
**1, 2, 3 Williams Mews,
Ruabon**

**Bat Survey
(Preliminary Roost Assessment
and Presence/Absence Surveys)**

June 2018

Issue Status

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1.0 Introduction

1.1 Background

- 1.1.1 This bat survey report has been prepared by Anthony Nickson Ecology Ltd on behalf of Wales & West Housing. The report will accompany a planning application for the proposed redevelopment of 1, 2, 3 Williams Mews (hereafter known as 'the application site').
- 1.1.2 The application site (ref. figure 1) is located in Ruabon (grid ref: SJ30434398). The application site consists of three mews properties, hardstanding and scrub. The site is located on the high street at the centre of the village and is bound by residential, commercial and amenity properties with pockets of green space. In the wider environment there are also residential properties with established gardens and green space as well as belts of broad-leaved trees.



Figure 1. Site location

1.2 Legislation and Planning

- 1.2.1 All British bat species and their roosts are protected under European Law (Conservation of Habitats and Species Regulations 2017) and UK Law (Wildlife and Countryside Act 1981, as amended). As such it is an offence to undertake the following acts;
- Deliberately capture, injure or kill a bat
 - Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats
 - Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time)
 - Intentionally or recklessly obstruct access to a bat roost
- 1.2.2 Biodiversity is a material consideration to the planning process and consideration must be given to the protection, retention and improvement, of existing biodiversity features. The redevelopment of the application site will effect a structure which could potentially support protected species and consideration should be given to roosting bats and other protected and notable species which utilise built structures.

2.0 Methodology

2.1 Desktop Study

- 2.1.1 A desk study was carried out to obtain and review bat records held by the Local Records Centre. Cofnod, the North Wales Environmental Information Service was asked to provide bat records for a 500m radius from the centre of the application site.

2.2 Site Survey

Habitat Suitability

- 2.2.1 The habitats present on site and within the surrounding area were identified by undertaking a site walkover and by reviewing publically accessible online maps. The habitats' suitability to support and provide connectivity for commuting and foraging bats was then determined.

Table 1. Guidelines for assessing the potential suitability of proposed development sites for bats based on the presence of habitat features within the landscape

Suitability	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated 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 (not in a parkland situation) or a 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 connected 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 that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Preliminary Roost Survey

- 2.2.2 In addition, a preliminary roost assessment of the existing mews building was undertaken. An external and internal inspection of the properties was undertaken to search for, and to assess the potential for, a bat roost to be present.
- 2.2.3 External searches included, for example, looking for gaps between any soffit boards and walls, gaps between window frames and the walls, and looking for bat droppings on the walls and window ledges. Following the external survey, an internal survey of accessible loft spaces was also carried out to search for evidence of a bat roost. This included looking for the following signs:

- live or dead bats
- bat droppings
- bat entry/exit points
- bat urine staining
- grease marks on any timbers
- feeding remains such as insect wings
- areas clear of cobwebs

- 2.2.4 A pair of close focussing binoculars, a high-powered torch and an endoscope were used (where required) to search for evidence of bats, externally and internally.
- 2.2.5 Anthony Nickson carried out the daytime bat survey; Anthony is an active bat worker and holds a Natural Resources Wales survey licence (74545:OTH:CSAB:2016) for bats; he is also a full member the Chartered Institute of Ecology and Environmental Management.
- 2.2.6 The existing mews building was then assessed in accordance with the guidelines for assessing the potential suitability of proposed development sites for bats (BCT, 2016).

Table 2. Guidelines for assessing the potential suitability of proposed development sites for bats based on the presence of suitable roosting features within a structure

Suitability	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

- 2.2.7 The daytime bat survey was carried out on the 18th January 2018, a sub-optimal time of the year to survey for bats and signs of bats; as it is outside the period when bats are most active (May to September). At this time of year it is likely that any external visible signs of bat presence that may have been present during the active season would have been washed away in the intervening period. A full unrestricted inspection of the building was carried out.

2.3 DNA Identification

- 2.3.1 During the preliminary roost assessment of the existing mews building two small amounts of bat droppings were identified in two separate locations in the loft spaces (the loft spaces of 2 and 3 Williams Mews). A sample of droppings was collected from each location using clean tweezers and transferred to a small plastic Eppendorf plastic tube. The sample was despatched to EcoWarwick Ecological Forensics at the University of Warwick following the completion of the survey for species analysis identification from the DNA.

2.4 Emergence/Re-entry Survey

- 2.4.1 Following the preliminary roost assessment further presence/absence surveys were carried out on the existing Williams Mews properties on the 2nd May 2018, 22nd May 2018 and 4th June 2018.
- 2.4.2 For each survey two surveyors were located strategically to ensure all potential bat access points were accounted for, and the building was monitored visually to determine whether or not any bats emerged from, or entered, the building. Further to this, each surveyor used a bat detector to listen to the echolocations of any bat activity so that the bats could be identified to species or at least genus level.



Figure 2. Showing emergence/re-entry surveyor locations

- 2.4.3 The dusk emergence surveys began 15 minutes before sunset and continued for 90 minutes after sunset. The dawn re-entry surveys began 90 minutes before sunrise and continued for 15 minutes after sunrise.
- 2.4.4 The presence/absence surveys were led by Anthony Nickson and Richard Lowe. Anthony and Richard were assisted by Martyn Barnes and Natasha Reece. All surveyors are experienced in undertaking presence/absence surveys.

2.5 Other protected species

- 2.5.1 In addition to surveying for bats, during the survey any direct observations or signs of other protected or notable species, in particular nesting birds, were also to be recorded.

3.0 Results

3.1 Desktop Study

- 3.1.1 The three most commonly recorded species of bat in North Wales and elsewhere in the UK are the common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and brown long-eared bat (*Plecotus auritus*); all of which commonly roost within built structures.
- 3.1.2 Nine other species of bats have also been recorded in North Wales all of which have been known to roost in built structures albeit less frequently than the species previously mentioned, these are:
- Brandt's bat (*Myotis brandtii*)
 - Daubenton's bat (*Myotis daubentonii*)
 - Greater horseshoe bat (*Rhinolophus ferrumequinum*)
 - Lesser horseshoe bat (*Rhinolophus hipposideros*)
 - Nathusius' pipistrelle (*Pipistrellus nathusii*)
 - Natterer's bat (*Myotis nattereri*)
 - Noctule (*Nyctalus noctula*)
 - Serotine bat (*Eptesicus serotinus*)
 - Whiskered bat (*Myotis mystacinus*)
- 3.1.3 The local record centre provided 5 bat records within a 500m radius of the site boundary. The record type e.g. roost, detector, injured bat etc was not given. The records are summarised within Table 3 below.

Table 3. Summary of the Cofnod bat records

Species	No. of records	Closest Record
Common Pipistrelle (<i>Pipistrellus pipistrellus</i>)	2	The closest record is 67m north of the site boundary.
Bats (<i>Vespertilionidae</i>)	3	The closest record is 412m north-east of the site boundary.

- 3.1.4 Whilst twelve species of bats have been recorded in North Wales, the likely bat species to be found roosting within the existing mews would be the common pipistrelle and/or soprano pipistrelle. These bats are both crevice dwelling bats which commonly roost in built structures in urban areas.

3.2 Site Survey

Habitat Suitability

- 3.2.1 The application site is located on the high street at the centre of Ruabon village. The habitats immediately surrounding the site would support a small number of foraging bats. There is limited connectivity to the green space and tree belts in the wider landscape which would provide good foraging habitat for bats.

Preliminary Roost Survey

- 3.2.2 The building within the application site is 1, 2, 3 Williams Mews which is a two storey mews building constructed of brick external wall with blockwork inner leaf and concrete tile pitched roofs (ref. Plates 1-2).
- 3.2.3 Each mews property has a pitched roof with a gable to the front elevation, as a result the whole building has 5 gables. The roofs have a concrete interlocking tile covering and a clay ridge tile. The pitched roof covering and clay ridge tiles are generally in excellent condition (ref. Plate 3), however, there were several missing roof tiles to the front and rear of the property (ref. Plate 4) which could provide access for bats into the building.

- 3.2.4 The building has wooden soffits and fascias which are generally in excellent condition and flush to the external wall, however, there was a small gap (ref. Plate 5) between the soffits and external wall on the gable of 1 Williams Mews which could provide access for bats into the building.
- 3.2.5 The glass within the uPVC doors and windows has been smashed in the majority of the windows and doors, whilst the all but one opening have been boarded over the first floor window to the front of 1 Williams Mews is not boarded (ref. Plate 6) and the boards to the window at the rear of the same property are damaged (ref. Plate 7), both of these windows provide opportunities for bats to access the building.
- 3.2.6 Internally each property has its own loft space (ref. Plate 8) separated by a blockwork dividing wall, although there are gaps at the apex of each divide which could provide access for bats to move between the loft spaces. Each loft space (including the gable) is approximately 12m long by 6m wide and 2m high (at apex). Each roof has a trussed rafter construction. The roof has a modern roofing membrane (ref. Plate 9) which could provide roosting opportunities for crevice dwelling bats between the roof covering and the membrane, evidence of which would not be possible to see from inside the roof.
- 3.2.7 A small amount of bat droppings were identified within the loft space of 2 Williams Mews on the southern blockwork wall (ref. Plate 10) and on the plasterboard floor (ref. Plate 11). A small amount of bat droppings were also identified within the loft space of 3 Williams Mews below the ridge beam on the plasterboard floor (ref. Plates 12-13) adjacent to the southern blockwork wall.

3.3 DNA Identification

- 3.3.1 The bat droppings within the lofts spaces of 2 Williams Mews (sample 1) and 3 Williams Mews (sample 2) were both identified as brown long-eared (*Plecotus auritus*), please see Appendix C for details of the analysis.

3.4 Emergence/Re-entry Survey

- 3.4.1 Following the preliminary roost assessment tree presence/absence surveys were undertaken on the Williams Mews properties to determine whether either of the buildings are being used by roosting bats and to assess the level of bat activity around the site. The results were as follows:

Table 4. Williams Mews properties emergence survey

Date	Sunset Time	Surveyors	Start and end times	Equipment used	Weather
02/05/2018	20:41	- Anthony Nickson - Natasha Reece	20:30- 22:15	2 x Anabat SD2	- 9.5°C (start temp) - 9°C (end temp) - Dry (precipitation) - 0-2 (beaufort wind scale)
Notes - No bat were observed entering or emerging from the building during the survey.					

Table 5. Williams Mews properties re-entry survey

Date	Sunset Time	Surveyors	Start and end times	Equipment used	Weather
22/05/2018	05:04	- Richard Lowe - Martyn Barnes	03:08- 05:19	2 x Anabat SD2	- 11.0°C (start temp) - 9.3°C (end temp) - Dry (precipitation) - 0 (beaufort wind scale)
<u>Notes</u> - No bat were observed entering or emerging from the building during the survey. - Common pipistrelle (<i>Pipistrellus pipistrellus</i>) bats were recorded throughout the survey commuting/foraging along the boundary of the site					

Table 6. Williams Mews properties emergence survey

Date	Sunset Time	Surveyors	Start and end times	Equipment used	Weather
04/06/2018	05:04	- Richard Lowe - Martyn Barnes	03:08- 05:19	1 x EMT Pro2 1 x Batbox Duet	- 18.0°C (start temp) - 16.0°C (end temp) - Dry (precipitation) - 2 (beaufort wind scale)
<u>Notes</u> - No bats were observed entering or emerging from the building during the survey. - A non-echolocating bat and 2 no. common pipistrelle bats were identified moving					

3.5 Other protected species

- 3.5.1 A dead fledgling (ref. Plate 14) was identified on the ground floor of 3 Williams Mews which suggests that birds have been nesting in the building. The rear fence in the garden has a dense ivy covering (ref. Plate 15) and there is also a small area of scrub and a privet hedge; (ref. Plate 16) all of which provide suitable nesting habitat for a variety of common garden bird species.

4.0 Conclusion and Recommendations

4.1 Bat Survey

- 4.1.1 The preliminary roost assessment demonstrated that the existing Williams Mews properties has had limited use by brown long-eared bats as a small amount of scattered dropping were found in the building.
- 4.1.2 Although occasional evidence of brown long-eared bats using the properties was recorded; the presence/absence surveys suggest that the properties do not support a regular bat roost as if this species was habitually roosting in the building then given the intensity of the presence/absence surveys during the peak activity period for bats, evidence of roosting would have been found.
- 4.1.3 It is considered to be inappropriate to obtain a European Protected Species mitigation licence to cover the occasional use of the existing properties, however, to ensure that the development does not significantly affect the ability of the local bat population to survive, breed, rear or nurture their young or significantly affect the local distribution or abundance of any bat species, the following measures should be implemented and secured by a suitably worded planning condition:
- 4.1.4 Prior to the commencement of works a tool box talk should be provided by a suitably qualified ecologist to applicable site operatives. Following this a soft strip will be overseen by the ecologist to ensure that all likely features where bats could be present are removed sensitively; specific features include roof tiles, ridge tiles, wooden soffits and fascias to be removed by hand. Mechanical demolition of the building must only take place once all sensitive features have been removed by hand.
- 4.1.5 If during development works a bat, or an accumulation of bat droppings is discovered at any time during the redevelopment, work is to temporarily cease whilst a bat ecologist is contacted for guidance and assistance. This can be Anthony Nickson (07921 571 823) who undertook the initial survey, or the Bat Conservation Trust (BCT) helpline (0845 1300 228).

4.2 Other protected species

- 4.2.1 All bird species are protected at their nest under the Wildlife and Countryside Act 1981. Due to the likelihood of nesting birds within the existing mews building and habitats within the garden it is recommended that works which would impact the buildings and applicable habitats takes place outside the peak bird breeding season (March to September).
- 4.2.2 If site works will be undertaken within the nesting season then an appropriately qualified ecologist will be required to undertake a site walkover to visually assess potentially suitable nesting habitat for active nests. If active nests are discovered then site works must wait until the nest is deemed inactive.

4.3 Biodiversity Enhancement

- 4.3.1 In line with Planning Policy Wales and Technical Advice Note 5 the planning system should contribute to the enhancement of species and their habitats, especially those with legal protection and those of principal importance for biodiversity conservation in Wales.
- 4.3.2 In order to comply with planning policy the project team should provide two integral bat boxes such as the Ibstock Type C (or equivalent) into the scheme. One to the south facing gable of the detached property and one to the rear of the semi-detached property. See Appendix D for examples of integrated bat boxes.

5.0 References

Bat Mitigation Guidelines, English Nature, A J Mitchell-Jones A J, 2004

Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd Edition, Bat Conservation Trust, J. Collins, 2016

Bat Workers Manual, 3rd Edition, JNCC, A. J. Mitchell-Jones & A. P. McLeish, 2004

Countryside and Wildlife Act, 1981

Data Request E06233; Cofnod, 5th January 2018

EU Habitats Directive, 1994

Planning Policy Wales (Edition 9), Welsh Government, November 2016

Technical Advice Note 5: Nature Conservation and Planning, Planning Policy Wales, September 2009

Appendix A - Ecological Data Search Records

Cofnod Environmental Information Search (PUBLIC VERSION)

Our Reference	E06233
Your Reference	ANE-180105-01
Requested By	Anthony Nickson Ecology Ltd
Data Users	Anthony Nickson, Ecologist, Anthony Nickson Ecology Ltd Data will be provided in a report which may be published on Wrexham planning website.
Search Date	05/01/2018
Expiry Date	05/01/2019
Search Type	Chargeable

Important Issues

- Use of the data is governed by Cofnod's [Terms & Conditions](#).
- Data marked as confidential or sensitive must not be released into the public domain, with the exception of the Public Version of the PDF report, which has had sensitive information removed or restricted.
- You should not amend any part of the downloaded records.
- Unless otherwise agreed, use of the data is valid until the Expiry Date (05/01/2019).
- The data was generated on the Search Date (05/01/2018) and is not live.
- The Dataset ID associated with each record can be used to find information about the provenance of the data. See the [Data We Hold](#) page on our website for more information.
- Quality Assurance (QA) levels are given for each record. For further information see our Data Quality Policy, available from our [website](#).
- Please [contact us](#) if you have any questions about using the data or wish to add further Data Users.

Notes

- Cofnod uses a search system which optionally reports species (usually high priority or protected species) within a specified search radius or buffer. Where required a search will also include high priority 'Mobile Species', such as bats, otters, amphibians and certain invertebrates, which lie outside the specified search radius. These species are highlighted on the report with **(Mobile)** next to the distance. They have been selected as 'Mobile Species' as their territory (possibly due to foraging activity or life cycle) could intersect with the search radius.
- Records with 4 figure grid references are displayed as 1km squares on any relevant maps. They are highlighted with **(1km)** next to the distance.
- Records shown in **bold** typeface are sensitive species records, and some details have been restricted in this public version of the report.

Data Description

Distance	Indicates the distance, in metres, between the GRID REFERENCE of the record (using the central point of the grid square) and the search location. For any Sensitive Species Records, this cannot be released into the Public Domain.
Species Name	Name of the taxon (usually identified to species level) using the binomial system.
Grid Reference	Full grid reference based on the Ordnance Survey grid system. For any Sensitive Species Records, this cannot be released into the Public Domain.
Date	Date on which the record was made. In some cases this might be a date range, or a vague date such as 'Summer 2010'.
Recorder(s)	One or more people who made the original observation and recorded it in some way. It may have subsequently been included in a data collation by another person or it may have been submitted to Cofnod directly.
Abundance	Number of individuals recorded. Where not specified it is assumed that at least one was present.
Record Type	The recording methods used (only where specified).
Site Name	The site name (if one has been supplied). For any Sensitive Species Records, this cannot be released into the Public Domain.
Comments	Any additional notes about the sighting, including any information on habitat or substrate if this is available. For any Sensitive Species Records, this cannot be released into the Public Domain.
Dataset ID	ID of this dataset. See 'Important Issues' for more details.
Lists	Any local, national or international conservation statuses or legal protection which apply to this species and whether it is included in any Local Biodiversity Action Plans. See 'Abbreviations' for more details.
QA	Summarised record Verification Level. The following codes are used: 1 - Unassessed, 2 - Unconfirmed, 3 - Considered Correct by Cofnod, 4 - Considered Correct by Expert. See our Data Quality policy, available from the Cofnod website for more details.

Abbreviations

ANG - Anglesey County Council Local Biodiversity Action Plan, **AONB** - Area of Outstanding Natural Beauty, **AW** - Ancient Woodland, **BAP** - UK Biodiversity Action Plan, **BDir1** - EU Birds Directive Annexe 1, **BDir2.1** - EU Birds Directive Annexe 2.1, **BDir2.2** - EU Birds Directive Annexe 2.2, **Bern** - Bern Convention on the Conservation of European Wildlife and Natural Habitats, **Bonn** - Bonn Convention on the Conservation of Migratory Species of Wild Animals, **CITES** - Convention on International Trade in Endangered Species of Wild Fauna and Flora, **CON** - Conwy County Borough Council Local Biodiversity Action Plan, **DEN** - Denbighshire County Council Local Biodiversity Action Plan, **EPS** - European Protected Species, **FLI** - Flintshire County Council Local Biodiversity Action Plan, **GWY** - Gwynedd County Council Local Biodiversity Action Plan, **HDir** - EU Habitats Directive, **INNS** - Invasive Non-native Species, **LBAP** - Local Biodiversity Action Plan species for the listed area, **LI** - Locally Important within the listed area, **LNR** - Local Nature Reserve, **MNR** - Marine Nature Reserve, **NNR** - National Nature Reserve, **NRW** - Natural Resources Wales Priority Species, **NWWT** - North Wales Wildlife Trust Reserve, **PBA** - Protection of Badgers Act 1992, **RD1(UK)** - Red Data Book listing for the UK based on IUCN guidelines, **RD1(Wales)** - Red Data Book listing for Wales based on IUCN guidelines, **RD2(UK)** - Red Data Book listing for the UK not based on IUCN guidelines, **RIGS** - Regionally Important Geodiversity Site, **S42** - Natural Environment and Rural Communities Act 2006 (Section 42), **SAC** - Special Area of Conservation, **SNP** - Snowdonia National Park Local Biodiversity Action Plan, **SPA** - Special Protection Area, **SSSI** - Site of Special Scientific Interest, **UKBA** - RSPB UK Birds Amber List (not based on IUCN criteria), **UKBR** - RSPB UK Birds Red List (not based on IUCN criteria), **VC48** - Locally Important within Vice-County 48: Meirionethshire, **VC49** - Locally Important within Vice-County 49: Caernarfonshire, **VC50** - Locally Important within Vice-County 50: Denbighshire, **VC51** - Locally Important within Vice-County 51: Flintshire, **VC52** - Locally Important within Vice-County 52: Anglesey, **WBA** - RSPB Welsh Birds Amber List (not based on IUCN criteria), **WBR** - RSPB Welsh Birds Red List (not based on IUCN criteria), **WCA1.1** - Wildlife & Countryside Act 1981 Schedule 1.1 (Birds which are protected at all times), **WCA1.2** - Wildlife & Countryside Act 1981 Schedule 1.2 (Birds which are protected at certain times), **WCA5** - Wildlife & Countryside Act 1981 Schedule 5 (Animals which are protected from killing and taking, possession, disturbance and sale), **WCA8** - Wildlife & Countryside Act 1981 Schedule 8 (Plants which are protected), **WCA9** - Wildlife & Countryside Act 1981 Schedule 9 (Non-native animals and plants which are established in the wild), **WRE** - Wrexham County Council Local Biodiversity Action Plan, **WS** - Wildlife Site, **WVP** - IUCN Threat Listing of Welsh Vascular Plants

Contact Us

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Search Location	Grid Reference
Former Victoria Garage, Ruabon	SJ30434398

Birds										
Species Name	Grid Reference	Date	Recorder(s)	Abundance	Record Type	Site Name	Comments	Dataset ID	Lists	QA
<i>Apus apus</i> (Swift / Gwennol Ddu)	SJ3043	2 records, between 27/04/2005 and 29/05/2011	Mervyn Rogers; Neil Hughes	2; 1		Ruabon	Comments Withheld	D0062/001/01 , D0062/003/01	UKBA, WBA	3
<i>Apus apus</i> (Swift / Gwennol Ddu)	SJ3044	29/05/2011	Neil Hughes	3		Ruabon, N	Comments Withheld	D0062/003/01	UKBA, WBA	3
<i>Corvus monedula</i> (Jackdaw / Jac-Y-Do)	SJ3044	01/02/2013	Davies, S	2		Ruabon, N		D1297/012/01	BDir2.2	1
<i>Cyanistes caeruleus</i> (Blue Tit / Titw Tomos Las)	SJ3043	4 records, between 09/01/2011 and 04/06/2011	Per Birdtrack; Neil Hughes	15; 10; 14		Ruabon	BirdTrack mixture of male and females - constant visitors; BirdTrack Mixture of males and females. Regular visitors to bird table throughout the day - 10; BirdTrack Several males and females seen - also noticed them collecting nest materials. Been regular visitors since last summer.; Comments Withhe...	D1297/005/01 , D0062/003/01	Bern, LBAP[CON]	1
<i>Cyanistes caeruleus</i> (Blue Tit / Titw Tomos Las)	SJ2944	3 records, between 03/03/2010 and 24/04/2015	John Rushton; Peter Lawton; Mr G Uney	4; 5; 15		Ruabon, NW	Comments Withheld; Birdtrack:	D0062/003/01 , D1297/005/01 , D1297/020/01	Bern, LBAP[CON]	3
<i>Delichon urbicum</i> (House Martin / Gwennol y Bondo)	SJ3043	23/04/2005	Mervyn Rogers	1		Ruabon	Comments Withheld	D0062/001/01	Bern, UKBA, WBA, LBAP[CON]	3
<i>Delichon urbicum</i> (House Martin / Gwennol y Bondo)	SJ3044	29/05/2011	Neil Hughes	12		Ruabon, N	Comments Withheld	D0062/003/01	Bern, UKBA, WBA, LBAP[CON]	3
<i>Falco tinnunculus</i> (Kestrel / Cudyll Coch)	SJ3043	08/02/2005	Mervyn Rogers	1		Ruabon	Comments Withheld	D0062/001/01	Bern, CITES, S7, UKBA, WBR, LBAP[ANG, CON, DEN, FLI, GWY]	3
<i>Hirundo rustica</i> (Swallow / Gwennol)	SJ3044	29/05/2011	Neil Hughes	8		Ruabon, N	Comments Withheld	D0062/003/01	Bern, WBA, LBAP[ANG, CON, GWY]	3
<i>Motacilla alba subsp. yarrellii</i> (Pied Wagtail / Siglen Fraith)	SJ3044	29/05/2011	Neil Hughes	2		Ruabon, N	Comments Withheld	D0062/003/01	Bern	3
<i>Muscicapa striata</i> (Spotted Flycatcher / Gwybedog Mannog)	SJ2944	09/07/2010	John Rushton	1		Ruabon, NW	Comments Withheld	D0062/003/01	Bern, S7, UKBR, WBR, LBAP[CON, DEN, FLI, GWY]	3
<i>Parus major</i> (Great Tit / Titw Mawr)	SJ3043	3 records, between 09/01/2011 and 26/03/2011	Per Birdtrack	4; 3		Ruabon	BirdTrack; BirdTrack very aggressive behaviour observed at other tit species.	D1297/005/01	Bern, LBAP[CON]	1
<i>Parus major</i> (Great Tit / Titw Mawr)	SJ2944	3 records, between 03/03/2010 and 24/04/2015	John Rushton; Mr G Uney; Peter Lawton	3; 12; 2		Ruabon, NW	Comments Withheld; Birdtrack:	D0062/003/01 , D1297/020/01 , D1297/005/01	Bern, LBAP[CON]	3
<i>Passer domesticus</i> (House Sparrow / Aderyn y To)	SJ3043	4 records, between 19/01/2005 and 26/03/2011	Per Birdtrack; Mervyn Rogers	2; 3; 4; 7+		Ruabon	BirdTrack; BirdTrack only recently emerged as regular visitors eating seeds from the ground.; Comments Withheld	D1297/005/01 , D0062/001/01	S7, UKBR, WBA, LBAP[CON, FLI, GWY]	1

Species Name	Grid Reference	Date	Recorder(s)	Abundance	Record Type	Site Name	Comments	Dataset ID	Lists	QA
<i>Passer domesticus</i> (House Sparrow / Aderyn y To)	SJ3044	2 records, between 12/04/2011 and 01/02/2013	Neil Hughes; Davies, S	18; 3+		Ruabon, N	Comments Withheld	D0062/003/01 , D1297/012/01	S7, UKBR, WBA, LBAP[CON, FLI, GWY]	3
<i>Passer domesticus</i> (House Sparrow / Aderyn y To)	SJ2944	24/04/2015	Mr G Uney	19		Peace Woods		D1297/020/01	S7, UKBR, WBA, LBAP[CON, FLI, GWY]	1
<i>Streptopelia decaocto</i> (Collared Dove / Turtur Dorchog)	SJ3043	3 records, between 09/01/2011 and 26/03/2011	Per Birdtrack	1; 2		Ruabon	BirdTrack; BirdTrack male and female visit together.	D1297/005/01	BDir2.2	1
<i>Streptopelia decaocto</i> (Collared Dove / Turtur Dorchog)	SJ3044	29/05/2011	Neil Hughes	2		Ruabon, N	Comments Withheld	D0062/003/01	BDir2.2	3
<i>Sturnus vulgaris</i> (Starling / Drudwen)	SJ3043	29/01/2005	Mervyn Rogers	2		Ruabon	Comments Withheld	D0062/001/01	BAP, BDir2.2, Bern, RD2(UK), S7, UKBR, WBR, LBAP[CON, FLI, GWY]	3
<i>Sturnus vulgaris</i> (Starling / Drudwen)	SJ2943	2 records, between 15/04/2007 and 23/05/2007	John Lawton Roberts	2; 5		Ruabon, W	Comments Withheld	D0062/001/01	BAP, BDir2.2, Bern, RD2(UK), S7, UKBR, WBR, LBAP[CON, FLI, GWY]	3
<i>Troglodytes troglodytes</i> (Wren / Dryw)	SJ3043	4 records, between 09/01/2011 and 29/05/2011	Neil Hughes; Per Birdtrack	1		Ruabon	Comments Withheld; BirdTrack; BirdTrack often seen in garden looking for insects under the ivy on an old stone wall. regular visitor although never visits bird table.	D0062/003/01 , D1297/005/01	Bern	3
<i>Troglodytes troglodytes</i> (Wren / Dryw)	SJ2944	2 records, between 09/07/2010 and 24/04/2015	John Rushton; Mr G Uney	2; 3		Ruabon, NW	Comments Withheld	D0062/003/01 , D1297/020/01	Bern	3
<i>Tyto alba</i> (Barn Owl / Tylluan Wen)	SJ34	09/08/2007	JA Jackson Per JLR	1		Site Name Withheld	Comments Withheld	D0062/001/01	Bern, CITES, RD2(UK), WBA, WCA1.1, WCA9, LBAP[ANG, CON, DEN, FLI, GWY, SNP, WRE]	3
<i>Tyto alba</i> (Barn Owl / Tylluan Wen)	SJ24	3 records, between 12/05/2006 and 27/06/2010	John Lawton Roberts	1; 2 Nestling; 2		Site Name Withheld	Comments Withheld	D0062/003/01 , D0062/001/01	Bern, CITES, RD2(UK), WBA, WCA1.1, WCA9, LBAP[ANG, CON, DEN, FLI, GWY, SNP, WRE]	3

Mammals										
Species Name	Grid Reference	Date	Recorder(s)	Abundance	Record Type	Site Name	Comments	Dataset ID	Lists	QA
<i>Chiroptera</i> (Unknown Bat / Ystlum Anhysbys)	SJ3044	21/07/1984	Anon			Site Name Withheld	Comments Withheld	D1486/001/01	EPS, S7, WCA5, LBAP[ANG, DEN, FLI, SNP]	3
<i>Chiroptera</i> (Unknown Bat / Ystlum Anhysbys)	SJ2943	1996	Anon			Site Name Withheld	Comments Withheld	D1486/001/01	EPS, S7, WCA5, LBAP[ANG, DEN, FLI, SNP]	3
<i>Chiroptera</i> (Unknown Bat / Ystlum Anhysbys)	SJ2944	25/06/1982	Anon			Site Name Withheld	Comments Withheld	D1486/001/01	EPS, S7, WCA5, LBAP[ANG, DEN, FLI, SNP]	3
<i>Pipistrellus pipistrellus</i> (Common Pipistrelle / Ystlum Lleiaf Cyffredin)	SJ3044	13/06/1995	Anon			Site Name Withheld	Comments Withheld	D1486/001/01	Bern, Bonn, EPS, HDir, RD2(UK), RD2(UK), S7, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	3
<i>Pipistrellus pipistrellus</i> (Common Pipistrelle / Ystlum Lleiaf Cyffredin)	SJ3044	25/07/2000	Anon	1		Site Name Withheld	Comments Withheld	D1486/001/01	Bern, Bonn, EPS, HDir, RD2(UK), RD2(UK), S7, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	3

Statutory Sites intersecting 500m buffer	None
Wildlife Sites intersecting 500m buffer	None
NWWT Reserves intersecting 500m buffer	None
RSPB Reserves intersecting 500m buffer	None
RIGS intersecting 500m buffer	None
Ancient Woodland intersecting 500m buffer	29690: Restored Ancient Woodland Site (315m), 36787: Restored Ancient Woodland Site (421m), 36786: Restored Ancient Woodland Site (452m), 36789: Restored Ancient Woodland Site (495m), 36784: Restored Ancient Woodland Site (496m), 47038: Plantation on Ancient Woodland Site (498m)
Phase I Habitats intersecting 500m buffer (Habitat at central point shown in red, if found)	A.1.1.1: Semi-natural Broad-leaved Woodland (0.23% / 1,797 sq.m), A.1.1.2: Planted Broad-leaved Woodland (1.2% / 9,449 sq.m), A.1.3.2: Planted Mixed Woodland (0.01% / 57 sq.m), A.2.1: Dense Scrub (2.44% / 19,151 sq.m), B.2.2: Semi-improved Neutral Grassland (0.73% / 5,696 sq.m), B.4: Improved Grassland (15.1% / 118,596 sq.m), I.2.1: Quarry (7.39% / 58,024 sq.m), J.1.1: Arable (3.27% / 25,692 sq.m), J.1.2: Amenity Grassland (1.96% / 15,371 sq.m), J.3.6: Buildings (45.36% / 356,184 sq.m) , NA: Not Accessed Land (1.91% / 15,023 sq.m)

Appendix B - Photograph Plates

Plate 1. 1, 2, 3 Williams Mews (front view)



Plate 2. 1, 2, 3 Williams Mews (rear view)



Plate 3. Roof view (rear 1 Williams Mews)



Plate 4. Missing roof tiles (rear 2 Williams Mews)



**Plate 5. Gap between soffit/external wall
(front 1 Williams Mews)**



Plate 6. Window (front 1 Williams Mews)



Plate 7. Window (rear 1 Williams Mews)



Plate 8. Loft space (1 Williams Mews)



Plate 9. Modern roofing membrane



Plate 10. Bat droppings on blockwork (2 Williams Mews)



Plate 11. Bat droppings on floor (2 Williams Mews)



Plate 12. Bat droppings on floor (3 Williams Mews)



Plate 13. Bat droppings on floor (3 Williams Mews)



Plate 14. Fledgling (3 Williams Mews)



Plate 15. Dense ivy covering on fence



Plate 16. Scrub and privet hedge



Plate 17. Fully grown common pipistrelle bat and pipistrelle bat droppings



Appendix C - Bat DNA Identification Results

7 February 18

Re: Identification Results for Anthony Nickson, Anthony Nickson Ecology

Job number 11351, received 25 January 2018

Sample labelled: Sample 1

PCR amplification successful. DNA sequence:

CGAAAGTCCCACCCTCTCATAAAAATTATCAATGATTCATTCATtGACTTACCTACTCC
CTCAAATATTTTCATCAT

Phylogenetic analysis identification: *Plecotus auritus*

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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7 February 18

Re: Identification Results for Anthony Nickson, Anthony Nickson Ecology

Job number 11352, received 25 January 2018

Sample labelled: Sample 2

PCR amplification successful. DNA sequence:

ATGACCAACATTTCGAAAGTCCCACCCTCTCATAAAAATTATCAATGATTCATTCATTGA
CTTACCTGCTCCCTCAAATATTTTCATCATGGTGAAACTTTGGGTCTCT

Phylogenetic analysis identification: *Plecotus auritus*

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.

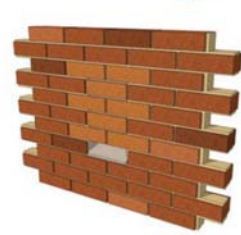
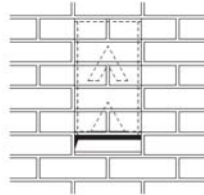
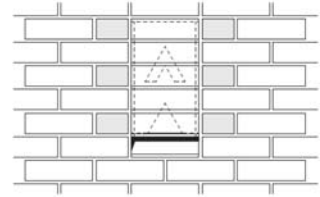
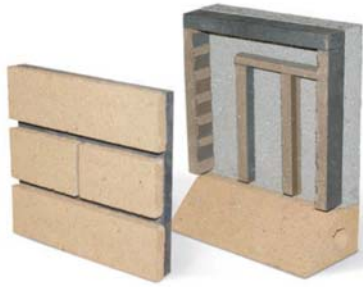
Professor Robin Allaby

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Appendix D - Integrated Bat Box Examples



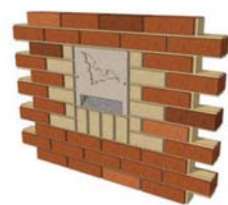
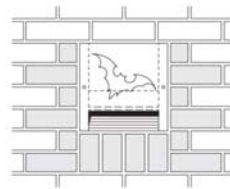
Ibstock Enclosed Bat Box 'C'



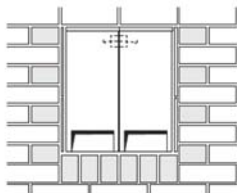
Habibat Bat Box (various finishes)



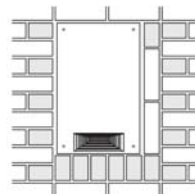
Forticrete Bat Box



Schwegler Bat Access Panel 1FE



Schwegler Bat Tube 1FR



Schwegler Summer and Winter Bat Box 1WI