

Continued Ecological Assessment

of Outbuildings at Aston Hall,

Aston Munslow,

Shropshire.

Grid reference SO 510 866

Bat Activity Surveys

On 19th May, 27th June & 10th September 2021

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Report completed

15/9/2021

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1. Summary

This report is a supplement to an earlier one which assessed the potential ecological impacts of a proposed development of outbuildings at Aston Hall, Aston Munslow, Shropshire, Grid reference SO 510 866 on the basis of visual inspection. In this report we describe the results of bat activity surveys during the summer of 2021.

We found that the loft area of the western range (B) is used as a maternity roost by brown long-eared bats, and as a day roost for a small number of lesser horseshoe bats.

Small numbers of common pipistrelle bats roost in the southern and western ranges, but not a maternity roost.

A mitigation licence from natural England will be needed for the proposed development.

2. Introduction

An initial ecological assessment of the buildings was done by us on 15th March 2021. We found that the buildings had moderate potential for roosting by bats, and therefore bat activity survey during the summer would be needed.

2.1 Scope of the assessment

The report describes three bat activity surveys as requested by Giulia Baldin of Giles Quarme Architects, 7 Bishops Terrace London SE11 4UE .

3. Methods

3.1 Personnel

Michael Worsfold PhD (MW) (See Appendix 9.7).

Eileen Bowen (EMB) (See Appendix 9.7).

Angus Andrew(AA), an experienced, licenced batworker (Level 2 Natural Resources Wales Survey Licence S090110/1 and Natural England Class Licence Registration number 2015-11270-CLS-CLS.

Gail Nichols (GN) a biologist and experienced batworker.

Susan Worsfold BSc ACIEEM is an experienced wildlife surveyor and licensed bat worker. Natural England registration numbers CLS 0895 2015-12555-CLS-CLS, CLS 0895 2015-12556-CLS-CLS (CL18 survey).

Craig Thomas (CT) is a trainee bat surveyor of 2 years' experience.

Damon Burns (DB), a trainee bat worker

3.2 Procedures and equipment

Four observers were used on each occasion. For the dusk surveys, all four surveyors used Echometer Touch bat detectors coupled to an iPad or Android phone, providing real-time display of bat calls, which were also recorded. In the pre-dawn survey, two surveyors used hand-held Peersonic RPA recording full-spectrum bat detectors .

Static bat detectors were deployed on each survey at sites within the buildings. These were Anabat Expresses and Songmeter SM2bat instruments. Types and locations are listed under the descriptions of each survey (Appendix 9.4).

Recordings were later uploaded onto a computer and analysed by M Worsfold using “Kaleidoscope” and “Analook” software. After each file was labelled with the species of bat, the records were aggregated into 1-minute cohorts for report preparation

On the dusk surveys, video recording using infra-red illumination was used to monitor bat activity. Sony HDR-SR12E was used, with 2 powerful LED infra-red lamps (JCheng security 12V 5W 850nm) mounted alongside the camera and a larger one mounted separately, placed to illuminate the entire east side of the lodge E for the 28th May survey, and the interior of the loft of the west range B on 10th September. Recordings contained embedded time stamps. The recordings were viewed using VLC Media Player. Recording full-spectrum bat detectors (Echometer 3 or Anabat) were installed alongside the video cameras so that bat images could be associated with bat calls as an aid to identification.

PMR446 personal radio transceivers were used to maintain inter-observer contact during surveys.

Temperature and humidity during the activity survey were recorded using a EL-USB-2 logger.

Yukon Tracker NV night vision goggles with infra-red illuminator and 1:1 magnification were used to observe in low light conditions, especially inside the buildings.

A risk assessment was made before entering the buildings.

4 Bat activity surveys

Dusk emergence surveys were done on 28th and 10th September 2021. A pre-dawn survey of the buildings was carried out on 23rd July 2021 (see Appendix 9.5).

These were done in accordance with Bat surveys for professional ecologists: Good Practice Guidelines (3rd Edn) (Collins 2016)

Survey times and conditions, and locations of observers, are given in Appendix 9.4.

5. Assessment of Effects and Mitigation /Compensation Measures

We conclude that there is a maternity roost of brown long-eared bats in the loft of the western range B .

We consider that the western range B is used as a day roost of a small number of lesser horseshoe bats.

We judge that a few common pipistrelles roost in the buildings from time to time. There was no evidence of a maternity roost.

Therefore measures will be required to mitigate the impact of the development. A mitigation licence from Natural England will need to be obtained.

Referring to the classifications used in the Bat Mitigation Guidelines published by English Nature (now Natural England), the roost types to be mitigated and compensated are a maternity site of common species (brown long-eared bat), small numbers of rarer species (lesser horseshoe) and small numbers of a common species (common pipistrelle). The suggested measures for first and most important of these include:

"Timing constraints and more or less like-for like replacement. Bats not to be left without a roost and must be given time to find a replacement. Monitoring for 2 years."

The requirements for the other species are less, and therefore could be included in those described above.

Where a roof lining membrane is to be used in the renovation of any of the outbuildings, a traditional bitumastic-hessian membrane type 1F (BS 747) must be used, rather than a modern breathable membrane, all of which are dangerous for bats.

There should be a minimum of extraneous lighting around the buildings.

On discussion with the architects, a compensatory bat loft, in a portion of the same site as the existing long-eared and lesser horseshoe bat roost, is suggested and is shown in appendix 9.6. Details of appropriate access provision, insulation and internal furnishings, including roost crevices, will need to be included in any licence application but are details which would not influence a planning decision.

A separate Ecological Impact Assessment is in preparation which will address enhancements for bats in the surrounding habitat.

6. Monitoring

Monitoring for two years will be required, as mentioned above

7. Conclusions

The loft area of the western range (B) is used as a maternity roost by brown long-eared bats, and as a day roost for a small number of lesser horseshoe bats.

Small numbers of common pipistrelle bats roost in the southern and western ranges, but not a maternity roost.

A mitigation licence from natural England will be needed for the proposed development.

8. Bibliography

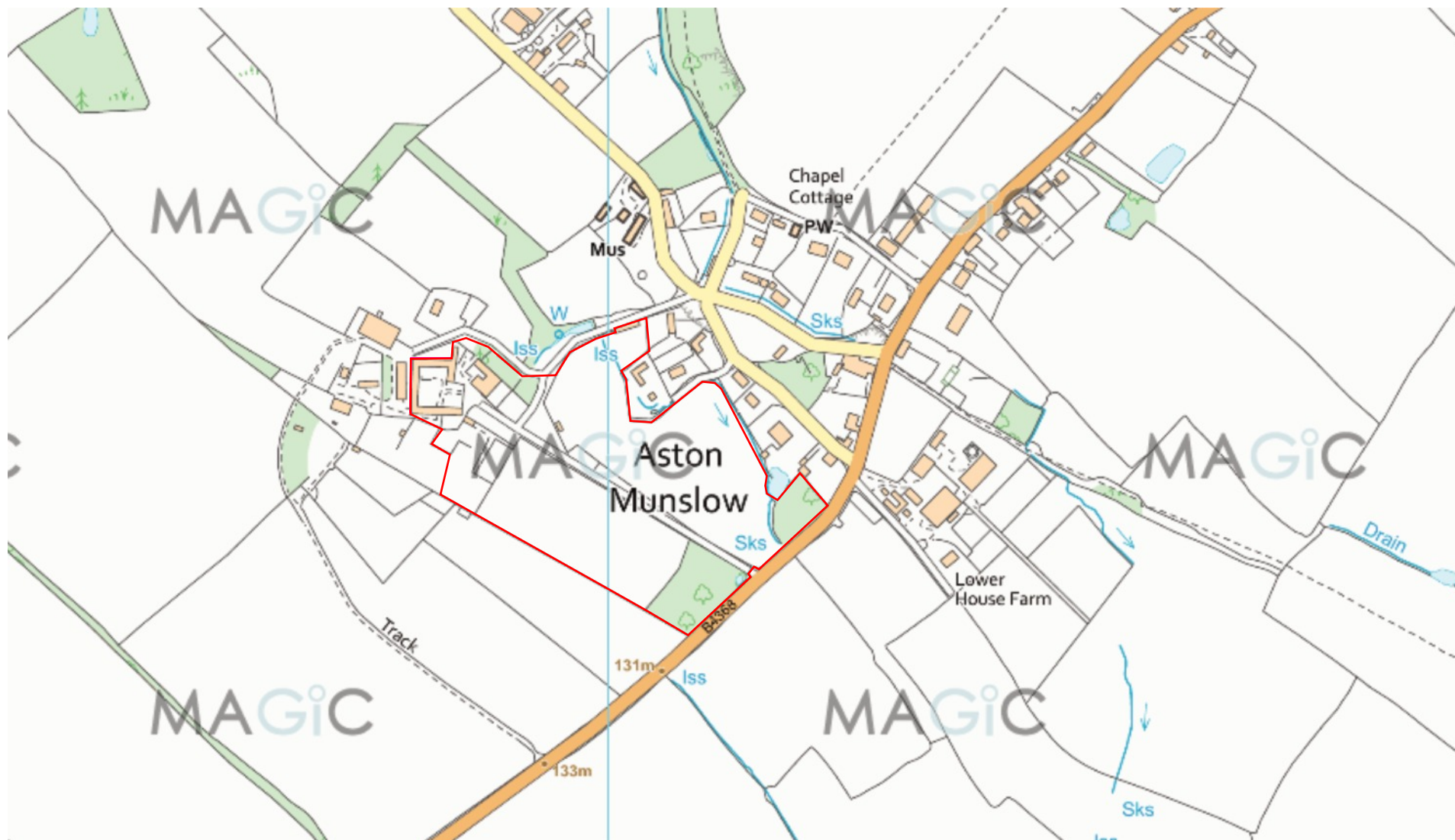
Worsfold M, Bowen EMB. *Initial Ecological assessment of Outbuildings at Aston Hall, Aston Munslow, Shropshire* . March 2021.

Collins J. (Ed) (2016) *Bat surveys for professional ecologists: Good Practice Guidelines (3rd Edn)*. The Bat Conservation Trust, London

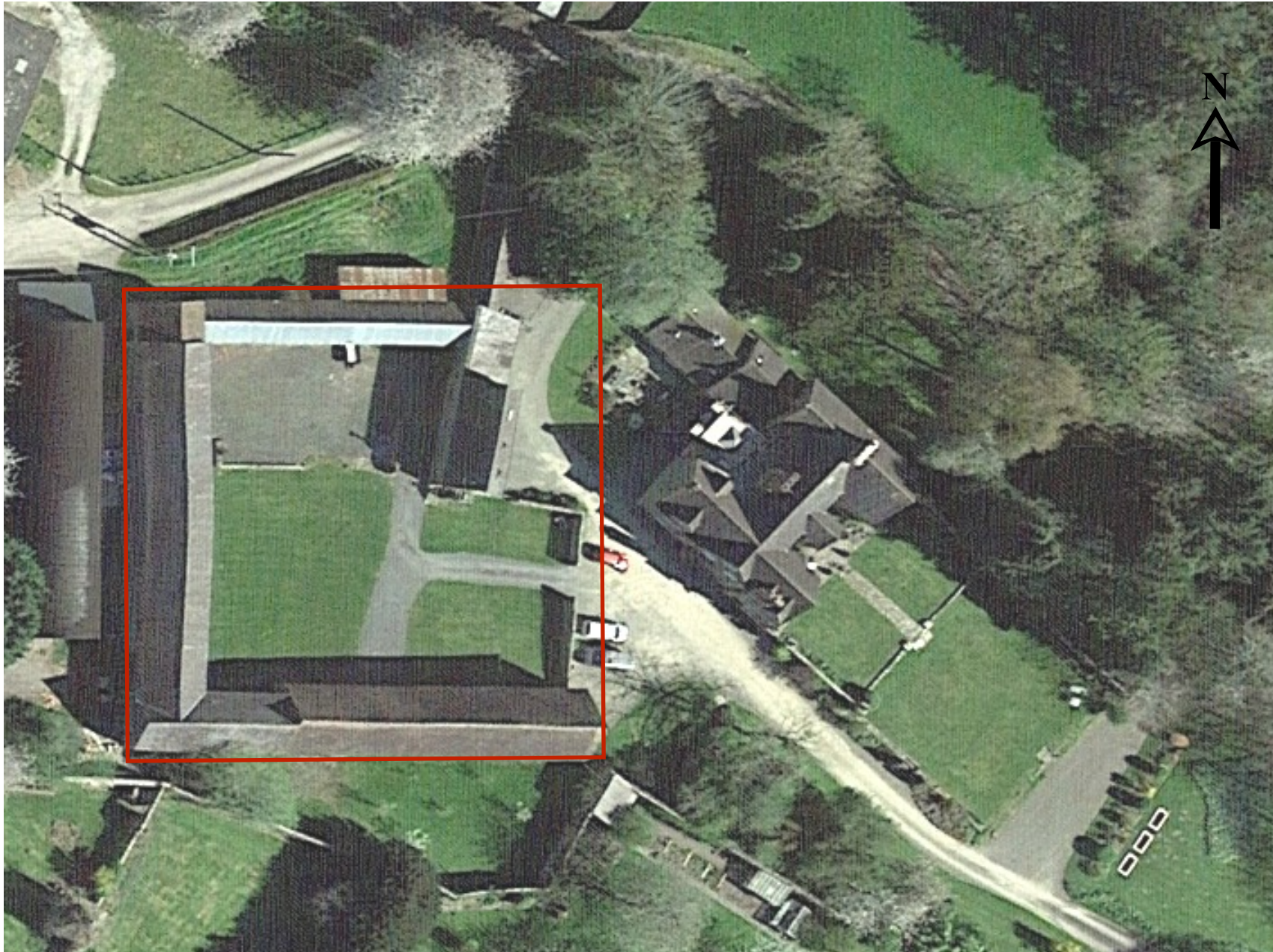
Mitchell-Jones, AJ. *Bat Mitigation Guidelines*. English Nature 2004.

Mitchell-Jones, A. J. and McLeish, A. P. (2004) *Bat Worker's Manual*, Peterborough: Joint Nature Conservation Committee

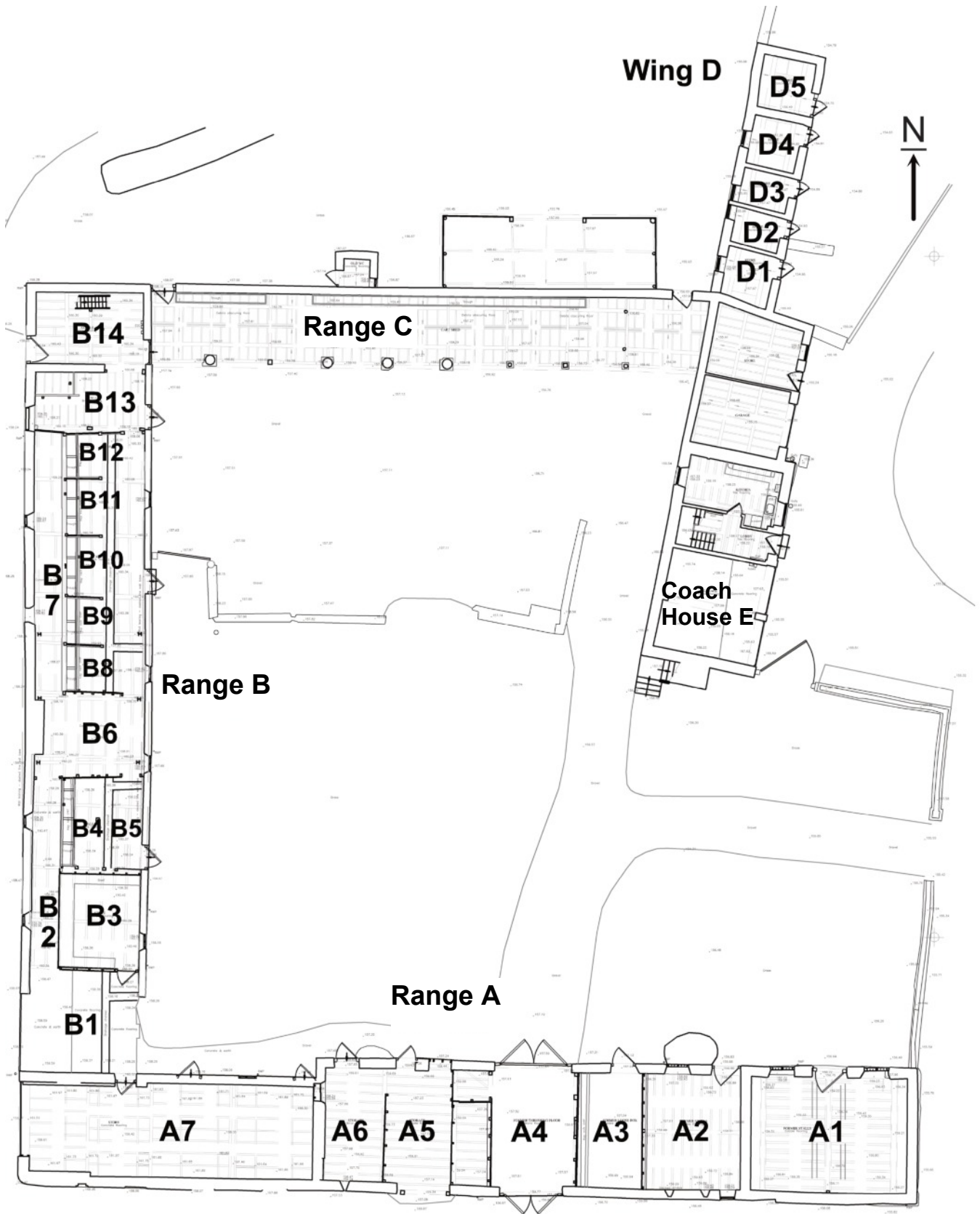
Appendix 9.1: Location map



Appendix 9.2: Aerial Photograph

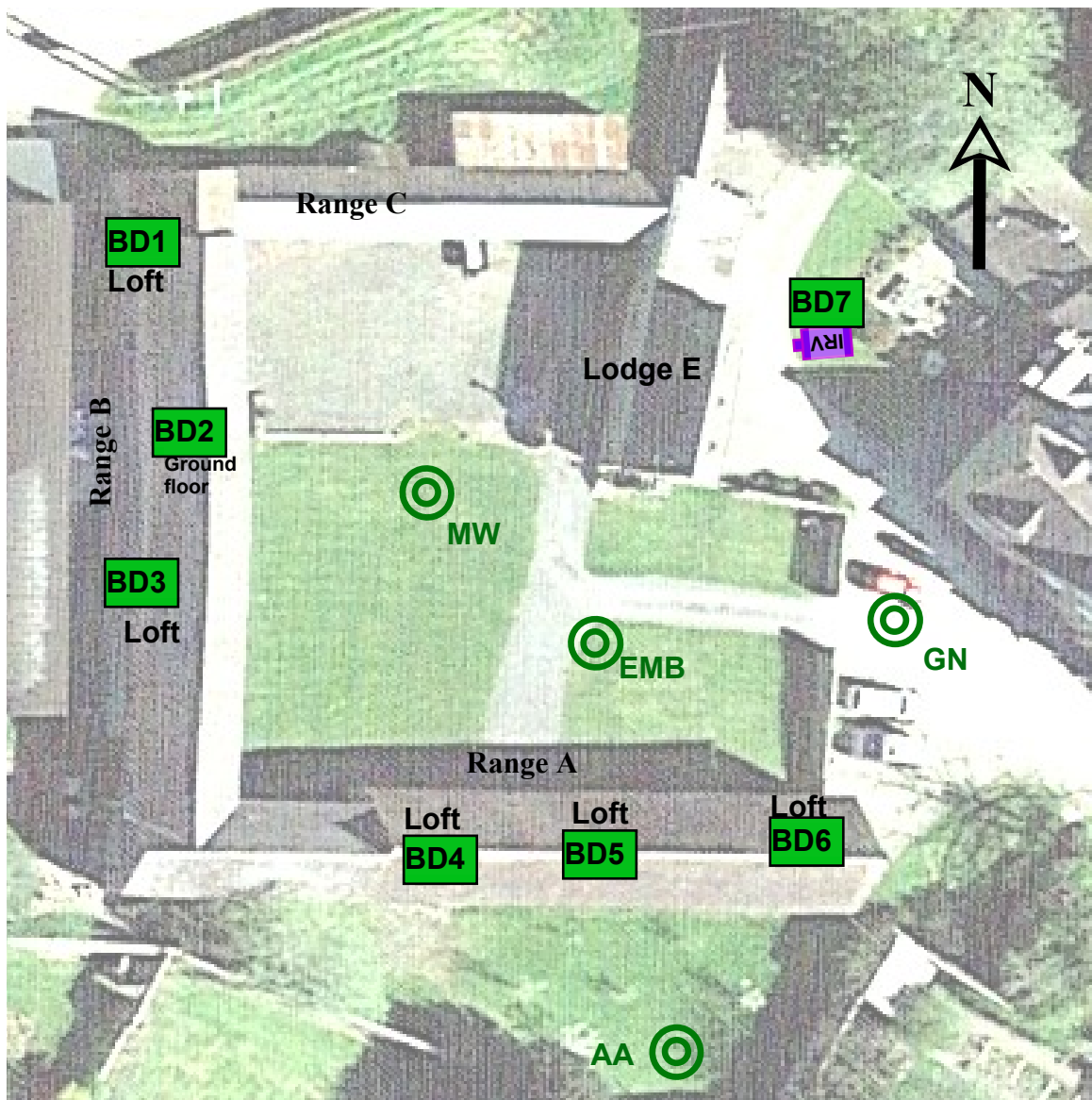





Appendix 9.3: Plan of the buildings



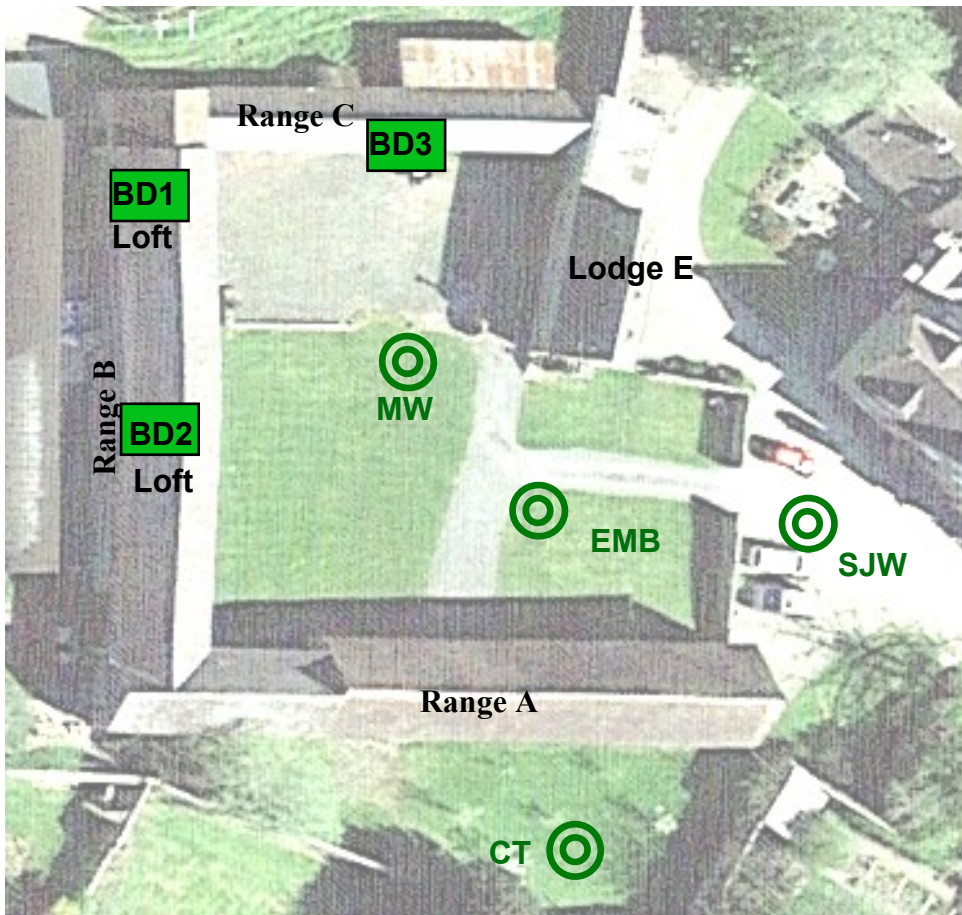
Appendix 9.4.1: Survey conditions, and locations of observers on 28/5/21

Date	Sunset / sunrise	Start	End	Temp start °C	RH Start %	Temp end °C	RH end	Cloud %	Wind (0-6)	Rain
28/05/2021	21.23	21.00	22.55	14.0	82	12.5	89	5	0	0
23/07/2021	5.20	3.50	5.35	17.0	99	15.0	99	100	0	0
10/09/2021	19.36	19.2	21.1	19.5	72	16	95	60	0.5 to 1	0

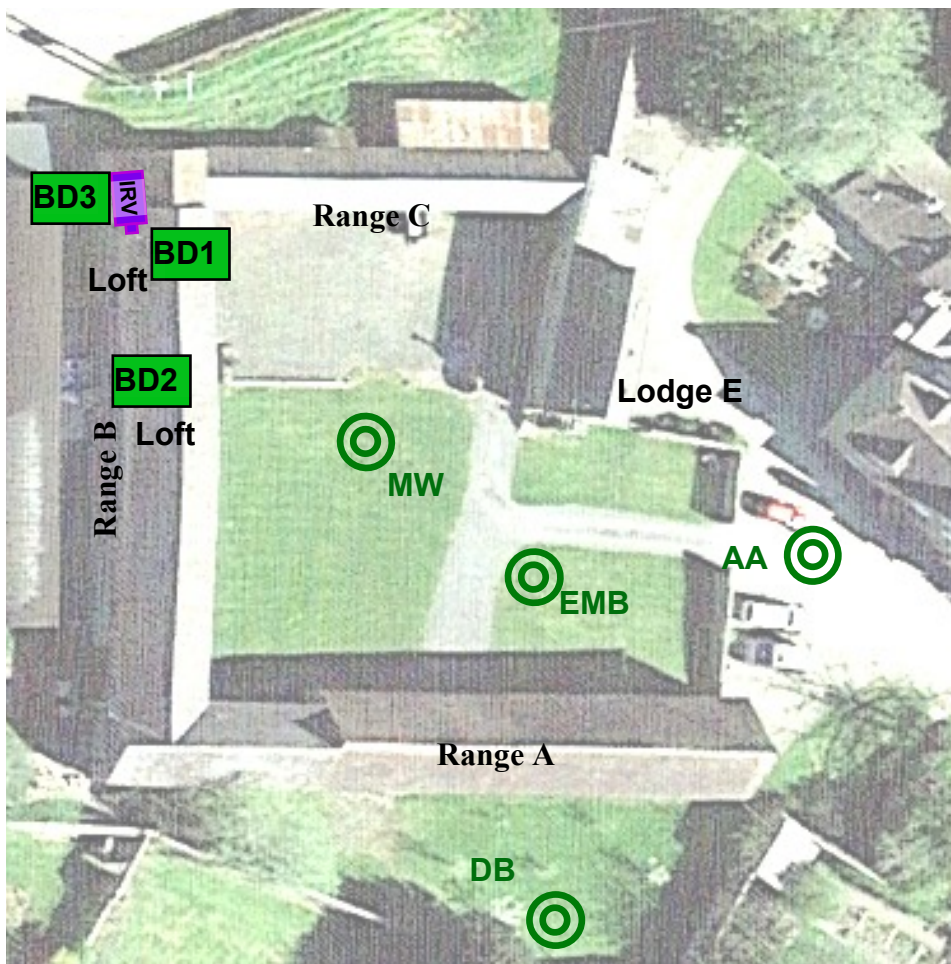


Observer stations	
Static bat detectors	
Infra-red video camera	

Appendix 9.4.2: Locations of observers on 23/7/21 and 10/9/21



23/7/21



10/9/21

Appendix 9.5.1: Bat activity surveys

Evening 28th May 2021

Locations of observers, infra-red video camera and static bat detectors are shown in Appendix 12.4.1 and 12.4.2.

Because the western and northern aspects of the buildings were not within the ownership of the developers, and access was denied, we were unable to observe from those directions

Number of observers 4.

Observer 1 MW; *Equipment* Echometer Touch
station middle of the courtyard

Observer 2 EMB; *Equipment* Echometer Touch
station in the yard, facing the south range.

Observer 3 AA; *Equipment* Echometer Touch
station opposite the south side of the south range A.

Observer 4 GN; *Equipment* Echometer Touch
station opposite the east side.

Infra-red video camera SR12 facing south side of Coach House E

Static bat detectors

- BD1 Anabat Express in loft B13
- BD2 Anabat Express in loft B13
- BD3 Songmeter SM2 in loft over B5
- BD4 Songmeter SM2 in loft A6
- BD5 Songmeter SM2 in loft A3
- BD6 Anabat Express in loft A1
- BD7 Echometer 3bat attached to camera SR12 mounting.

First bat: Common pipistrelle (*Pipistrellus pipistrellus*);

Time; 20:57 *Location;* AA. One probably emerged from the loft A1 of the southern wing.

Subsequently: Frequently at all stations from 21:27 until the end, often feeding.

Other species

Noctule bat (*Nyctalus noctula*)

Time 1st recorded; 21:57 *location;* AA

Subsequently: occasionally throughout the evening, all stations

Long-eared bat (*Plecotus auritus*)

Time 1st recorded; 22:24 *location;* AA

Subsequently: 22:27 *Location;* SR12

Soprano pipistrelle (*Pipistrellus pygmaeus*);

Time; 21:57 *Location;* AA.

Subsequently:

Daubenton's bat (*Myotis daubentonii*)

Time 1st recorded; 22:04 & 22:05 *Location;* MW & SR12

Subsequently: no

Appendix 9.5.2: Bat activity surveys

All of the static bat detectors inside the buildings except BD6 recorded common pipistrelles frequently from between 22:02 and 22:05 until late in the evening, often foraging.

BD4, in a loft over the central part of the south range, also recorded four passes of a lesser horseshoe bat (*Rhinolophus hipposideros*) between 21:45 and 21:48.

BD6 in loft A1 recorded no bats until 21:51 when a common pipistrelle was recorded, and then a soprano pipistrelle at 23:11.

The infra-red video camera recording did not show any bats leaving or entering the building.

Morning 23rd July 2021

Number of observers 4

Observer 1 MW; *Equipment* Echometer Touch
station middle of the courtyard

Observer 2 EMB; *Equipment* Echometer Touch
station facing the south range.

Observer 3 SJW; *Equipment* Peersonic RPA
station opposite east side.

Observer 4 CT; *Equipment* Peersonic RPA
station opposite the south side of the south range A.

Static bat detectors

BD1 Anabat Express in loft B13

BD2 Anabat Express in loft B6

BD3 Songmeter SM2 in the north range C (open implement shed).

First bat: Common pipistrelle (*Pipistrellus pipistrellus*);

Time; 04:02 *Location;* MW

Subsequently: occasionally until 04:45 at all stations, often feeding

Other species

Soprano pipistrelle (*Pipistrellus pygmaeus*);

Time; 4:10 *Location;* MW.

Subsequently: Occasionally, MW & EMB

Noctule bat (*Nyctalus noctula*)

Time 1st recorded; 04:19 *location;* MW

Subsequently: occasionally throughout the morning, all stations

Long-eared bat (*Plecotus sp*, probably *P auritus*)

Time 1st recorded; 04:24 *location;* CT, seen flying over roof.

Subsequently: 04:30, CT

Static detectors inside buildings:

BD1 and BD2 in the west range (B) recorded long-eared bats almost continuously from 04:22 until 05:10.

BD3 recorded common and soprano pipistrelles at a similar frequency to the observers above.

Appendix 9.5.3: Bat activity surveys

Evening 10th September 2021

Number of observers 4

Observer 1 MW; *Equipment* Anabat SD2
station opposite the south west corner

Observer 2 EMB *Equipment* Echometer touch
station opposite the north east corner.

Observer 3 AA; *Equipment* Echometer Touch
station opposite the south side of the south range A.

Observer 4 DB; *Equipment* Echometer Touch
station opposite the east side.

Infra-red video camera SR12 in loft B13 facing south along the loft.

Static bat detectors

BD1 Anabat Express in loft B13

BD2 Songmeter SM2 in loft over B10

BD3 Songmeter SM2 in loft A1

BD4 Echometer 3bat attached to camera SR12 mounting.

First bat: Common pipistrelle (*Pipistrellus pipistrellus*);

Time; 19:52 *Location;* EMB & AA

Subsequently: frequently at all stations, often feeding.

Other species

Soprano pipistrelle (*Pipistrellus pygmaeus*);

Time; 20:05 *Location;* EMB.

Subsequently: Occasionally, all stations

Barbastelle bat (*Barbastellus barbastellus*)

Time; 20:05 *Location;* EMB.

Subsequently: 20:52,-20:55 DB, EMB, MW

Long-eared bat (*Plecotus auritus*)

Time 1st recorded; 20:45 *Location;* MW

Subsequently: 20:57 MW

A common pipistrelle was seen to emerge from a hole beside a protruding purlin of the south gable of the Coach House (E). Another was seen to emerge from the wide vehicular doorway at the south end of the west range (B). No other bats were seen to leave or enter the buildings.

The static bat detectors in the loft of the west wing recorded long-eared bats from 20:02 to 20:07, and again at 20:56; and lesser horseshoe from 20:15 to 20:17. Common pipistrelles were recorded at 19:37 for 10 minutes, and then sporadically.

The infra-red video camera recording showed bats foraging in the loft, correlated with

Appendix 9.5.4: Bat activity surveys

sound recordings of common pipistrelles. from 19:37 and long-eared bats from 20:02 to 20:16, and again at 20:55. Occasionally 3 bats were in frame, but mostly just one bat. A single lesser horseshoe was recorded at 20:16 for 1 minute.

A small localised deposit of bat droppings was seen in the loft B14 at the north end of the western range (B). Moth and butterfly wings were also seen there.

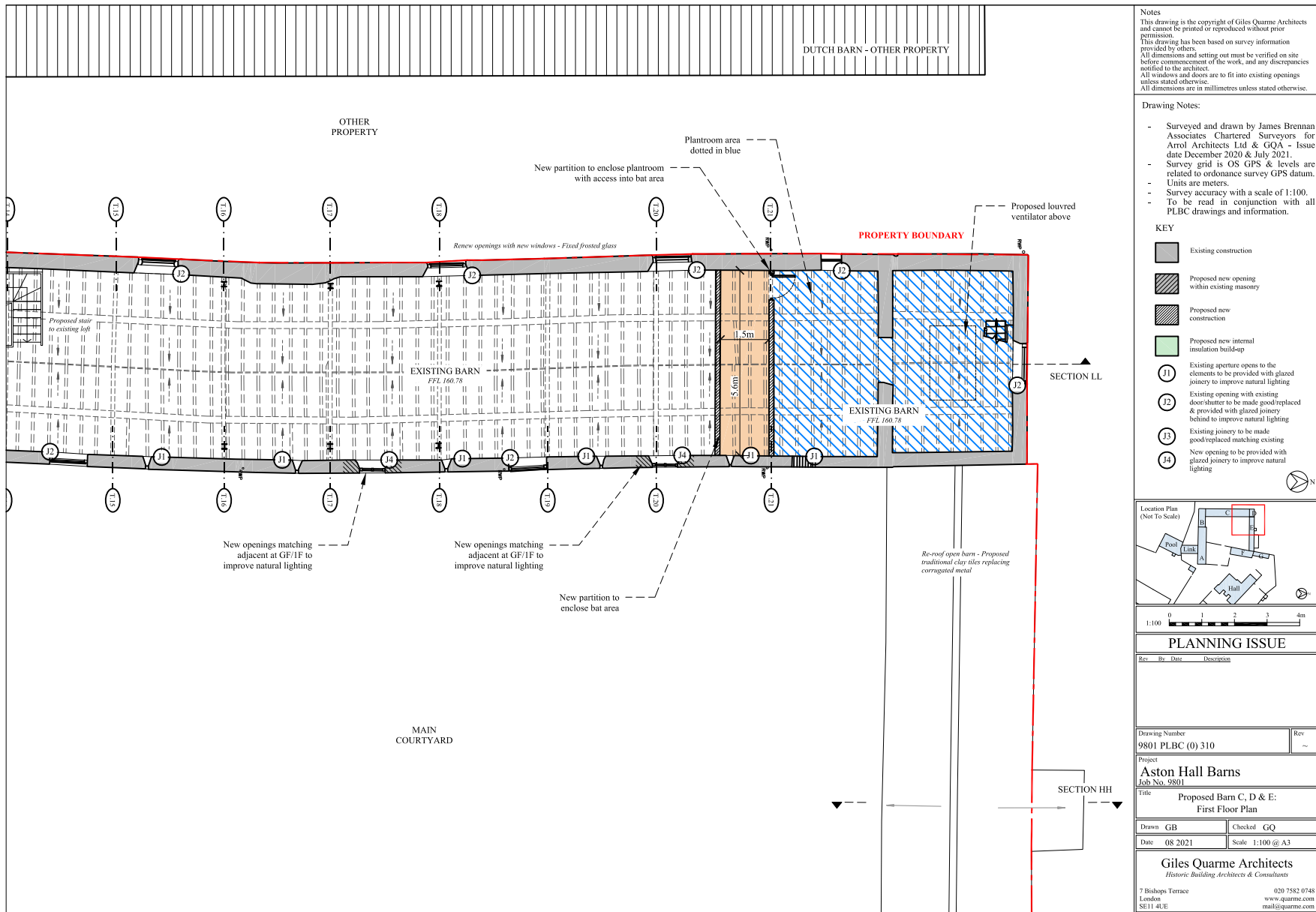
Interpretation

The activity survey was done under good conditions at an optimal time of the year. The number of common and soprano pipistrelle bats and the time of their arrival were consistent with most of them having travelled from roosts elsewhere to feed at this site. Many of the pipistrelles recorded flying inside the buildings undoubtedly had gone there to forage. However, it does appear that a few common pipistrelles roost in the buildings from time to time. There was no evidence of a maternity roost.

The extended activity of long-eared bats in the loft of the western range (B) in July and September suggests that there is a maternity roost of this species in this loft area. Because of the unsafe floor there, we were unable to make a visual assessment of the usage.

The first record of a lesser horseshoe bat on 10th September was outside the buildings, followed by records inside the buildings. However, the records of lesser horseshoe bat within 45 minutes of sunset in May and September indicate that a small number, possibly only 1 bat, roosted there on those days. We consider this to be a day roost of a small number of lesser horseshoe bats.

Appendix 9.6: Proposed bat loft in the western range (Range B)



Appendix 9.7: Worsfold & Bowen7

Worsfold & Bowen have been professional ecological consultants since 2005, after many years' voluntary bat work.

Michael Worsfold PhD. European Protected Species Licences

Bat survey and roost visitor licences held since 1994.

Volunteer Bat Roost Visitor licence and Volunteer Bat Roost Visitor Trainer licence (Level 2) CLS0 1727. (Natural England)

Level 4 survey licence 2014-1217-CLS-CLS. (Natural England)

Project licence 2015-14344-SCI-SCI (Natural England)

Bat Survey licence 71974:OTH:CSAB:2016 (NRW).

Great crested newt survey licence CLS0 1727. (Natural England)

Great crested newt survey licence 65948:OTH:SA:2015 (NRW)

Eileen Bowen. European Protected Species Licences

Bat survey and roost visitor licences held since 1996.

Volunteer Bat Roost Visitor licence and Volunteer Bat Roost Visitor Trainer licence (Level 2) CLS0 1725. (Natural England)

Level 4 survey licence 2015-14028-CLS-CLS (Natural England)

Bat Survey licence 71973:OTH:CSAB:2016 (NRW).

Great crested newt survey licence CLS0 1725. (Natural England)

Current EPS mitigation licences:

EPSM 2014-7044A

2015-16429-EPS-MIT

61698:OTH:EPS:2015

71544:OTH:EPS:2016