



Elite Ecology

Passionate about Ecology

**Big Green Farm,
Penley**



Bat Method Statement

July 2019



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1 Introduction

1.1 Report rationale

This method statement has been prepared at the request of Mr. Colin Bowen (Bower Edleston Architect) on behalf of Mr. Roy Evison (R & C Homes) and Wawne Developments Ltd). It relates to the potential presence of bats and birds at the proposed re-development site located at Big Green Farm, Penley, Wrexham, LL13 0LP (Central OS Grid Reference: SJ 41684 39555).

This report should be read in conjunction with the Protected Species Survey Report undertaken by EVR Ecology.

This Bat Method Statement has been produced at the recommendation of Natural Resources Wales. This document was produced on the 11th January 2017 and recommends:

Condition 1: Submission of a method statement outlining avoidance measures described in the ecological report.

1.2 Site description

The site itself is situated within a rural setting on the southern outskirts of the village of Penley. Hard standing ground, arable land, hedgerows, residential dwellings (and their associated gardens) and amenity grassland are situated in the immediate vicinity of the building. This method statement relates to three farm buildings on site, including two barns, which collectively measure approximately 1044m².

Figure 1: An aerial photograph of the surveyed structures at Big Green Farm, Penley (as shown by the red outline).



1.3 Proposed works

The surveyed structures are proposed to be demolished, with 13 new residential dwellings located on the site itself. The site plans can be found in Appendix A.

2 Survey Methodology

2.1 Desktop Survey Methodology

- 2.1.1 A variety of resources were independently consulted to assess the known local records within the nearby area and the importance of the site within the local landscape from an ecological perspective. The resources used were the Local Records Centre, www.naturalengland.org.uk, www.ordnancesurvey.co.uk, Google Maps, Google Earth and Bing Maps. A search of other relevant nature conservation information was made through the use of the Multi-Agency Geographic Information for the Countryside (MAGIC) database.
- 2.1.2 The local records centre was contacted to provide data on all bat bird species within 2km of the proposed development site. Cofnod were the relevant local record centre for this project.

2.2 Field Survey Methodology

- 2.2.1 All site surveys were undertaken in accordance with the Bat Conservation Trust Survey Guidelines at the time of the survey. These came in the form of the 2016 Edition for the updated site survey undertaken by Elite Ecology.

2.3 Surveyors Information

- 2.3.1 The survey was undertaken by licensed bat ecologist/s and members of the Chartered Institute of Ecology & Environmental Management (CIEEM) and Elite Ecology staff members:

Mr. Richard Millington BSc (Hons), ACIEEM, Senior Ecologist, Natural Resources Wales Bat Survey Licence Number: 79191:OTH:CSAB:2018.

Mr. Adam Harper BSc, Ecologist

Mr. Alex Fitzroy BSc (Hons), Assistant Ecologist

Mr. Matthew Priddey, Assistant Ecologist

3 Results

3.1 Desktop Survey Results

Please refer to previous ecological reports for the data from the local records centre.

3.2 Field surveys

3.2.1 Summary of the building inspection

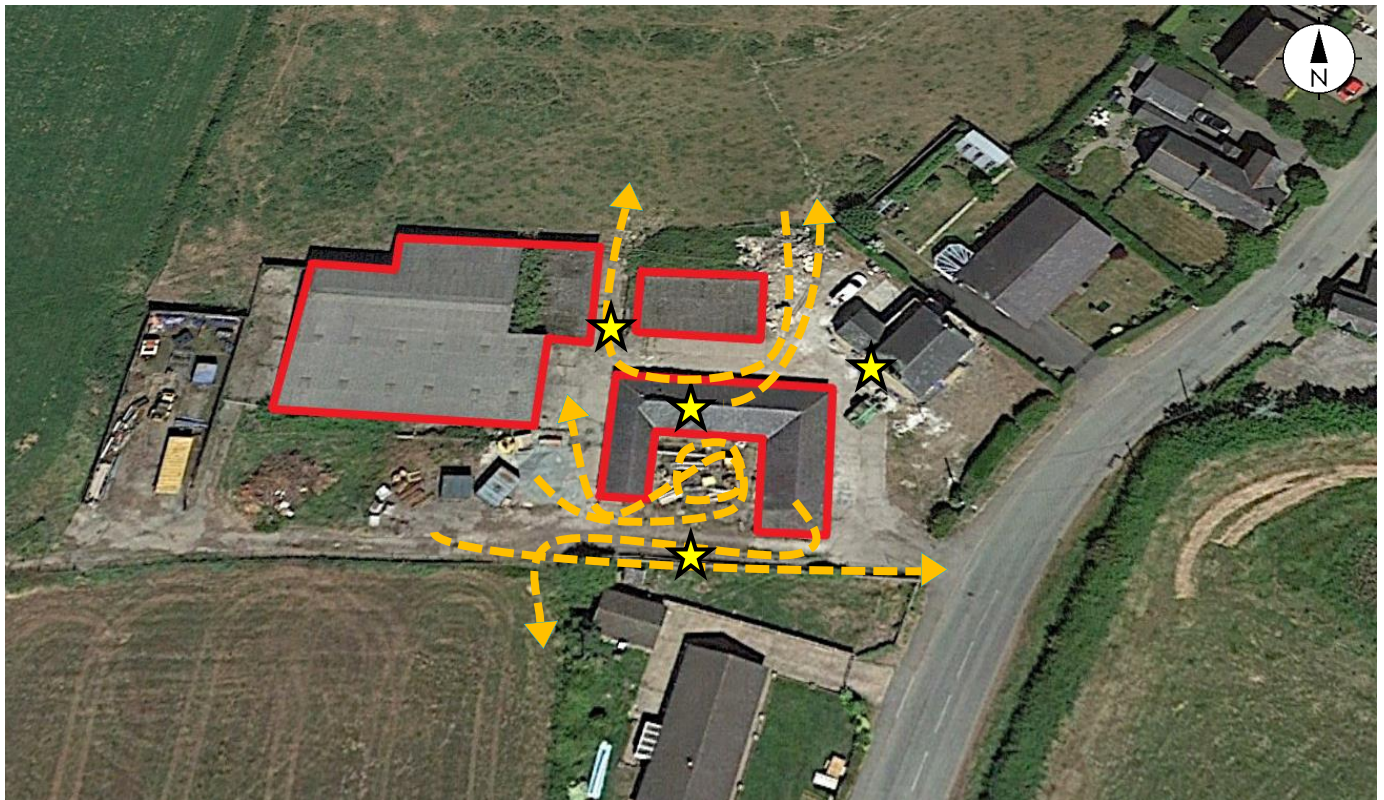
The previous survey undertaken by EVR Ecology identified that the structures at Big Green Farm contained:

- B1: '**Low**' potential for bats to roost.
- B2: '**Negligible**' potential for bats to roost.
- B3: '**Negligible**' potential for bats to roost.

3.2.2 Activity survey

The updated bat activity survey undertaken by Elite Ecology on the 2nd July 2019 found similar results to the previous survey undertaken by EVR Ecology. It has been identified that foraging and commuting brown long-eared (*Plecotus auritus*), common pipistrelle (*Pipistrellus pipistrellus*), unidentified Myotis (*Myotis* sp.) and soprano pipistrelle (*Pipistrellus pygmaeus*) bats are present.

Figure 3: An aerial photograph of the surveyed buildings (red outline). This photograph illustrates the surveyor locations (yellow stars) and the bat flight paths (dotted orange lines).



4 Impact Assessment

4.1 Constraints

Constraints on:	Survey Information	Equipment Used
Constraint (Yes or No):	No	No
Explanation of Constraints:	N/A	N/A
Action Taken:	N/A	N/A

4.2 Potential Impacts of the re-development

The current planning proposal will see the structures at Big Green Farm, Penley demolished to make way for 13 new residential dwellings. The potential impacts of these works have been identified as follows:

4.2.1 Designated sites

As the proposed works are due to remain within the site boundary, the presence of any designated sites nearby is not applicable to this project. This, therefore, means that any building works would be of no detriment to the surrounding habitats and landscape.

4.2.2 Bat Roosts

Impact	Short-term Impacts: Disturbance	Long-term Impacts: Roost Modification	Long-term Impacts: Roost Loss
Classification:	Low	Low	Low
Justification:	Evidence of old bat droppings within B1 are apparent.	Evidence of old bat droppings within B1 are apparent.	Evidence of old bat droppings within B1 are apparent.
Any further action:	Further precautions should be applied. These are outlined in section 5 for the Method Statement.	Further precautions should be applied. These are outlined in section 5 for the Method Statement.	Further precautions should be applied. These are outlined in section 5 for the Method Statement.

4.2.3 Bird Nests

Due to the presence of bird nests in relation to the surveyed structure (B1), the proposed scheme of works will be of a **'high'** effect to the local bird populations. This is due to the planned development leading to the permanent loss of nesting sites for the various species found to be nesting on site. Precautionary measures and mitigation are required, please see section '5 – Recommendations and Mitigation' for further details.

4.2.4 Foraging and commuting habitat

It is considered that the re-development of the site would have a '**negligible**' effect on potential foraging and commuting habitat. The site itself offers little foraging habitat, with the adjacent land containing better opportunities for bats and birds to use. Post development, all foraging and commuting habitats will be maintained, thus not negatively affecting the local landscape.

5 Method Statement

5.1 Summary of Results

The structure has not been found to support any roosting bats. However, it can be confirmed that foraging and commuting bats are present in close proximity to the site. Old bat droppings have been identified internally, with this thought to be from sporadic foraging.

5.2 Timings of the Works

Bats: The structure referred to as B1 should only take place in the early spring (March/April) or autumn/winter (September/October) to reduce the likelihood of bats being present during the works.

There are no timing constraints in relation to bats and the structures labelled B2 and B3.

Birds: Due to the presence of active nests within B1, this structure is only required to be undertaken outside of the breeding bird season of March to August inclusive.

No active nests were found within buildings B2 and B3.

5.3 Avoidance Measures

At the start of demolition works, a licenced bat ecologist is required to be on site to undertake soft demolition with the appointed contractor. On the morning prior to the commencement of the demolition works, one [2F Schwegler Bat Boxes](#) box is required to be installed on a nearby tree facing north.

If bats or evidence of bats are found during the site visit, works must cease and a European Protected Species Mitigation Licence will be required from Natural Resources Wales.

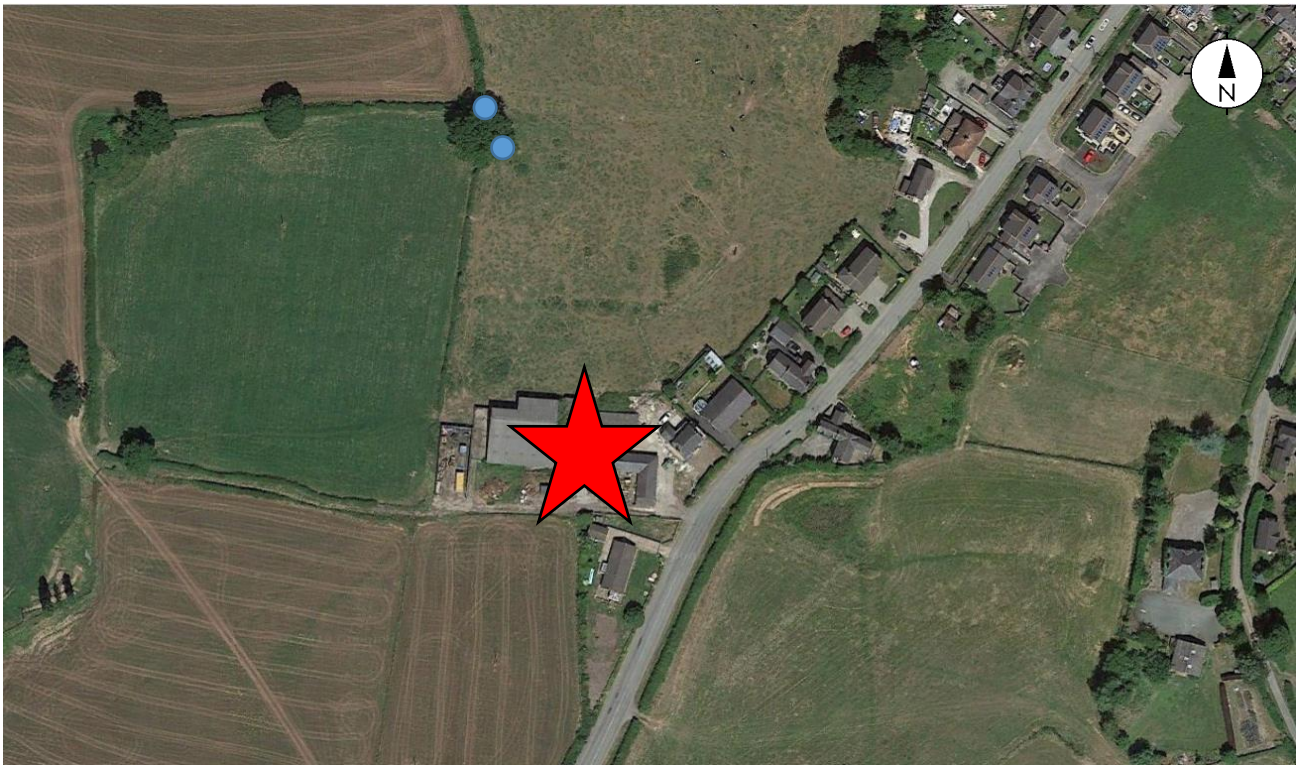
If any bats are harmed or injured during the works, the local bat group will be contacted.

5.4 Mitigation

Bats: A total of two [2F Schwegler Bat Boxes](#) will be installed on nearby trees. One will face north, with the other facing south-west. **Please note: landowner permission is required for the recommended locations.**

Birds: For the swallow (*Hirundo rustica*) nests, it will be necessary to incorporate eaves/ridge overhangs or easily accessible loft spaces. This will give these specimens the necessary internal opportunities to continue to nest at the site. These features should be located in the southern section of the re-developed site. These should be enhanced with the inclusion of four [No.10 Schwegler Swallow Nest](#) boxes per feature. A further two [Apex Robin Boxes](#) and two [Apex Bird Boxes](#) are to be installed post-development, these should be located high up, ideally under the eaves of the new buildings and at least 1m apart.

Figure 4: An aerial photograph of the surveyed buildings (red star). The proposed location for the two 2F Schwegler Bat Boxes are shown by the blue circles.



[illegible]

5.7 Reporting

A letter statement will be produced following each site visit to report actions taken and the survey findings. Appropriate enhancement measures will be outlined within these documents.

5.8 Enhancements

Possible site enhancements can be installed at the prerogative of the client. The following information includes Elite Ecology's recommendations.

Bats: This could include the inclusion of [Integrated Eco Bat Boxes](#), [Eco Bat Boxes](#) or [Bat Access Tiles](#) on the new residential dwellings proposed to be constructed. These features should avoid any artificial lighting, with **no modern breathable felt** to be used around any bat access tiles.

To enhance the site for bats, a floral scheme that contains bat friendly flora is recommended. The table below outlines species recommended by the Bat Conservation Trust, all of which could be incorporated into the site post development.

Flowers for borders	Trees, shrubs & climbers
Aubretia	Bramble
Candytuft	Buddleia
Cherry pie	Common alder
Corncockle	Dogrose
Corn marigold	Elder
Corn poppy	English oak
Echniacea	Gorse
English bluebell	Gelder rose
Evening primrose	Hawthorn
Field poppies	Hazel
Honesty	Honeysuckle (native)
Ice plant 'pink lady'	Hornbeam
Knapweed	Ivy
Mallow	Jasmine
Mexican aster	Pussy willow
Michaelmas daisy	Rowan
Night-scented stock	Silver birch
Ox-eye daisy	Wild flowers for pond edges & marshy areas
Phacelia	Bog bean
Poached egg plant	Bugle
Primrose	Creeping Jenny
Red campion	Flag Iris
Red valerian	Hemp agrimony
Scabious	Lady's smock
St. John's Wort	Marsh mallow
Sweet William	Marsh marigold
Tobacco plant	Marsh woundwort
Verbena	Meadowsweet
Wallflowers	Purple loosestrife
Wood forget-me-not	Water avens
Yarrow	Wood forge-me-not
	Water mint

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Herbs	
Angelica	
Bergamot	
Borage	
Coriander	
English marigolds	
Fennel	
Feverfew	
Hyssop	
Lavenders	
Lemon balm	
Marjoram	
Rosemary	
Sweet Cicely	
Thyme	

Birds: A variety of [bird boxes](#) can be installed around the site to enhance the nesting opportunities for a number of additional species within the local landscape.

7 Appendices

Appendix A: Site Plans

Appendix B: Artificial Light and Bats

Appendix C: Photographic Records

Appendix D: The Annual Bat Year (BCT)

Appendix E: Legislation

Appendix B: Artificial Lighting and Bats

Artificial lighting is known to affect bat's roosting and foraging behaviour, with lighting resulting in a range of impacts that includes roost desertion (BCT, 2009), delayed emergence of roosting bats (Downs et al., 2003), increased activity of some bat species and decreased activity by others (Stone et al., 2012).

An experimental approach using LED units, demonstrated that relatively fast-flying bat species, including the common pipistrelle, showed no significant impacts as a result of new artificial lighting, even when lighting was set at relatively high levels close to 50 lux.

In contrast, slow flying bats such as the myotis bats (*Myotis* spp.) showed sharp reductions in presence, even at low light levels of 3.6 lux (Stone et al., 2012).

Current recommendations for all bat species specifies that no bat roost should be directly illuminated.

Due to the impacts of lighting, mitigation and sensitive lighting design schemes are required for projects where bats are present. These should include bat friendly lighting plans that should aim to avoid lighting wherever possible. If this is not possible, then the minimisation of any lighting impacts is required by adopting the following measures:

➤ **To introduce lighting curfews or use of PIR sensors.**

Lighting curfews can be an effective way of avoiding impacts on bats. These curfews may involve either turning off lighting or dimming light units at specific times of the night, dimming units at key times of the year, providing the luminaire allows for this option via a control unit. Lighting to be triggered by PIR sensors can be expected to be illuminated only when required and for a low proportion of time.

➤ **To consider no lighting solutions where possible.**

Options such as white lining, good signage and LED cat's eyes should be considered as preferable. Reflective fittings may help make use of headlights to provide any necessary illumination in some areas.

➤ **To use only high pressure sodium or warm white LED lamps where possible.**

High pressure sodium and warm white LED lamps emit lower proportions of insect attracting UV light than mercury, metal halide lamps and white LED lighting. Generally, lamps should have a lower proportion of white or blue wavelengths, with a colour temperature <4200 kelvin recommended (BCT, 2014).

➤ **To minimise the spread of light.**

The light spread should be kept at or near horizontal to ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Baffles, hoods, louvres and shields should be used where necessary to reduce light spill.

➤ **To consider the height of the lighting column.**

While downward facing bollard lighting is often preferable, it should be noted that a lower mounting height does not automatically reduce impacts to bats as bollard lighting can often be designed to provide up-lighting. Where bollard lighting is considered to be the most appropriate system, bollard spacing or unit density should be kept to a minimum and units should be fitted with the appropriate hoods/deflectors to reduce any up-lighting.

➤ **To avoid reflective surfaces below lights.**

The polarisation of light by shiny surfaces attracts insects increasing bat activity (BCT, 2012). Consequently, surface materials around lighting require consideration.

Appendix C: Photographic Records

Plate 1: A photograph of an active swallow's nest found in the barn 'B1'.



Plate 2: A photograph of a birds' nest found in barn 'B1'.



Plate 3: A photograph of the roof of barn 'B1'.



Plate 4: A photograph of an air ridge on the roof of barn 'B1'.



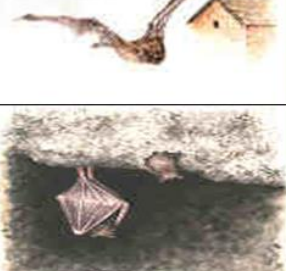
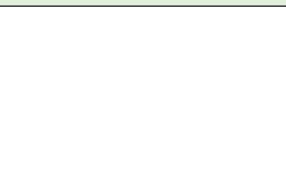
Plate 5: A photograph of two birds' nests found in barn 'B1'.



Plate 6: A photograph of a passerine birds' nest found in barn 'B1'.



Appendix D: The Annual Bat Year (BCT)

A Year in the Life of a Bat		
	January	Hibernating; using up fat reserves.
	February	Still hibernating; few fat reserves left.
	March	Some activity; occasional bat seen feeding.
	April	Awake and feeding at night.
	May	Females looking for nursery sites.
	June	Young born, usually only one.
	July	Young still suckling.

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	August	Young start catching insects; females leave nursery to find males.
	September	Mating season begins; start building fat reserves for hibernation.
	October	Search for suitable hibernation site.
	November	Hibernation begins although still some activity in warm weather.
	December	Hibernating.

Appendix E: Legislation and Policy

All species of bat are fully protected under a variety of domestic, European and international legislation and conventions. These include:

- Bern Convention (Appendix II)
- Bonn Convention (Appendix II)
- Conservation Regulations (Northern Ireland) 1995
- Conservation of Habitats and Species Regulations 2017
- Countryside Rights of Way Act 2000
- Eurobats Agreement
- Habitats Directive (Annexes IV and II)
- Habitats Regulations 1994 (as amended) Scotland
- NERC Act 2006
- Wildlife and Countryside Act 1981 (as amended)
- Wild Mammals Protection Act

In addition to this, some species have additional protection by being listed on the UK Biodiversity Action Plan (UKBAP).

The legislation afforded to bats makes it illegal to possess or control any live or dead specimens, to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a bat while it is occupying a structure or place which it uses for that purpose.

All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which protects birds, nests, eggs and nestlings from harm. In addition to this, some rarer species, such as barn owls are afforded extra protection.

National Planning Policy Framework, Section 15:

In early 2012, the National Planning Policy Framework (NPPF) replaced much previous planning policy guidance, including Planning Policy Statement 9: Biological and Geological Conservation. The government circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System, which accompanied PPS9, still remains valid. A presumption towards sustainable development is at the heart of the NPPF. This presumption does not apply however where developments require appropriate assessment under the Birds or Habitats Directives. The latest National Planning Policy Framework was updated in July 2018, with the section in relation to conserving the natural environment being located within section 15.

Section 15, on conserving and enhancing the natural environment, sets out how the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and, where possible, provide net gains in biodiversity. Opportunities to incorporate biodiversity gains into a development should be encouraged.

Biodiversity 2020:

This sets out to halt overall biodiversity loss and support healthy well-functioning ecosystems by establishing coherent ecological networks, with more and better places for nature, to the benefit of wildlife and people. The government's policy is aimed at individuals, communities, local authorities, charities, business and government, which all have a role to play in delivering Biodiversity 2020.

8 Notice to Readers: Conditions of this Report

All reports are certified products and cannot be shown, copied or distributed to third parties without the written permission of Elite Ecology. No liability is accepted for the contents of the report, other than to that of the client(s). If any part of this report is altered without the written permission of Elite Ecology, then the whole report becomes invalid.

Elite Ecology agrees to supply ecological consulting services and advice of a preliminary or thorough nature as advised or commissioned. Upon commissioning Elite Ecology to undertake the work, the client(s) grant access to the site upon the agreed date. If no site access is available upon this date, Elite Ecology holds the right to charge the client(s) for lost staffing time and additional travel costs.

Elite Ecology undertake all site surveys with reasonable skill, care and diligence, within the terms of the contract that has been agreed with the client and abiding by the Elite Ecology Terms and Conditions. The actions of the surveyors on site, and during the production of the report, were undertaken in accordance with the Code of Professional Conduct for the Chartered Institute of Ecology and Environmental Management.

The latest good practice guidelines put in place by Natural England or the relevant statutory conservation bodies have been followed by the surveyors on site. If those methodologies fail to identify a protected species during the survey efforts, no responsibility can be attributed to Elite Ecology. If any of these guidelines are adapted between the date(s) of the surveys being undertaken and the submission of this report, then Elite Ecology takes no responsibility for this.

Should any equipment be damaged or lost on site at the fault of the client(s), then Elite Ecology withholds the right to charge 100% above the current market value for that exact product or the nearest similar product.

The survey results purport the current status of the site and its potential for protected species utilisation at the time of surveying. It should not be viewed as a complete list of the possible flora and fauna species that could be using the site at different times of the year.

Elite Ecology has been provided with full payment for this report and thus the product has been released to the client(s) for the purpose of their planning application. If any part of the report is lost or altered without the written permission of Elite Ecology, then the entire report becomes invalid. Due to the potential for continual change within the natural world, this report is valid for **2 years only** from the date of the last survey visit. If this report is submitted after the 2 year deadline, then a further updated inspection will be required to ascertain whether the site remains in the same condition as it was when initially inspected.

No reliance should be made on any such comments in relation to the structural integrity of the features located on the surveyed site. All information within the report is based solely on evidence that has been found on site during the service provided. No individual opinion or inference will be made other than that of the suitably qualified ecologist appointed to the project.