



KEY

: Surveyor position

?E: Possible Emergence
: Bat Activity
: Common Pipistrelle

Figure 4: Bat Activity Map- Dusk 15/07/2020
Project: 2020-01(08)
Date: 15/07/2020 **Scale:** Not to scale 2020

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Timestamp	Surveyor ID	Bat species	Activity	Map Reference, eg A, B, C	Comments/additional info	Identification method	
7/15/2020 21:28:58	CG	Common pipistrelle	Pass	A		Seen	
7/15/2020 21:31:56	CG	Myotis sp.	Pass	B		Seen	
7/15/2020 21:32:14	JG	Noctule	Pass	A		Seen	
7/15/2020 21:37:50	CG	Common pipistrelle	Foraging	C	Foraging constantly	Seen	
7/15/2020 21:45:48	HB	Common pipistrelle	Pass			Heard on bat detector	
7/15/2020 21:45:58	TH	Common pipistrelle	Pass	A		Seen	
15/07/2020 21:46:00	LC	Common pipistrelle	Pass	A	Passed Twice	Seen	
7/15/2020 21:46:27	CG	Common pipistrelle	Pass	D		Seen	
15/07/2020 21:47:00	LC	Common pipistrelle	Pass	A		Seen	
7/15/2020 21:47:42	JG	Common pipistrelle	Pass			Heard on bat detector	
15/07/2020 21:48:00	LC	Common pipistrelle	Pass	A		Seen	
7/15/2020 21:48:38	CG	Common pipistrelle	Pass	E	where Lou was	Seen	
15/07/2020 21:50:00	LC	Common pipistrelle	Pass	B	from central track	Seen	
7/15/2020 21:50:57	CG	Common pipistrelle	Pass	F	tunnel	Seen	
15/07/2020 21:52:00	LC	Common pipistrelle	Pass	B	Under overhang	Seen	
15/07/2020 21:55:00	LC	Common pipistrelle	Pass	B	twice then headed	Seen	
15/07/2020 21:57:00	LC	Common pipistrelle	Pass	A then A2	central area west	Seen	
7/15/2020 21:58:45	HB	Common pipistrelle	Possible emergence from	A	directly toward me	Seen	
15/07/2020 22:00:00	LC	Common pipistrelle	Pass	A the A2	the back and across the in	Seen	
7/15/2020 22:00:35	AR	Common pipistrelle	Pass			Heard on bat detector	
7/15/2020 22:04:05	JG	Common pipistrelle	Possible emergence	B	have been across from	Seen	Came from Lou
7/15/2020 22:04:38	CG	Common pipistrelle	Pass, Foraging	C then a		Seen	
7/15/2020 22:17:21	JG	Common pipistrelle	Pass	B		Seen	
7/15/2020 22:33:05	AR	Indet. pipistrelle	Pass		V. Faint	Heard on bat detector	
7/15/2020 22:33:25	TH	Common pipistrelle	Pass	B		Seen	
7/15/2020 22:38:45	JGreen	Indeterminate bat	Pass	A	second (no time for fine	Heard on bat detector	
7/15/2020 22:38:51	HB	Common pipistrelle	Pass	B		Seen	
7/15/2020 22:40:24	HB	Common pipistrelle	Pass			Heard on bat detector	
7/15/2020 22:43:32	CG	Common pipistrelle	Pass	D		Seen	
7/15/2020 22:44:11	JGreen	Common pipistrelle	Pass	B	2 or doubled back	Heard on bat detector	
7/15/2020 22:44:52	CG	Common pipistrelle	Foraging	C	X2	Heard on bat detector, Seen	
7/15/2020 22:48:46	JGreen	Common pipistrelle	Pass	C		Heard on bat detector	
7/15/2020 22:51:03	AR	Noctule	Pass			Heard on bat detector	
7/15/2020 22:53:32	JGreen	Indet. pipistrelle	Pass	D	Caught at 45 for only a moment, sounded a little tinny but unsure	Heard on bat detector	
7/15/2020 22:53:50	JGreen	Common pipistrelle	Pass	B		Heard on bat detector	
7/15/2020 22:54:46	JGreen	Common pipistrelle	Pass	E		Heard on bat detector	
7/17/2020 5:00:23	JGreen	Common pipistrelle	Pass	E		Heard on bat detector	

3.4.2 Dawn Re-Entry Survey

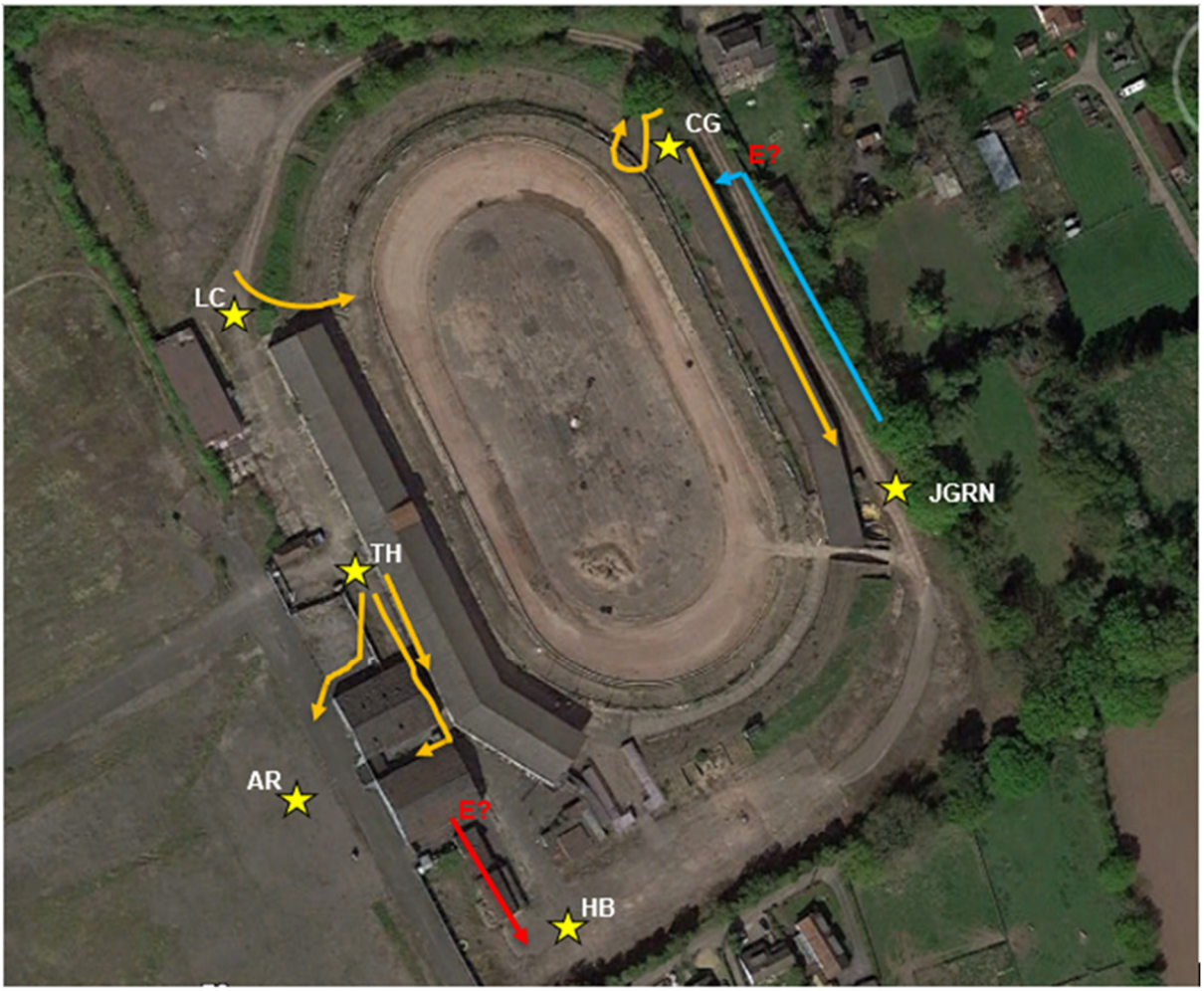
The dawn re-entry survey was undertaken on 4th August 2020, using 6 surveyors. Sunrise was at 05:31hrs.

Table 06: weather conditions during Dawn survey on 4th August 2020.

Parameter	Start	End
Time	03:40	05:46
Temperature	12ºC	13ºC
Cloud cover	65%	65%
Precipitation	Dry	Dry1
Wind speed (Beaufort scale)	3 (Gentle breeze)	3 (Gentle breeze)

A single common pipistrelle was noted as entering building 8 during the survey at 04:21. With an addition common pipistrelle identified a possibly entering near the men's toilet block of building 5 at 05:09. No other bats were seen to emerge from any of the buildings.

Please refer to the following inserts for the results



KEY

: Surveyor position
: Indeterminate Pipistrelle
: Bat Activity
: Common Pipistrelle
?E: Possible Emergence

Figure 5: Bat Activity Map- Dawn 04/08/2020
Project: 2020-01(08)
Date: 04/08/2020 **Scale:** Not to scale 2020

ecolocation

Timestamp	Surveyor ID	Bat species	Activity	Map Reference, eg A, B, C	Comments/additional info	Identification method
8/4/2020 3:59:13	AR	Myotis sp.	Pass			Heard on bat detector
8/4/2020 4:05:44	AR	Common pipistrelle	Pass			Heard on bat detector
8/4/2020 4:07:05	TH	Common pipistrelle	Pass	A		Heard on bat detector, Seen
8/4/2020 4:16:03	TH	Common pipistrelle	Pass	B		Heard on bat detector, Seen
8/4/2020 4:17:53	CG	Common pipistrelle	Pass			Heard on bat detector
8/4/2020 4:21:38	HB	Indet. pipistrelle	Possible entry	Building to left of view from HB position	Unclear as to whether bat came from building due to low vis, flew from low	Heard on bat detector, Seen
8/4/2020 4:24:09	CG	Common pipistrelle	Pass	A		Heard on bat detector, Seen
8/4/2020 4:25:11	TH	Common pipistrelle	Pass	C		Heard on bat detector, Seen
8/4/2020 4:25:29	AR	Common pipistrelle	Pass			Heard on bat detector
8/4/2020 4:25:57	JG	Indeterminate bat	Pass		Heard at 45 khz for only a moment, couldnt fine tune	Heard on bat detector
8/4/2020 4:26:38	HB	Common pipistrelle	Pass			Heard on bat detector, Seen
8/4/2020 4:28:50	LC	Common pipistrelle	Pass	A	From grassy area behind me	Seen
8/4/2020 4:31:56	CG	Common pipistrelle	Pass			Heard on bat detector
8/4/2020 4:33:03	CG	Common pipistrelle	Foraging	B		Heard on bat detector, Seen
8/4/2020 4:34:59	JG	Indeterminate bat	Pass	A	Seen doing a figure 8 (but flew off), didnt hear anything Clearly at 45 khz	Seen
8/4/2020 5:08:17	CG	Common pipistrelle	Pass	C	Entered stadium through opening by camera, unsure where it went afterwards	Heard on bat detector, Seen
8/4/2020 5:09:16	JG	Common pipistrelle	Pass, Possible entry	A	Circled numerous times, didnt see if it flew off or entered possible roost	Heard on bat detector, Seen

3.4.3 Dusk Emergence Survey

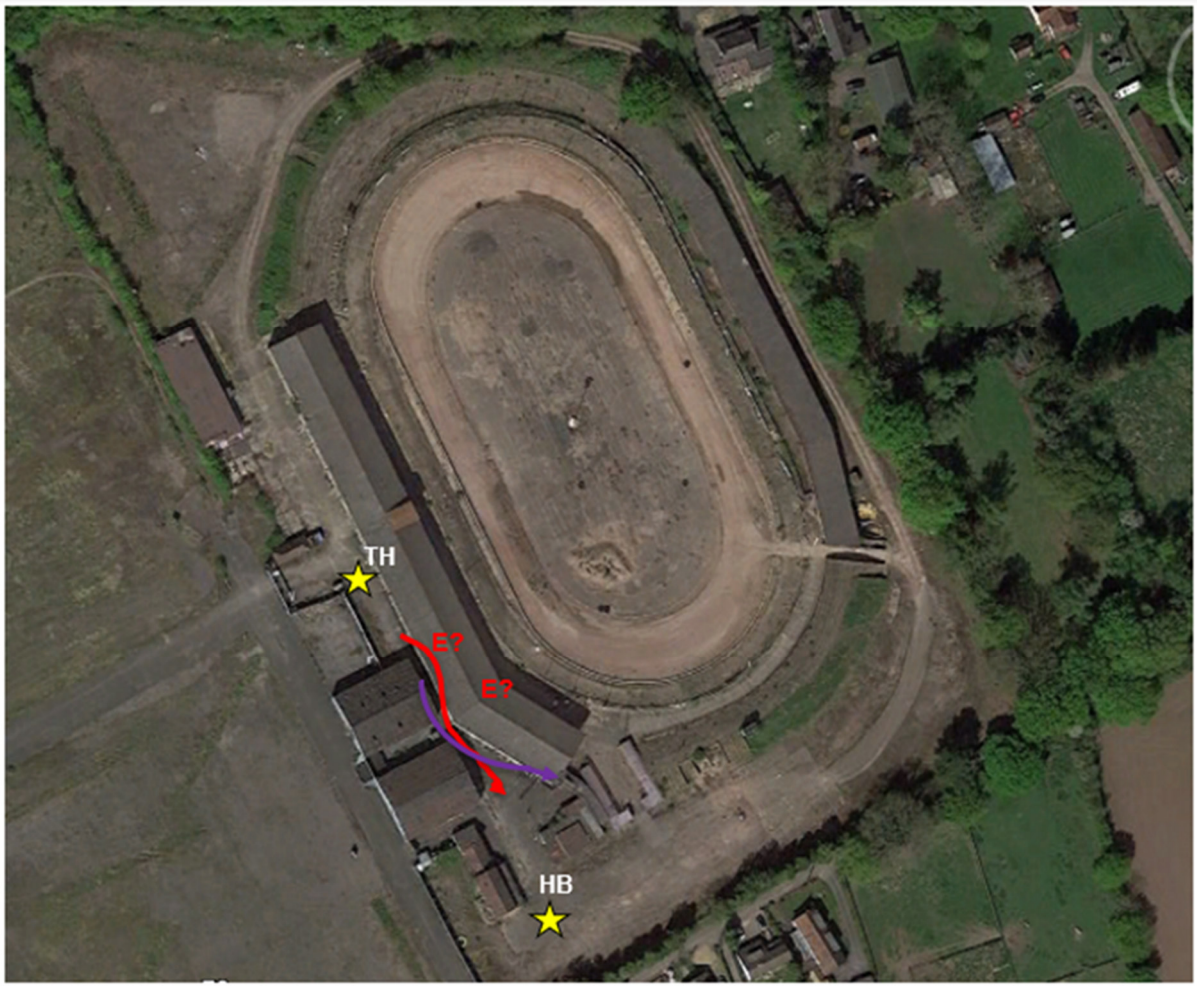
The targeted dusk emergence survey was undertaken on 24th August 2020, using 2 surveyors. Sunset was at 20:11hrs.

Table 7: weather conditions during Dusk survey on 24th August 2020.

Parameter	Start	End
Time	19:55	23:30
Temperature	15ºC	14ºC
Cloud cover	95	95
Precipitation	Dry	Dry
Wind speed (Beaufort scale)	3 (Gentle breeze)	2 (light breeze)

Observation of a single common pipistrelle was made at 20:54 possibly emerging from the western ridge of building 4. No other bats were seen to emerge from any of the buildings.

Please refer to the following inserts for the results.



KEY

: Surveyor position
: Soprano Pipistrelle
: Bat Activity
: Common Pipistrelle
?E: Possible Emergence

Figure 6: Bat Activity Map- Dusk 24/08/2020
Project: 2020-01(08)
Date: 24/08/2020 **Scale:** Not to scale 2020

ecolocation

Timestamp	Surveyor ID	Bat species	Activity	Map Reference, eg A, B, C	Comments/additional info	Identification method
8/24/2020 20:35:04	TH	Indet. pipistrelle	Pass	A	3 bats all same. Through steps into stadium	Heard on bat detector, Seen
8/24/2020 20:36:44	TH	Indet. pipistrelle	Playing?		Around roof brackets	Heard on bat detector, Seen
8/24/2020 20:39:38	HB	Soprano pipistrelle	Emerging	A	Flew from left hand side of main grandstand roof.	Heard on bat detector, Seen
8/24/2020 20:42:59	TH	Common pipistrelle	Pass	C		Heard on bat detector, Seen
8/24/2020 20:43:38	HB	Common pipistrelle	Pass			Heard on bat detector
8/24/2020 20:50:04	TH	Common pipistrelle	Pass, Foraging			Heard on bat detector
8/24/2020 20:51:30	HB	Common pipistrelle	Foraging		Flew overhead	Heard on bat detector, Seen
8/24/2020 20:53:17	HB	Common pipistrelle	Foraging			Heard on bat detector
8/24/2020 20:54:34	HB	Common pipistrelle	Possible emergence	Flew from left side of main stand roof along ridge towards HB		Heard on bat detector, Seen
8/24/2020 20:54:52	HB	Soprano pipistrelle	Pass			Heard on bat detector
8/24/2020 20:55:53	HB	Common pipistrelle	Foraging			Heard on bat detector
8/24/2020 21:05:19	TH	Common pipistrelle	Pass			Heard on bat detector
8/24/2020 21:08:51	TH	Common pipistrelle	Pass		Circling roof under cover above me	Heard on bat detector
8/24/2020 21:08:06	TH	Common pipistrelle	Pass		Amendment to previous sighting. Circling from 20:53-21:08	Heard on bat detector
8/24/2020 21:11:41	TH	Indet. pipistrelle	Pass	Possibly A		Heard on bat detector
8/24/2020 21:13:33	TH	Indet. pipistrelle	Pass			Heard on bat detector
8/24/2020 21:19:42	TH	Indet. pipistrelle	Pass			Heard on bat detector
8/24/2020 21:25:17	TH	Indet. pipistrelle	Pass			Heard on bat detector
8/24/2020 21:55:18	HB	Soprano pipistrelle	Pass			Heard on bat detector

4 Discussion & Conclusions

The results of the initial bat assessment of the buildings indicated low-medium potential for bats across all the buildings at the site.

Bat activity surveys at the site between July and September 2020 provided evidence of individual common and soprano pipistrelle emergences and/or entries recorded at buildings 4, 5 and 8. As all of the buildings within the site are proposed to be demolished, suitable mitigation for these species is outlined within section 10 to demonstrate that appropriate bat mitigation can be readily accommodated within the site.

Building 4 appeared to offer moderate hibernation roost opportunities for bats during the winter months. Due to the potential extent of the cavities within the ceilings, it was not possible to undertake suitably thorough inspections of the building, although a check for bats in winter prior to development is recommended, it should be noted that an absence of bat evidence at this time would not necessarily represent an absence of bats. As such, it is assumed that such a building could house hibernating bats and a replacement hibernation building is recommended to be erected within the shaded woodland area. Further details and sensitive working practices are described in the sections below.

Incidental use of buildings by indeterminate bird species was recorded during the walkover survey. It is noted that there is a medium to high potential for nesting birds to make use of most buildings at the site and sensitive working practices in this regard are outlined in the section below.

As roosts have been identified, the proposed demolition of building 8 and building 4 and 5 will result in the destruction of these roosts and a Natural England derogation licence is therefore necessary for demolition works to proceed legally. Details of any licence requirements and recommended mitigation can be found in sections 9 and 10 below and will allow the works to proceed in a sensitive manner, avoiding harming or injuring the bats and secure replacement roosting opportunities in the replacement dwellings for the longer term, such that the favourable conservation status of these bat species in the locality should remain unchanged with habitat enhanced.

Note: previous surveys in 2014and 2017 by Ecolocation confirmed roosting by common pipistrelle and brown long-eared bat, together with hibernation in building 4. Given the scale and nature of the buildings on site it cannot be discounted that such activity may not continue as facility for such activity remains present and viable. A lack of brown long-eared bat activity in summer 2021 does not indicate desertion of the site by the species and as such mitigation/compensation must be provided unless use can be confirmed to have ceased in the interim.

Bats are highly mobile and when not in hibernation can occupy a building overnight. It is essential therefore that due vigilance be maintained before and during any works to ensure their protection. The lack of evidence of more significant roosting at this stage does not constitute confirmation that this is not taking place intermittently or may not take place in the future. Please note that a bat mitigation licence application to Natural England may need to be supplemented with additional bat activity surveys between May-early August in the same year of submission.

Derogation Licence or Method Statement

Under The Conservation of Habitats and Species Regulations 2010 it is an *absolute offence* to damage or destroy a bat roost. The Regulations fully protect bats and their breeding sites or resting places, making it an offence to:

- Deliberately capture (take), injure or kill bats;
- Deliberately disturb bats;
- Damage or destroy a bat breeding site or resting place.

In addition, the Wildlife & Countryside Act 1981 (as amended) (WCA) makes it an offence to intentionally or recklessly:

- disturb any bat whilst it is occupying a structure or place which it uses for shelter or protection;
- obstruct access to any structure or place which any bat uses for shelter or protection.

The proposal was assessed against these criteria and it was concluded that the demolition of both buildings would constitute destruction of the roosts and would, therefore, be **licensable.**

A licence application in respect of bats must be made to Natural England in order to ensure that the proposed works are conducted in a legal manner. Further details are provided in section 10 below but please note that a licence application can only be made once planning permission has been granted and any relevant planning conditions have been discharged. Please note: Natural England generally take 30 working days to respond to a licence application and should a re-application or further information need to be made then this would incur the potential for up to a further 30 working days delay before a decision is issued (NB: Natural England have advised during the period of Covid-19 protection measures that this period may extend to 45 working days).

A floodlit sports pitch with facilities is proposed in the northwest corner of the site, adjacent to the woodland edge of New Close and Birchley wood on the northern boundary and gardens of houses on the western side. These are both habitats along and over which bats can commute, forage and possibly roost. There is a possible adverse impact of light spillage onto these habitats, making them less attractive to bats, and deterring some species from foraging/commuting in these areas. A lit sports pitch may also be a barrier to any bat movements across it or around its edge. Lighting is also thought to increase predation, delay emergence with reduced foraging time and the desertion of roosts (Bats and artificial lighting in the UK, Guidance Note 8/18, Bat Conservation Trust, and the Institution of Lighting Professionals 2018.) Possible adverse impact of light spillage onto the woodland edge, making it less attractive to bats, and possibly deterring some species from foraging/commuting along the woodland edge (Separate assessment of this issue is covered in an accompanying Bat Transect Survey Report by Ecolocation).

In addition, due to evidence of bird nesting being noted in buildings at the time of the surveys, there remains potential for nesting birds to utilise buildings in future and due diligence prior to and during works is recommended.

5 Mitigation & Compensation

5.1 Bats

Certain mitigation in respect of day roosts of common and soprano pipistrelle bats at the site will be required. The following mitigation is based on that considered to be required for a bat licence application to be made to Natural England, it is advised that updated bat activity surveys of the site should be undertaken in the survey season current at the time of submission in order to fully inform the licence application together with a revised visual inspection within a 3-month period prior to submission. On the basis of the current information, mitigation for day roosts of small numbers common and soprano pipistrelle (and brown long-eared bat) should include:

5.1.1 Install temporary boxes

In advance of any works to any building likely to disturb bats (e.g., works at roof level, removal of ceilings, etc), and to ensure that bats are not left without a roost during the course of the works, no works will commence on demolition until five temporary bat boxes have been erected on suitably located trees within the site. Location will be determined and checked by a Licensed Bat Worker prior to demolition commencing.

5.1.2 Dismantling of the roof under supervision of a licensed ecologist

A watching brief by a Licensed Bat Worker will be commissioned during the course of any roof stripping works to sections of all existing structures with bat potential. Such works will be undertaken upon the instructions of the Licensed Bat Worker until demolition works have reached such a stage that he/she is satisfied that no bat presence is likely beyond that point. Any bats found during the course of this process should be taken into the care of the Bat Worker and released into the previously fixed bat boxes. Should more bats be found than are approved on the Natural England licence, works would have to cease whilst Natural England are contacted for advice on how best to proceed. This can occasionally happen as N.E. limit the number of bats licensed for disturbance; bats move roosts regularly and sometimes more bats are found during the strip than were observed during surveys.

5.1.3 Sensitive timing of works

Timing of works are to be set out in the licence application to Natural England. It is not considered *absolutely necessary* to avoid works during the summer months as no maternity roost of bats is confirmed, although this is a strong preference for minimising impacts to the bats. Timing of works are therefore *preferred* between September and April of any given year. Hibernation opportunities are considered high in building 4 and timing of works thereto must reflect this being March to November, inclusive. If there are other works to be undertaken that would not constitute disturbance to bats (seek advice from an ecologist) then these may proceed without timing restrictions, albeit they may be subject to other planning conditions.

5.1.4 Permanent replacement roosting/hibernation opportunities

During the construction of the replacement buildings, it is advised that four integrated bat boxes are included with two on south/south-east/south-west elevations and two on north/north-east elevations of structures close to suitable habitat within or adjacent to the site, for which there is ample scope. The Licensed Bat Worker must conduct a site visit to evidence that these are being installed correctly.

Recommended roosting and hibernation facilities are as follows:

- 2 x Ibstock small, enclosed bat box B under the eaves on two appropriate structures (http://www.nhbs.com/title/187691/ibstock-enclosed-bat-box-b)

- 2 x ridge tile roosts as per standard English Nature detail EN4a

As building 4 has potential to support hibernating bats, at this stage it is appropriate to indicate how mitigation or compensation for hibernating bats (all species unknown) could be achieved within the scheme and this is outlined below:

The loss of hibernation opportunities for roosting bats can be mitigated for via the provision of a dedicated bat hibernaculum, the location of which is suggested within the woodland strip to be unaffected by the proposed development at the north/north-west boundary. The precise location of this would be agreed with the arboriculturalist to minimise any damage to significant trees but is specifically proposed to be located here as it could be shaded on all sides by trees ensuring that it does not receive direct sunlight which could result in the internal temperature of the hibernaculum being too warm.

The bat hibernaculum should take the form of a structure of minimum footprint 5m x 5m with thick walls of brick or stone that are enclosed (although access for bats could be provided via a grille opening on a door that was only accessible to a licensed bat worker for monitoring purposes). The building would be enclosed (i.e. not open-sided) and it would need no separate loft space as crevices would be created on the ground floor of the hibernaculum within the walls or perhaps via the addition of Norfolk bat bricks (suitable for use by hibernating bats). The roof of the hibernaculum should be of a design that would allow for a range of temperature levels within the building between 0℃ and 10℃ and to encourage humidity levels to be high (around 90%). A bare earth floor located at a level below finished external ground level will serve to achieve this. See Norfolk Bat Group information sheet on bat hibernacula and Norfolk bat bricks, below

5.1.5 Monitoring

As roosts are of common species, no post-development monitoring is considered to be required.

5.1.6 Design of Floodlighting for Sports Pitch

Best practice on lighting design to reduce its impact on bats as set out in “Bats and Artificial Lighting in the UK Guidance Note 08/8, Bat conservation trust, Institution of lighting professionals 2018” should be followed.

Landscape planting with trees and shrubs will be required to provide a buffer/screen.

For further information on this section see separate accompanying Bat Transect Survey Report by Ecolocation.

5.2 Birds

Evidence of nesting birds was recorded during the surveys and there remains good suitability for birds to access buildings to nest. The majority of species of nesting bird are protected under the Wildlife & Countryside Act 1981 and as amended by the Countryside & Rights of Way Act 2000. The site should therefore be surveyed for nesting birds prior to commencement of works by a person competent to do so and due vigilance also be maintained during construction to ensure that no breeding birds are disturbed during the construction process should nesting commence thereafter. Birds typically nest between March-September inclusive though some species will nest at any time of year. If evidence of nesting birds is found, no works should be undertaken that may cause disturbance within 5m of active nests until after all chicks have fledged and permanently left the nest

5.3 Other Protected Species

Due vigilance should be maintained throughout the development and should any other protected species be found works should stop and Ecolocation called for advice on the best way to proceed.

The National Planning Policy Framework paragraph 175 states that "Opportunities to incorporate biodiversity in and around developments should be encouraged". Therefore, additional recommendations for biodiversity enhancements across the Site are provided below:

Planting:

All proposed planting must follow a design ethos in preference of native species to maximise the potential for invertebrates and consequently an ultimately biodiverse communities of species including tree, hedge and shrub planting using native species of local provenance and suitably specified and sourced wildflower mixes.

Birds:

Nesting facilities for locally present and formerly common species such as house sparrow (*Passer domesticus*), starling (*Sturnus vulgaris*), swift (*Apus apus*) and house martin (*Delichon urbica*) can be provided by way of standard built-in nest boxes at appropriate locations, suitably orientated, throughout the development site as advised by a suitably experienced ecologist.

Hedgehog:

Access into and between all gardens is recommended for hedgehog by way of 150x150mm gaps at the base of back garden fences randomly positioned.

Invertebrates:

Ten bug houses and bee huts are recommended to be located in full sun throughout the development within private gardens

6 References

Bat Conservation trust &Institution of Lighting Professionals, 2018. Bats and artificial lighting in the UK, Guidance Note 08/18

BSI,2013. Biodiversity- Code of Practice for Planning and Development. BS 42020:2013.

CIEEM, 2018. Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM, 2017. Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester, [2nd edition].

Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London. ISBN – 13 978-1-872745-96-1

Conservation of Habitats and Species Regulations, HMSO (2010, as amended)

Government Circular 2005: *Biodiversity and geological conservation: Statutory obligations and their impacts in the planning system.* The Stationary Office Ltd, ISBN 0 11 7539511

Mitchell-Jones, A.J, & McLeish, A.P. Ed., (2004), 3rd Edition Bat Workers' Manual, 178 pages b/w photos, softback, ISBN 1 86107 558 8

Magic Map Application 2013, *MAGIC*. [online]. Available from: http://www.magic.gov.uk/MagicMap.aspx

Mitchell-Jones, A. J. (2004) Bat Mitigation Guidelines, 1st edition, English Nature, ISBN 1 857167813

National Planning Policy Framework, February 2019.

Russ, J. (2012) *British Bat Calls; A guide to species identification*. Pelagic Publication, Exeter.

Swift, S. M. (2002) *Long-eared Bats*, Poysner Natural History, ISBN – 10: 0856611085

Warwickshire Biological Record Centre