



28 Dilworth Lane, Longridge

**Bat Survey Report – Version 1**

**Date:** 15 May, 2018

**By:** Dominic Rigby MCIEEM

**Ref:** JE 6536a 18

**Client:** Mr. J Holland



## NOTICE

Our ecological reports are published on the understanding that nothing will be omitted, amended or misrepresented by the client or any other interested party. This report and its contents remain the property of Conservation Contracts Northwest Ltd. until payment has been made in full.

The results and any advice contained here is based on the information available during the agreed period of study and within the resources available. All reasonable effort has been taken to ensure that an accurate assessment of the subject is provided at the time of the survey. However, the absence of recorded evidence should not be taken as an absolute guarantee that the site was not being used by a particular species.

Any future readers should note that both the physical state of the site and the relevant environmental legislation may have changed since this report.

| Revision Schedule |         |                             |             |                         |
|-------------------|---------|-----------------------------|-------------|-------------------------|
| Version           | Date    | Prepared by                 | For Comment | Checked by              |
| 1                 | 15/5/18 | D Rigby<br>Senior Ecologist |             | G Lowe<br>CCNW Director |
|                   |         |                             |             |                         |
|                   |         |                             |             |                         |

Conservation Contracts Northwest Ltd.  
29-31 Lee Lane  
Horwich  
Bolton  
BL6 7AX

Tel: 01204 693500  
Fax: 01204 693503  
[www.ccnw.info](http://www.ccnw.info)



@ccnw1



## 28 Dilworth Lane, Longridge

### Bat Survey Report

*Dominic Rigby MCIEEM*

*Senior Ecologist*

*Conservation Contracts Northwest Ltd.*

*15 May, 2018*

### CONTENTS

|                                             |           |
|---------------------------------------------|-----------|
| <b>1. Summary</b>                           | <b>5</b>  |
| <b>2. Introduction</b>                      | <b>6</b>  |
| <b>3. Legislation, Planning and Policy</b>  | <b>7</b>  |
| <b>4. Methodology</b>                       | <b>8</b>  |
| <b>5. Results</b>                           | <b>11</b> |
| <b>6. Discussion and Analysis</b>           | <b>21</b> |
| <b>7. Recommendations</b>                   | <b>21</b> |
| <b>8. References</b>                        | <b>22</b> |
| <b>9. Appendix: Maps</b>                    | <b>23</b> |
| <b>Map One: Planning Boundary</b>           | <b>24</b> |
| <b>Map Two: Proposed Development Layout</b> | <b>25</b> |

#### **List of Tables:**

|                                                                                                          |           |
|----------------------------------------------------------------------------------------------------------|-----------|
| <b>Table One: Bat roost trigger index scores, roost suitability class and BCT survey recommendations</b> | <b>9</b>  |
| <b>Table Two: Dusk Emergence Times and Conditions</b>                                                    | <b>10</b> |
| <b>Table Three: Bat Roost Trigger Index: The House</b>                                                   | <b>19</b> |
| <b>Table Four: Bat Roost Trigger Index: Garage</b>                                                       | <b>20</b> |

## **1. Summary**

Conservations Contracts Northwest Ltd. (CCNW) were contracted in April 2018 to undertake a preliminary roost survey for bats at 28 Dilworth Lane, Longridge, Lancashire.

The single detached residence and accompanying detached garage were subject to a development planning application and a bat survey had been recommended by planning consultants.

The survey was undertaken following industry-standard guidelines and using the Bat Roost Trigger Index to aid transparency in the process.

The preliminary roost assessment deemed the garage unsuitable for bats, scoring a negligible index. The house, however, was assessed as having a "low" potential, triggering the guidelines requirement for a single dusk emergence-survey.

The survey was undertaken on 8<sup>th</sup> May 2018, by three surveyors, led by a level-two licenced bat surveyor. No bats were recorded emerging, using or entering the property during that survey.

No further surveys were required. No further licencing or mitigation measures were required. However, the Longridge area lies in a landscape with good potential for bat foraging. Any developer should be mindful of the potential for transient bats and be aware of the legislation, outlined in this Report, that protects bats in the UK.

## **2. Introduction**

### **2.1 Principal Author**

This report was compiled by Dominic Rigby MCIEEM, Senior Ecologist at CCNW. He has over 30 years' professional experience in the ecology sector and holds a current level-two licence to survey for bats in England. He has the knowledge, skills and experience required to survey, disturb, handle or to carry out research works for the bats in a professional capacity, as set out in the CIEEM Technical Guidance Series (CIEEM, 2013).

### **2.2 Guidelines**

The Report follows the CIEEM format and guidelines on Ecological Report Writing (CIEEM 2017) for ecological surveys.

### **2.3 Client**

Mr. J Holland,  
8 Salisbury Avenue, Grimsargh PR2 5LF

### **2.4 Site Location**

"Pengarth", 28 Dilworth Lane, Longridge, Preston PR3 3XH,  
National Grid reference: SD6093037335  
District: South Ribble Borough; County: Lancashire.

The site was a detached, domestic dwelling with accompany detached garage, set in a mature garden. The site curtilage was 0.33ha. The house lay along ribbon development, with housing immediately to the south and west and agricultural, grazing land to the north and east. Map One (p24) shows the planning red-line boundary (map reference 17-2348 EX001).

### **2.5 Purpose of Report**

This report was compiled to enable the client to meet the requirements for a bat survey at the property, as a pre-requisite for gaining planning permission. The planning application concerned a proposed extension at the rear of the property and the demolition of the existing garage. The original planning application was submitted to Ribble Valley Borough Council in February 2018, application number 3/2018/0214. The proposed layout of the extension is presented on Map Two, p25 (map reference 17-2348-PN001).

This Report compiled the results of the preliminary roost assessments for the existing property and garage and as a consequence of the former, a presence/absence dusk survey of the property.

### 3. Legislation

#### 3.1 Legislation

3.1.1 Bats are listed under Schedule 5 of The Wildlife & Countryside Act 1981 (as amended) and Schedule 2 of The Conservation of Habitats and Species Regulations 2017. This legislation, when taken together, results in a level of protection that prohibits the intentional, deliberate or reckless:

- killing, injuring, taking or disturbance of bats;
- damaging, destroying or obstructing any place used by bats for the purposes of breeding, sheltering or protection; and,
- selling and/or advertising for sale a bat or any part thereof.

3.1.2 Seven species of bat are listed as species of principal importance for nature conservation in England in Section 41 of The Natural Environment and Rural Communities (NERC) Act 2006. Section 40 of the same Act requires that local and regional authorities have regard to the conservation of biodiversity in England, when carrying out their normal functions.

#### 3.2 Policy

Planning policy relevant to the current application on the Ribble Valley Borough Council Planning website stated (Ribble Valley Borough Council, 2018):

*Bats are a protected species and as such are a material consideration in planning applications.*

*We will require an appropriate bat survey to be submitted if your scheme includes works to the roof, eaves, stone faced walls, weather boarding, or vertically hung slate of any of the following:*

*Domestic dwellings where a two or single storey extension will result in having to break into or disturb the existing roof.*



## 4. Methodology

### 4.1 Desk Study

4.1.1 The objective of the desk study was to review the existing information available in the public domain concerning species and habitats to identify the following:

- Internationally and nationally designated sites for bats, up to 5 km from the Site using the Multi Agency Geographic Information for the Countryside (MAGIC) website ([www.magic.gov.uk](http://www.magic.gov.uk));
- Local bat records using local searches of reliable, up to date data.
- Aerial photographs and Ordnance Survey (OS) maps were reviewed to identify features of ecological interest surrounding the Site, nearby areas of ecological interest and features connecting these habitats (hedgerows, watercourses, railway lines).

### 4.2. Field Surveys

#### 4.2.1 Preliminary Roost Assessment – Buildings

##### 4.2.1.1 Bat Roost Trigger Index

The dwelling and garage were inspected and assessed for their potential for bats, following the methodology detailed in Collins (2016). The building and its environmental context were then scored using the Bat Roost Trigger Index: a metric developed by Underhill-Day of Swift Ecology.

- Underhill-Day (2017) describes the bat roost trigger index as an excel-based tool which helps evaluate the suitability of structures and buildings to support summer bat roosts. It can be used in preliminary roost assessments to augment professional judgement. The tool allows numerical comparison of different buildings, and thus helps bat surveyors to maintain a consistent approach to their assessments across a range of structure or building types, characters and ages.
- The index is based on a list of 28 features which reflect: A) the location, habitat and environmental context of the structure or building (8 features); B) exterior features and characteristics of the structure or building (10 features); and C) interior features and characteristics of the structure or building, particularly those comprising, or within, the roof void (10 features).
- Each feature is sub-divided into three or four descriptive categories which summarise the feature 'condition', while indicative descriptions are provided which loosely define each category; these are used as a prompt to assign a numerical score (i.e. 1.0, 0.67, 0.33 or 0.2) to the feature. The index uses indicative descriptions, rather than strict criteria, since the relationships are qualitative and rely on experience and generally accepted associations rather than on known numerical correlations.

- The value at the end of the process is a Trigger Index (TI) score, which the surveyor can use to inform the number of subsequent surveys (see Table One) that may be required, in a transparent way.

**TABLE 1: Bat roost trigger index scores, roost suitability class and BCT survey recommendations**

| TI Score  | Roost Suitability Class | BCT Survey Recommendations    |
|-----------|-------------------------|-------------------------------|
| > 0.7     | HIGH                    | Three separate survey visits. |
| 0.6 - 0.7 | MODERATE                | Two separate survey visits.   |
| 0.5 - 0.6 | LOW                     | One survey visit.             |
| < 0.5     | NEGLIGIBLE              | No further surveys required.  |

#### 4.2.1.2 Building Survey

The Buildings survey was undertaken on 1<sup>st</sup> May 2018 by Dominic Rigby, a Level 2 Bat Licence holder. The weather was sunny and dry and provided no constraints. Access was granted to all areas and the loft was totally accessible and had optional lighting. A high-powered LED torch and close-focussing binoculars (down to 50cm) were used to aid inspection of both internal and external features. Photographs were taken of key features.

#### 4.2.2 Dusk Emergence Survey

4.2.2.1 The garage was scoped-out of the survey following the preliminary roost assessment (see 5.2.3).

4.2.2.2 An emergence survey of the house was conducted on 8<sup>th</sup> May 2018. This was led by Dominic Rigby, supported by two colleagues. One observer was positioned on the opposite side of Dilworth Lane, enabling a full view of the front of the house; the other observers were positioned at posts at the north-east and north-west corners of the rear of the house, respectively. Together this enabled complete coverage of all potential exit sites.

4.2.2.3 The survey started 15 minutes before sunset and finished 95 minutes after sunset. On the night of the survey this was a 2035 start and 2220 finish.

4.2.2.4 A Peersonic RPA3 full spectrum bat detector/recorder and an Echo Meter Touch bat detector were used. Additionally, a Night Vision Scope (Yucon sku #24121NVM T Spartan 2x24) was positioned overlooking the NE corner of the house, where light penetration into the loft had been noted during the preliminary building survey.

**4.2.2.5** A Peersonic RPA3 full spectrum bat detector/recorder was positioned in the archway half way down the garden to aid interpretation of bat behaviour/usage of the site from any bat that may emerge from the house.

**TABLE 2: Dusk Emergence Times and Conditions**

| Start Time | Temperature °C | Humidity (%) |
|------------|----------------|--------------|
| 2035       | 12.1           | 84           |
| 2220       | 9.8            | 73           |

### **4.3 Limitations and Guidance Deviations**

**4.3.1 Desk Study** Biological records can be received from a wide variety of sources and may or may not be comprehensive and accurate. However, if assessed in conjunction with a survey, they can contribute to a robust ecological assessment of a site.

**4.3.2 Bat Roost Trigger Index** This tool is a working prototype which has only been used in general professional consultancy since first published in June 2017. It was however, used in conjunction with the assessor's experienced professional judgement.

## 5. Results

### 5.1 Desk Study

#### 5.1.1 Designated Sites

A search on the presence of designated sites revealed there to be no Special Areas of Conservation (SAC) or Sites of Special Scientific Interest (SSSIs) within 5km of the proposed development site which are designated for bats.

#### 5.1.2 Records Search

Avian Ecology Ltd was commissioned in 2014 by Taylor Wimpey UK Ltd to undertake a bat survey for a medium sized development off Dilworth Lane, just 300m from Number 28. This included extensive data searches, transect surveys and some building surveys (Avian Ecology, 2014).

At least six species of bat were recorded during the surveys: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Brandt's *Myotis brandtii*, Daubenton's *Myotis daubentonii*, Natterer's *Myotis nattereri* and Noctule (*Nyctalus noctule*).

5.1.3 Aerial Photographs

Photograph One: 28 Dilworth Lane in a landscape context



**0m** **---** **Distance** **---** **3km**

The habitat to the east of the site provides good, connected foraging opportunities for bats. The mix of modern and older buildings to the west provided opportunities for roosting for several species.



## 5.2 Preliminary Roost Assessment

### 5.2.1 The House

#### 5.2.1.1 External Description

The house is a post-war, brick-built structure with a four-sided hipped roof, with a single slate skin. There was a lean-to along the length of the rear of the house with a pitched roof.

- The pebbledash exterior-wall covering was in good condition. The doors and windows and accompanying lintels were in good condition, sealed and no droppings were present. The slate roof was largely well-sealed and no ridge tiles were lifted or missing, however, there was some light penetration into the loft, with gaps enough for bats to enter.

**Photograph Two: Front view of house**



**Photograph Three: Rear View of house, showing Lean-to**



- The fascias and soffits were of wood and in good condition.

**Photograph Four: The eaves were in good condition**



- Pebbledash was sealed around the external chimney breast and the front-door lintel and recess, it was in good condition with no obvious entry-point for crevice-dwelling bats.

**Photograph Five: Side View (east), showing door lintel and chimney breast**



### 5.2.1.2 Internal Description

The loft was undisturbed, clear and accessible. There was some light penetration, especially at the front centre and in the NE corner. There was extensive cobwebbing and no signs of droppings. As the roof was single-skin all gaps between slates could be inspected and no bats or bat evidence was found.

**Photograph Six: Single-skinned slate roof and wooden purlin and rafters**



**Photographs Seven: Internal apex of hipped roof, showing extensive cobwebbing**





**Photographs Eight: Internal apex of hipped roof, showing wooden hip rafters**



### **5.2.2**

#### **The Garden**

The garden was not the focus of the survey. However, the quality of habitat in and around the garden affect the desirability of potential roost sites and were part of the Bat Roost Trigger Index metric. The garden contained good quality linear habitats leading from the house into the wider pastoral landscape.

**Photograph Nine: The garden, looking NNE, showing a combination of linear and open habitat**



### 5.2.3 The Garage

The garage is a single-leaf concrete structure with an ivy-covered corrugated concrete-asbestos roof. There were windows on the western and eastern sides and a metal up-and-over door at the front. The garage was regularly used as a garden storage area. Ivy covering the roof gappy enough to enable adequate inspection.

**Photograph Ten: Western side of garage**



**Photograph Eleven: Eastern side of garage, with broken window**



**Photograph Twelve: Internal view of garage**




**The poor thermal properties of concrete and asbestos, the high light levels enabled by windows and the regular usage from spring to autumn and occasional during winter all contributed to this being a structure of negligible use to bats and as such was scoped out of the need for emergence surveys (see Table Five, p20).**



### 5.3 Bat Roost Trigger Index

#### 5.3.1 The House


TABLE FOUR: Bat Roost Trigger Index: The House

| BAT ROOST TRIGGER INDEX (TI): RESULTS                             |                                          |              |  Swift Ecology |
|-------------------------------------------------------------------|------------------------------------------|--------------|---------------------------------------------------------------------------------------------------|
| Project:                                                          | 28 Dilworth Lane, Longridge              | Evidence:    | 0                                                                                                 |
| Code:                                                             | JE6536 18                                | Constraints: | 0                                                                                                 |
| Date:                                                             | 1 May 2018                               | Surveyor:    | Dominic Rigby                                                                                     |
| TRIGGER INDICES                                                   |                                          | CATEGORY     | TI VALUE                                                                                          |
| A) Location, habitat and environmental context of structure       |                                          |              |                                                                                                   |
| T1: General location                                              | Rural                                    |              | 1                                                                                                 |
| T2: Foraging opportunities within 250 m                           | Moderate                                 |              | 0.67                                                                                              |
| T3: Foraging opportunities within 5 km                            | Moderate                                 |              | 0.67                                                                                              |
| T4: Commuting opportunities                                       | Moderate                                 |              | 0.67                                                                                              |
| T5: Cover in vicinity of structure                                | Moderate                                 |              | 0.67                                                                                              |
| T6: External lighting in vicinity of structure                    | Low level                                |              | 0.67                                                                                              |
| T7: Number and character of nearby buildings                      | Mixture of old and new                   |              | 0.67                                                                                              |
| T8: Structure/building exposure                                   | Low                                      |              | 1                                                                                                 |
| B) Exterior features and characteristics of structure or building |                                          |              |                                                                                                   |
| T9: Structure/building age                                        | Intermediate                             |              | 0.67                                                                                              |
| T10: Size of Building                                             | Intermediate size                        |              | 0.67                                                                                              |
| T11: Main wall construction material                              | Modern                                   |              | 0.33                                                                                              |
| T12: Condition of wall/roof pointing/render                       | Some gaps, cracks or crevices noted      |              | 0.67                                                                                              |
| T13: Condition of lintel/door frame features                      | Tightly sealed                           |              | 0.33                                                                                              |
| T14: Condition of eaves/soffits/bargeboards                       | Some gaps or cracks noted                |              | 0.67                                                                                              |
| T15: Condition of weatherboarding/cladding                        | No boarding present                      |              | 0.2                                                                                               |
| T16: Condition of lead flashing                                   | Flashing tightly sealed                  |              | 0.33                                                                                              |
| T17: Roofing material                                             | Modern tiling or mixture                 |              | 0.67                                                                                              |
| T18: Bat access potential                                         | Several small gaps noted                 |              | 0.67                                                                                              |
| C) Interior features and characteristics of structure or building |                                          |              |                                                                                                   |
| T19: Character of roof void/roof space                            | Typical single void or dark roof space   |              | 0.67                                                                                              |
| T20: Character and condition of roof supports                     | Tightly sealed modern timbers/supports   |              | 0.33                                                                                              |
| T21: Presence and extent of cobwebbing                            | Numerous cobwebs in roof space           |              | 0.33                                                                                              |
| T22: Presence and condition of roof lining                        | Unlined or cavity filled with insulation |              | 0.2                                                                                               |
| T23: Light levels in roof void/space                              | Intermediate                             |              | 0.67                                                                                              |
| T24: Protection from weather/wind                                 | Intermediate protection                  |              | 0.67                                                                                              |
| T25: Temperature regime                                           | Intermediate                             |              | 0.67                                                                                              |
| T26: Level of (human, animal) disturbance                         | Low                                      |              | 1                                                                                                 |
| T27: Flight Space                                                 | Good                                     |              | 1                                                                                                 |
| T28: Flying Access (Horseshoe bats)                               |                                          | 0            | 0                                                                                                 |
| TRIGGER INDEX SCORE =                                             |                                          | 0.57         |                                                                                                   |
| BAT ROOST SUITABILITY =                                           |                                          | LOW          |                                                                                                   |

## 5.3 Bat Roost Trigger Index

## 5.3.2 Garage

TABLE FIVE: Bat Roost Trigger Index: Garage

| BAT ROOST TRIGGER INDEX (TI): RESULTS                             |                                          |              |  |
|-------------------------------------------------------------------|------------------------------------------|--------------|-------------------------------------------------------------------------------------|
| Project:                                                          | Garage at 28 Dilworth Lane, Longridge    | Evidence:    | 0                                                                                   |
| Code:                                                             | JE6536 18                                | Constraints: | 0                                                                                   |
| Date:                                                             | 1 May 2018                               | Surveyor:    | Dominic Rigby                                                                       |
| TRIGGER INDICES                                                   |                                          | CATEGORY     | TI VALUE                                                                            |
| A) Location, habitat and environmental context of structure       |                                          |              |                                                                                     |
| T1: General location                                              | Rural                                    |              | 1                                                                                   |
| T2: Foraging opportunities within 250 m                           | Moderate                                 |              | 0.67                                                                                |
| T3: Foraging opportunities within 5 km                            | Moderate                                 |              | 0.67                                                                                |
| T4: Commuting opportunities                                       | Moderate                                 |              | 0.67                                                                                |
| T5: Cover in vicinity of structure                                | Moderate                                 |              | 0.67                                                                                |
| T6: External lighting in vicinity of structure                    | Low level                                |              | 0.67                                                                                |
| T7: Number and character of nearby buildings                      | Mixture of old and new                   |              | 0.67                                                                                |
| T8: Structure/building exposure                                   | Low                                      |              | 1                                                                                   |
| B) Exterior features and characteristics of structure or building |                                          |              |                                                                                     |
| T9: Structure/building age                                        | Intermediate                             |              | 0.67                                                                                |
| T10: Size of Building                                             | Small size                               |              | 0.33                                                                                |
| T11: Main wall construction material                              | Modern                                   |              | 0.33                                                                                |
| T12: Condition of wall/roof pointing/render                       | Some gaps, cracks or crevices noted      |              | 0.67                                                                                |
| T13: Condition of lintel/door frame features                      | Some gaps, cracks or crevices noted      |              | 0.67                                                                                |
| T14: Condition of eaves/soffits/bargeboards                       | Some gaps or cracks noted                |              | 0.67                                                                                |
| T15: Condition of weatherboarding/cladding                        | No boarding present                      |              | 0.2                                                                                 |
| T16: Condition of lead flashing                                   | Flashing tightly sealed                  |              | 0.33                                                                                |
| T17: Roofing material                                             | Corrugated metal/asbestos/similar        |              | 0.33                                                                                |
| T18: Bat access potential                                         | Substantial holes or collapsed roof      |              | 0.2                                                                                 |
| C) Interior features and characteristics of structure or building |                                          |              |                                                                                     |
| T19: Character of roof void/roof space                            | No void or very limited roof space       |              | 0.2                                                                                 |
| T20: Character and condition of roof supports                     | No apparent supports or flat roof        |              | 0.2                                                                                 |
| T21: Presence and extent of cobwebbing                            | Numerous cobwebs in roof space           |              | 0.33                                                                                |
| T22: Presence and condition of roof lining                        | Unlined or cavity filled with insulation |              | 0.2                                                                                 |
| T23: Light levels in roof void/space                              | Light                                    |              | 0.33                                                                                |
| T24: Protection from weather/wind                                 | Intermediate protection                  |              | 0.67                                                                                |
| T25: Temperature regime                                           | Cold, north-facing or too hot            |              | 0.33                                                                                |
| T26: Level of (human, animal) disturbance                         | Moderate                                 |              | 0.67                                                                                |
| T27: Flight Space                                                 | Good                                     |              | 1                                                                                   |
| T28: Flying Access (Horseshoe bats)                               |                                          | 0            | 0                                                                                   |
| TRIGGER INDEX SCORE =                                             |                                          | 0.47         |                                                                                     |
| BAT ROOST SUITABILITY =                                           |                                          | NEGUGIBLE    |                                                                                     |

## **5.4 Emergence Survey**

**5.4.1** No bats were recording emerging from, using or entering the property during the 110-minute survey.

**5.4.2** In the garden, common pipistrelle (14), soprano pipistrelle (1) and noctule (1) passes were recorded during the emergence survey from a passive detector located in the archway midway down the garden. None of these had emerged from the buildings at Number 28.

## **6. Discussion and Analysis**

### **6.1 The House**

The single-skinned roof, well-sealed windows, door frames and roof make this property of low potential for roosting bats. However, the garden and surrounding landscape are of high potential and raised the trigger score to a threshold where a single survey was recommended. No bats were recorded during this survey and thus no further surveys were required. The likelihood of bats using this property is low.

### **6.2 Garage**

The nature of the construction materials and the light levels within the garage led to the structure having negligible potential for bats. The ivy growing on the garage roof (see Photograph Ten) was open in structure and was unlikely to provide suitable cover for bats. No further surveys were required.

## **7. Recommendations**

No further surveys are required. The structures to be modified or demolished during the development are of low or negligible suitability for bats.

However, given the wider landscape context the developer should be mindful of the possible presence of transient bats and their protection in law. Should any bats be found during the development phase work must cease and a licensed ecologist contacted immediately, so that the correct licensing and mitigation measures be put into place.

## 8. References

All documents referred to in the text should be listed and appropriately referenced

AVIAN ECOLOGY (2014) *Bat Survey Report. Dilworth Lane, Longridge*. Avian Ecology Limited, Warrington.

CIEEM (2017) *Guidelines on Ecological Report Writing. 2<sup>nd</sup> edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2013) *Competencies for Species Survey: Bats. Technical Guidance Series*. Chartered Institute of Ecology and Environmental Management, Winchester.

COLLINS J (ed.) (2016) *Bat Surveys for Professional Ecologists. (3<sup>rd</sup> edition)*. The Bat Conservation Trust, London.

DIETZ C AND KIEFER A (2016) *Bats of Britain and Europe*. Bloomsbury, London.

Gov.uk. (2015). *Bats: surveys and mitigation for development projects - GOV.UK*. [online] Available at: <https://www.gov.uk/guidance/bats-surveys-and-mitigation-for-development-projects> [Accessed 8/5/2018].

MITCHELL-JONES AJ AND MCLEISH AP (2004) *Bat Workers' Manual. (3<sup>rd</sup> edition)*. JNCC, Peterborough.

Ribble Valley Borough Council (2018) *Protected Species: Bats – Ribble Valley Borough Council* [online] Available at: [https://www.ribblevalley.gov.uk/info/200365/trees\\_and\\_countryside/1420/protected\\_species](https://www.ribblevalley.gov.uk/info/200365/trees_and_countryside/1420/protected_species) [Accessed 8/5/2018].

RUSS JM (2012) *British Bat Calls: A Guide to Species Identification*. Pelagic Publishing, Exeter.

UNDERHILL-DAY N (2017) The Bat Roost Trigger Index – A New Systematic Approach to Facilitate Preliminary Bat Roost Assessments. In *Practice* 96, 37-42.

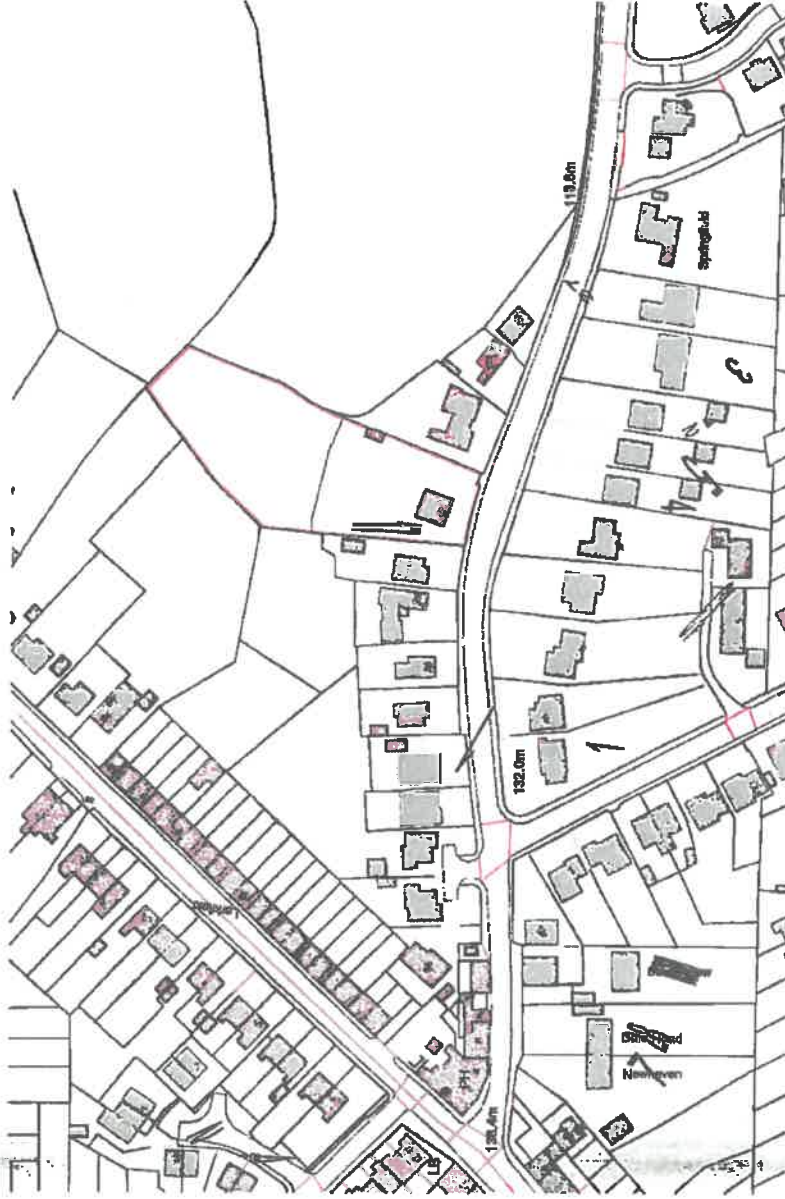
# APPENDICES

**Map One: Planning red-line Boundary**

**Map Two: Proposed Development Layout**



# Map One: Red-line Planning Boundary



Site area - 0.33 hectares (0.80 acres)

Site boundary

Ordinance Survey  
Copyright 2018  
All rights reserved. Licence 100022-332

Mr. & Mrs. Holland  
Project  
28 Dilworth Lane  
Longridge

Existing Site Location Plan

|         |                    |         |               |
|---------|--------------------|---------|---------------|
| Project | 17-3246-EX001      | Scale   | 1:1250 @ A3   |
| Client  | Mr. & Mrs. Holland | Author  | RJE           |
| Drawn   | 17-3246-EX001      | Checked | 17-3246-EX001 |

The copyright of this drawing is held by Croft Goode Limited, and all representations made herein are made on behalf of Croft Goode Limited. The drawing is for the use of the client and is not to be used for any other purpose without the written consent of Croft Goode Limited. The drawing is not to be used for any other purpose without the written consent of Croft Goode Limited.

**croft goode**  
Architects, Planning, Surveyors, Engineers, Quantity Surveyors, etc.  
100022-332  
100022-332  
100022-332

