

# Updated Dusk Survey Results

June 2021

**Glyndwr University**  
Plas Coch Campus  
University of Wrexham  
Wrexham

National Grid Reference: SJ32735135.



|                |                                  |
|----------------|----------------------------------|
| Document Title | Updated Dusk Survey Results      |
| Issue          | 1.0                              |
| Prepared for   | D. S. Jones & CO.                |
| Prepared by    | Tyrer Ecological Consultants Ltd |

|               |                                                                                                                  |
|---------------|------------------------------------------------------------------------------------------------------------------|
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| Dusk Survey   | 12/05/2021                                                                                                       |
| Reviewed by   | Mrs. K. Wilding CEnv MIEMA ACIEEM                                                                                |
| Review date   | 07/06/2021                                                                                                       |
| Approved by   | Mrs. K. Wilding CEnv MIEMA ACIEEM                                                                                |
| Date of Issue | 07/06/2021                                                                                                       |

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*This report aims to provide general advice on ecological constraints associated with any development of the site and includes recommendations for further survey; it is not intended that this report should be submitted with a planning application for development of the site, unless supported by the results of further surveys and a detailed assessment of the effects of the proposed development*

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*Tyrer Ecological Consultants Ltd will however consider forwarding data that is collected as part of its reports to the relevant wildlife records centre.*

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## 1.0 Background and Introduction

1.1 As part of a planning application at Glyndwr University, Plas Coch University Campus in Wrexham, Tyrer Ecological Consultants Ltd were commissioned by D. S. Jones & CO to:

- review ecological survey work and reports carried out by RPS in 2017-2018 that loosely identified a bat roost at the student hall (B01), and,
- review, with a view to discharge, several planning conditions attached to the planning application for the erection of around 95 dwellings following the demolition of the existing Student Accommodation Buildings and Library,

1.2 This involved x1 updated Dusk survey by Tyrer Ecological Consultants Ltd at three buildings on the university site (B01, B06, B10 - see Figure 1.1) within the active season of bats previously categorised as offering 'Low' bat roost potential in accordance with Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3<sup>rd</sup> ed. (2016).

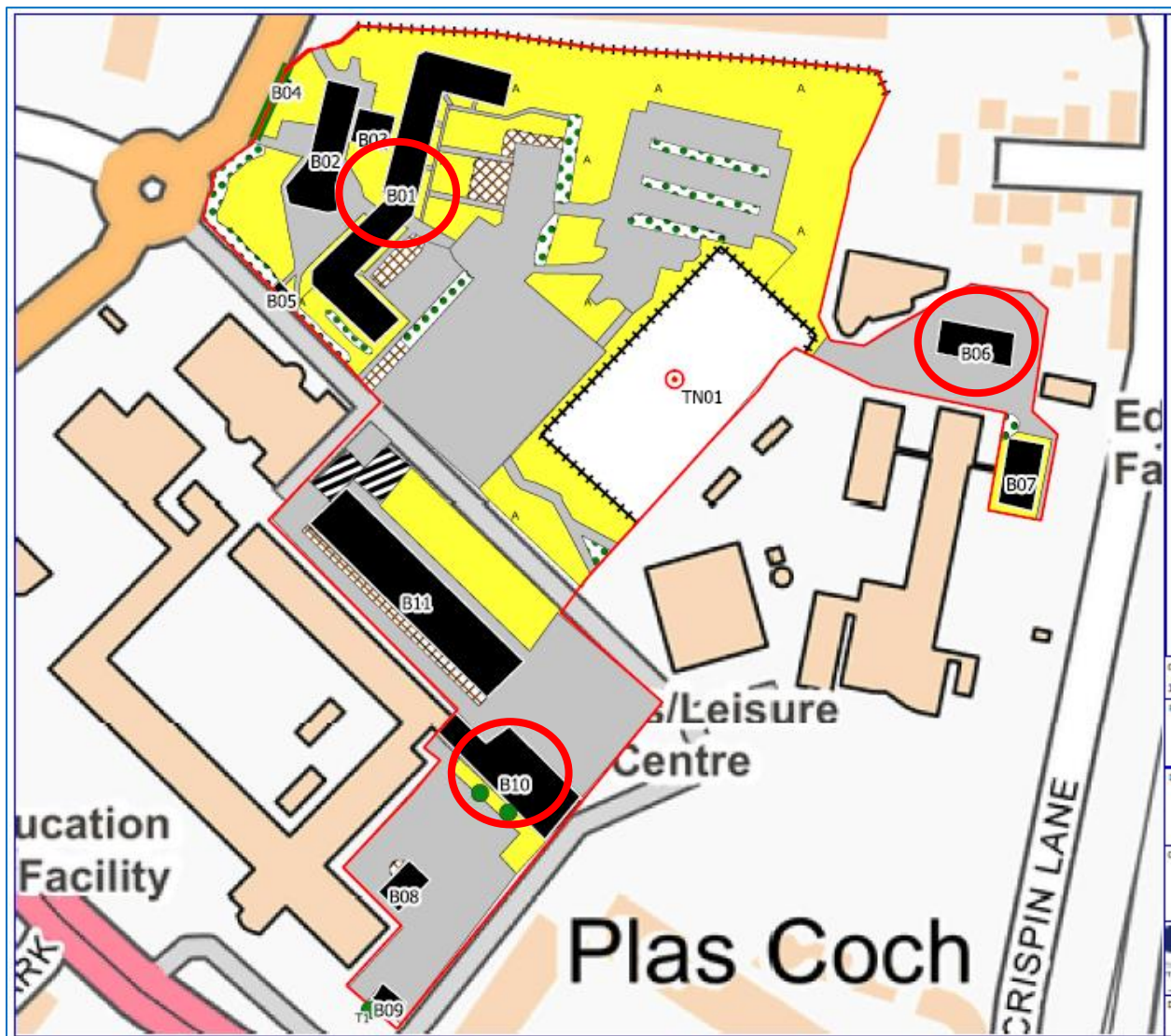


Figure 1.1 - Surveyed structures at Plas Coch Campus, (plan extracted from associated reports)

### Previous relevant site surveys

#### RPS - Bat Assessment Report - (December 2018)

- 1.3 The text below (Figure 1.2) is extracted from the RPS Bat survey report section 4.4, and describes the results of activity surveys carried out in September 2018 at B01, B06 and B10.

#### **4.4 Nocturnal Bat Surveys**

Nocturnal bat surveys were undertaken on three of the buildings on site. The results of the surveys are outlined below:

##### B01: Dusk survey (25-09-2018)

Sunset 19:04, survey start time 18:49, survey end time 20:34.

**A large bat was recorded emerging from the soffit at the north western corner of the student halls. No echolocation was detected in the field or on automated devices for this emergence.**

Activity commenced at **19:21** with an unidentified bat emerging from the soffit above the third-floor kitchen window. Commuting was recorded during the survey; however, activity levels were considered low. Both soprano pipistrelles (calls recorded at **19:51** and **20:10**) and common pipistrelles (recorded at **20:16**) were noted during the survey. Activity was concentrated to the north-western corner of the site.

##### B06: Dusk survey (17-09-2018)

Sunset: 19:23, survey start time: 19:08, survey end time 20:53.

Two noctule calls were recorded during the survey the first being at **20:01** and the second being at **20:54**. No other activity was recorded. It should be noted that security lighting on along the west side of the building was turned on at **19:44**.

##### B10: Dusk survey (24-09-2018)

Sunset 18:51, survey start time 18:51, survey end time 20:36.

No bats were recorded visually or by static detection during the survey.

##### B10: Dawn survey (25-09-2018)

Sunrise 07:53, survey start time 05:33, survey end time 07:18

No bats were recorded visually or by static detection during the survey.

**Figure 1.2 - Extract from RPS - Bat Assessment Report, section 4.4**

- 1.4 A “large bat” not identified to species level but later speculated in the report to be a *Nyctalus* sp. of bat, common names Common Noctule or Leisler’s bat, is suspected as emerging from a gap located in the timber soffits to the north-western elevation corner of B01, despite a follow up endoscopic inspection carried out the same night finding no evidence of bats (see Figure 1.3):

“No evidence of bats such as droppings or feeding remains were recorded during the internal loft inspection. The soffit was inspected internally using an endoscope from the gaps around the window. No evidence of bats such as droppings or feeding remains were recorded within the soffit box, however a full inspection was not possible due to the position of the feature.”

**Figure 1.3 - Extract from RPS - Bat Assessment Report, section 4.5**

- 1.5 The RPS - Bat Assessment Report goes on to recommend that a European Protected Species Mitigation (EPSM) Licence be in place following planning consent issued by Natural Resources Wales (NRW) to permit roost destruction, and the report includes mitigation recommendations for bats.
- 1.6 The mitigation recommendations have been acknowledged and conditioned by the local authority as part of outline planning permission, as per email received by D. S. Jones & CO. (Email: Pers. comm, 06/01/2021) (see Figure 1.4):

*C13.*

*The development shall be carried out in accordance with the reasonable avoidance measures set out in the approved Bat Assessment Report of RPS reference no. ECO00246.*

*C14.*

*No development shall commence until a scheme of mitigation and compensation measures relating to Bats, in line with the recommendations set out in the approved Bat Assessment Report of RPS reference no. ECO00246 has been submitted to and approved in writing by the local planning authority. The development shall be carried out in accordance with the approved scheme.*

*C15.*

*Prior to the first occupation of the development, an Ecological Compliance Audit shall be submitted to and approved in writing by the local planning authority. The audit shall provide confirmation that all measures as required by condition no 13 have been implemented.*

**Figure 1.4 - Email outlining planning conditions (as per email received by D. S. Jones & CO. (Email: Pers. comm, 06/01/2021))**

- 1.7 The results, conclusions and recommendations following the surveys, including any indicative mitigation to inform an application to Natural Resources Wales (NRW) for a European protected species mitigation licence (EPSML), if/where necessary, will be supplied within this report.
- 1.8 This report should be read, understood and presented to the local Council as per the conditions of the planning permission granted.
- 1.9 In accordance with *Biodiversity Net Gain: Good practice principles for development* (CIEEM *et al*, 2019), measures have been recommended proportionate to anticipated impacts to ensure that the proposed development results in a biodiversity net gain.

## **2.0 Bats - Legislation & Policy**

### Bats

- 2.1 All British bats and their \*\*roosts are afforded protection under Schedule 5 of the Wildlife & Countryside Act (1981) (as amended) and are listed in Schedule 2 of the Conservation of Habitats & Species Regulations 2019 (as amended). When dealing with cases where a European Protected Species (all UK bats) may be affected, a planning authority is a competent authority within the meaning of the Regulation 7 of the 2019 Regulations and therefore has a

statutory duty to have due regard to the provisions of the Regulations in the exercise of its functions.

- 2.2 The presence of a species protected under European or UK legislation, or under Section 7 of the Environment (Wales) Act 2016 is a material consideration when a planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat and to ensure that the range and population of the species is sustained.

2.3 Use of Buildings by Bats

- a) Summer breeding roost,
- b) Hibernation roost,
- c) Transitional or temporary roost.

\*Roost selection is often closely correlated to suitable foraging habitat within a reasonable commuting distance from the roost and different sites are used depending upon insect densities and abundance, climatic conditions can also affect their ability to successfully forage. All British bats are insectivorous.

\*\* The term roost is generically referred to as a place that bat/s use for any of the above reasons, however it should be noted that under the Conservation of Habitats & Species Regulations 2019 (as amended) (Regulation 43 (d)) the term roost is not used but refers to “a *breeding site or resting place of such an animal*” and is afforded legal protection. The roost, breeding site or resting place of bats, whichever terminology is used is legally protected whether or not bats are in occupation.

Policy

- 2.4 Planning Policy Wales (PPW) 11th Edition (2021) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. PPW, the TANs, MTANs and policy clarification letters comprise national planning policy.
- 2.5 PPW and the National Development Framework (published as Future Wales – the National Plan 2040) set out how the planning system at a national, regional and local level can assist in delivering these requirements through Strategic Development Plans (SDPs) and Local Development Plans (LDPs).
- 2.6 PPW (2021) states:

*“The presence of a species protected under European or UK legislation, or under Section 7 of the Environment (Wales) Act 2016 is a material consideration when a planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat and to ensure that the range and population of the species is sustained. Planning authorities should advise anyone submitting a planning application that they must conform with any statutory species protection provisions affecting the site, and potentially the surrounding area, concerned. An ecological survey to confirm whether a protected species is present and an assessment of the likely impact of the development on a protected species may be required in order to inform the development management process. It is considered best practice that screening to determine the presence of protected species*

*should be carried out by a competent ecologist on the basis of data provided by the relevant Local Environmental Record Centre."*

- 2.7 Planning authorities must therefore follow a step-wise approach to maintain and enhance biodiversity and build resilient ecological networks by ensuring that any adverse environmental effects are firstly avoided, or minimized, or mitigated, and as a last resort compensated for; enhancement must be secured wherever possible.
- 2.8 The first priority for planning authorities is therefore to avoid damage to biodiversity and ecosystem functioning. Where there may be harmful environmental effects, planning authorities will need to be satisfied that any reasonable alternative sites that would result in less harm, no harm or pro-gain have been fully considered.
- 2.9 The Environment (Wales) Act 2016 ("the Act") - requires local planning authorities to have regard to area statements in the development of Local Development Plans. The Act introduced an enhanced biodiversity and resilience of ecosystems duty (Section 6 Duty). This duty applies to public authorities in the exercise of their functions in relation to Wales and will help maximise contributions to achieving the well-being goals. The Nature Recovery Action Plan supports this legislative requirement to reverse the decline in biodiversity, address the underlying causes of biodiversity loss by putting nature at the heart of decision-making and increasing the resilience of ecosystems by taking specific action focused around objectives for habitats and species.

Part 1 of the Act promotes sustainable management of natural resources, and in Part 1 section 6 states:

*"A public authority must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions."*

- 2.10 Policy EC6 of the Wrexham Unitary Development Plan mirrors these statements within PPW and goes onto state the following:

*"Development either within or close to sites of biodiversity interest will only be permitted where it can be clearly demonstrated that the need for the development outweighs the need to safeguard the intrinsic nature conservation value of the site. Where such development is permitted, damage should be kept to a minimum, and compensatory measures should be provided. Measures to improve the biodiversity value of sites and enhance their natural conservation interest and landscape quality including the establishment of local nature reserves will be supported."*

and...

*5.8 - This policy applies to, in order of importance: nature conservation sites of international importance comprising Special Protection Areas, Special Areas of Conservation, and Ramsar Sites; nationally important Sites of Special Scientific Interest; regionally important Geological Sites; locally important Wildlife Sites; and other protected species and their habitats. The Council will require a survey to be undertaken in order to evaluate the impact of development on the intrinsic qualities of these sites. Local nature reserves comprising habitats of local significance can make a useful contribution both to nature conservation and to the opportunities for the public to see, learn about, and enjoy wildlife.*

### 3.0 Protected Species in North Wales

- 3.1 Up to twelve bat species have been recorded in North Wales, most of which use built structures notably occupied residential properties for roosting. The most frequently encountered bat species is the Common Pipistrelle (*Pipistrellus pipistrellus*) and its abundant status in North Wales is reflected throughout the UK.

### 4.0 Survey Methods

- 4.1 Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3<sup>rd</sup> ed. (2016) edition states:-

*“The guidelines do not aim to either override or replace knowledge and experience. It is accepted that departures from the guidelines (e.g. either decreasing or increasing the number of surveys carried out or using alternative methods) are often appropriate. The guidance should be interpreted and adapted on a case-by-case basis according to site-specific factors and the professional judgement of an experienced ecologist. Where examples are used in the guidelines, they are descriptive rather than prescriptive.”*

Relative to the above the survey methods and protocol adopted were determined using the collective and long standing experience of Tyrer Ecological Consultants Ltd and knowledge of the specific nature of the site.

#### Survey Protocol

- 4.2 The timing of the dusk survey took place in May, at a time when bats have entered their active season and a period of the year when maternity colonies are forming at established bat roosts, following on from winter hibernation. The active season of bats is generally accepted as May-August across the industry.

Where bats are roosting they are likely to be detected by the ecologists, trained in the use of bat detector hardware and call analysis software (Analog / Kaleidoscope) in how to detect bats and how to correctly identify/disseminate bat calls.

When considering survey protocol the decisions about whether dusk or dawn surveys are selected are based on the extensive experience of the Tyrer Ecological Consultants Ltd, the nature of the building and species that can be anticipated as being present either at the property or in the locality and how complex a building is relative to observations.

In this case the bat roost potential that exists at Glyndwr University presents no problems for dusk observations; if a building is complex, or observations were restricted, or species that are difficult to detect at dusk are suspected then dawn surveys would be conducted. At Glyndwr University there are no visual constraints and to date there is no evidence to suggest the presence of such species.

It should also be noted that at dawn temperatures are usually lower than at dusk as a result bat activity can, in some locations, be less frequent. Additionally, where singular/small numbers of bats are present and there are no survey constraints then dawn surveys are of no more value than dusk surveys; singular bats can and do return to a roost before dawn and as a result a dawn survey would not record them anyway. Dawn surveys are more productive when “back tracking” bat to a roost from foraging grounds.

Survey protocol should not be determined by parties who are 1) not familiar with the site, and 2) do not have a sufficient level or experience in relation to the undertaking of dusk/dawn bat surveys.

- 4.3 The number of surveys and surveyors was adequate relative to the roost potential that was identified i.e. 'Low' and requiring Seven surveyors to accurately monitor potential roost features (PRF's) across the survey buildings at any one time.
- 4.4 Surveyors were strategically positioned so that all elevations with bat roost potential could be observed without limitations. The surveys were aided with Anabat electronic bat detectors that enable the locating and recording of the high frequency calls that are emitted by bats, along with Bat logger and Peersonic RPA3 detectors; echolocation calls were analysed the next day using Analook and Kaleidoscope computer software to verify field observations.

#### Survey limitations

- 4.5 Following the completion of the surveys, despite low temps within acceptable weather parameters and having carefully considered the results and conclusions derived from all surveys to date, no significant constraints were experienced that might hinder the gathering of ecological data on which to base sound conclusions and recommendations.

#### Dusk Survey Results

- 4.6 One dusk emergence survey was undertaken on the 12<sup>th</sup> May 2021 by a combination of seven surveyors, as per Table 4.1 below. See Table 4.2 - 4.5 for survey results.
- 4.7 See associated imagery overleaf for visual aid in respect of survey results.

**Table 4.1 - Surveyor Credentials**

| Name                              | Experience | Details                                                                                                                                                            |
|-----------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dusk survey                       |            |                                                                                                                                                                    |
| Mr. J. Pescod<br>Qualifying CIEEM | 4 years    | A Consultant Ecologist with Tyrer Ecological Consultants Ltd and accredited agent on the Natural Resources Wales bat License of Mrs K Wildling (S086297/1).        |
| Dr R. King MCIEEM                 | 14 years   | A Senior Ecologist at Tyrer Ecological. Accredited agent on the Natural Resources Wales bat License of Mrs K. Wildling (S086297/1). Extensive range of experience. |
| Mr. M. Pritchard<br>ACIEEM        | 5 years    | Multiple licenced Senior Ecologist at Tyrer Ecological. Accredited agent on the Class 2 Natural England bat license of Mrs K. Wildling (S086297/1).                |
| Mr. H. Green                      | 30+ years  | Highly experienced bat surveyor who has professional surveying experience spanning may years with Tyrer Ecological Consultants Ltd.                                |
| Mr. D. Boyd                       | 7 years    | A highly experienced surveyor currently working as a sub-contractor for Tyrer Ecological Consultants Ltd                                                           |

|               |         |                                                                                          |
|---------------|---------|------------------------------------------------------------------------------------------|
| Mr. D. Ney    | 4 years | Seasonal ecological consultant with experience of undertaking professional bat surveys   |
| Ms. E. Thomas | 1 year  | A seasonal ecological consultant with experience of undertaking professional bat surveys |

**Table 4.2 – Survey date, time and weather conditions**

| Times of Survey            | Date       | Weather Conditions                                                                                |
|----------------------------|------------|---------------------------------------------------------------------------------------------------|
| Dusk survey<br>2039 - 2230 | 12/05/2021 | <b>Sunset: 2059:</b> Light drizzle, Calm, 100% cloud<br><br>Start temp: 10 ° C<br>End temp: 9 ° C |

**Table 4.3 – Dusk Survey Result - at B01**

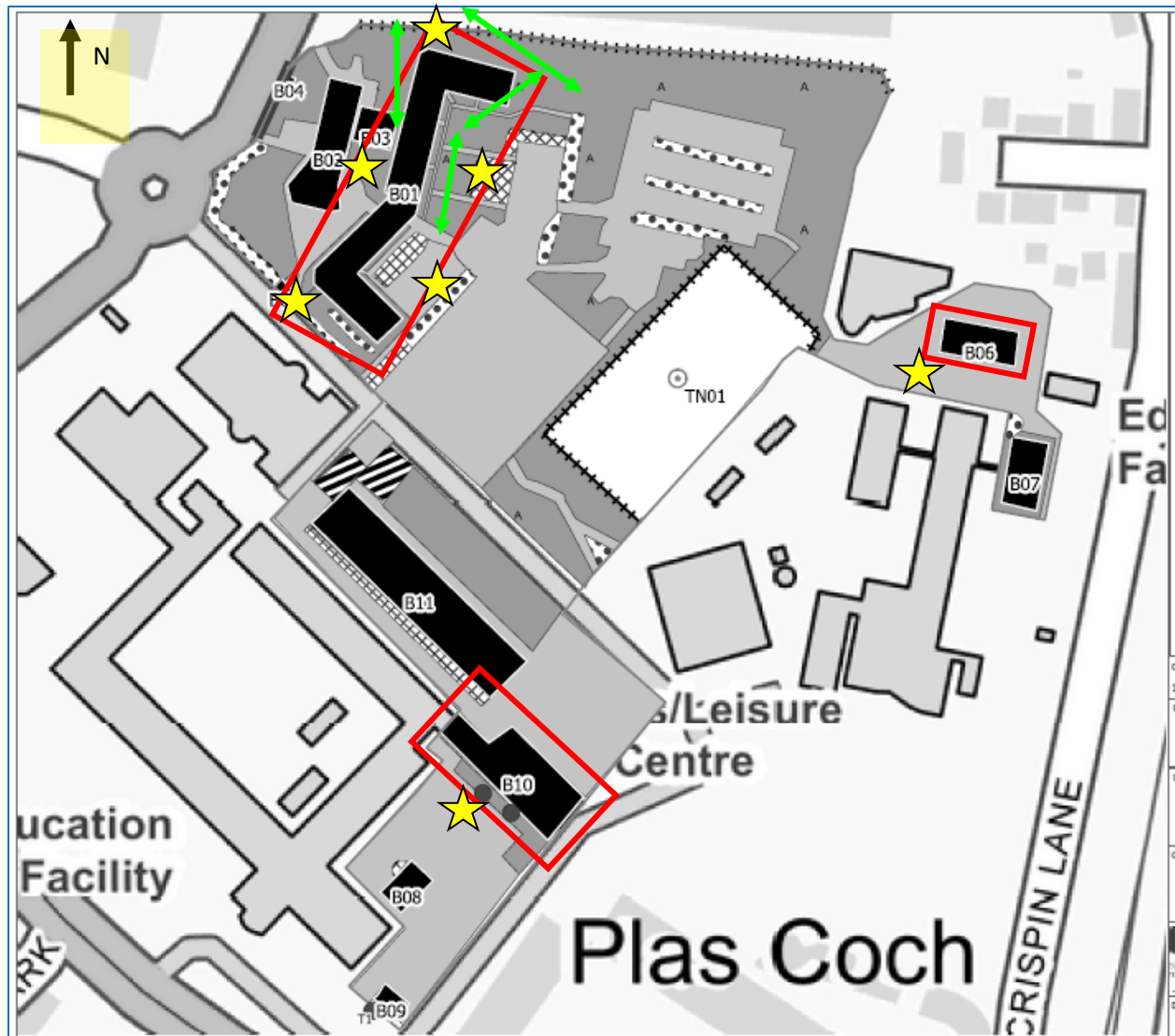
| Dusk Survey              | Time        | Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/05/2021<br><br>at B01 | 2039 - 2230 | <b>Summary: No bat emergence for the duration of survey.</b><br><br>2107 hrs: Foraging in the north of the site by a Common Pipistrelle bat which did not emerge from the B01, but entered site from the north.<br><br>2108 - 2122 hrs: Foraging in the north of the site by a Common Pipistrelle bat, occasional foraging over land just north of the site.<br><br>2123 - 2126 hrs: Foraging around the building briefly by the same bat.<br><br>General activity comprised of occasional foraging by a singular bat observed to enter the site from the north. |

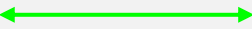
**Table 4.4 – Dusk Survey Result - at B06**

| <b>Dusk Survey</b>   | <b>Time</b> | <b>Activity</b>                                                                                                             |
|----------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------|
| 12/05/2021<br>at B06 | 2039 - 2230 | <b>Summary: No bat emergence for the duration of survey.</b><br>No bat activity recorded throughout the observation period. |

**Table 4.5 – Dusk Survey Result - at B10**

| <b>Dusk Survey</b>   | <b>Time</b> | <b>Activity</b>                                                                                                             |
|----------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------|
| 12/05/2021<br>at B06 | 2039 - 2230 | <b>Summary: No bat emergence for the duration of survey.</b><br>No bat activity recorded throughout the observation period. |



| Key                                                                                 |                    |                                                                                      |                     |
|-------------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------|---------------------|
|  | Survey boundary    |  | Foraging activity   |
|  | Surveyor Positions |   | Directional compass |

Dusk Survey Results 12/05/2021 (adapted over (plan extracted from associated reports)

## 5.0 Dusk Survey Conclusions & Recommendations

- 5.1 From the updated dusk survey results, it can be concluded whilst using best practice survey methodology, emergence of bats was absent at Glyndwr University building B01. Additionally, no bats were recorded emerging from any other surveyed structure.
- 5.2 Glyndwr University building B01 was the suspected bat roost in the RPS report; however, the absence of any echolocation also results in some uncertainty as 'big bats' such as Noctule are often the first species to exit a roost with a median emergence time of 5 mins after sunset (Jones & Rydell, 1994), which combined with a general loud call makes them easy to identify, especially so soon after sunset, which further adds doubt over the suspected emergence. Furthermore, this is a species often associated with tree holes and not buildings; however, it is acknowledged that whilst highly unlikely is not impossible as this genus has been recorded within built structures on occasion. Given the actual evidence base and taking speculation of roosting aside, Tyrer Ecological Consultants Ltd are satisfied that demolition to the structure B01 does not require a Natural Resources Wales Mitigation licence at this time as there is no evidence of a bat roost, however, in accordance with the avoidance measures recommended by the local authority of Planning condition C13, we recommend ecological supervised dismantling of specific features under the watching brief of a suitably licenced Ecologist / Ecological clerk of works (ECoW) in line with the following method statement.

### Reasonable avoidance measures statement

- i. At the pre-commencement stage a suitably licenced Ecologist / Ecological clerk of works (ECoW) is to undertake a site induction 'toolbox talk' to the Site Manager and all contractors on possible bat presence during the dismantling process.
  - ii. Prior to any work being undertaken the presence/absence bats as far as is possible will be established by undertaking a thorough detailed investigation of the gap located in the timber soffits to the north-western elevation corner of B01. All dismantling of potential roost features will be undertaken during favourable weather conditions (above 9°C). This will involve a thorough inspection of this area and supervision of its dismantling carried out by the inducted contractor team. The Ecologist will supervise the careful dismantling of this area of interest, and any other areas of roost potential locally, which may involve loft access. In addition, at the Ecologist's / ECoWs discretion, wherever opportunities for bats exist in other areas of the building, supervised dismantling will extend to these areas.
  - iii. It should be noted that if bats or evidence of bats are found at any stage (see Figure 5.1), then a Natural Resources Wales Mitigation licence will be required to legally continue with the work. Notwithstanding the granting of a licence works that would affect a roost cannot take place if a maternity colony is in occupation.
  - iv. Bats are a highly transient species with multiple roosts in an area, and can use buildings that offer potential roost features at any time of the year, therefore despite no roost behaviour being observed it should be stated that if bats, or evidence of bats (see Figure 5.1) is found at any stage during work schedule, then as a legal requirement the work at the site should immediately cease and a Bat licenced ecologist should be contacted for further advice.
- 5.4 Notwithstanding the results of the updated dusk survey which evidences no bat roost(s) exist at the site, in accordance with Planning condition C14, and in proportion with the evidence base, the proposed development scheme should include enhancement measures for bats by way of a

bat box layout plan, in accordance with the approved Bat Assessment Report of RPS reference no. ECO00246, which presents a bat box enhancement plan.

This is also in accordance with Biodiversity Net-gain principles, local planning policy and national planning policy. See section 6.0 overleaf for indicative bat box plan for the proposed scheme.



**Figure 5.1** - Bat droppings (left) and pipistrelle bat (right) - indicative evidence of bats

- 5.5 Planning condition C15 requires a Tier 2 ecological compliance audit to be carried out by an independent ecologist. It should be noted that the RPS Bat report states that *“the ecologist appointed should not be or have been directly involved in the works on site”*, therefore cannot be Tyrer Ecological Consultants Ltd without the permission of the local authority, as Tyrer Ecological have now carried out bat surveys of the site.
- 5.6 As part of the ecological audit process the developer will be responsible for appointing an suitably licenced Ecologist to undertake the internal audit. The suitably licenced Ecologist will be responsible for the following:
- defining appropriate (key) performance indicators that will inform an inspection, utilising the NRW audit template (see overleaf),
  - determining the minimum number of assessment visits required to demonstrate compliance,
  - defining what documentation, including logs, will be required to inform inspections; and
  - progressing remedial or contingency actions identified during audit
  - reporting back to the developer and NRW

An example template for Ecological compliance audit form has been included in Appendix 4 of the RBS bat report referred too (Appendix I) identifying key performance indicators associated with the proposed development.

- 5.7 Glyndwr University building B01 was the suspected bat roost in the RPS report. Given the actual evidence base and taking speculation aside, Tyrer Ecological Consultants Ltd are satisfied that demolition to the structure B01 does not require a Natural Resources Wales

Mitigation licence at this time, therefore it may be prudent for the developer to approach the local planning authority for a variation of planning conditions to omit the need for an ecological compliance audit as part of the proposed scheme.

## 6.0 Bat Box Enhancement Plan



| Schwegler Bat Box 2FN* | Bat Hibernation Box 1FW* | 1WQ Schwegler Summer & Winter Bat Roost* | Eco Rocket Bat Box* |
|------------------------|--------------------------|------------------------------------------|---------------------|
|                        |                          |                                          |                     |

\*Use reputable equivalent boxes if exact models are not available.

### Bat boxes

- Schwegler Bat Box 2FN – a larger box with both a wide access slit at the base and an access hole on the underside. This box is particularly successful in attracting larger species of bats.
- Bat Hibernation Box 1FW – Suitable for clinging and crevice dwelling bat species and ensures safe hibernation of bats as well as nursery roosts and colony formation in the summer.
- 1WQ Schwegler Summer & Winter Bat Roost - suitable for larger and smaller bat species and is designed for the safe hibernation of bats in the winter as well as for roosting and raising young.
- Eco Rocket Bat Box – This can be purchased either for crevice dwelling species or cavity dwelling species and does not have to be mounted on a tree or building.

\*Reputable alternatives can be sourced from [www.greenwoodsecohabitats.co.uk](http://www.greenwoodsecohabitats.co.uk) where Schwegler boxes are unavailable.

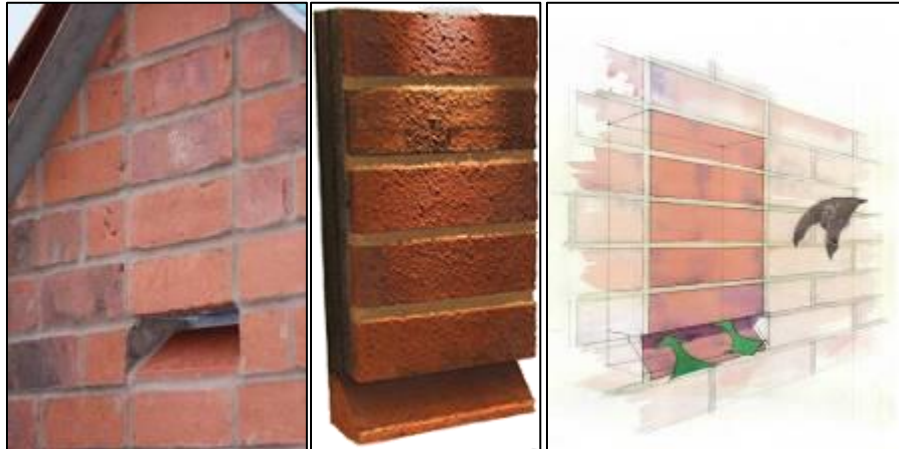
## 7.0 References

- **CIEEM et al**, 2019. *Biodiversity Net Gain: Good practice principles for development*. Available from: [www.cieem.net/data/files/Publications/Biodiversity\\_Net\\_Gain\\_Principles.pdf](http://www.cieem.net/data/files/Publications/Biodiversity_Net_Gain_Principles.pdf)
- **CIEEM**, 2016. *Guidelines for Ecological Impact Assessment in the UK and Ireland*, 2<sup>nd</sup> edition. Available from: [www.cieem.net/data/files/Publications/EcIA\\_Guidelines\\_Terrestrial\\_Freshwater\\_and\\_Coastal\\_Jan\\_2016.pdf](http://www.cieem.net/data/files/Publications/EcIA_Guidelines_Terrestrial_Freshwater_and_Coastal_Jan_2016.pdf)
- **CIEEM**. 2020. *Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK*. 2nd Edition. Chartered Institute of Ecology and Environmental Management. Winchester, UK
- **CIEEM**, 2017. *Guidelines for Preliminary Ecological Appraisal*, 2<sup>nd</sup> edition. Available from: [www.cieem.net/data/files/Publications/Guidelines\\_for\\_Preliminary\\_Ecological\\_Appraisal\\_Jan2018\\_1.pdf](http://www.cieem.net/data/files/Publications/Guidelines_for_Preliminary_Ecological_Appraisal_Jan2018_1.pdf)
- **Collins, J** (ed.), 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, 3<sup>rd</sup> edition. The Bat Conservation Trust, London.
- **Mitchell-Jones, A.J. and McLeish, A.P.** (Eds) (2004). *Bat Workers' Manual*, Joint Nature Conservation Committee, Peterborough.
- **RPS**. 2017. Preliminary Ecological Appraisal, Plas Coch Campus, University of Wrexham.
- **RPS**. 2018. BAT ASSESSMENT REPORT, Plas Coch Campus, University of Wrexham.

### **Enhancing a development site for Bats - optional**

#### **Integrated bat box**

The Habibat Bat Box is a solid box made of insulating concrete with internal roosting space. The box blends seamlessly into brick-built properties and may be incorporated into the fabric of buildings, being best placed on gable elevations.



#### **Bat brick houses - integrated**

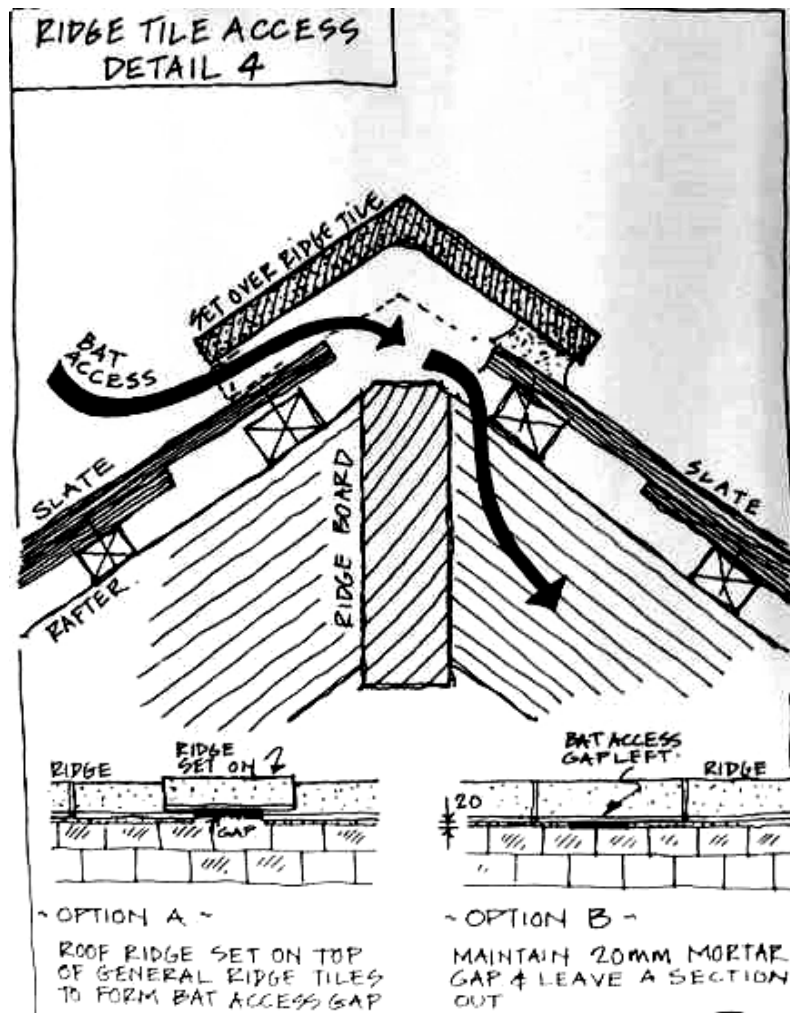


The Bird Brick Houses integral Bat Box creates an inconspicuous roosting opportunity within a brick wall, and is incorporated in the same way; in this case the box should be cited on the south-east elevation of the new garage

See - [www.birdbrickhouses.co.uk/brick-nesting-boxes/bat-box/](http://www.birdbrickhouses.co.uk/brick-nesting-boxes/bat-box/))

### Ridge access

Where appropriated, ridge tile access should be made with the incorporation of traditional Bitumen 1F underfelt immediately beneath ridge tiles. Breathable BRM membrane can cause significant problems where bats are in contact with it, whereby their fine claws become entangled within the fibres of the membrane, entrapping and killing bats.

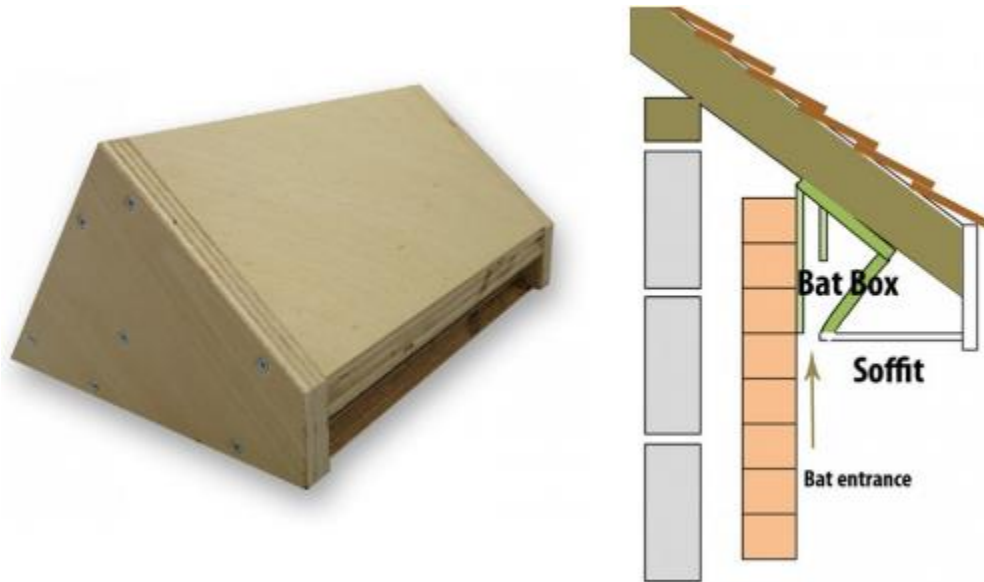


Ridge tile access should be made with the incorporation of traditional Bitumen 1F underfelt immediately beneath ridge tiles. Breathable BRM membrane can cause significant problems where bats are in contact with it, whereby their fine claws become entangled within the fibres of the membrane, entrapping and killing bats.



### Soffit access

Where soffits are instated at gable elevations, roost provision may be instated in the form of a soffit bat box with internal roosting space.



### Externally fitted boxes

A large number of externally fitted box models for bats exist for buildings and trees. Suitable models for both buildings and trees may include the Eco Kent Bat Box.



**Appendix I:** Bat Assessment Report - RPS (December 2018)

**Appendix II:** Preliminary Ecological Appraisal - RPS (July 2017)