



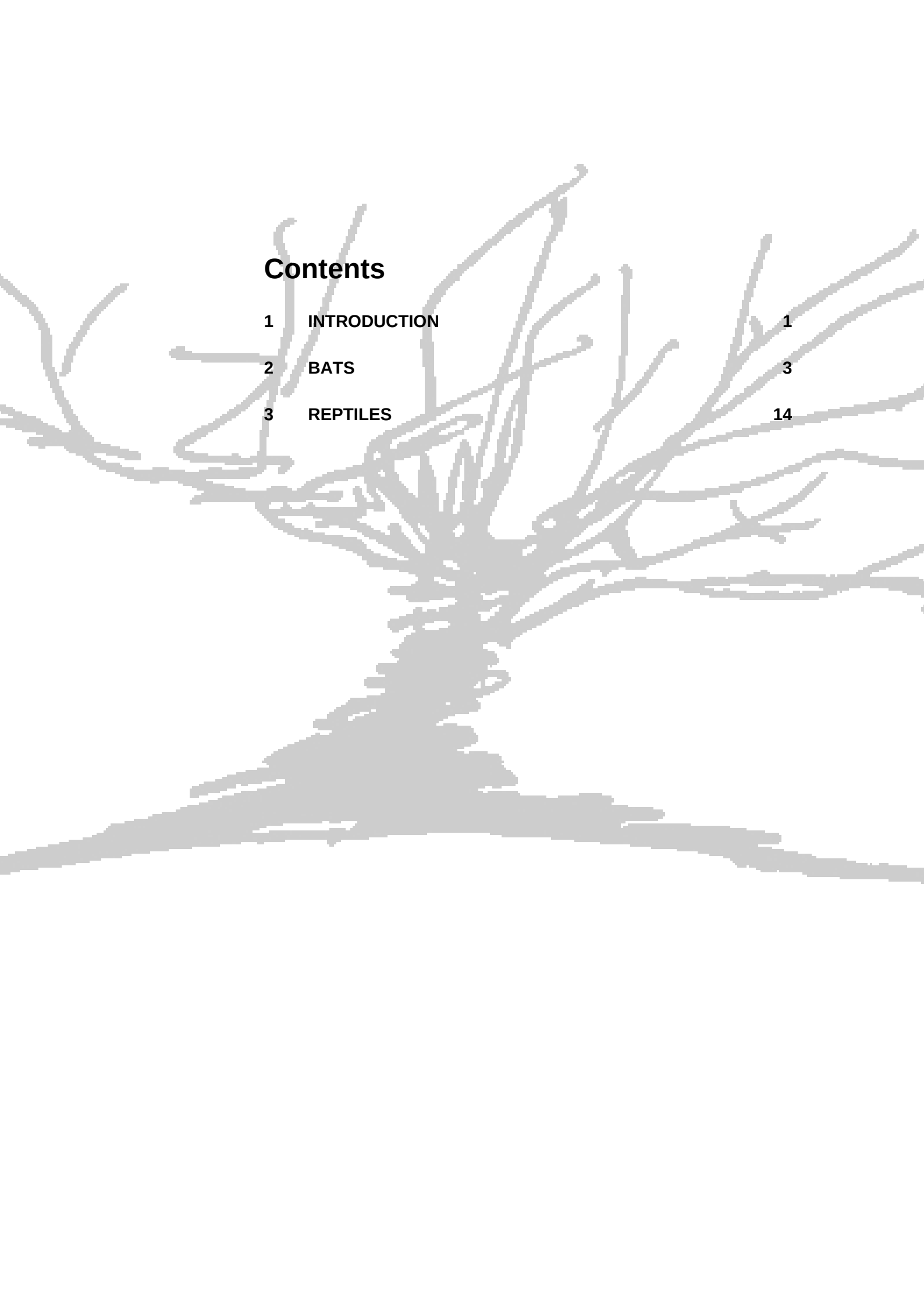
PROTECTED SPP REPORT

BRYNTAF GARAGE

For:

JTPlanning

Project: BRYNTAF GARAGE		
Project Number	M050	
Title	PROTECTED SPP REPORT	
Document Number	M050- Eco Report-V1.1	
Client	JT Planning	
Issue Date	15/10/21	
Prepared by:	David Price	15/10/21
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EXECUTIVE SUMMARY

ECOLOGICAL LAND DESIGNATION	
There are no statutory designated sites within 2km of the site. There is a non-statutory designated site, the West of Aberfan SINC approximately 40m west of site; no adverse impacts are foreseen on this SINC as a result of the proposed development.	
HABITATS	
The application site is considered to be of low ecological value. The habitat on site with the highest ecological value is the scrub.	
PROTECTED SPECIES	
BATS	Potential low impact – commoner bat species commuting on site boundary - impacts to be negated through mitigation
REPTILES	No impact – No evidence of reptiles on site
CONCLUSION	
Providing the recommended mitigation measures are adopted, relevant legislation will not be contravened, and ecological issues will not preclude the development.	



1 INTRODUCTION

Background

- 1.1 Sylvan Ecology were commissioned to carry out protected species surveys at Bryntaf Garage, Aberfan, Merthyr Tydfil.

Report Structure

- 1.2 The scope of the work to be undertaken was determined on the basis of a background data check and the results of a *Preliminary Ecological Appraisal* undertaken by Sylvan Ecology. Based on the results, the following Phase 2 were commissioned:

- Reptile survey; and
- Bat emergence survey

- 1.3 For further information on survey selection, please review document: *Preliminary Ecological Appraisal, Bryntaf Garage*.

LEGISLATION PERTAINING TO PROTECTED SPECIES

- 1.4 All species of British bat are European Protected Species protected under The Conservation of Habitats, & Species Regulations (amendment) (EU exit) 2019. All UK native reptiles are legally protected under section 9(1) and 9(5) of the Wildlife and Countryside Act 1981 (as amended), but their habitat is not protected. However, disturbing or destroying their habitat while they are present may lead to an offence.

Ecological Context

- 1.5 The site is located east of the A470, on the southwestern boundary of Aberfan. All associated land for the development (herein referred to as the site) is located at:
- central OS grid reference: ST 07026 99820
 - nearest post code: CF48 4PJ

- 1.6 The site comprises of 0.7 acres of semi-improved grassland, dense scrub and hard standing. The immediate surrounding area is predominantly residential to the north, south, and east; the site boundary to the west is a large, old quarry, cliff face, with a woodland above it. The greater surrounding area includes sections of woodland (some of which could be ancient) and a relatively intact network of hedgerows. The surrounding landscape has good potential for roosting, foraging, and commuting bats.



Aims of Study

1.7

The aims and objectives of these surveys were to:

- Determine the presence or likely absence of protected species;
- To provide an estimate on populations where appropriate;
- To assess the ecological constraints that potential presence may pose to the development and the provision of general information on mitigation techniques for species.



2 BATS

METHODOLOGY

Building survey

- 2.1 The site was subject to an internal and external inspection for evidence of bats in May 2021. Surveys were carried out in accordance with the standards set in Bat Conservation Trust's *Bat Surveys – Good Practice Guidelines* (2016).¹ The survey was conducted under optimal condition by a suitably experienced ecologist. The site was inspected by licenced bat worker David Price MCIEEM. Mr Price has 17 yrs. professional consultancy experience and has worked on a large variety of bat related projects throughout the UK.
- 2.2 Bright torches and ladders were used to search for bats and evidence of bats. The following signs were searched for:
- live bats;
 - dead bats, as either complete or partial skeletons;
 - insect remains (mainly wings & legs) below feeding perches;
 - droppings;
 - urine beneath roosting positions, or discolouring of entrance holes;
 - scratch-marks on roofs & ceilings;
 - grease or rub-marks on roofs or ceilings; and
 - evidence of wear on potential access points.
- 2.3 Where possible, cavities, cracks and crevices were thoroughly inspected for bat evidence using a Ridgid 40613 and/or FLIR C2 where appropriate.
- 2.4 The buildings were assessed for bat suitability taking into account the following general criteria:
- surrounding habitat;
 - temperature regime;
 - light levels;
 - protection from the elements;
 - construction detail;
 - potential roosting locations; and
 - potential bat-access points.
- 2.5 A description of the buildings was made, with particular attention to the factors listed above. Where possible voids, cracks and crevices were

¹ Bat Conservation Trust, 2016. *Bat Surveys: Good Practice Guidelines*. Bat Conservation Trust, London.



noted. Information including the type of building, number and size of potential bat-roosting locations and bat-access points allows it to be categorised according to a scheme published in Bat Conservation Trust's *Bat Surveys – Good Practice Guidelines* (2016) as follows:

- **High** - Buildings or structures with numerous or extensive locations that are suitable for roosting. Generally, they have sheltered roosting places, with a stable temperature regime, low light levels and suitable bat-access points. They could be suitable for maternity roosts or hibernation sites.
- **Moderate** - Buildings or structures with few or individual, small-sized areas that are suitable for roosting. They could be used by small numbers of bats for roosting and may be suitable for a maternity roost or a hibernation roost.
- **Low** - Buildings or structures that have limited potential roosting locations, are subject to wide temperature regimes, higher light levels and/or restricted bat-access points. They might be used as occasional, transient, or night roosts, by small numbers or individual bats, but are unsuitable for larger colonies.
- **Negligible** - Buildings or structures with no bat roosting potential that are unsuitable for roosting bats.

2.6 Evidence of bats and features of particular interest were noted and described below.

Emergence survey

2.7 Best practice survey guidelines published by the *Bat Conservation Trust* (2016) state that for buildings of moderate value to bats, the minimum visit frequency and timing is for two emergence surveys; to be conducted between May - mid Sep. The surveys were to assess if the features identified during the initial survey were being used by roosting bats. A total of four surveyors were used enabling all aspects of the buildings to be observed. Surveys were led by licenced bat ecologist David Price, and assisted by Richard Jenkins, Dr Todd Lewis, and Gareth Price. Survey equipment included a Batbox Griffin time expansion bat recorder, an Anabat Scout full spectrum bat recorder and two *Elekon Batlogger M*. Where applicable bat echolocation calls were analysed using *Batscan* and *Batexplorer* software.



RESULTS

Building Description

- 2.8 The application site consists of two workshops (both directly linked), and a storeroom, with a small lean-to office room. The external walls are partially rendered breezeblocks; the roofs are corrugated steel and plastic which are partially lined (probably asbestos boards).
- 2.9 The small lean-to office has a clay tile roof, there is no accessible loft space. The breezeblock/rendered walls allow no opportunities for crevice dwelling bats. The roof is in good condition and allows negligible access to the building.
- 2.10 The edges of the steel roofs have small bargeboards that have some potential to be accessed by bats.

Photographic evidence of findings.

Photo 1: Shows an overview of the buildings.





Photo 2: Shows part of the southern aspect of the workshop, the orange circles highlight some roosting potential beneath the edge of the corrugated steel roof. The red circle highlights a gap along the top of the steel shutter.



Photo 3: Shows the internal structure of workshop 1. If bats accessed the workshop, they could potentially roost between the rafters and the interior wall. The space was inspected with torch and binoculars, it was found to be heavily cobwebbed, no evidence of bats was found. No evidence of bats was found within workshop 1.

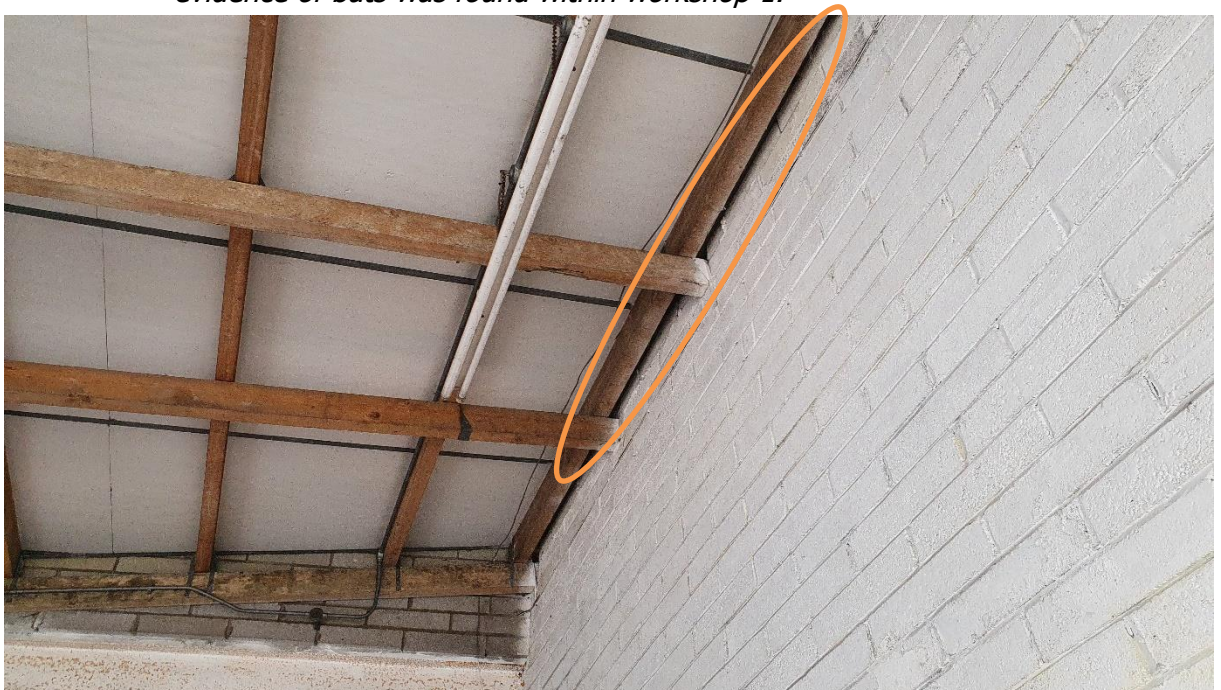




Photo 4: Shows the internal structure of workshop 2. The roof is partially lined with (likely) asbestos boards. The area is very light and busy during the day, making roosting suboptimal. No evidence of bats was found within this space.



Photo 5: Shows the internal structure of the storeroom. The roof is partially lined with (likely) asbestos boards. The area is very light and busy during the day, making roosting suboptimal. No evidence of bats was found within this space.





Photo 6: The old quarry face with woodland above. There is water percolating through many gaps in the quarry face and large parts of it are partially vegetated. As a result the quarry face is considered to have low to moderate potential for roosting bats.



Photo 7: There is a small lean-to storage room along the western aspect. The mortar along the joint is severely damaged and part of the building has pulled away from the wall. Light is clearly visible on the other side of the crack. The crack offers limited roosting potential for crevice dwelling bats. The space between the two walls was simple to inspect, it was heavily cobwebbed, and no bats or evidence of bats was found.





Photo 8: There is a small wooden bargeboard around the building, the potential roosting feature is shallow and heavily cobwebbed with no evidence of bats.



Bat Potential of Building

2.11 The limited access points, the lack of internal activity, and the lack of any bat evidence; suggests the building and quarry face are not being used as a bat roost. However, the possibility exists that bats could access the space along the edge of the corrugated roof, or over a gap in the shutter doors, as a result, the building has been designated as having moderate suitability for bats.

2.12 As the building has a moderate suitability for bats it was deemed appropriate that two emergence surveys should be undertaken to see if bats are using the building.

Emergence Survey Results

2.13 Two dusk/dawn surveys were conducted on the building and the quarry face. No bats were observed exiting or entering the building or quarry face.



Table 1: Emergence results

Date	Survey Times	Sunset Sunrise	Conditions	Results
28 th June 2021	20:45 22:45	Dusk: 21:02	Warm 18°C, fine, no rain or wind. Insects flying.	No bats were observed exiting or entering the building or quarry face. Activity was restricted to the woodland above the quarry face.
25 rd July 2021	04:10 06:00	Dawn: 05:46	Warm 17°C, fine, no rain or wind. Insects flying	No bats were observed entering or exiting the building or quarry face. Activity was restricted to the woodland above the quarry face.

Site activity

- 2.14 Activity on site was relatively low (5-10 individuals per night) and restricted to the trees along the top of the quarry walls. Species diversity of bats observed was low and restricted to common (*Pipistrellus pipistrellus*) and soprano pipistrelles (*Pipistrellus pygmaeus*). Noctules (*Nyctalus noctule*) were also recorded on site, however they were not observed. The noctules were observed about 15min after sunset, so the roost is likely not in the immediate area.

INTERPRETATION AND RECOMMENDATIONS

Conclusion

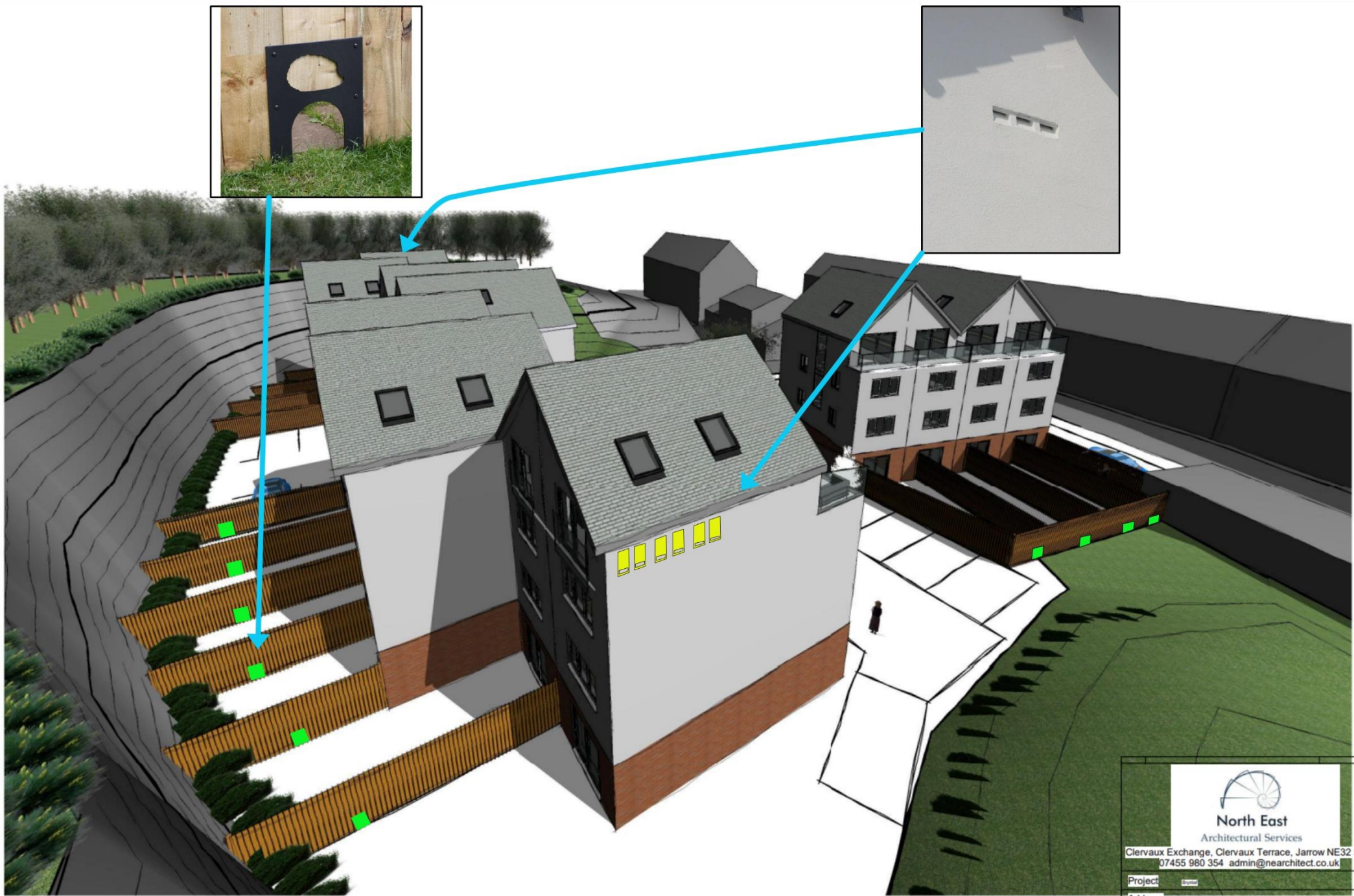
- 2.15 The results of the building inspection and detector surveys show no evidence of bats using the building as a roost.
- 2.16 Given the results of the survey, it is considered that the development of the site is unlikely to result in any impacts on bats and it is considered that an EPS Licence will not be required. Based on the conclusion that bats are unlikely to be using the structures as a roost site, according to the "*Bat Mitigation Guidelines*"² the impact on bats is likely to be negligible.
- 2.17 The site is considered generally unsuitable for hibernation; however little is known about pipistrelle hibernation roosts. Though no evidence of bats was found within the building, due to the transient nature of many species, it is recommended that contractors be made aware of the potential presence for bats in the area.

² Mitchell, A.J., 2004. *Bat Mitigation Guidelines*. English Nature, Peterborough.



- 2.18 Works will avoid encountering torpid bats by avoiding midwinter and only working during periods when temperatures have not dropped below 5°C over four consecutive days and nights.
- 2.19 All works that could potentially disturb, injure, or kill roosting bats will be directly supervised by a licensed bat worker; e.g. the soft stripping (the careful removal by hand (using a crowbar, if necessary)) of roof tiles, soffit boxes/barge boards, the careful removal by hand of wooden sarking. In the unlikely event of any bats being found, works will stop and NRW will be consulted on the best way to proceed, works may need to cease until a mitigation licence has been acquired. There may be a welfare need to capture bats that are discovered during this process. Any bats will be removed by an ecologist to a safe roosting location (pre-installed bat boxes). In the unlikely event of any bats being injured, any injured bat or bats will be immediately taken into care (as directed in the Bat Workers Manual, section 7.3, pages 64-66, 3rd edition, 2004)³.
- 2.20 At other times a licensed bat worker or accredited agent will be available at short notice should bats be found. Copies of this mitigation strategy will be available on site and contractors will be made aware of the procedures to be followed in the unlikely event that bats are found during the works. All site workers will be made aware of the possibilities of finding bats and the procedure to follow should they be found when the ecologist is not on site. If at any point a bat is discovered, contractors will stop work immediately and telephone an ecological professional qualified to deal with bats. Telephone numbers of such will be held on site. Should any bats fall out of structures or be injured, they will be gently placed in a secure ventilated box (e.g. a cardboard box) by the contractor and left in a cool dark place, until appropriate advice can be sought. Bats should not be handled without gloves.
- Enhancement**
- 2.21 The future development of the site also offers an opportunity to enhance the site's ecological value by the addition of ecological enhancement features. As an ecological enhancement feature, six integrated bat boxes (*2FR Schwegler Bat Tubes* or similar) should be installed at the top of the northern and southern walls (twelve in total) where no external windows are present. The location is illustrated below.

³ Mitchell, A.J. & McLeish, A.P., 2004. The Bat Workers Manual. Joint Nature Conservation Committee, Peterborough.



3D View 3



North East
Architectural Services

Clervaux Exchange, Clervaux Terrace, Jarrow NE32 5UP
07455 980 354 admin@nearchitect.co.uk

Project Brynmor	
Address Brynmor	
Client Andrew Lockley	
Sheet 3D 3	Project No. 2020-03-14
Date 2020-04-10	Scale (@ A3)
Drawing No. A103	Rev



Bats – lighting mitigation

- 2.23 To limit any potential impacts from lighting, the following lighting mitigation will be implemented.

External

- 2.24 A warm white spectrum (ideally <2700Kelvin) should be used as blue-white short wavelength lights can have a significant impact on the invertebrate prey of bats by mimicking daylight and will not be used. The design will attempt to minimise the amount of light spillage into woodland boundary habitat and the trees, via the use of baffles and hoods. These will also ensure the light beam angle will be ideally less than 70° above the horizontal, preferably nearer to 45°⁴. There will be a full horizontal cut off with no light more than 90° above the horizontal.

- 2.25 Dark areas will be retained around the northern, western, and southern boundary, to ensure there is no break in the existing habitat of suitable foraging areas. No uplighters i.e. up lighting trees, buildings and vegetation will be incorporated.

- 2.26 The surveys found that activity on site was restricted to low numbers of *Pipistrellus spp* commuting and foraging along the woodland edge above the quarry face. Stone 2012 found light-emitting diode lights had no significant effect on *P. pipistrellus*, *P. pygmaeus* and *Nyctalus/Eptesicus spp.*⁵. Stone, 2013⁴ also states that lighting has a low impact on the commuting and foraging activities of these species.

- 2.27 The proposed light fittings are anticipated to be position at a height of 3m, will be downwards facing; and with baffles and hoods, this should ensure there is no light spill from the external lights upon the boundary habitat. As a result, the impact from the external lighting on the species detected during the site surveys is anticipated to be negligible.

Internal

- 2.28 Light spill from windows can greatly increase ambient light levels in an area. To reduce the ambient light from windows, all new buildings should be constructed with recessed lighting rather than pendant. The downward facing, recessed lights have significantly less light spill than pendant lights³.

⁴ Stone, E.L. (2013) Bats and lighting: Overview of current evidence and mitigation guidance

⁵ Stone, E.L., Jones, G., Harris, S. (2012). Conserving energy at a cost to biodiversity? Impacts of LED lighting on bats. Glob. Change Biol. 18, 2458–2465.



3 REPTILES

SURVEY METHODOLOGY

- 3.1 The methodology for the survey was based on the guidelines provided by Natural England⁶, NARRs Survey protocols for the British herpetofauna⁷ and Froglife^{8 9}. Though the NE guidance was subsequently withdrawn, the survey effort is in line with that of the Froglife guidance.
- 3.2 Two methods of surveying were used. Firstly, artificial refugia were placed at potential basking areas throughout the site. Artificial reptile refugia was deployed across the site in early June 2021. The artificial reptile refugia were a combination of sections of folded bitumastic roofing-felt and corrugated roofing felt; also, there was corrugated steel sheets already on site.
- 3.3 The refugia provide an opportunity for reptiles to bask without exposing them to increased predation pressure. They were positioned within the survey area in locations considered most likely to support reptiles.
- 3.4 During each visit, each refugia was inspected for any reptiles basking on the upper side, then lifted and checked for sheltering animals before being carefully replaced. A different route was taken each time to ensure that there is no bias due to time of survey.
- 3.5 The second survey method involved transect searches across suitable habitats within the site. This ensured that all areas were represented in the survey, and that the survey was not biased towards those reptiles more likely to use refugia. Transect searches involve walking slowly around the site, visually searching potential basking areas and marking the locations of any reptiles observed on a map.
- 3.6 Surveys were carried out during optimum temperature and weather conditions (intermittent or hazy sunshine, with mild temperatures

⁶ Natural England, Reptile Mitigation Guidelines (Technical Information Note No. 102), September 2011

⁷ Sewell et al (2013) Survey protocols for the British herpetofauna Amphibian and Reptile Conservation, Bournemouth.

⁸ Froglife (1999) Reptile survey. An introduction to planning, conducting, and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10. Froglife, Halesworth.

⁹ Froglife (2015) Surveying for Reptiles, Tips, techniques, and skills to help you survey for reptiles. Froglife, Halesworth



between 9°C and 20°C and low winds).

RESULTS

3.7

Eight site visits were undertaken, between late-June and early Aug. The survey visits were conducted at a suitable time of year and meets the minimum standard effort and recommended methods for presence/absence surveys according to the NE guidance.

Table 2: Reptile survey results

Visit	Date	Refugia Results	Trans' Results	Temp	Weather
1	22/06/21	0	0	12°C	
2	28/06/21	0	0	15°C	Cool morning
3	30/06/21	0	0	12°C	
4	03/07/21	0	0	12°C	Cool morning
5	10/07/21	0	0	16°C	
6	18/07/21	0	0	18°C	Rain previous night
7	25/07/21	0	0	18°C	
8	09/08/21	0	0	18°C	

INTERPRETATION AND EVALUATION

Constraints

3.8

The small area of grassland and scrub to the north are on top of a cliff and was inaccessible for surveying.

Survey Efficiency

3.9

Sewell et al. (2012)¹⁰ has shown that 4-5 survey visits (depending on species) are usually sufficient to detect 95% of occupied sites; it is thought that the results provide adequate information to estimate the presence or likely absence of the species on site, owing to the consistency of the results. Additionally, the standard survey guidance assumes a refugia density of 10 units per hectare. The survey effort amounted to ten times the density of refugia compared to standard guidance.

Summary of impacts at the site level

3.10

The results of the reptile survey show no evidence of reptiles using the site.

¹⁰ Sewell, D., Guillera-Arroita, G., Griffiths, R.A. and Beebee, T.J.C. (2012). When is a species declining? Optimizing survey effort to detect population changes in reptiles. PLoS ONE 7(8): e43387 doi:10.1371/journal.pone.0043387



MITIGATION STRATEGY

Habitat Manipulation

- 3.11 All areas of suitable reptile basking, and foraging habitat (grassland and scrub) affected by the proposed works should be strimmed to ground level (under supervision by a suitably qualified ecologist) to make them unsuitable for reptiles and suitable refugia removed. The habitat manipulation will ensure no reptiles, amphibians are injured or killed during the works, while also ensuring no hedgehogs are killed during clearance works.
- 3.12 A strimming regime over a week would discourage reptiles from work areas so that they avoid injury during works to reptiles as detailed below. Once the area has been strimmed to ground level and all potential refugia removed, then reptiles are extremely unlikely to be present in the area and topsoil can be stripped or moved.
- 3.13 Mitigation works should be conducted outside the hibernation season (November to February inclusive) to avoid the risk of injuring hibernating reptiles.
- 3.14 Summary of habitat manipulation works at the site.
- Strimming to 15 cm from ground level to encourage reptiles to move from the area. Habitat clearance to be supervised by a suitably qualified ecologist, who will then perform a hand-search of the area to capture any remaining reptiles. The habitat manipulation for a site this size would likely take one day, the vegetation will then be for a period of 24 hours, allowing time for any reptiles not discovered to move out of the area.
 - Strimming to ground level and subsequent topsoil stripping. Habitat clearance to be supervised by a suitably qualified ecologist who will then perform a hand-search of the area to capture any remaining reptiles.

Deconstruction of Refuges

- 3.15 Areas of habitat suitable for refuge (e.g. piles of rocks and rubble) should be made unsuitable for reptiles by hand (under supervision by a suitably qualified ecologist) to ensure no reptiles are harmed if present. In the unlikely event that a reptile or amphibian is found, they should be moved to the retained suitable habitat on site.

APPENDIX A: Survey Maps



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LEGEND

-  Reptile refugia
-  Surveyor location
-  Pip 45: Activity
-  Pip 55: Activity

ECOLOGY SURVEY MAP

Bryntaf Garage

Date: Aug 2021

Drawn by: D.P.
© Google Earth Data

Scale:

Drawing N°: v1.1



• Light fitting (wall mounted at 3m above ground)

• Light spread over ground

TAURUS – Lighting for performance and security..
Bespoke optical design for dark sky performance in exterior wall applications with a reduction in light pollution.

Lighting for Dark Sky

The ecology and behaviour of nocturnal animals can be significantly disrupted by artificial light, but the downward light angle of the TAURUS ensures that light pollution can be a thing of the past

Light pollution occurs when light is emitted into the atmosphere and reflects off of dust, water vapour and particles in the air. TAURUS achieves an Upward Light Output Ratio (ULOR) of less than 2% due to intelligently designed optics, ensuring that no light is wasted, or intrudes upon surrounding properties. Its photocell receptor option ensures that light output reduces as natural illumination levels increase, dramatically reducing energy consumption.

High performance optic

Light that is directed on areas of interest provides visible spatial depth, aiding the feeling of safety and safe navigation. The high-performance optic of the TAURUS allows maximum of 15m spacing at 3m mounting height.

Three lumen outputs

Comes with a choice of three lumen outputs, to illuminate your space how you need. Each output option combines energy efficiency with minimised light pollution to provide the ideal exterior lighting solution.

LIGHTING SCHEMATIC

1 : 500

No.	Description	Date
 North East Architectural Services Clervaux Exchange, Clervaux Terrace, Jarrow NE32 5UP 07455 980 354 admin@nearchitect.co.uk		
Project	Bryntal	
Address	Bryntal	
Client	Andrew Loxley	
Sheet	LIGHTING	Project No. 2020-03-14
Date	2020-04-10	Scale (@ A3) 1 : 500
Drawing No.	A112	Rev



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