

Emsworth EWI & D&W, V45

784-B043756

Bat Roost Assessment and Bat Emergence / Return Survey Report

Vivo Defence Services

September 2023

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ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
BCT	Bat Conservation Trust
BER	Bat Earned Recognition (EPSL Pilot Scheme)
BRA	Bat Roost Assessment
BRM	Breathable Roofing Membrane
DEFRA	Department for Environment, Food and Rural Affairs
D&W	Doors and Windows
EPS	European Protected Species
EPSL	European Protected Species Licence
EWI	External Wall Insulation
HBIC	Hampshire Biodiversity Information Centre
LPA	Local Planning Authority
NE	Natural England
NERC Act	Natural Environment and Rural Communities Act (2006)
PRF	Potential Roosting Feature
SAC	Special Area of Conservation
SFA	Service Family Accommodation
SSSI	Site of Special Scientific Interest
WC&A	Wildlife and Countryside Act (1981)

EXECUTIVE SUMMARY

Contents	Summary
Site Location	The site comprises a complex of 48 residential Service Family Accommodation (SFA) buildings, with small areas of private gardens and associated car parking and is centred at Ordnance Survey National Grid Reference SU 74590 07280. The site includes: 1-12 (all numbers), 14 Farm View 1-10 (all numbers) Hedgerow Gardens 11-19 (odd numbers) Helston Drive 30-52 (even numbers) Helston Drive 534-548 (even numbers) Southleigh Road
Proposals	The proposed works comprise EWI (External Wall Insulation) and replacement of doors and windows (D&W) of properties within the site.
Scope of this Survey(s)	Tetra Tech was commissioned by Vivo Defence Services in November 2022 to undertake the first of three stages of bat survey work on properties within the site, which included: - Stage One – Daytime external bat roost assessment (BRA) and desktop study; - Stage Two – Nocturnal dusk and dawn surveys of those buildings deemed suitable for roosting bats; and - Stage Three – European Protected Species Licence (EPSL). Stage 2 works were subsequently commissioned in March 2023. The surveys were required to determine the presence or likely absence of roosting bats and to inform mitigation if required. Bat surveys were undertaken in line with the BCT Guidelines (Collins, 2016).
Results and Evaluation	Of the 48 buildings surveyed at Stage One, 24 were identified as being of negligible suitability and 24 were identified as being of low suitability to support bat roosts. Stage Two surveys were undertaken in June 2023 and no bat roosts were identified as a result.
Recommendations	No bat roosts were identified at any of the surveyed SFA and as such roosting bats are considered likely to be absent from the site. Works can proceed without further survey or mitigation. Should a bat or evidence of a bats (i.e. droppings) be identified at any point during the proposals, all works should cease, and a licenced ecologist should be contacted to advise an appropriate course of action.

	Four bat boxes are recommended to be installed on trees to enhance the site for roosting bats. Additionally, it is recommended that works to SFA take place outside the nesting bird season (March to September inclusive). Where this is not possible, nesting bird checks will be required prior to works. Swift bricks are recommended to be installed on each SFA within the site.
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1.0 INTRODUCTION

1.1 BACKGROUND

Tetra Tech was commissioned by Vivo Defence Services in November 2022 to undertake the first of three stages of bat survey work on properties in Emsworth, Hampshire, which included:

- Stage 1 – Daytime external bat roost assessments (BRA) and desktop study;
- Stage 2 – Nocturnal dusk and dawn surveys of those buildings deemed suitable for roosting bats; and
- Stage 3 – European Protected Species Licence (EPSL).

Stage 2 works were subsequently commissioned in March 2023.

A total of 48 Service Family Accommodation (SFA) properties were assessed at Stage 1 in 2022 for their bat roost potential. A total of 24 properties were assessed at Stage 2 to determine if the buildings were occupied by roosting bats.

This report has been prepared by Tetra Tech Consultant Ecologist Harriet Kimber and the conditions pertinent to it are provided in Appendix A.

1.2 SITE LOCATION

The site is located in Emsworth, Hampshire and includes:

- 1-12 (all numbers) 14 Farm View;
- 1-10 (all numbers) Hedgerow Gardens;
- 11-19 (odd numbers) Helston Drive;
- 30-52 (even numbers) Helston Drive; and
- 534-548 (even numbers) Southleigh Road.

The site comprises a complex of 48 residential SFA buildings, with small areas of private gardens and associated car parking and is centred at Ordnance Survey National Grid Reference SU 74590 07280. To the north, south and west of the site lies residential housing. To the east of the site lies Southleigh Park then residential housing. To the west of the site just beyond the residential housing lies grassland. The site is shown in Figure 1.

1.3 DEVELOPMENT PROPOSALS

The proposed works comprise external wall insulation (EWI) works and replacement of doors and windows (D&W) of 48 SFA residential properties within the site.

1.4 PURPOSE OF THE REPORT

The purpose of this report is to:

- Assess the suitability of properties on site for roosting bats;

Determine the presence or likely absence of roosting bats;
Ascertain the number and species of bat roosting within the buildings (if present) to determine the roost assemblage;
Outline the legislative protection for bats; and
Provide an assessment of potential ecological constraints to the proposed development on site and recommendations for further survey, avoidance and mitigation, where appropriate.

Note that scientific names are provided at the first mention of each species and common names (where appropriate) are then used throughout the rest of the report for ease of reading.

2.0 METHODOLOGY

2.1 STAGE ONE: DESK STUDY AND DAYTIME EXTERNAL BAT ROOST ASSESMENTS

2.1.1 Previous Reports

Tetra Tech was not aware of any previous ecological reports relating to the site at the time of writing this report.

2.1.2 Online Resources

A search of the relevant information was also made of MAGIC, www.magic.gov.uk, DEFRA's interactive, web-based database for statutory designations and information relating to bat EPSL application in the local area was gathered.

2.1.3 Local Ecological Records Centre

Bat records were requested from the Hampshire Biodiversity Information Centre (HBIC) for information within 2km of the site. Only records within the past 10 years are considered in this assessment.

2.1.1 Daytime External Bat Roost Assessments

The daytime bat roost assessment, using high-powered torches and binoculars was undertaken on 14th December 2022 by Class 3 and 4 bat licensed surveyor (2023-11112-CL19-BAT; 2022-10472-CL20-BAT) Tetra Tech Associate Ecologist Kevin Wood with Consultant Ecologist Sophie Lunn and Assistant Ecologist Neil Smith.

The bat roost assessment was undertaken during suitable weather conditions (1°C, dry with little cloud and a light breeze) with survey methodology based on current industry standard practice guidance Bat Conservation Trusts (BCT) Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016) –hereafter referred to as the 'BCT Guidelines'.

The daytime bat roost assessment was completed to assess the likelihood of bats using the building within the site. The building exterior were systematically inspected during daylight, and any features suitable for bats to utilise for access or roosting were noted, such as gaps between or around roof tiles, gaps in brickwork, cracks and crevices collectively known as Potential Roosting Features (PRFs). Roof coverings were viewed from the ground using close focusing binoculars (where appropriate). Any potential bat access points were identified and inspected for signs of bat presence (where visibility permitted) such as:

- Bat droppings on the ground, stuck to walls or on window sills;
- Suitable entry and exit points around roof tiles, at the eaves, and cracks and missing mortar in brickwork;
- Live bats, bat corpses or skeletons; and
- Oily marks (from fur) or localised clean spots (e.g. cobwebs swept free) around possible access points and roost areas.

The outcome of this survey was to categorise the buildings in accordance with the BCT Guidelines given in Table 1 below.

Table 1: Categories of Bat Roost Suitability (BCT Guidelines)

Suitability	Typical Roosting Features
Negligible	Negligible habitat feature 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).
Moderate	A structure 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 with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis & potentially for longer periods of time due to their size, shelter, protection, conditions & surrounding habitat.

2.2 STAGE TWO: NOCTURNAL DUSK AND DAWN SURVEYS OF THOSE BUILDINGS DEEMED SUITABLE FOR ROOSTING BATS

In accordance with BCT Guidelines buildings assessed during the BRA as having a low suitability for roosting bats, a single nocturnal survey (dusk emergence or dawn return) was undertaken between 8th and 30th June 2023.

The dusk emergence surveys commenced 30 minutes before sunset and continued for at least 1.5 hours after sunset. The dawn re-entry surveys commenced 1.5 hours before sunrise and continued for at least 15 minutes after sunrise or until bats had stopped flying.

During the surveys, surveyors were positioned to view the PRFs identified on each property. Vantage points were iterative and changed as necessary on the second and/or third visits dependant on roost access points identified. During the surveys, bat emergences and returns were recorded on survey sheets and their calls recorded using Elekon Batloggers. BatExplorer software was subsequently used to analyse these calls. Temperature readings, cloud cover and wind conditions were also recorded. The metadata for each survey is provided in Appendix C. Surveyor positions are illustrated in Figure 1.

In addition to the surveyor positions, night-vision cameras paired with additional lighting and acoustic bat detectors were used. Canon XA11 and XA65 video cameras mounted on tripods were used in combination with infrared Night Fox torches and floodlights to help illuminate the buildings where required. This equipment was set up ahead of the survey start time and the cameras were directed at any previously identified potential roost features (PRFs) present on the building. The cameras were switched on and set to begin recording video footage at the start of the survey and switched off at the end. A member of Tetra Tech staff was assigned to monitor the position, battery life and field of view of the cameras during the survey to ensure the equipment worked consistently throughout the recording period. The infra-red lighting equipment was adjusted where necessary to ensure proper illumination of any features on the buildings and thus provide clear footage of any bats recorded.

Following the survey, the recorded files were then processed using MotionMeerkat (Weinstein, 2015) motion detection software to detect any movement within the video files. The output from this was then reviewed to check any motion events picked up by the software and determine if bats were recorded emerging from or returning to the buildings.

Surveyors were led by the following experienced personnel:

Tetra Tech Consultant Ecologist Harriet Kimber;

Tetra Tech Assistant Ecologist Izzy Frey;

Tetra Tech Assistant Ecologist Chloe Mockridge

Assisted by the following experienced bat surveyors:

Tetra Tech Assistant Ecologist Georgie Atkinson;

Tetra Tech Field Ecologists Lydon Trowbridge, Ryan Pearson and Rhys Gadd.

2.3 LIMITATIONS

Due to the scale of the wider project and the number of occupants involved, internal surveys of properties were not completed. This was identified as a limitation and therefore a precautionary approach to determining bat roost suitability was taken.

Evidence of bat activity such as bat droppings or staining on external walls and surfaces is frequently removed by the action of wind and rain, therefore apparent absence of evidence was evaluated with caution. Equally, it is noted that some small, crevice-dwelling bats such as pipistrelle species, can roost in

spaces of just 10mm in height. Therefore, certainty of identifying every inconspicuous PRF, even with experienced ecologists and visual aids, cannot be assumed.

No seasonal constraints were identified for the daytime or the nocturnal bat surveys.

The optimal period to undertake bat presence/likely absence surveys is between May and August, although surveys in April and September may aid in identifying pre-maternity gathering roosts or transitional roosts. The surveys were completed in June which is inside the optimal survey window and are therefore compliant with the levels of survey effort required for the suitability assigned to these buildings. Weather conditions were suitable for the entirety of each survey. As such, there were not any constraints associated with survey timing or weather conditions.

The surveys were completed with the assistance of bat detectors. All survey techniques are subject to bias, and bat detector surveys may under-record species with weak echolocation calls, such as brown long-eared bats *Plecotus auritus*. However, these biases were considered when interpreting the results. (It is also of note that Batloggers are very effective at picking up quiet calls from brown long-eared bats). Some bat calls are variable and extremely similar between species. Where identification to species level was not possible (for example in the *Myotis* bat group), bats were identified to family level (e.g. *Myotis* sp.). where call parameters were inconclusive the species has been labelled as 'unknown'. This allows the dataset to be interpreted accurately and transparently.

Bats vary their calls dependent on the habitats they fly in and on their activity (commuting, foraging, social interaction, etc). It is not always possible to identify bat calls to species level owing to the overlap of call parameters between some species and / or poor-quality recordings (e.g. brief and distant passes). In these cases, it is accepted that species are identified to genus level or group level (e.g. *Myotis*, *Myotis* / *Plecotus* and *Nyctalus* / *Eptesicus*) (BCT Guidelines). Where call parameters are inconclusive the species has been labelled as 'unknown'. This allows the dataset to be interpreted accurately and transparently.

As light levels drop after dusk, the visibility of features decreases over time. Conversely for dawn surveys, light levels are worst at the start of the survey, with visibility of features improving approaching sunrise. However, surveyors and infra-red cameras were positioned appropriately to ensure that any bats flying over or around the building would be recorded and therefore emergence or re-entries would be identified. Based on the species assemblage recorded and their usual emergence / re-entry times, it is considered that visibility after dusk and pre-dawn was not a constraint during surveys.

To determine presence or likely absence of protected species usually requires multiple visits at suitable times of the year. As a result, this survey focuses on assessing the potential of the site to support species of note, which are considered to be of principal importance for the conservation of biodiversity with reference to those given protection under UK or European wildlife legislation. This report cannot therefore be considered a comprehensive assessment of the ecological interest of the site. However, it does provide an assessment of the ecological interest present on the day the site was visited and highlights areas where further survey work may be recommended.

The details of this report will remain valid for a period of one year from June 2023 – i.e. until June 2024 (CIEEM, 2019), after which the validity of this assessment should be reviewed to determine whether further updates are necessary. Note that the recommendations within this report should be reviewed (and reassessed if necessary) should there be any changes to the red line boundary or development proposals which this report was based on.

3.0 RESULTS

3.1 STAGE ONE: DESK STUDY AND DAYTIME EXTERNAL BAT ROOST ASSESSMENTS

3.1.1 Online Resources

No Special Areas of Conservation (SACs) or Sites of Special Scientific Interest (SSSIs) which are designated for bats are present within a 2km radius of the site.

The MAGIC website identified a single EPSL relating to disturbance or destruction of bat roosts granted by Natural England (NE) within the 2km search area. The closest record - 2019-44235-EPS-MIT (2020 – 2024) – was located approximately 1.3km south of the site. This EPSL allowed destruction of a resting place for soprano pipistrelles *Pipistrellus pygmaeus*.

3.1.2 Local Ecological Records Centre

A desk study data request from HBIC returned 490 bat records within 2km of the site in the last 10 years, comprising 13 confirmed species (Table 2).

Table 2: Desk Study Records

Species	Nearest Distance from Site	Most Recent Record	Number of records	Notes
Serotine <i>Eptesicus serotinus</i>	Within site	2021	29	Bat detector recordings.
Myotis species <i>Myotis sp.</i>	290m	2021	69	Bat detector recordings and field records.
Barbastelle <i>Barbastella barbastellus</i>	290m	2021	12	Bat detector recordings.
Bechstein's <i>Myotis bechsteinii</i>	600m	2017	5	Mist netting
Brandt's <i>Myotis brandtii</i>	690m	2017	1	Harp trapping.
Daubenton's <i>Myotis daubentonii</i>	690m	2018	13	Bat detector recordings and harp trapping.
Whiskered <i>Myotis mystacinus</i>	690m	2017	4	Mist netting and harp trapping.
Whiskered / Brandt's <i>Myotis mystacinus / brandtii</i>	690m	2017	2	Harp trap

Natterer's <i>Myotis nattereri</i>	640m	2019	7	Bat detector recordings, mist netting and harp trapping.
Leisler's <i>Nyctalus leisleri</i>	300m	2020	4	Bat detector recordings.
Noctule <i>Nyctalus noctula</i>	300m	2021	25	Bat detector recordings and field records.
Pipistrelle species <i>Pipistrellus sp.</i>	550m	2016	11	Bat detector recordings and roost visit.
Nathusius's <i>Pipistrellus nathusii</i>	470m	2021	8	Bat detector recordings.
Common pipistrelle <i>Pipistrellus pipistrellus</i>	Within site	2021	141	Bat detector recordings and mist netting.
Soprano pipistrelle	Within site	2021	132	Bat detector recordings, mist netting and harp trapping.
Long-eared species <i>Plecotus sp.</i>	290m	2021	15	Bat detector recordings.
Brown long eared <i>Plecotus auritus</i>	300m	2021	12	Bat detector recordings and mist netting.

3.1.3 Daytime External Bat Roost Assessment

A total of 48 SFA buildings were assessed for their potential to support roosting bats. Following the daytime inspections, the buildings were categorised as follows:

Negligible – 24 SFA (1, 4, 5, 8, 12 Farm View, 2, 5, 6 Hedgerow Gardens, 16, 17, 19, 32, 34, 36, 38, 46, 48, 50, 52 Helston Drive, 534, 536, 538, 540, 511 Southleigh Road).

Low – 24 SFA (2, 3, 6, 7, 9, 10, 11, 14 Farm View, 1, 3, 4, 7, 8, 9, 10 Hedgerow Gardens, 11, 15, 30, 40, 42, 44 Helston Drive, 536, 546, 548 Southleigh Road).

Moderate – None identified.

High / confirmed roost – None identified.

Further details describing the individual buildings, potential roost features (PRFs) and overall suitability for roosting bats / BRA classification is found in Appendix B. Figure 1 shows the buildings on site and the confirmed BRA classifications.

The 48 SFA were a mixture of detached and semi-detached houses constructed in the 1970's. The properties were all of the same structure; comprised of two-storey, cavity-walled buildings with pitched

pantile roofs and concrete ridge. Hanging tiles were present on most properties, with some missing (see Photograph 1). Windows and doorframes comprised uPVC. The pantiles were generally intact, and the soffit boxes flush to the walls, reducing potential access points for bats. Properties with a gable end comprises a concrete verge with only occasional gaps present. Lead flashing was present around the chimneys and below the windows by the hanging tiles and was lifted at some of the properties creating a potential access point.

Photograph 1: Example of a typical property, with missing hanging tiles visible.



3.2 STAGE TWO: NOCTURNAL DUSK AND DAWN SURVEYS OF THOSE BUILDINGS DEEMED SUITABLE FOR ROOSTING BATS

3.2.1 Survey Meta Data

Appendix C summarises the survey times and weather conditions of the dusk emergence / dawn return surveys.

All bat surveys were completed during the period when bats are active, within the optimum survey season and within suitable weather conditions (above 10 °C, dry and with calm winds). Temperature was recorded in degrees Celsius (°C), cloud cover was rated in Oktas (out of 8) and wind was recorded on the Beaufort scale.

3.2.2 Survey Results

24 buildings were surveyed for bat emergence / re entry. During these surveys, no bats were recorded emerging from or re-entering any of the buildings and as such (in accordance with BCT Guidelines) no further surveys were undertaken.

4.0 RELEVANT LEGISLATION

All British bat species are given special protection within England by their inclusion on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) and Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

As a result, it is an offence to:

- 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's roosting place (even if bats are not occupying a roost at the time);
- Possess or advertise, sell or exchange a bat (dead or alive) or any part of a bat; and
- Intentionally or recklessly obstruct access to a bat roost

With specific reference to the offence of disturbance, Regulation 41(1) of the Conservation of Habitats and Species Regulations 2017 (as amended) states that a person commits an offence if they:

“...deliberately disturb wild animals of any such species [i.e. a European Protected Species] in such a way as to be likely significantly to affect:

- (i) the ability of any significant group of animals of that species to survive, breed, or rear or nurture their young; or
- (ii) the local distribution or abundance of that species”.

Where development will result in damage to, or obstruct access to, any bat roost (whether occupied or not) or risks harming or significantly disturbing bats, a European Protected Species Licence (EPSL) is required from Natural England to allow the development to proceed.

Bats are also afforded more general protection in England (and Wales) within the Natural Environment and Rural Communities Act (NERC) 2006. This imposes a duty on all public bodies, including local authorities and statutory bodies, in exercising their functions, “to have due regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity” [Section 40 (1)]. It notes that “conserving biodiversity includes restoring or enhancing a population or habitat” [Section 40 (3)]. Consequently, attention should be given to dealing with the modification or development of an area if aspects of it are deemed important to bats, such as roosts, flight corridors and foraging areas.

Section 41 (S41) of this Act requires the Secretary of State to publish a list (in consultation with Natural England) of habitats and species which are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies including local and regional authorities, when carrying out their normal (e.g. planning) functions. The S41 list includes 65 habitats of principal importance and 1,150 species of principal importance.

Seven species of bats (soprano pipistrelle, brown long-eared bat, greater horseshoe bat *Rhinolophus ferrumequinum*, lesser horseshoe bat *Rhinolophus hipposideros*, Bechstein's bat and noctule) are listed under Section 41 of the NERC Act 2006.

5.0 POTENTIAL IMPACTS AND MITIGATION STRATEGY

5.1 IMPACT ASSESSMENT

No active bat roosts were identified within any of the 24 buildings that underwent nocturnal (emergence / re-entry) surveys. As such, no significant negative impacts to bats are anticipated as part of the proposals.

5.2 PROTECTION MEASURES FOR BATS DURING RENOVATION

In the unlikely event that a bat or evidence of a bat (i.e. droppings) be identified at any point during the development, all works should cease and an licenced ecologist be contacted to advise on an appropriate course of action.

Should a bat roost be identified, additional surveys may be necessary and an EPSL may be required to be obtained from Natural England.

5.3 ENHANCEMENTS

To enhance the site for roosting bats it is recommended a minimum of one general purpose bat box (such as a Schwegler 2F bat box) will be provided for every 10 buildings impacted; for this stage of the project it is recommended that 4 general purpose boxes be installed. The bat boxes will be installed on retained trees with the location agreed with the project ecologist prior to installation.

5.4 NESTING BIRDS

Following anecdotal evidence of birds nesting on buildings within the site, it is recommended that works to the SFA take place outside of the nesting bird season (March to September inclusive). Where this is not possible, nesting bird checks should be carried out in advance of works by a suitably experienced Ecologist. Additionally, to mitigate for the potential loss of nesting habitat in the properties, it is recommended that one swift brick should be installed on each SFA within the site. Swift bricks are a universal nest brick for small bird species, including red-listed species such as Common Swift, House Sparrow, House Martin, and Starling (CIEEM, 2021).

6.0 REFERENCES

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FIGURES

FIGURE 1: SITE LOCATION PLAN AND SURVEYOR LOCATIONS

FIGURE 1: SITE LOCATION PLAN AND SURVEYOR LOCATIONS



Site Location Plan and Surveyor Locations

Vivo Emsworth EW1 & D&W

Vivo

Legend

- Low
- Negligible
- Surveyor position

Notes:

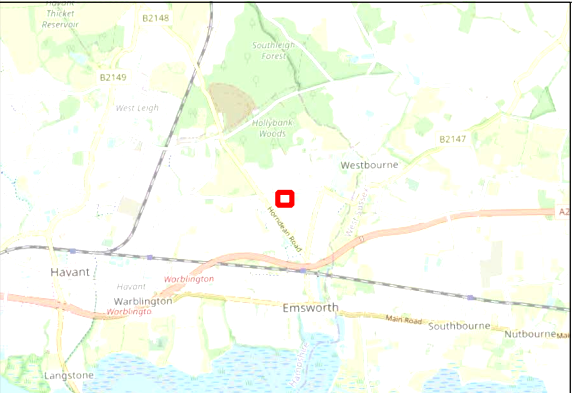
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Office: Southampton

Figure No. 1
Revision No. A
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Scale 1:600 @A3

British National Grid
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The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The "shelf life" of the Report will be determined by a number of factors including; its original purpose, the Client's instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Tetra Tech accept no liability for issues with performance arising from such factors.

APPENDIX B: BAT ROOST ASSESSMENT FINDINGS

Property Address	BRA Classification	Building Description	Potential Roosting Features (PRFs)
2 Farm View	Low	The building was a two-storey, semi-detached, brick house with hanging tiles on the first floor. The roof comprised a pitched, concrete interlocking tile roof and ridge with timber soffit, fascia and barge board.	Elevation - East: Potential access features were present: Behind hanging tiles
3 Farm View	Low	The building was a two-storey, semi-detached, brick house with hanging tiles on the first floor. The roof comprised a pitched, concrete interlocking tile roof and ridge with timber soffit, fascia and barge board.	Elevation - East: Potential access features were present: Behind fascia, Behind hanging tiles, In soffits
6 Farm View	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with plastic soffit, fascia and barge board and lead flashing.	Elevation - South-east: Potential access features were present: Behind hanging tiles, Behind barge boards
7 Farm View	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with plastic soffit, fascia and barge board and lead flashing.	Elevation - South: Potential access features were present: Behind hanging tiles
9 Farm View	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with plastic soffit, fascia and barge board and lead flashing.	Elevation - West: Potential access features were present: Behind hanging tiles
10 Farm View	Low	The building was a two-storey, semi-detached, brick house with hanging	Elevation - West:

Property Address	BRA Classification	Building Description	Potential Roosting Features (PRFs)
		tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with timber soffit, fascia and barge board and lead flashing.	Potential access features were present: Behind hanging tiles
11 Farm View	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with timber soffit, fascia and barge board and lead flashing.	Elevation - South: Potential access features were present: Behind hanging tiles
14 Farm View	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with timber soffit, fascia and barge board and lead flashing.	Elevation - West: Potential access features were present: Behind hanging tiles
1 Hedgerow Gardens	Low	The building was a two-storey, semi-detached, brick house partly rendered. The roof comprised a pitched, concrete interlocking tile roof and ridge with timber soffit, fascia and barge board and lead flashing.	Elevation - West: Potential access features were present: Under tiles
3 Hedgerow Gardens	Low	The building was a two-storey, semi-detached, brick house partly rendered. The roof comprised a pitched, concrete interlocking tile roof and ridge with plastic soffit, fascia and barge board and lead flashing.	Elevation - South: Potential access features were present: In soffits
4 Hedgerow Gardens	Low	The building was a two-storey, semi-detached, brick house partly rendered. The roof comprised a pitched, concrete interlocking tile roof and ridge with plastic soffit, fascia and barge board and lead flashing.	Elevation - South-east: Potential access features were present: Under tiles
7 Hedgerow Gardens	Low	The building was a two-storey, detached, brick house with hanging tiles. The roof comprised a pitched,	Elevation - East:

Property Address	BRA Classification	Building Description	Potential Roosting Features (PRFs)
		concrete interlocking tile roof and ridge with plastic soffit, fascia and barge board and lead flashing.	Potential access features were present: Under tiles Elevation - West: Potential access features were present: Under tiles
8 Hedgerow Gardens	Low	The building was a two-storey, detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with plastic soffit, fascia and barge board and lead flashing.	Elevation - East: Potential access features were present: Behind barge boards Elevation - West: Potential access features were present: Behind barge boards
9 Hedgerow Gardens	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with timber soffit, fascia and barge board and lead flashing.	Elevation - East: Potential access features were present: Behind hanging tiles, Behind barge boards
10 Hedgerow Gardens	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with timber soffit, fascia and barge board and lead flashing.	Elevation - North: Potential access features were present: Behind hanging tiles, Behind barge boards
11 Helston Drive	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and	Elevation - South:

Property Address	BRA Classification	Building Description	Potential Roosting Features (PRFs)
		ridge with timber soffit, fascia and barge board and lead flashing.	Potential access features were present: Behind hanging tiles
15 Helston Drive	Low	The building was a two-storey, detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with timber soffit, fascia and barge board and lead flashing.	Elevation - North: Potential access features were present: Behind hanging tiles
30 Helston Drive	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with timber soffit, fascia and barge board and lead flashing.	Elevation - South: Potential access features were present: Behind barge boards
40 Helston Drive	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with plastic soffit, fascia and barge board and lead flashing.	Elevation - East: Potential access features were present: Behind hanging tiles, Under tiles
42 Helston Drive	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with timber soffit, fascia and barge board and lead flashing.	Elevation - West: Potential access features were present: Behind barge boards
44 Helston Drive	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with timber soffit, fascia and barge board and lead flashing.	Elevation - East: Potential access features were present: Wall gaps
536 Southleigh Road	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and	Elevation - West:

Property Address	BRA Classification	Building Description	Potential Roosting Features (PRFs)
		ridge with timber soffit, fascia and barge board and lead flashing.	Potential access features were present: Under tiles, Under lead flashing
546 Southleigh Road	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with timber soffit, fascia and barge board and lead flashing.	Elevation - North: Potential access features were present: Gaps around overflow pipe, behind fascia Elevation - West: Potential access features were present: Under tiles, Behind barge boards, In soffits
548 Southleigh Road	Low	The building was a two-storey, semi-detached, brick house with hanging tiles. The roof comprised a pitched, concrete interlocking tile roof and ridge with timber soffit, fascia and barge board and lead flashing.	Elevation - West: Potential access features were present: Under lead flashing Elevation - East: Potential access features were present: Behind barge boards, Under slates, Behind cladding Elevation - South: Potential access features were present: Under tiles

APPENDIX C: STAGE TWO SURVEY META DATA

Date of Survey	Buildings	Timings	Weather Start	Weather End
8 th June 2023 – Dusk	2, 3, 6, 7, 9, 10, 11, 14 Farm View	Start: 20:45 End: 22:45 Sunset: 21:15	Temp: 18 °C Precipitation: Nil Cloud: 0 Wnd: 3	Temp: 18 °C Precipitation: Nil Cloud: 0 Wnd: 3
9 th June 2023 - Dawn	1, 3, 7, 8, 9, 10 Hedgerow Gardens	Start: 03:22 End: 04:52 Sunrise: 05:07	Temp: 11 °C Precipitation: Nil Cloud: 0 Wnd: 2	Temp: 11 °C Precipitation: Nil Cloud: 0 Wnd: 2
30 th June 2023 – Dawn	11, 15, 30, 40, 42, 44, Helston Drive, 536, 546, 548 Southleigh Road	Start: 03:23 End: 05:08 Sunrise : 04:53	Temp: 11 °C Precipitation: Nil Cloud: 0 Wnd: 0	Temp: 11 °C Precipitation: Nil Cloud: 30 Wnd: 0