

BAT SURVEY REPORT

JULY 2022

Cornhill Regeneration Project, Leek

Barnfield Road and Sunnyhills Road

Cornhill, Leek

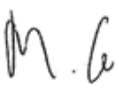
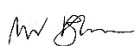
Staffordshire

ST13 5RJ

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G R E E N



QUALITY MANAGEMENT

Project No.:	UG1145			
Project:	Cornhill Regeneration Project			
Location:	Barnfield Road and Sunnyhills Road, Cornhill, Leek ST13 5RJ			
Title:	Bat Survey Report			
Document Type:	BSR	Issue No.:	01	
Date:	19/07/2022			
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Revision Status:				
Rev:	Date:	Issue/Purpose/Comment:	Prepared:	Checked:

NON-TECHNICAL EXECUTIVE SUMMARY

Casey Group Ltd are proposing to develop land at Barnfield Road and Sunnyhills Road, Leek in Staffordshire (hereafter referred to as 'the site'). The proposals include the demolition of former industrial buildings and redevelopment of the site.

Urban Green have been appointed to complete Bat Activity Surveys and a Report of the site. A Preliminary Ecological Appraisal was conducted at the site in July 2021. Further surveys in the form of nocturnal emergence and re-entry surveys were recommended to further assess the site's value for roosting bats.

In accordance with relevant guidance set out in Collins (2016), emergence and re-entry surveys were carried out at four buildings on site, as detailed within the PEA. The nocturnal surveys recorded three identified species and three unidentified species utilising the site for commuting and foraging purposes.

No bats were recorded emerging or re-entering the surveyed buildings; therefore, no bat roosts are considered to be present at the site and it is considered to be utilised solely for commuting and foraging purposes.

Lighting mitigation recommendations have been included to protect retained habitats and off-site habitats of value to commuting and foraging bats and should be considered within the proposed external lighting plans.

Pigeon (*Columba livia domestica*) were confirmed to be nesting within B1 and B3. It has been recommended that demolition works be undertaken outside of the nesting bird season (March – September, inclusive) or, failing that, that a suitably experienced ecologist check the buildings internally and externally for breeding bird activity no more than 48 hours before any works commence. If nesting activity is found, nests must be left in situ until the young have fledged.

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1 Introduction

1.1 Background to the Scheme

Casey Group Ltd are proposing to develop land at Barnfield Road and Sunnyhills Road, Leek, in Staffordshire (hereafter referred to as ‘the site’). The proposals include the demolition of former industrial buildings and redevelopment of the site. Urban Green have been appointed to undertake a Preliminary Ecological Appraisal (PEA) of the site.

Urban Green have been appointed to undertake further Nocturnal Emergence and Re-entry Surveys following recommendations outlined within a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA), undertaken at the site by Urban Green in July 2021.

The author of the report is Max Grindle BSc, QCIEEM, Assistant Ecologist at Urban Green. Max has experience providing ecological consulting services for a range of development schemes across the UK, including residential and commercial schemes.

1.2 Site Context

The site is located at National Grid Reference SJ 97827 55259 and comprises a total area of approximately 7ha (see Figure 1).

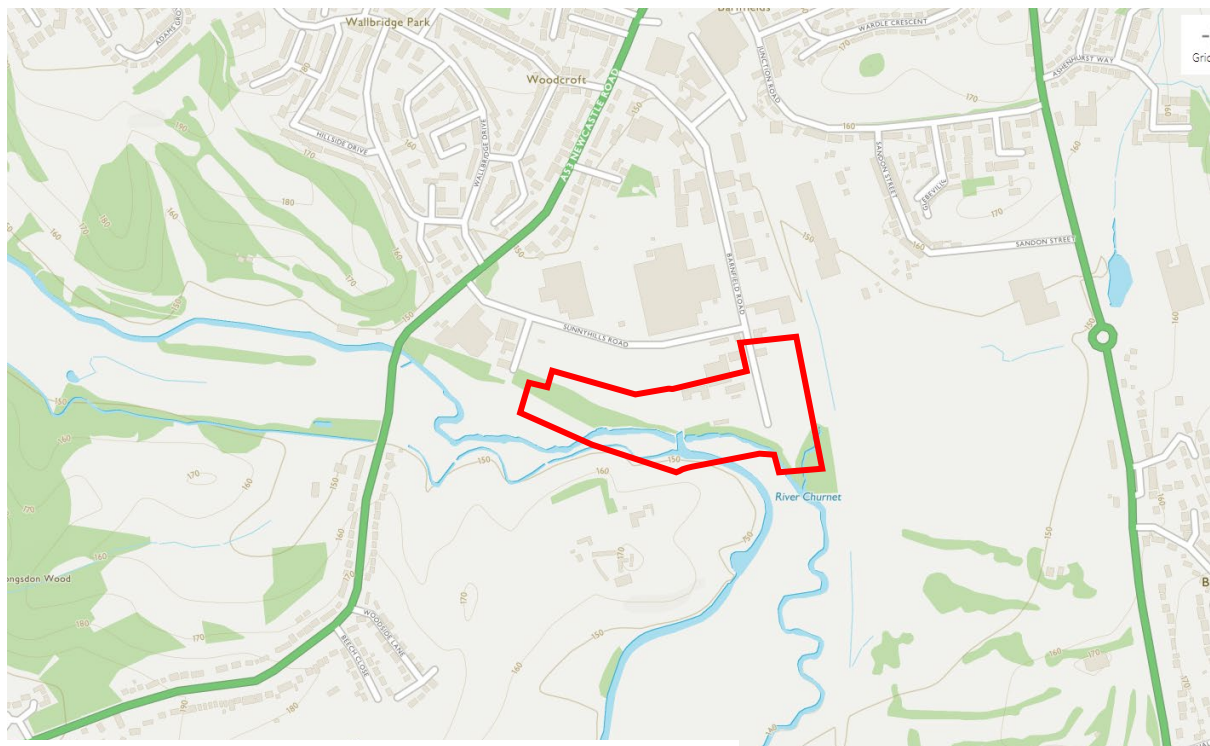


Figure 1 – Site Extent

The site is located on the rural-urban fringe of Leek, approximately 1.5km from the town centre. Sunnyhills Road borders the site to the north and Barnfield Road runs through the eastern part of the site. The A53 is present approximately 300m to the west and the A520 is present approximately 800m to the east. Westwood Golf Club is present approximately 700m to the west and Leek Golf Club is also present 1km to the south-east. The River Churnet is present 30m to the south and runs through

Ladderedge Country Park, a locally important site comprising a mosaic of grassland, woodland, and scrub.

1.3 Purpose of this Report

This report has been produced to demonstrate the results of nocturnal emergence and re-entry surveys which were completed at the site. The surveys were conducted to further assess the site's value for roosting bats. The report has been produced in support of the proposed planning application.

Relevant UK legislation of the protection of all UK bats are detailed in Appendix 1.

2 Previous Surveys

2.1 Preliminary Ecological Appraisal

A PEA and PRA were completed at the site by Urban Green in July 2021 and are detailed within Report UG_1145_ECO_PEA (Urban Green, 2021).

Roosting Bats

A PRA was completed on all structures and trees located on site and adjacent. Please refer to Appendix 2 for the results of the PRA.

Buildings 3 and 7 were assessed as having **low** bat roosting potential, requiring a minimum of one nocturnal dusk emergence or dawn re-entry survey. Buildings 6 and 9 were assessed as having **moderate** bat roosting potential, requiring a minimum of two nocturnal dusk emergence/dawn re-entry surveys. Building 2 was assessed as having **high** bat roosting potential, requiring a minimum of three nocturnal dusk emergence/dawn re-entry surveys.

To summarise, Buildings 2, 3, 6, 7 and 9 were assessed as having bat roosting potential. All buildings will require demolition to facilitate development. As such, further bat surveys were recommended to confirm the presence or likely absence of roosting bats within these buildings.

Commuting and Foraging Bats

The habitats of highest commuting value were to be retained and incorporated within the site layout. Whilst compensatory habitats should be incorporated within the proposed landscape design to compensate for the loss of foraging habitat, it was not anticipated that the extent of foraging habitat would impact the local bat population due to the presence of higher valued habitat adjacent to the south.

The habitats surrounding the site were anticipated to provide the most valuable commuting and foraging habitat for the local bat population. This habitat was offsite and outside the remit of the client. However, the recommended CEMP should mitigate potential impacts to this habitat and should consider lighting and working hours.

Slow-flying species such as brown long-eared bats (*Plecotus auritus*) and myotis species (*Myotis sp.*), were known to be in the local area (see Section 3.1.3 of the PEA for further details). These species are sensitive to lighting and may be impacted by the proposed development, should no mitigation for lighting be considered.

3 Methods

3.1 Emergence and Re-entry Surveys

Nocturnal surveys were undertaken across B2, B3, B6 and B7, following good practice guidance set out in Collins (2016). Surveys were conducted by three to four suitability qualified ecologists, and under the guidance of Mark Blacker, Senior Ecologist at Urban Green who holds a Level 1 Class Licence for bats (2022-10353-CL17-BAT).

The surveys were conducted using handheld Elekon Batscanner and/or BatBox Duet detectors. Surveyors were positioned around the building concerned to observe the Potential Roosting Features (PRFs) identified during the PRA. The emergence surveys started at least 15 minutes before sunset until approximately 1.5 to 2 hours after sunset, with the re-entry surveys starting approximately an hour and a half before sunrise until 15 minutes after sunrise.

A summary of the survey details are provided in Table 1. Approximate surveyor locations around each building are located within Appendix 3. Individual surveyor results are available on request.

Table 1 – Emergence/re-entry survey details

Date	Surveyed feature/ survey type	Sunset/ sunrise time	Survey time	Surveyors	Weather conditions at start
08/06/2022	B2 Emergence	21:32	21:32-23:01	S1 – Katy Ellen S2 – Toby Mills S3 – Jake Healy	Temp: 13°C Cloud cover: 3/8 oktas Wind: 3 Beaufort Precipitation (Ppt): None
09/06/2022	B7 Re-entry	04:43	03:13-04:58	S1 – Jake Healy S2 – Toby Mills S3 – Katy Ellen	Temp: 9°C Cloud cover: 0/8 oktas Wind: 2 Beaufort Precipitation (Ppt): None
15/06/2022	B3 Emergence	21:36	21:21-23:06	S1 – Max Grindle S2 – Jennifer Furby S3 – Jessica Sibley S4 – Toby Mills	Temp: 16°C Cloud cover: 0/8 oktas Wind: 1 Beaufort Precipitation (Ppt): None
16/06/2022	B6 Re-entry	04:41	03:11-04:56	S1 – Max Grindle S2 – Jennifer Furby S3 – Jessica Sibley S4 – Toby Mills	Temp: 11°C Cloud cover: 0/8 oktas Wind: 1 Beaufort Precipitation (Ppt): None
20/06/2022	B2 Emergence	21:39	21:24-23:09	S1 – Max Grindle S2 – Katy Ellen S3 – Jessica Sibley	Temp: 16°C Cloud cover: 1/8 oktas Wind: 0 Beaufort Precipitation (Ppt): None
06/07/2022	B6 Emergence	21:35	21:20-23:05	S1 – Max Grindle S2 – Jennifer Furby S3 – Jessica Sibley S4 – Toby Mills	Temp: 17°C Cloud cover: 8/8 oktas Wind: 2 Beaufort Precipitation (Ppt): Light drizzle

Date	Surveyed feature/ survey type	Sunset/ sunrise time	Survey time	Surveyors	Weather conditions at start
07/07/2022	B2 Re-entry	04:51	03:19-04:51	S1 – Toby Mills S2 – Max Grindle S3 – Jennifer Furby S4 – Jessica Sibley	Temp: 13°C Cloud cover: 8/8 oktas Wind: 1 Beaufort Precipitation (Ppt): None

Jake Healy – an assistant ecologist with three years’ bat survey experience

Max Grindle – an assistant ecologist

Katy Ellen – a seasonal ecologist

Toby Mills – a seasonal ecologist

Jennifer Furby – a seasonal ecologist

Jessica Sibley – a seasonal ecologist

3.2 Constraints to the Surveys

The conclusions and recommendations detailed in this report are based upon the site redline boundary and the development proposals as outlined by the client at the time of writing. Should there be any changes to the site redline boundary or development proposals at a later stage, this assessment should be reviewed to determine whether any amendments or additional survey work is required.

The findings of this report represent the professional opinion of qualified ecologists and do not constitute professional legal advice. The client may wish to seek professional legal interpretation of the relevant wildlife legislation cited within this document.

During the emergence survey on the 8th of June, due to lack of available access to site, the survey was delayed by 15 minutes and as such began as sunset commenced.

Myotis Alcaethoe (*Myotis alcaethoe*), Brandt’s (*Myotis brandtii*), Daubenton’s bat (*Myotis daubentonii*) and whiskered bat (*Myotis mystacinus*) are often difficult to distinguish between by handheld detectors and sound analysis. As such, the species have been recorded as *Myotis sp.* throughout the report.

B9 underwent demolition before nocturnal surveys were able to be carried out, therefore it was not possible to conduct emergence or re-entry surveys on this building. A full suite of surveys was conducted on all other buildings identified within the PEA, Although; it is unknown whether or not the building supported any bat roosts prior to demolition, this does not pose a significant constraint to the assessment provided within this report.

3.3 Lifespan of Reports

In accordance with the BCT guidance (Collins, 2016), the details of this report will remain valid for a period of **24 months** from the date of the first survey (i.e., until 8th June 2024). After this date, this assessment should be reviewed to determine whether any update surveys are required.

4 Results

4.1 Nocturnal Surveys

4.1.1 B2

8th of June 2022 – Dusk emergence

Little activity was observed during the survey period. The first record of the night was at 22:00 (approximately 28 minutes after sunset) and was attributed to common pipistrelle (*Pipistrellus pipistrellus*), heard not seen, by S2.

Common pipistrelle was observed by all surveyors during the survey period, mainly heard not seen but also displaying both foraging and commuting behaviours. S1 observed two records of unidentified pipistrelle (*Pipistrellus sp.*) during the survey period, with S3 also observing an unidentified myotis species at 22:40 (approximately 69 minutes after sunset).

The final record of the night was observed by S1 and concerned an unidentified pipistrelle species, seen not heard, at 22:59 (approximately 87 minutes after sunset).

No bats were identified emerging from B2 during the survey, nor were any roost locations identified.

20th of June 2022 – Dusk emergence

Activity was observed throughout the survey period, with the first record of the night observed at 22:05 (approximately 26 minutes after sunset) by S3, concerning common pipistrelle, heard not seen.

S2 observed two counts of foraging common pipistrelle throughout the survey period, with S1 observing four counts of common pipistrelle, foraging and commuting, as well as unidentified bat species and one foraging common noctule (*Nyctalus noctula*).

S3 observed a high level of activity concerning common pipistrelle foraging between 22:06 (approximately 27 minutes after sunset) and 23:02 (approximately 83 minutes after sunset). During this period, approximately three bats were observed entering and departing from B3 for foraging purposes, which took place within the structure.

No bats were identified emerging from B2 during the survey, nor were any roost locations identified.

7th of July 2022 – Dawn re-entry

Very little activity was observed during the survey period. The first record of the survey was at 03:33 (approximately 78 minutes before sunrise) and was attributed to commuting brown long-eared bat by S3.

Common pipistrelle was observed by S1, S3, and S4 during the survey period, mainly heard not seen but occasionally displaying both foraging and commuting behaviours. S3 observed two records of unidentified pipistrelle during the survey period. S1 observed only one record during the survey period, with S2 observing none.

The final record of the survey was observed by S3 and concerned an unidentified pipistrelle species, heard not seen, at 04:14 (approximately 37 minutes before sunrise).

No bats were identified emerging from B2 during the survey, nor were any roost locations identified.

4.1.2 B3

15th of June 2022 – Dusk emergence

Little activity was observed during the survey period. The first record of the night was at 22:34 (approximately 58 minutes after sunset) and was attributed to common pipistrelle, heard not seen, by S3.

Common pipistrelle and unidentified bat species were observed infrequently during the survey period, with a total of ten records observed across all four surveyors. When visually identified, common pipistrelle displayed foraging and commuting behaviour. Unidentified bat species were observed, seen not heard, commuting at distance from the site.

The final record of the night was observed by S2 and concerned common pipistrelle, heard not seen, at 22:51 (approximately 75 minutes after sunset).

No bats were identified emerging from B3 during the survey, nor were any roost locations identified.

4.1.3 B6

16th of June 2022 – Dawn re-entry

No records of bat activity were observed by any surveyors throughout the course of the survey period.

6th of July 2022 – Dusk emergence

No records of bat activity were observed by any surveyors throughout the course of the survey period.

4.1.4 B7

9th of June 2022 – Dawn re-entry

No records of bat activity were observed by any surveyors throughout the course of the survey period.

4.2 Assessment

No emerging bats were recorded at the site; therefore, it has been deemed unlikely that B2, B3, B6, or B7 support bat roosts.

Low levels of foraging and commuting common pipistrelle activity constituted most of the activity at B2 and B3. Unidentified pipistrelle, unidentified myotis, common noctule, and brown long-eared bat were also identified occasionally across the survey sessions at B2, with observations of unidentified bat species being occasionally taken at B3. No activity was recorded at B6 or B7 during any surveys by any surveyors.

It is anticipated that the site is used solely for commuting and foraging purposes.

5 Mitigation Recommendations

5.1 Impact Assessment

A bat roost was identified at B2 during the PEA site visit in 2021. However, no emergence was identified during the nocturnal bat surveys at B2, nor at any of the other buildings, and it has there been assessed that the buildings present do not support bat roosts. It is likely that the signs observed during the 2021 survey were historical, and no further evidence of a roost was observed during the 2022 survey season.] As such, no further surveys or mitigation is required to facilitate the development relating to bats.

However, bats were recorded using the site for commuting and foraging purposes, and construction activities may impact bats through increased levels of artificial lighting. All bats are sensitive to artificial lighting and may be impacted by the proposed development, should no mitigation for lighting be considered.

5.2 Lighting mitigation

All bats have some degree of sensitivity to artificial, night-time lighting. Introducing artificial lighting to areas that are not currently illuminated may sever important bat flight lines and discourage bats from using important foraging resources.

Lighting mitigation should follow the guidance outlined in the Institute for Lighting Engineers document “Guidance for the Reduction of Obtrusive Lighting” (2005) and BCT’s “Bats and Artificial Lighting in the UK” (2018).

Construction lighting and proposed external lighting should not be directed towards retained and surrounding habitats including the trees and hedgerows being retained on site. The lighting may impact bats which are sensitive to light. Directional lighting will be achieved by angle and orientation of beam, use of a cowl, louvre or other light shield, or a combination of these.

5.3 Other considerations

B1 and B3 were identified as being utilised by nesting pigeons. It is also possible that other species, such as white collared doves (*Streptopelia decaocto*) which were spotted within B1, may use the buildings for nesting purposes. An active pigeon nest was identified within the rafters of B1, as well as atop a joist in B3, with multiple pigeons seen emerging from and perching within B2. As such, demolition works may impact nesting pigeons and therefore it is recommended that any works are undertaken outside of the nesting bird season (March – September, inclusive). If this is not possible, it is recommended that a suitably experienced ecologist should check the buildings internally and externally for breeding bird activity no more than 48 hours before any works commence. If nesting activity is found, nests must be left in situ until the young have fledged.

6 References

Andrews Ecology (2017) A review of Empirical Data in Respect of Emergence and Return Times Reported for the UK's 17 Native Bat Species.

CIEEM (2019). Advice Note on the Lifespan of Ecological Reports and Surveys. CIEEM.

Collins (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (Third Edition). The Bat Conservation Trust, London.

Urban Green (2021). Preliminary Ecological Assessment. Ref: UG_1145_ECO_PEA.

Appendix 1 – Relevant Legislation

Legislation relating to European Protected Species (e.g., bats)

European Protected Species and their resting places (e.g., bat roosts) are protected under the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way (CROW) Act 2000, and the Conservation of Habitats and Species Regulations 2017.

The Conservation of Habitats and Species Regulations 2017 transpose the European Union's 'Habitats Directive' (Council Directive 92/43/EEC) on the Conservation of Natural Habitats and of Wild Fauna and Flora (EC Habitats Directive) into UK law. The Regulations provide for the designation and protection of 'European Sites', the protection of 'European Protected Species' (EPS), and the adaptation of planning and other controls for the protection of European Sites. EPS are listed on Schedule 2 of the Conservation of Habitats and Species Regulations 2017.

Appendix 2 - Preliminary Roost Assessment

Building Ref.	Description	Photograph
B1	Storage barn constructed of single panelled asbestos, supporting by metal frames. Plastic sheeting was present within the ceiling. No overlapping panels were identified which could provide a suitable PRF, whilst the building was considered too exposed to support non-crevice dwelling species. The building was assessed as negligible.	
B2	Storage barn located to the east of B1. Its lower aspect was constructed of breeze blocks, whilst the upper elevation comprised double panelled asbestos sheets and roof, supported by metal frame. Multiple roller doors were located on its eastern aspect. Broken asbestos panels were located on the south- western aspect, where a small number of bat droppings were identified underneath demonstrating a bat roost location. Insulation felt was located between the panels for but a suitable gap for crevice dwelling bats in low number was present at the access point. Additional PRFs of similar roosting opportunities include a crack on the southern aspect and access above the roller doors. The building was assessed as high (confirmed roost).	

Building Ref.	Description	Photograph
B3	Storage barn of similar construction as B2, and larger in size. Some aspects of the southern wall were constructed of metal panelling rather than asbestos. Northern aspects were constructed of single panelled asbestos with no suitable PRFs noted. However, the southern and eastern aspect were double layered, with a number of cracks present providing a suitable PRF for crevice dwelling bats. An additional PRF was noted within the brick work, where a crack was present. Two single storey breeze block buildings were located to the south of the building. PRFs were identified with cracks within the brick work. Internally, no suitable PRFs were identified with the building comprising bare asbestos and metal panels supported by metal frames. The building was assessed as low.	
B4	Storage barn of similar construction of B2, though was of single panelled asbestos and metal. Whilst the brick was rendered. A single roller door was located on the eastern aspects. No suitable PRFs were identified during the survey. The building was assessed as negligible.	

Building Ref.	Description	Photograph
B5	Storage shed, constructed of breeze block walls and single panelled metal sheets. The southern aspect was open, and the building was supported by metal frames. No suitable PRFs were identified during the survey. The building was assessed as negligible.	
B6	Single storey, pebble dashed building. The roof was constructed of asbestos panels, with plastic guttering and wooden fascia boards. Gaps were located under overlapping asbestos on the ridges and the wooden fascia boards that may provide a PRF. The windows were constructed of wooden frames, with multiple windows open which may provide access to the building. No internal survey could be completed, though by observation through the windows a loft void was identified. Suitable access points to the loft could be gained via the open windows and gaps within the asbestos roof. The building was assessed as moderate.	

Building Ref.	Description	Photograph
B7	Single storey pebble dashed building, located to the east of B6. No wooden fascia boards were present whilst the building appeared well-sealed in comparison to B6. The wooden framed windows were slightly opened on the southern aspect of the building which may provide internal access to the building. No internal survey was completed. The building was assessed as low.	
B8	Partially demolished building comprised of single storey painted breeze blocks and metal frames. Single panelled asbestos panels were present on some aspects of the roof though no PRFs were identified during the survey. The building was assessed as negligible.	

Building Ref.	Description	Photograph
B9	Single storey building comprised of two sections. The northern section comprised rendered walls with a single panelled asbestos roof. Plastic guttering and wooden fascia boards were present. The walls contained no PRFs. Gaps were located under overlapping asbestos on the ridges and the wooden fascia boards that may provide a PRF. The windows were covered in wooden boarding, where bats may roost between the glass window and boards. This aspect of the building contained a loft void which could not be inspected during the survey. Access points to the loft could be obtained via the lifted overlapping asbestos. The southern aspect was of similar construction to B10, with no PRFs identified. The building was assessed as moderate.	
B10	Storage shed constructed of breeze block and red brick on its lower elevation and metal panelling walls and roof. A single roller door was located on its northern aspect. The building was well sealed with no PRFs identified during the survey. The building was assessed as negligible.	

Building Ref.	Description	Photograph
B11	Single storey flat roofed building. Constructed of pebbled dashed walls and a flat steel roof. No PRFs were identified, and the building was well-sealed with no internal access obtained. The building was assessed as negligible.	

Appendix 3 – Surveyor Location Map

Surveyor locations are colour coded according to their respective buildings. The surveys at B2 were carried out with three or four surveyors, depending on the night (see Table 1). The nights where B2 was surveyed with three surveyors have been denoted in purple, with the night where B2 was surveyed with four surveyors being denoted in orange.

