Internal Works at Flat 8, Hodder Court, Stonyhurst, Knowles Brow, BB7 9PP

LICENSED BAT SURVEY AND ASSESSMENT INCLUDING A MITIGATION STRATEGY

September 2021

[ERAP (Consultant Ecologists) Ltd ref: 2021-241]

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Survey Type:	Surveyors[1]	Survey Date(s)
Daylight internal and external surveys and assessment	Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM	22nd August 2021
Dusk emergence survey	Victoria Burrows, Brian Robinson and Amy Sharples	26th August 2021
Dawn re-entry survey	Victoria Burrows, Catie Haworth and Amy Sharples	8th September 2021
Reporting	**Personnel**	**Date**
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[1] *Licence reference numbers*

Bats

Victoria Burrows, Natural England Class Survey Licence (bats, Level 2) Registration Number 2015-10390-CLS-CLS

Barn owl

Victoria Burrows Natural England Class Survey Licence Registration Number CL29/00061

SUMMARY

Introduction and Scope

i. ERAP (Consultant Ecologists) Ltd was commissioned to carry out a licensed bat survey and assessment of the property at Flat 8, Hodder Court, Stonyhurst, Knowles Green in August 2021. The survey and assessment are required to inform a listed building consent application in relation to internal works involving the removal of the existing flat ceiling above the lounge and replacement with a vaulted ceiling to create a higher ceiling height.

ii. This report presents the results of a licensed daylight survey and assessment of the relevant part of the property followed by a dusk emergence survey carried out in August 2021 and a dawn re-entry survey carried out in September 2021. The works were carried out by a licensed, qualified and experienced ecologist (and assistants) and in accordance with recognised survey guidelines.

Results of Survey and Assessment

iii. The bat surveys detected the following roosts:

Roost 1: Use of the void between the undertile felt and the slates at the north facing roof pitch above Flat 8 by roosting bats. The number of bats and species is not known;

Roost 2: Use of the roof void above Flat 8 as a day roost by a low number (maximum 4 bats) of whiskered bats (*Myotis mystacinus*);

Off-site Roost A: Soprano pipistrelle day roost (1 bat) beneath the ridge coping on a nearby part of the Hodder Court building; and

Off-site Roost B: Soprano pipistrelle maternity roost (max. 53 bats) behind a timber fascia at the north-western corner of a nearby part of the Hodder Court building.

iv. The proposed works will result in the permanent modification and temporary disturbance of Roosts 1 and 2. The impact is assessed to be of a low scale.

v. Owing to the relevant wildlife legislation and the protection afforded to bats and their roosts, works at / near to Roosts 1 and 2 must only be carried out under a relevant Natural England European Protected Species Mitigation licence issued under Regulation 55 of *The Conservation of Habitats and Species Regulations 2017*. **Section 5.3** of this report presents a bat mitigation strategy to demonstrate how the proposals can be achieved whilst protecting roosting bats and ensuring there is no net loss of roost opportunity at the site in the long-term.

vi. No other impacts on protected species, including at the detected Off-site Roosts A and B, and animal life are identified.

Conclusion

vii. Comprehensive survey and assessment has detected evidence of use of the roof covering and roof void above Flat 8, Hodder Court by roosting bats. The comprehensive mitigation strategy outlined in **Section 5.3** demonstrates that protection of the roosts and mitigation to minimise the scale of impacts on roosting bats and conservation of roosting opportunities at the site in the long-term is achievable. The 'three tests' of *The Conservation of Habitats and Species Regulations 2017* will be met and the appropriate Natural England licence will be obtained to facilitate the works.

viii. No other ecological constraints have been detected.

1.0 INTRODUCTION

1.1 Background and Rationale

1.1.1 ERAP (Consultant Ecologists) Ltd was commissioned to carry out a licensed bat survey and assessment of the property at Flat 8, Hodder Court, Stonyhurst, Knowles Green in August 2021. The Ordnance Survey (OS) grid reference of Flat 8 at Hodder Court is SD 70184 39872. An aerial image of the site and surrounds is appended at **Figure 1**.

1.1.2 The survey and assessment are required in connection with a listed building application in relation to internal works involving the removal of the existing flat ceiling above the lounge and replacement with a vaulted ceiling following the line of the existing roof to create a higher ceiling height on the first floor[1].

1.1.3 It is reported that all works will be carried out internally; no re-roofing or re-pointing works are proposed around the external perimeter or roof of the property.

1.2 Scope of Works

1.2.1 The scope of ecological works undertaken in August and September 2021 comprised:

a. A desktop study and search for known ecological information at the site and the local area;

b. Assessment of the suitability of the relevant portion of the property to support roosting bats at any time of year;

c. Examination of the exterior and interior (where relevant) of the relevant portion of the property for evidence of the current and previous presence of roosting bat species followed by the appropriate scope of bat activity survey;

d. Search and assessment of the property for use by nesting birds including species listed on Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended) and Priority Species;

e. Provision of guidance in accordance with wildlife legislation, Bat *Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016), and best practice in relation to the proposed works; and

f. A description of the bat mitigation strategy required including identification of the need for a Natural England licence and / or precautionary actions that may be required prior to the commencement of works.

2.0 METHOD OF SURVEY

2.1 Desktop Study and Data Search

2.1.1 The following sources of information and ecological records were consulted:

a. MAGiC: A web-based interactive map which brings together geographic information on key environmental schemes and designations, including details of statutory nature conservation sites;

b. MARIO Maps; and

c. Lancashire Biodiversity Action Plan.

[1] As illustrated on the Proposed T1 Section (drawing CH_099-SK10)

2.1.2 The planning section of Ribble Valley Borough Council's website was consulted and other licensed ecologists known to have surveyed the wider Hodder Court building were also contacted for background information.

2.2 Survey Area

2.2.1 The survey area comprised the elevations and roof of the portion of the property associated with Flat 8 (refer to **Photos 1** and **2**). As shown on **Photo 2** owing to the height difference, the roof void above Flat 8 is not considered to be connected to the void of the adjacent part of the building and, as such, this was considered to be an appropriate zone of potential influence of the works and impact of the proposals. As outlined later in this report the roofs and elevations of other parts of the property could be seen during the bat activity surveys and, if roosts were detected, they are reported for completeness.

2.3 Licensed Bat Survey and Assessment

Daylight Survey and Assessment

Surveyor and Survey Date

2.3.1 The initial daylight licensed bat survey and assessment was carried out by Victoria Burrows, Natural England Class Survey Licence WML CL18 (Bat Survey Level 2), Registration Number 2015-10390-CLS-CLS, on 22nd August 2021. The weather conditions were dry and overcast with a light air (Beaufort scale 1) and a temperature of 18°C. Victoria's qualifications and experience meet the criteria as defined in the *Technical Guidance Series Competencies for Species Survey: Bats* (CIEEM, 2013).

2.3.2 A daylight survey and assessment was also carried out prior to the dusk emergence survey and after the dawn re-entry survey (refer to **Table 2.3**, below).

Survey Guidelines

2.3.3 The survey was carried out in accordance with standard methodology including the *Bat Mitigation Guidelines* (Mitchell-Jones, 2004), the *Bat Workers' Manual 3rd Edition* (Mitchell-Jones & Mcleish, 2004) and *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016).

Habitat Assessment for Commuting / Foraging Bats

2.3.4 Habitats surrounding the property were assessed for their value and suitability for commuting and foraging bats in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn),* (Collins, J. (ed), 2016). Reference has been made to the categories and descriptions / examples, presented below.

Table 2.1: **Consideration of Suitability of Foraging and Commuting Habitat for Bats**

Suitability	Commuting Habitat	Foraging Habitat
Negligible	Negligible habitat features on site likely to be used by commuting bats.	Negligible habitat features on site likely to be used by foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat.	Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree or patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.	Habitat that is linked to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape and is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. Habitats close to and connected to known roosts.	High-quality habitat that is well-connected to the wider landscape and is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Habitats close to and connected to known roosts.

Daylight Survey and Inspection

2.3.5 An inspection and assessment of the external surfaces, walls and roofs of the relevant part of the property was carried out to find potential bat roosting habitat or accesses into crevices areas where roosts may be present. Searches for evidence of bat presence in the form of droppings, urine stains, feeding signs, grease marks and other evidence were also carried out.

2.3.6 The roof void was accessed and searched for bats and evidence of the previous use by bats such as droppings, staining and prey remains.

2.3.7 The suitability of the relevant portion of the property for use by roosting bats was assessed in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn),* (Collins, J. (ed), 2016), taking into account any presence of gaps suitable for access by bats, features suitable for use by roosting bats within the building (including crevice dwelling species and species which can roost in the open in roof voids), and the suitability of the surrounding habitats for use by foraging and commuting bats.

Equipment

2.3.8 A list of equipment used is provided below.

Table 2.2: **Survey Equipment Used / Available for Use During Daylight Bat Survey**

Ladders
LED Lenser P14 torch
Canon Ixus digital camera
8x20 binoculars
Ridgid Micro Inspection Camera Borescope CA-300

Bat Activity: Presence / Absence Surveys

2.3.9 Based on the time of year the survey was commissioned and in consideration of the relatively minor scale of the proposed works and the comprehensive survey data obtained during the daylight survey

and assessment, a minimum of two bat activity surveys were recommended (with a third survey as a provisional item, if needed).

2.3.10 Three surveyors experienced in conducting bat surveys, were positioned at suitable locations to maximise the coverage of the relevant portion of the property and identified potential roost features to determine any entry into or exit by roosting bats. Surveyor positions are annotated at **Figure 2** (appended).

2.3.11 Heterodyne detectors were used to determine any bat detected to species or group (*Myotis* species often cannot be reliably separated to species via their echolocation calls, for example). Recording bat detectors units (Anabat Express, Anabat Scout and Peersonic RPA3) were also used to record and analyse echolocation calls after the survey using AnalookW call analysis software. Any bat emergence or re-entry activity was recorded.

2.3.12 SANNCE CCTV systems (comprising a 1080N Digital Video Recorder with screen and 720P high definition cameras with night vision and supplemented with additional infra-red lighting) were used at the positions annotated on **Figure 2** (i.e. both in the roof void and outside the property during the dusk emergence survey and outside the property during the dawn re-entry survey) as a supplementary survey technique.

2.3.13 The survey information is presented below.

Table 2.3: **Bat Activity Survey Dates, Weather Conditions and Surveyors**

Date	**26th August 2021**	**8th September 2021[2]**
Sunset / rise	20:15	06:28
Start time	19:30	04:45
End time	22:00	06:45
Wind	Beaufort scale 1 (light air) throughout	Beaufort scale 0 (calm) throughout
Precipitation	Dry	Dry
Air temperatures	16°C at 20:00 falling to 14°C at 22:00	16°C throughout
Surveyor Position	**Surveyor and Detector**	
1 (inside roof void)	Victoria Burrows Batbox Duet and Anabat Express SANNCE CCTV system	-
2	Brian Robinson Batbox Duet and Peersonic RPA3 SANNCE CCTV system	Catie Haworth Anabat Scout and Anabat Express
3	Amy Sharples Batbox III and Anabat Express	Amy Sharples Batbox III and Anabat Express
4 (positioned on earth bank to gain height of 1.5 metres to facilitate a view of the west facing roof pitch)	-	Victoria Burrows Batbox Duet and Anabat Express SANNCE CCTV system

[2] It is accepted that 8th September 2021 is only 13 days after the first bat activity survey (rather than at least a fortnight as specified in the *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn),* (Collins, J. (ed), 2016)). However, given the time of year the survey was commissioned (i.e. later in the bat activity season), the knowledge of bat roosts at the property and the fact that a few days of less favourable weather conditions for survey and bat activity were forecast after 8th September 2021 it was decided that the completion of the second survey one day sooner that a fortnight after the first survey was appropriate to meet the objectives of the survey in this instance.

2.4 Other Relevant Protected Species and Animal Life

Bird Species

2.4.1 The relevant portion of the property was searched for pellets, faecal splashes and feathers which may indicate use by roosting or nesting barn owl in accordance with *The Barn Owl Conservation Handbook* (Barn Owl Trust, 2012) and *Barn Owl Tyto alba Survey Methodology and Techniques for use in Ecological Assessment. Developing Best Practice in Survey and Reporting* (Shawyer, 2011).

2.4.2 Incidental observations of use of the property and site by other nesting birds were also recorded.

2.5 Survey and Reporting Limitations

2.5.1 The actual roosting position(s) of all of the four possible whiskered bats (*Myotis mystacinus*) at Roost 2 in the roof void above Flat 8 was not determined during the surveys as the void is large and complex. Based on the locations of the accumulations of droppings (around the base of the stone chimney and on the floor beneath the concrete block internal wall in the roof void) and the fact the roof void is a closed void with no connections to the roof voids elsewhere at Hodder Court, it is considered that reasonable assumptions in relation to the roost position(s) can be made (refer to **Section 3.2**). Based on the evidence collated it is also very likely that a variety of roost positions are used throughout the season. The survey also confirmed that whiskered bats use the roof void to carry out pre-emergence flight activity. For these reasons and for the purposes of the assessment, the whole of the roost void above Flat 8 is classed as a roost (Roost 2).

2.5.2 No other survey limitations were experienced.

2.5.3 All measurements within this report are approximate only, and have been either estimated whilst on site, calculated using mapping software (QGIS) or internet-based mapping services such as MAGiC and Google Earth or extracted from the proposals drawings.

3.0 SURVEY RESULTS

3.1 Desktop Study and Data Search

Statutory Designations

3.1.1 The Hodder Place property which includes Hodder Court is a Grade II listed building.

3.1.2 The property is not afforded any statutory designation for nature conservation. The section of River Hodder located approximately 50 metres to the north of Flat 8 is designated as a Site of Special Scientific Interest (SSSI) owing to its geological value.

3.1.3 The property lies within an Impact Risk Zone for the River Hodder Section SSSI; the SSSI Impact Risk Zone requires the Local Planning Authority to consult with Natural England on likely risks to the designated sites relating to all planning applications (with the exception of householder applications) (Ordnance Survey, 2021)).

3.1.4 As the proposals do not require planning consent (only listed building consent) and all works will be carried out in the internal area of the building, the proposals do not meet the criteria to require consultation with Natural England in relation to the likely risks of impacts on the designated sites.

Non-statutory Designated Sites for Nature Conservation

3.1.5 Consultation of MARIO Maps indicates that the property and immediate surrounds are not afforded any non-statutory designation for nature conservation.

3.1.6 Land to the north (within 50 metres of Flat 8) is designated as Over Hacking Wood Biological Heritage Site (BHS) and the river corridor beyond the woodland is designated as the River Hodder From Confluence with River Ribble Upstream to Cross of Greet Bridge / Bowland Fells SSSI Boundary BHS.

Protected Species

3.1.7 Consultation of the information and resources cited in **Section 2.1** confirmed that a soprano pipistrelle (*Pipistrellus pygmaeus*) maternity roost is present at the Hodder Court / Hodder Place complex. Roosts of whiskered / Brandt's (*Myotis brandti*) bats are also reported.

3.1.8 Use of other sections of the building by nesting swift (*Apus apus*) and kestrel (*Falco tinnunculus*) were also reported.

3.2 Licensed Bat Survey and Assessment

Habitat Assessment for Commuting / Foraging Bats

3.2.1 Refer to **Figure 1**. The habitats immediately surrounding the property comprise an established mature garden with mature trees and hedgerows.

3.2.2 Beyond the curtilage of the Hodder Place / Hodder Court buildings the River Hodder corridor, riparian woodland, extensive woodland plantation and fields of semi-improved pasture provide optimum conditions for the attraction of foraging and commuting bats. The habitats are assessed to be of high suitability for use by foraging bat species in accordance with Table 4.3 of the *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn) (Collins, J. (ed), 2016) and **Table 2.1** of this report.

Daylight Survey

3.2.3 Refer to **Photos 1** to **16** and **Figures 1** and **2**, appended.

Exterior

3.2.4 Flat 8 occupies the first floor of the south-western end of the larger property at Hodder Court. The elevation walls are stone clad to the south and west and partially render covered to the rear (north and east). All stone work appears to be intact; no gaps or opportunity for bat access were observed on the elevation walls or around the stone window sills, lintels and jambs. No gaps were detected around the timber window frames.

3.2.5 The roof above Flat 8 is slate covered and has a hip end. A stone chimney stack with lead flashing at the base protrudes from the north facing roof pitch. Stone eaves are present with no timber soffits or fascia.

3.2.6 Approximately six bat droppings were found on the ground at the northern perimeter of the building.

Roof Void

3.2.7 The single roof void above Flat 8 is large (13 metres by 13.5 metres) and a maximum height of 5.10 metres from floor to ridge. The roof void is a discrete unit that is not connected to any roof voids at

the adjacent parts of the wider building. Much of the floor of void is boarded and fibreglass insulation is present over the ceiling of Flat 8. Hessian-backed bitumen undertile felt is present beneath the slates.

3.2.8 The roof void is not entirely in darkness owing to the presence of the upper section of the windows on the southern and western elevations of the building which permits daylight into the roof void, refer to **Photos 5** and **6**.

3.2.9 No bats were found in the roof void during the daytime site visit on 22nd August 2021.

3.2.10 At least eight separate piles of accumulations of bat droppings (50 to 150 droppings) and scattered droppings and urine splashes were found throughout the roof void, as annotated on **Figure 2**. Dropping samples were taken for DNA analysis in two positions as annotated on **Figure 2**. At the time of preparation of this report the result at Sample Position 1 was returned as whiskered bat (*Myotis mystacinus*)[3], refer to **Appendix 3**.

3.2.11 No piles of old / aged bat droppings were found to indicate long-term use and / or a large number of bats[4]. Examination of the roof timbers above the dropping accumulations confirmed that the timbers are cobweb free and in some areas staining was present to indicate use by roosting bats (the wood can become stained as a result of the oil in bats fur rubbing against the timber).

3.2.12 In addition to potential roosting positions against the roof timbers, opportunities for bat access / roosting bats were note at the wall top around the stone chimney stack and also at the wall top (and inside the hollow blocks) at a concrete block partition wall at the top of the stair well, refer to **Photos 15** and **16**.

3.2.13 No evident holes or crevices to connect the roof void to the exterior were found although in two areas an accumulation of bat droppings was found beneath minor areas of damaged undertile felt which may provide an access between the slates to the exterior.

Bat Activity Surveys

Dusk Emergence Survey: 26th August 2021

3.2.14 No bats were found inside the roof void at the start of the survey.

3.2.15 Surveyor 1 positioned inside the roof void recorded four short periods (20:28 to 20:38, 20:38 to 20:39, 20:50 to 20:53 and 21:23 to 21:24) when one *Myotis* bat was recorded flying inside the roof void. On the first observation (13 minutes after sunset) the bat was observed emerging from around the wall top at the stone chimney (Roost 2). The exit points of the bat(s) from the roof void was not observed by Surveyor 1.

3.2.16 During the survey the sound of bat 'chattering' and scurrying was audible in the space between the undertile felt and the slates at a height of 1.5 metres up the roof on the north facing roof pitch by Surveyor 1 (Roost 1).

3.2.17 No other emergence activity was detected from the roof above Flat 8 by Surveyors 2 and 3 positioned around the building elevations.

[3] This is consistent with the Anabat Express recordings, as reported later.

[4] It is understood that the current owner has recently bought the property and it is not known whether the void had been swept prior to the previous owner vacating the property (although no evidence such as patterns in the dust were found to indicate use of a broom).

3.2.18 Surveyor 2 and the CCTV camera systems recorded 53 soprano pipistrelle bats emerging from behind the timber fascia at the north-western corner of an adjacent section of the building (Off-site Roost B).

3.2.19 The Anabat and Peersonic detectors recorded passes of soprano pipistrelle, common pipistrelle and *Myotis* around the external elevations of the property throughout the survey period.

3.2.20 **Table 8.2**, appended, provides an account of the observations made during the dusk emergence survey and the results of the recording bat detectors.

Dawn Re-entry Survey: 8th September 2021

3.2.21 Two bats were observed entering a gap between the roof slates on the west facing roof pitch (one at 05:56 and one at 06:02). No echolocation calls were heard by the surveyors on the heterodyne detectors and no calls were recorded by the nearest Anabat Express to this position immediately prior to the roost entry time. The entry point is consistent with the accumulations of droppings beneath the damage in the section of undertile felt where droppings were taken at sample position 2.

3.2.22 Surveyor 2 observed 3 soprano pipistrelle bats entering the gap at Off-site Roost B. One soprano pipistrelle bat was also observed entering a gap at the ridge coping on the roof of an adjacent building known as Hodder Bank (Off-site Roost A) (refer to **Figure 2**).

3.2.23 No other bat re-entry activity was detected although it is considered that the south-western corner of the Flat 8 may be used as a navigational aid / for social use as up to three soprano pipistrelle were observed circling the area from 05:34 before heading eastwards (presumably to enter a roost elsewhere).

3.2.24 **Table 8.3**, appended, provides an account of the observations made during the dawn re-entry survey and the results of the recording bat detectors.

3.3 Other Relevant Protected Species and Animal Life

Bird Species

3.3.1 No evidence of the current use of the surveyed section of the property by nesting birds, including barn owl, was detected.

4.0 EVALUATION AND ASSESSMENT

4.1 Description of Proposals

4.1.1 The proposals, as illustrated on the *Proposed Floor Plan* and *Proposed T1 Section* (drawings CH_099_SK10 and 11) comprise the raising of the ceiling above the lounge portion of Flat 8 from 2.95 metres to 4 metres to create a vaulted ceiling. This will ensure that the first floor ceiling no longer cuts across the windows on the southern elevation and part of the western elevation of the property. The new ceiling will be lined with ridged insulation and plasterboard.

4.1.2 In consideration of the roof void it is confirmed that the northern portion will remain unaffected. The roof void above the lounge will be reduced in volume as illustrated on the *Proposed T1 Section* (drawing CH_099_SK10).

4.1.3 There are no proposals to install additional roof timbers inside the retained section of roof void (which may obstruct bat movements), to re-roof or to carry out any works the roof covering or exterior of the property.

4.2 Designated Sites for Nature Conservation and Associated Habitats

4.2.1 As all works will be carried out inside the property there is no risk of any adverse effects on designated sites for nature conservation and the associated habitats present the local area.

4.3 Roosting Bats

4.3.1 Based on the nature of the works and the information obtained during the daylight survey and the two bat activity surveys is it considered that appropriate information has been obtained to characterise the roosts present and inform the works. The need for the provisional third survey in September to inform the works was reasonably discounted.

Roost 1

4.3.2 Evidence of bats roosting between the roof slates and the undertile felt at the north facing roof pitch was detected. The species of bat is not confirmed, although based on the bat activity detected at the site and surrounds the species is likely to be common pipistrelle, soprano pipistrelle or whiskered bat.

4.3.3 Roost 1 will not be directly affected by the proposals. It is accepted that disturbance as a result of the construction works will occur, although the works are scheduled to be carried out over the autumn and winter months and, as such, the risk of disturbance of bats at a sensitive time of year (such as during the maternity season) is avoided[5].

Roost 2

4.3.4 The surveys have confirmed that whiskered bats roost within the roof void above Flat 8 and use the roof void to carry out pre-emergence flight activity. For the purposes of this assessment, the whole of the roof void above Flat 8 is classed as a roost (Roost 2).

4.3.5 The status of the whiskered bat roost using the roof void is not known. Based on the number of droppings, the absence of an accumulation of old droppings and number of bats (maximum of 4 assuming the four periods of bats flying in the roof void during the dusk emergence survey were individual bats) the presence of a maternity roost at the roof void above Flat 8 is not considered likely. Rather the roof void may be used by bats as a day roost following dispersal from a maternity roost elsewhere at the Hodder Court / Hodder Place property.

4.3.6 The modification of the roof void above Flat 8 will cause the following impacts:

a. Permanent reduction in the size of the southern portion of the roof void available for pre-emergence flight activity. The reduction is not considered to be significant as a large section of roof will remain present. In addition, based on the size of the void to be retained void (13 metres long by 10.5 metres wide by 5.1 metres high) it is not considered that the proposals will result in any significant changes in ventilation for example;

b. Permanent change in the lighting conditions inside the void as some of the windows will be covered cover to create a darker void. It is possible that the modifications to the roof void may enhance the suitability of the void for use by roosting bats as the void will become dark as the upper section of the windows at the southern and part of the western elevations will be omitted from the roof void;

[5] No significant opportunities or favourable conditions for bats in the hibernation season were detected owing to the presence of an occupied property which will not typically provide the thermally stable and humid conditions required by bats in the hibernation season.

c. Temporary disturbance of the roof void during the construction works including the risk of noise, artificial lighting and dust; and

d. Risk of bats entering the dwelling area of the site during the works and becoming lost / trapped inside the building.

4.3.7 None of the detected roost accesses to the roof void from the exterior will be obstructed by the proposals. The proposals will not result in a reduction in the availability of roosting positions inside the roof void. Based on the proposals and the materials to be used no additional hazards to bats are likely in the presence of the proposals.

4.3.8 Based on Natural England's standing advice[6] the impacts (i.e. modification of a day roost and temporary disturbance) are a low scale of impact.

4.3.9 Based on the assessed scale of impact the works in Roost 2 and near to Roost 1 must only be carried out under a relevant Natural England European Protected Species Mitigation licence issued under Regulation 55 of *The Conservation of Habitats and Species Regulations 2017*. It is advised that mitigation for the bat day roost in accordance with relevant Natural England guidance and licensing requirements are entirely feasible within the remit of the proposals, refer to **Section 5.3**.

Off-site Roosts A and B

4.3.10 The proposals will not be directly affect the other detected soprano pipistrelle roosts.

4.3.11 No other impacts on roosting bats are identified.

4.4 Other Animal Life

4.4.1 No other impacts on protected species and animal life are identified.

5.0 RECOMMENDATIONS

5.1 Introduction

5.1.1 The recommendations described below aim to ensure that the proposals are implemented in accordance with relevant wildlife legislation, Natural England guidance and best practice.

5.2 Site Design

Appropriate Use of Lighting

5.2.1 To ensure the modification to the roof void and Roost 2 is as minimal as possible the use of spotlights in the new ceiling is discouraged. If spotlights will be used it is advised that appropriate covers are installed to ensure that no light spill from the upper side of the spotlight illuminates the roof void.

5.3 Bat Mitigation Strategy

Introduction

5.3.1 This bat mitigation strategy draws on the following resources:

[6] Available at https://www.gov.uk/guidance/bats-surveys-and-mitigation-for-development-projects#assess-the-impacts

a. Current Natural England guidance;

b. Information presented in the *BCT Mitigation Conference Proceedings* (BCT, January 2017) and the *Mitigation Case Studies Forum* (BCT, January 2017);

c. Implemented and monitored activities / specifications carried out by ERAP (Consultant Ecologists) Ltd at other sites / properties; and

d. Information presented on the 'Roost' website provided by the Bat Conservation Trust.

Licensed Works

5.3.2 The licensed works only comprise actions that will directly affect (or have the risk of impacting) the detected roosts (i.e. works in the roof void). Other works such as the painting and decorating of the first floor room can be carried out outside the licence, as required and subject to the listed building consent conditions.

Compensatory Roost

5.3.3 As no roosts will be lost as a result of the works and based on the abundance of available roost opportunities present elsewhere at the Hodder Court / Hodder Place complex there is no requirement to provide an alternative or compensatory roost provision.

Timing of Works

5.3.4 In accordance with the roost status and the predicted scale of impact and there is no restriction on the timing of works although it is strongly advised that the completion of works within the roof void between the months of October and April inclusive would further minimise the risk of impact on bats.

Toolbox Talk

5.3.5 Prior to the commencement of works the licensed ecologist will inform all contractors of the following:

a. The wildlife legislation and protection afforded to bats and their roosts;

b. The presence of the licence and the associated method statement and the need to abide by the content;

c. The licensable actions;

d. Good working practices (i.e. need to abide by the maintenance of the partition sheets described below, avoidance of obstruction of bat access to the roof void (i.e. take care when materials and equipment is stored an how to minimise the risk of bats becoming trapped in the dwelling area of the property);

e. The protocol to be followed if a bat is discovered when the licensed ecologist is not on site; and

f. An outline of the proposals and timescales.

Capture and Exclusion During Works and Preparation of the Working Area

5.3.6 It is not considered necessary to capture bats or exclude access to the roof void during the works. However in accordance with best practice and to minimise the risk of adverse effects as a result of dust and artificial lighting to be used during construction (for example) the following is recommended:

a. Install a dark-coloured tarpaulin sheet (or similar) to temporarily partition off the construction area of the roof void and to leave the northern area undisturbed. The partition sheeting will

confine construction works and will also assist in minimising dust in the northern portion of the roof void;

b. Avoid the use of artificial lighting outside the working area and in the northern portion of the roof void (this may involve temporary removal of the bulb from one of the light fittings);

c. Ensure lighting in the roof void is switched off outside of working periods; and

d. Although the risk is low it is recommended that the internal doors at Flat 8 are kept closed as much as possible whilst the first floor ceiling is missing as this will minimise the risk of bats being lost inside the other areas of the flat whilst access from the roof void to the dwelling area is temporarily available.

Discovery of a Bat

5.3.7 If at any time during the works a bat is discovered or suspected when the licensed bat surveyor is not on site all contractors must withdraw from the area and ERAP (Consultant Ecologists) Ltd (01772 750502) or the Bat Conservation Trust must be contacted for further guidance.

Mechanism for Ensuring Implementation / Success

5.3.8 If the licensed ecologist has any concerns regarding the quality of workmanship or there is non-compliance with the Natural England licence, the Mitigation Strategy and / or guidance provided by the licensed ecologist then this will result in additional site visits to make inspections.

5.3.9 It is always the intention to ensure all parties are aware of the importance of the Natural England licence and compliance with the Mitigation Strategy and this is achieved through good communication. However, in extreme / significant cases of non-compliance the licensed bat surveyor will report the issue to Natural England and further action may be taken.

Post-development Interference Impacts and Mitigation

5.3.10 The risk of post-development interference impacts has been minimised by designing in the provisions for roosting bats in liaison with the property owners and by providing guidance to the property owners on the protection afforded to bats and their roosts and nesting birds.

6.0 CONCLUSION

6.1 Comprehensive survey and assessment has detected evidence of use of the roof covering and roof void above Flat 8 Hodder Court by roosting bats. The comprehensive mitigation strategy outlined in **Section 5.3** demonstrates that protection of the roosts and mitigation to minimise the scale of impacts on roosting bats and conservation of roosting opportunities at the site in the long-term is entirely feasible. The 'three tests' of *The Conservation of Habitats and Species Regulations 2017* will be met and the appropriate Natural England licence will be obtained to facilitate the works.

6.2 No other ecological constraints have been detected.

7.0 REFERENCES

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8.0 APPENDIX 1: TABLES

Table 8.1: **Photographs Taken August 2021**

Photo 1: Southern elevation of section of building showing Flat 8

Photo 2: Northern and eastern elevations and extent of Flat 8

Photo 3: Western and southern elevations and slated covered hipped roof

Photo 4: Slate covered roof above Flat 8 (southern elevation)

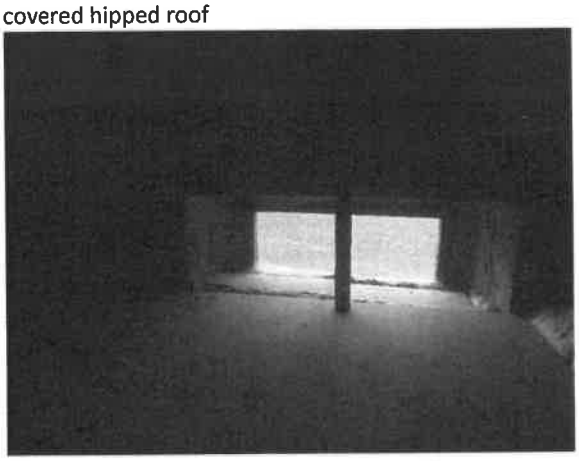


Photo 5: Roof void at Flat 8 showing ceiling crossing the upper section of window

Photo 6: Roof void at Flat 8. Ceiling to be raised to the trusses as shown.

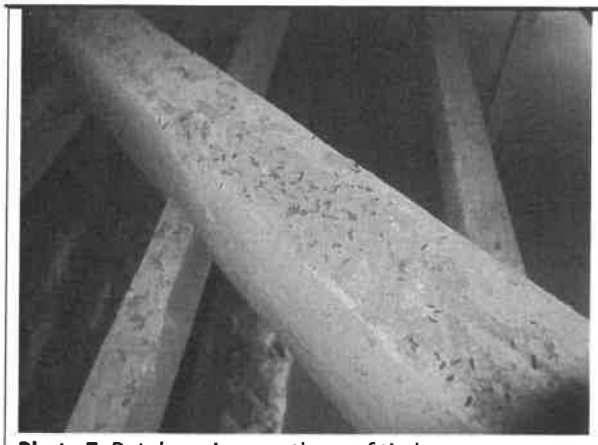


Photo 7: Bat droppings on the roof timbers

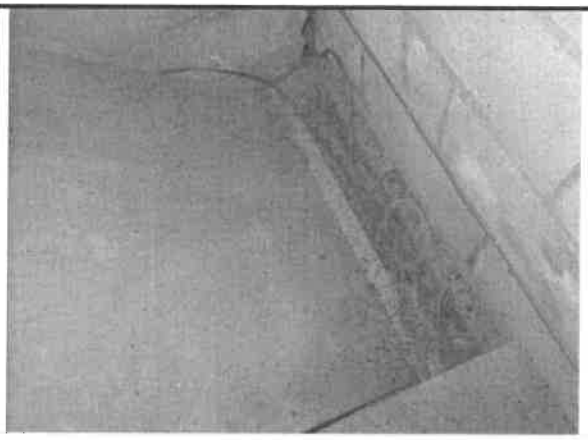


Photo 8: Bat droppings on floor of roof void (near access hatch)

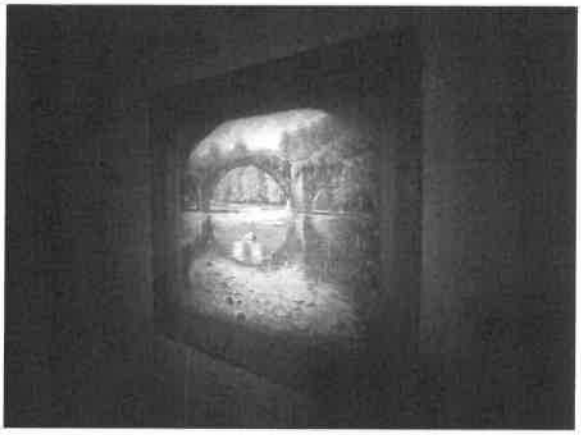


Photo 9: Evidence of bats flying in the roof void

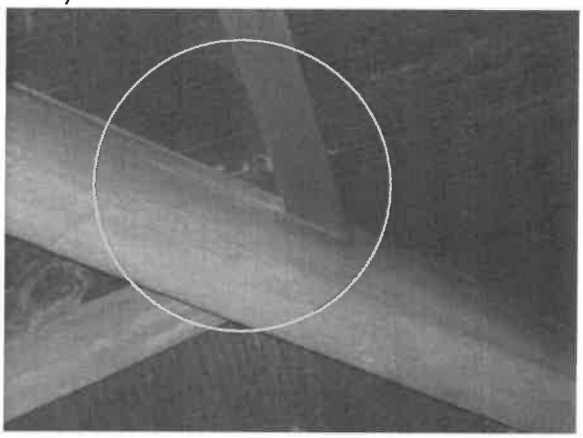


Photo 10: Likely bat roost position at cobweb free roof timber with staining caused by the oils on bat fur

Photo 11: Bat droppings on floor of rood void (at dropping sample collection point 1 = whiskered bat)

Photo 12: Northern side of roof void showing timber arrangement and large void that will be retained

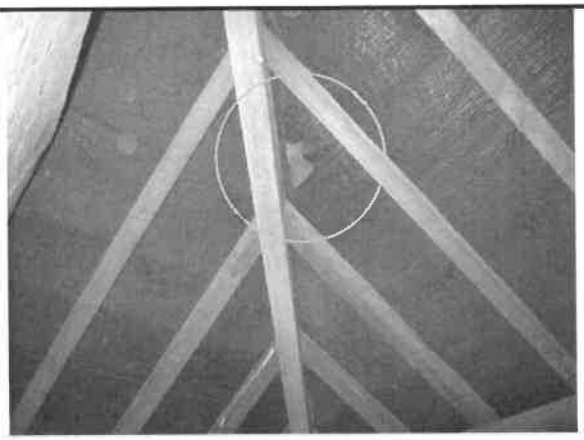


Photo 13: Minor damage at undertile roof felt with droppings beneath (possible roof void / roost access point to Roost 2)

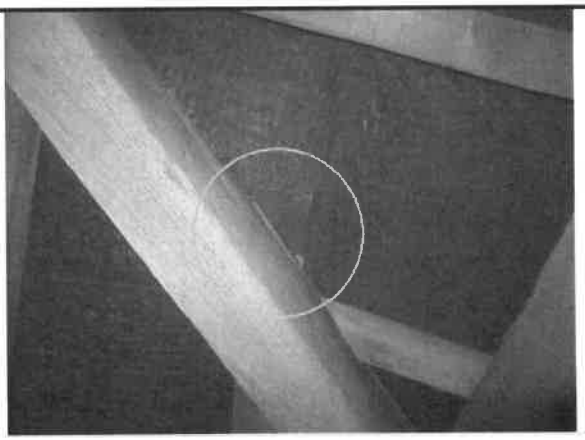


Photo 14: Minor damage at undertile roof felt with droppings beneath (possible roof void / roost access point to Roost 2)

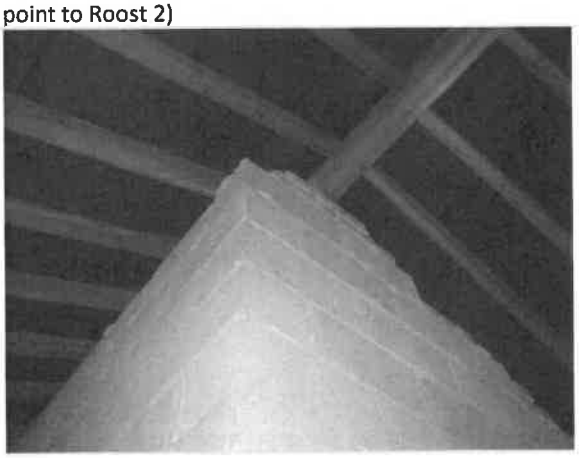


Photo 15: Concrete block partition wall at the top of the stair well; once inside the roof void bats have access to the hollow section of the blocks.

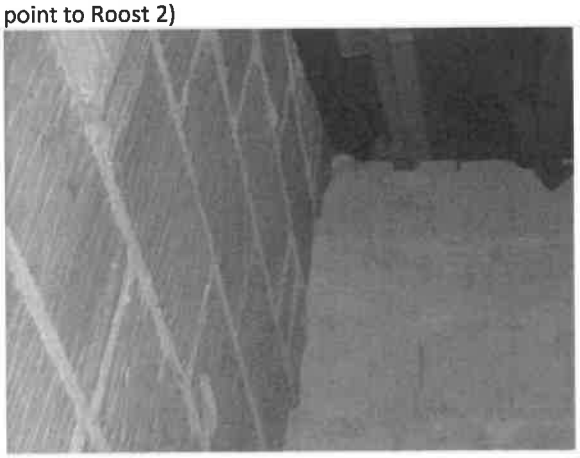


Photo 16: Accumulations of droppings on and beneath the concrete block partition wall at the top of the stair well; once inside the roof void bats have access to the hollow section of the blocks.

Table 8.2: **Bat Activity Survey 1, 26th August 2021, Sunset Time 20:15, Start Time: 19:30**

Surveyor Position 1: Victoria Burrows (inside roof void)

Time	Species	Notes
19:30	-	No bats found in roof void at the start of the survey.
20:28 to 20:30	*Myotis* Anabat analysis (and DNA analysis of droppings from two locations in roof void) indicates whiskered bat	One bat emerged from around the wall top at the stone chimney stack [**Roost 2**]. Bat flew around roof void until 20:30 then no further observations. Exit point not observed by surveyor 1 or CCTV infra-red cameras. A search did not locate the bat resting at the roof timbers.
20:37	-	Bats heard 'chattering' above the undertile felt (i.e. between the slates and the undertile felt) at a height of 1.5 metres from eaves height on the northern facing foot pitch [**Roost 1**]
20:38 to 20:39	Whiskered bat	Flying in the roof void. Exit point not observed by surveyor 1 or CCTV infra-red cameras. A search did not locate the bat resting at the roof timbers.
20:50 to 20:53	Whiskered bat	Flying in the roof void. Exit point not observed by surveyor 1 or CCTV infra-red cameras. A search did not locate the bat resting at the roof timbers.
20:55	-	Bats at under tile felt [Roost 1] no longer audible (assumed to have emerged).
21:23 to 21:25	Whiskered bat	Flying in roof void
21:30 to 22:00	-	A search did not locate any bats resting in the roof void.
22:00	End	
The Anabat Express made the following recordings: 21 *Myotis* calls[7] in groups at 20:28 to 20:30, 20:38 to 20:39, 20:50 to 20:53 and 21:23 to 21:24; and 4 soprano pipistrelle recordings between 20:33 and 20:34.		

Surveyor Position 2: Brian Robinson

Time	Species	Notes
20:26	Common pipistrelle	Pass along western elevation of building
20:31 to 20:41	Soprano pipistrelle	53 bats emerged from **Off-site Roost B**
20:33	Myotis	Heard not seen
20:45	Myotis	Pass along western elevation of building
20:46	Common pipistrelle	Pass along western elevation of building
22:00	End	
The Peersonic RPA3 made the following recordings: 27 common pipistrelle recordings between 20:38 and 21:58; 98 soprano pipistrelle recordings between 20:26 and 21:55; and 17 Myotis recordings between 20:39 and 21:52.		

[7] The sonograms are, in accordance with the Myotis bat call characteristics outlined in *British Bat Calls: A Guide to Species Identification* (Russ, 2012), most indicative of a whiskered bat, in that they are typically between 90 and 30khz, with no calls ending below 30khz, the bulk of energy between 50 and 40khz and no kinks or bends within the call. No call sequences were typical of other Myotis bat species (no calls have characteristics typical of Daubenton's bats, such as a kink at 40-45khz, the calls did not regularly start over 100khz as per Natterer's bats, and the call sequences did not alternate between long and short bandwidth pulses as per Brandt's bats). The site is not located well outside the known range of Bechstein's bat and calls were not typical of this species.

Surveyor Position 3: Amy Sharples

Time	Species	Notes
20:30	Bat	Pass cover roof east to west
20:34	Bat	Along trees near the garages
20:38 to 20:56	Soprano pipistrelle	Pass and social calls
21:12	Soprano pipistrelle	Pass and social calls
21:12 – 21:24	-	Car entered survey area and set security light on at the southern elevation of building so visual observations impeded temporarily.
21:30	Common pipistrelle	Feeding nearby
21:35 to 21:45	Soprano pipistrelle	Feeding nearby
22:00	End	
The Anabat Express made the following recordings: 3 common pipistrelle recordings at 21:12, 21:31 and 21:33; 31 soprano pipistrelle recordings between 20:34 and 21:47; and 10 Myotis recordings between 21:00 and 21:45.		

Table 8.3: **Bat Activity Survey 2, 8th September 2021, Sunrise Time 06:28, Start Time: 04:45**

Surveyor Position 2: Catie Haworth

Time	Species	Notes
05:42	Soprano pipistrelle	One bat entry into **Off-site Roost A**
05:59 to 06:06	Soprano pipistrelle	Three bats circling and then entry into **Off-site Roost B**
Throughout survey	Soprano pipistrelle	Activity throughout survey. Many of the bats flew eastwards (presumably to enter a roost elsewhere at the Hodder Court building based on the time of the observations / recordings).
06:45	End	
The Anabat Express made the following recordings: 29 Myotis recordings[8] between 04:59 and 05:43; 8 common pipistrelle recordings between 05:05 and 05:21 and 39 soprano pipistrelle recordings between 04:57 and 06:18.		

Surveyor Position 3: Amy Sharples

Time	Species	Notes
04:43	Badger	Observed on the track / access to the Hodder Court site
05:09	Myotis	Heard not seen
05:11	Myotis	Heard not seen
05:12	Myotis	Heard not seen
06:45	End	
The Anabat Express made the following recordings: 2 common pipistrelle recordings at 05:28 and 05:38; 33 soprano pipistrelle recordings between 04:54 and 06:10; and 9 Myotis recordings between 04:58 and 05:05.		

[8] The sonograms are, in accordance with the Myotis bat call characteristics outlined in *British Bat Calls: A Guide to Species Identification* (Russ, 2012), most indicative of a whiskered bat, in that they are typically between 90 and 30khz, with no calls ending below 30khz, the bulk of energy between 50 and 40khz and no kinks or bends within the call. No call sequences were typical of other Myotis bat species (no calls have characteristics typical of Daubenton's bats, such as a kink at 40-45khz, the calls did not regularly start over 100khz as per Natterer's bats, and the call sequences did not alternate between long and short bandwidth pulses as per Brandt's bats). The site is not located well outside the known range of Bechstein's bat and calls were not typical of this species.

Surveyor Position 4: Victoria Burrows

Time	Species	Notes
05:19	Soprano pipistrelle	Flying over. Social calls audible.
05:29	Myotis	Pass along trees and access track.
05:34	Soprano pipistrelle	Three bats circling at south-western corner of building before flying eastwards along frontage of building.
05:56	No echolocation (Possible Myotis / whiskered bat)	One bat entered roof void at Flat 8 [Roost 2] beneath slate on west facing roof pitch, as shown on **Figure 2**
06:02	No echolocation (Possible Myotis / whiskered bat)	One bat entered roof void at Flat 8 [Roost 2] beneath slate on west facing roof pitch, as shown on **Figure 2**
06:18	Soprano pipistrelle	Bat still out relatively late (10 minutes before sunrise). Flew along western elevation of building and headed eastwards.
06:45	End	
The Anabat Express made the following recordings: 1 common pipistrelle recording at 04:58; 63 soprano pipistrelle recordings between 05:03 and 06:11; and 11 Myotis recordings between 04:57 and 05:35.		

9.0 APPENDIX 2: FIGURES

Figure 1: **Aerial Image to Show Location of Flat 9 and Surrounding Habitats**

Figure 2: Plan to Show Location of Detected Bat Roosts

Off-site Roost A: Soprano pipistrelle day roost

26th August 2021 (dusk): No observations (but not the target building).

8th September 2021 (dawn): 1 bat entered at gat beneath the ridge coping.

Off-site Roost B: Soprano pipistrelle roost (likely maternity)

26th August 2021 (dusk): 53 bats emerged

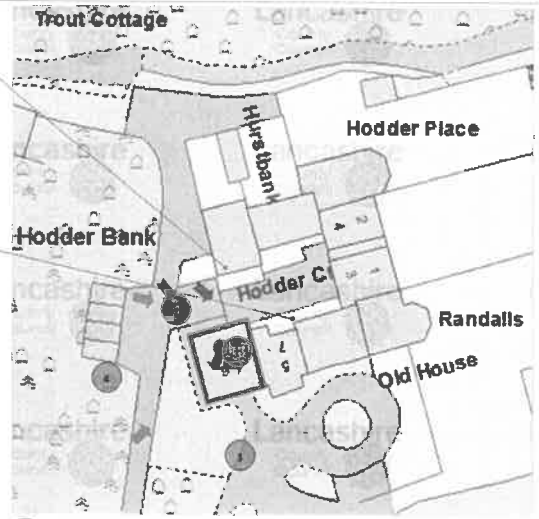
8th September 2021 (dawn): 3 bats entered

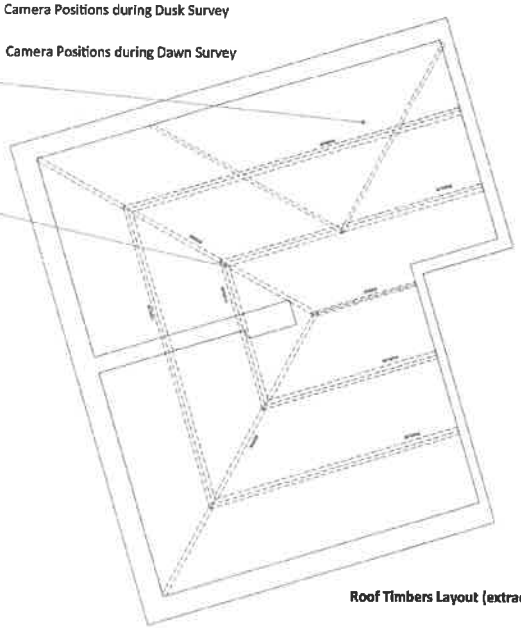
Roost 1: Species Not Known

26th August 2021 (dusk): Bats heard by Surveyor 1 (in roof void). Bats present between the roof slates and the underfile felt on the north facing roof pitch.

Roost 2: Whiskered Bat Roost Access

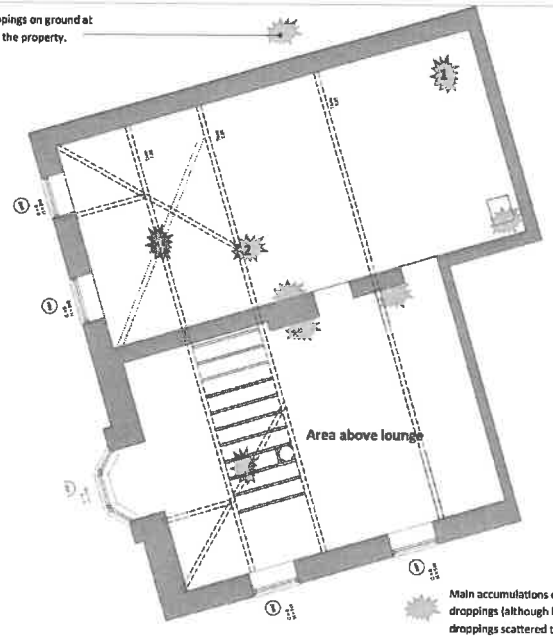
8th September 2021 (dawn): 2 bats entered beneath roof slate on the western roof pitch (in the location of the damaged roof felt and the accumulation of droppings shown on the Attic Floor Plan.





Roof Timbers Layout (extracted from CH_099-SK03)

Approximately 6 bat droppings on ground at the northern elevation of the property.



Existing Attic Floor Plan (extracted from CH_099-SK02)

Main accumulations of bat droppings (although bat droppings scattered throughout the roof void)

1 Dropping sample reference

North

Project Name: Flat 8, Hodder Court, Stonyhurst, Knowles Green, BB7 9PP		
Title: Plan to Show Location of Detected Bat Roosts		
Scale: NTS	**Drawing No.** Figure 2	**Date:** Sept. 2021
Reference No. ERAP ref: 2021-241		

ERAP Ltd Consultant Ecologists
Building M7, Chorley Business and Technology Centre, East Terrace, Euxton, Chorley, Lancashire PR7 6TP Tel: 01772 750582
E-mail: mail@erap.co.uk Website: www.erap.co.uk

10.0 APPENDIX 3: RESULTS OF DNA ANALYSIS OF DROPPINGS

10.1 Sample 1: Whiskered Bat

WARWICK
THE UNIVERSITY OF WARWICK

EcoWarwicker
Ecological Forensics

16 September 21

Re: Identification Results for Victoria Burrows, ERAP Ltd

Job number 17195, received 01 September 2021
Sample labelled: 2021-241 Hodder's Court Loft 1
PCR amplification successful. DNA sequence:
ATGACCAACATTCGAAAGTCCCACCCCTTAGTAAAAATTATTAATAGCTCATTTATCG
ACCTTCCTGCCCCATCAAATATCTCATCTTGATGAAATTTCGGATCTCTTTTAGGAAT
CTGCCTAATAC

Phylogenetic analysis identification: *Myotis mystacinus*

Confirmed by maximum likelihood, maximum parsimony, bootstrap 100%.

Best regards,

Professor Robin Allaby

The results and conclusions in this report are based on an investigation of mtDNA sequence analysis. The results obtained have been reported with accuracy. The interpretation represents the most probable conclusion for the DNA sequence obtained rather than the sample provided given current levels of species data. It should be borne in mind that different circumstances might produce different results. Therefore, care must be taken with interpretation of the results especially if they are used as the basis for commercial recommendations.

Professor Robin Allaby

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10.2 Sample 2: Waiting for Result