# Trenchard Circle, Heyford Park

## Extended Phase I Habitat and Preliminary Bat Survey

On Behalf of:
The Dorchester Group

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| Issue No. | 1 |
| Issue Date | 3/3/2016 |
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4 Acre Ecology Limited

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# 1. Executive Summary

1.1 Heyford Park is a former military base with the first buildings built in 1926 (Central Grid Reference SP 51432577), with various additions since then, especially when it was used as an American Air Base. This was decommissioned in 1994 and many of the buildings have been unoccupied since.

1.2 The site consists of a sixteen semi-detached bungalows and their associated sheds, gardens and access roads. The buildings were subject to Preliminary Bat Surveys, as there are plans to demolish these poorly conditioned buildings and replace them with a similar number of modern housing.

1.3 A new housing estate is being developed to the west of the site, traditional housing lies to the south, farmland to the east and the former Flying Filed to the north, beyond a small stream.

1.4 Due to the presence of Great Crested Newt populations to the north and east of the site, and as a precautionary approach, a method statement for the works has been put forward to avoid death or injury to Great Crested Newts, as they could move across the site despite the lack of suitable foraging habitat. This also covers reptiles, although they are currently thought to be absent.

1.5 The method statement will also protect any reptiles from death or injury in the highly unlikely event that they are present.

1.6 The buildings are regarded as having low potential for roosting bats due to their construction and lack of roosting features, but their poor condition means that three had a few signs of bats within their loft spaces. These are regarded as occasionally used transitional and feeding roosts by Brown Long-eared bats, but further surveys are required to inform the Bat Low Impact Class Licence that the site will be registered under to carry out the demolition. The mitigation and reasoned statement for this are detailed.

1.7 Mitigation for the loss of these low level bat roosts will be the installation of integrated bat boxes into three of the replacement buildings and the construction of a bat roost in the roof space of a double garage.

1.8 There is potential for nesting birds in the boundary trees. Works should avoid disturbance to nesting birds through timing or pre-works surveys.

1.9 No other protected or notable species were found on the site or are regarded as likely to use the common habitats found there.

1.10 A number of suggestions have been made to further enhance the site for wildlife.

# 2. Introduction

## *Background*

2.1 Heyford Park is the former RAF Base of Upper Heyford, Oxfordshire (Central Grid Reference SP 51432577). The base was originally built in 1926 and has had many additional buildings constructed up until the 1980s. The base was decommissioned in 1994 and many of the buildings have been empty since. However, the park has been increasingly used as a light industrial area around the former flying field, with occupied housing centrally to the south of Camp Road.

2.2 For the last ten years there have been plans to redevelop the site into mixed business and residential uses, divided roughly north and south of Camp Road, the majority of the housing to the south and most of the business areas to the north.

2.3 Trenchard Crescent forms part of the historical housing area on Heyford Park, with 14 of the 30 semi-detached bungalows already being refurbished. Planning permission is now being sought for the remaining 16 semi-detached bungalows to be replaced by modern housing.

2.4 Cherwell District Council require an Extended Phase I Habitat Survey of the site to inform their planning decision, with particular reference to Great Crested Newts and bats.

2.5 The Dorchester Group commissioned 4 Acre Ecology Limited on 16th February 2016 to undertake an Extended Phase I Habitat Survey, including a Preliminary Bat Survey of all the bungalows, to allow this report to be prepared.

## *Aims and Objectives*

2.6 The aim of the survey was to determine the ecological value of the site and to assess possible ecological constraints that may be present on the site, suggesting any further surveys or mitigation required, with the objective of informing the planning decision, whilst maintaining the conservation status of the area.

## *About the Author*

2.7 Mark Satinet has been working in the field of Wildlife Conservation and Ecology since 1992. 13 years at the Wildlife Trusts working on wider countryside habitat and species projects provided a good background in habitat surveys, species identification, habitat management advice to landowners and dealing with the public and media. He was the County Mammal Recorder for Wiltshire from 2000 to 2015 and set up the Wiltshire Mammal Group in 2005, maintaining his links with the Wildlife Trusts through this voluntary work. He also is a voluntary Bat Warden for Natural England and has been an active member of the Wiltshire Bat Group since 2001.

2.8 Since 2006 he has been a consultant ecologist, first as a senior ecologist at a multi-disciplinary company for a year and then the Principal Ecologist running the ecology team in a specialised ecological firm for a further four years. He is a full member of the Chartered Institute of Ecology and Environmental Management and a Chartered Environmentalist. He now owns and runs his own company, 4 Acre Ecology Limited. He holds disturbance licences for bats, Great Crested Newts, Dormice, Barn Owls and Shrews, a Bat Low Impact Class Licence and has held development licences for Great Crested Newts, various bat species and Dormice.

# 3. Methodology

## *Desk Study*

3.1 A data search was commissioned from the Thames Valley Environmental Records Centre for the site and all land within 2km of the site. Biological Records Centres hold information regarding statutory designated sites, local nature reserves, sites of conservation interest, records of protected species and other species of conservation concern. However, this data cannot be considered fully comprehensive and therefore the absence of data, in response to a data search, does not imply that a species, important habitat or designation does not exist within that search area.

3.2 The Multi-Agency Geographical Information for the Countryside (MAGIC) website was also consulted to obtain any additional information and to determine if there were any sites designated for bats within 5km of the site boundary, or any designated sites within 2km. The land within 500m of the site was examined through aerial/satellite images and on-line mapping tools to identify any likely ponds that may support Great Crested Newts (GCNs) and the recent GCN survey report of these ponds referred to (Satinet, 2014). The NBN Gateway was consulted to ascertain the number of bat records within 5km of the site.

3.3 Past survey reports were consulted to provide detailed records for the site.

## *Field Survey*

### *Extended Phase I Habitat Survey*

3.4 An extended Phase I habitat survey (JNCC, 2010) was carried out across the site and up to 30m beyond its boundary to investigate the potential for badger setts. Phase I habitat survey is a standardised, rapid mapping technique for obtaining baseline ecological information over large areas of land. It uses standard habitat definitions for classifying areas of land based on the vegetation present. The technique was modified to provide more detail over a smaller area and give further consideration to the presence of fauna. The standard habitat definitions were used, with coarse grassland as an additional category to cover unmanaged, secondary grasslands that are species poor.

3.5 Easily identified higher plant species from each habitat type were recorded and their abundance was assessed on the DAFOR scale:

| | |
|---|---|
| D | Dominant (81-100% Cover) |
| A | Abundant (61-80% Cover) |
| F | Frequent (41-60% Cover) |
| O | Occasional (21-40% Cover) |
| R | Rare (1-20% Cover) |

3.6 This scale is only representative of the area covered within each habitat type on the site and does not reflect national, regional or local abundances. As plant cover is stratified total percentage cover by adding up the scale can easily be greater than 100%. The names of all species follow the *National Biodiversity Network's Species Dictionary*.

3.7 The site was examined for badgers and evidence of bats, but no other specific faunal surveys were undertaken. However, incidental records were made and the habitats identified on site were evaluated for their potential to support species of conservation interest, including protected and Biodiversity Action Plan (BAP) Priority species.

*Preliminary Bat Survey*

3.8 An external and internal inspection of the buildings was made by a Natural England Licensed bat surveyor (Licence Registration 2015-13769-CLS-CLS). The exterior of the buildings were searched for evidence of bats, looking for grease stains in external crevices and searching for droppings on windows sills, windows, walls and ledges and on the ground below potential entrance/exit areas to the roof or walls.

3.9 The interior of the buildings, and in particular the loft or roof spaces, were searched using high powered torches for evidence of bats. This evidence includes sightings, dead bats, feeding remains, smell, droppings and grease marks at entry/exit points. The potential of the buildings as bat roosts was judged and any signs of bats or features offering roost potential were noted.

# 4. Legislation and Planning Policy

4.1 There are a number of tiers of legislation protecting wildlife in England and Wales. The highest tier is for those species protected by European Legislation, such as the Dormouse, Great Crested Newt, Otter and all species of bat. These are known as European Protected Species (EPS), which gain their protection from the Conservation of Habitats and Species Regulations (Habitat Regulations) 2010, whereby under section 41 it is an offence to

- deliberately capture, injure or kill an EPS
- deliberately disturb or take/destroy the eggs of an EPS
- damage or destroy a breeding site or resting place of an EPS

4.2 Nationally protected species are either fully protected (e.g. Water Vole) or partially protected (e.g. Adder or Smooth Newt) under the Wildlife and Countryside Act (WCA) 1981 and amendments, including the Countryside and Rights of Way Act (CRoW) 2000. Under the WCA it is an offence to:

- intentionally kill, injure or take any wild bird, take or destroy any wild bird egg or take, damage or destroy any nest while it is in use or being built
- intentionally or recklessly disturb any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or disturb dependent young of such a bird
- intentionally or recklessly at any other time take, damage, destroy or otherwise interfere with any nest habitually used by any wild bird included in Schedule A1
- intentionally or recklessly kill, injure or take from the wild or possess all or any part of a Schedule 5 species
- intentionally or recklessly damage or destroy any structure or place which a schedule 5 species uses for shelter or protection, or disturb a schedule 5 species while it is occupying such a place
- obstruct access to any structure or place which a schedule 5 species uses for shelter or protection
- intentionally pick, uproot or destroy any wild plant included in Schedule 8

4.3 The CRoW Act 2000 added the term recklessly after intentionally in the Wildlife and Countryside Act 1981 and introduced a maximum custodial sentence of 6 months for offences.

4.4 The Natural Environment and Rural Communities Act 2006 (NERC) made provision about bodies concerned with the natural environment and rural communities and in connection with wildlife, sites of special scientific interest, National Parks and the Broads. Section 41 established a list of the living organisms and types of habitat which in the Secretary of State's opinion are of principal importance for the purpose of conserving biodiversity. This is known as the UK Biodiversity Action Plan (BAP) list.

4.5 Under the Protection of Badgers Act 1992 it is an offence to wilfully kill, injure or take a Badger and damage, destroy or obstruct a badger sett, cause a dog to enter a Badger sett or disturb a badger while it is occupying a sett.

4.6 The National Planning Policy Framework (NPPF) published in March 2012 states that "in assessing and determining development proposals, local planning authorities should apply the presumption in favour of sustainable development" and "opportunities to incorporate biodiversity in and around developments should be encouraged".

4.7 In general terms the NPPF states that the planning system should contribute to and enhance the natural and local environment by:

- protecting and enhancing valued landscapes, geological conservation interests and soils;
- recognising the wider benefits of ecosystem services;
- minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

4.8 However, the "presumption in favour of sustainable development does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined", but "development proposals where the primary objective is to conserve or enhance biodiversity should be permitted".

# 5. Results

## *Desk Study*

5.1 The data search from the local Biological Records Centre has been summarised in the tables below, with Table 1 showing the sites of wildlife interest, Table 2 the areas of ancient woodland and Table 3 the species of conservation interest.

5.2 137 species records exist within 2km of the site, but only those that are legally protected or appear on national or local BAP lists are shown. No European and nationally designated sites were identified, but one locally classified site is located within 2km. No protected sites designated for bats were identified within 5km.

Table 1. Sites of Wildlife Interest

| Site Name | Grid Ref. | Area (ha) | Distance from Site | Direction from site | Description |
|---|---|---|---|---|---|
| European Importance | | | | | |
| - | - | - | - | - | - |
| National Importance | | | | | |
| - | - | - | - | - | - |
| Local Importance | | | | | |
| Upper Heyford Airfield LWS | SP 519269 | 63 | 700m | NNE | The old airbase at Upper Heyford includes a very large area of grassland which ranges in diversity and includes some species-rich areas which are strongly calcareous in character. Due to the distance from the site and the perimeter fencing around the flying field there are no envisaged impacts on this by the development. |

LWS = Local Wildlife Site CTA = Conservation Target area

Table 2. Ancient or Semi-Ancient Woodland

| Site Name | Grid Ref. | Area (ha) | Distance from Site | Direction from site | Description |
|---|---|---|---|---|---|
| Kennel Copse | SP518237 | 1.95 | 1.51km | NE | Ancient semi-natural woodland. Due to the distance from the site beyond the flying field, there are no envisaged impacts on this by the development. |

Table 3. Species of Wildlife Interest

| Species | European Protected | Nationally Protected | UK BAP | NERC | No. of Records | Suitable Habitat on-site |
|---|---|---|---|---|---|---|
| Amphibians & Reptiles | | | | | | |
| Common Frog | No | Yes | No | No | 2 | No |
| Common Toad | No | Yes | Yes | Yes | 1 | No |
| Great Crested Newt | Yes | Yes | Yes | Yes | 13 | No |
| Palmate Newt | No | Yes | No | No | 1 | No |
| Smooth Newt | No | Yes | No | No | 1 | No |
| Birds | | | | | | |
| Common Grasshopper Warbler | No | No | Yes | Yes | 1 | No |
| Corn Bunting | No | No | Yes | Yes | 4 | No |
| Eurasian Curlew | No | No | Yes | Yes | 1 | No |
| Eurasian Tree Sparrow | No | No | Yes | Yes | 2 | Yes |
| Grey Partridge | No | No | Yes | Yes | 1 | No |
| Hoope | No | Yes | No | No | 1 | No |
| Lapwing | No | No | Yes | Yes | 2 | No |
| Linnet | No | No | Yes | Yes | 1 | Yes |
| Peregrine Falcon | Yes | Yes | No | No | 1 | No |
| Red Kite | Yes | Yes | No | No | 1 | No |
| Reed Bunting | No | No | Yes | Yes | 1 | No |
| Skylark | No | No | Yes | Yes | 2 | No |
| Song Thrush | No | No | Yes | Yes | 1 | Yes |
| Spotted Flycatcher | No | No | Yes | Yes | 1 | No |
| Whimbrel | No | Yes | No | No | 1 | No |
| Yellowhammer | No | No | Yes | Yes | 1 | No |
| Yellow Wagtail | No | No | Yes | Yes | 1 | No |
| Invertebrates | | | | | | |
| Adonis Blue | No | Yes | No | No | 1 | No |
| Cinnabar | No | No | Yes | Yes | 1 | No |
| Dingy Skipper | No | No | Yes | Yes | 8 | No |
| Grizzled Skipper | No | No | Yes | Yes | 16 | No |
| Small Blue | No | No | Yes | Yes | 7 | No |
| Small Heath | No | No | Yes | Yes | 39 | No |
| Wall | No | No | Yes | Yes | 5 | No |
| Plants | | | | | | |
| Bluebell | No | Yes | No | No | 3 | No |
| Terrestrial Mammal | | | | | | |
| Brown Long-eared Bat | Yes | Yes | No | No | 1 | No |
| Common Pipistrelle Bat | Yes | Yes | No | No | 1 | No |

NB: Protection under the Bern or Bonn convention has not been classed as European, only those protected under the Habitats Regulations 2010. Generic national protection (e.g. all nesting wild birds) is not included in this table, only specific species protection.

5.3 Eight water bodies were located during the desk survey on the wider Heyford Park and Flying Field within 500m of the site. In addition there are five water bodies present outside of Heyford Park, on land at Letchmere Farm to the East.

5.4 All of these were surveyed for GCNs in 2014 (Satinet, 2014), while all those on Heyford Park (not Letchmere Farm) have been surveyed in 2015, 2012, 2010, 2007 and 2005. GCNs were present in Water Body 1 during each survey, in Water Body 2 in 2007 and 2010 only (none breeding), in Water Body 3 in 2005 and 2007 only, in Water Body A only in 2007, (a single juvenile), in Water Body B in 2007, 2010 and 2012.

5.5 For the Letchmere farm site GCNs were not found in the three water bodies closest to the site (LE1, LE2 and LE3), but were found in LE 4 (4 GCNs) and LE5 (15 GCNs), 180m and 210m east respectively. Both of these water bodies had breeding confirmed.

5.6 Extensive surveys for bats around Heyford Park have also been carried out, determining the presence of low numbers of roosting Common Pipistrelle, Brown Long-eared, Natterer's and whiskered bats, with a maternity colony of Brown Long-eared bats and Common Pipistrelle bats in the former officers mess, now the location of the Free School to the south-west of the site. Other species detected in surveys on the site include Soprano Pipistrelle and large numbers of commuting and foraging Noctule bats. Two licences are in-place for the conversion of the Officer's Mess and the demolition of 120 buildings in the settlement area, which provide extensive mitigation for bats.

5.7 Prior to the conversion works of the other bungalows on Trenchard, no bats or evidence of them was found in the roofs, but when No. 16 was stripped a Brown Long-eared bat opportunistically roosted there in autumn 2012 for two nights, before then moving away.

## *Field Survey*

## *Habitats*

5.8 The field survey was undertaken on 17th February 2016 by an experienced ecologist. The weather conditions were rain, 100% cloud cover and a temperature of 4.0 degrees centigrade with a moderate wind. The results are summarised on the Phase I map (Figure 1) but the following habitats were identified during the survey:

- Buildings
- Hard-standing
- Amenity Grassland
- Bare Ground
- Scattered Scrub/Shrubs
- Standard Trees

*Buildings*

5.9 Buildings occupy around 18.6% of the site, consisting of the eight blocks of semi-detached bungalows, small sheds associated with each of the bungalows and a stand-alone brick building at the north-west corner of the site.

5.10 The sheds have single skin prefabricated panel walls with single skin corrugated asbestos sheet mono-pitch roofs. Most of the sheds are paired, lying between the bungalow blocks, but there are some single ones. Internally the sheds are dark, but have no obvious crevices. They are individually 1.5m wide, 2m long and 2m high (See Figure 2).

5.11 The bungalows are all of the same construction. They have prefabricated concrete panel walls that have been pebble-dashed on the outside. They have low-angled, twin pitched roofs with gables that contain a grilled air gap towards the apex of each (See Figure 2).

5.12 The roofs are covered by large interlocking concrete roof tiles with no chimneys, but they do have a flue in the rear of each dwelling, all well sealed, apart from a large hole around the flue of No. 37. The eaves are sealed by wooden barge boards, while the ends are sealed by the render, which rises to the tiles. The roofs are generally well-sealed, but there are some gaps where tiles have slipped or been damaged, such as the SE corner of No. 13, the lower east side of No. 19, the lower east side of 27, the lower northern side of No. 30 and the lower south side of No. 32.

5.13 Internally there is an individual roof space to each semi-detached section, with an internal wall of concrete panelling sprayed with concrete separating the two. These are accessed through loft hatches that are located in store rooms separated from the rest of the accommodation by internal walls and mirrored at the centre and rear of each pair of bungalows. Some of the doors to these were left open and others boarded shut, indicating they have been open in the past, but half were locked.

5.14 The roof is a low collar construction with widely spaced trusses (every four rafters), but has a central ridge board (See Figure 2). However the mineral felt lining goes over this board, sealing the roof space. There is 100mm of fibreglass insulation laid on the ceiling, generally with no boarding, but a few of the lofts have boards near to the loft hatches.

5.15 The small building in the north-west corner of the site is a 1920s brick building with a twin-pitched concrete tile roof. The eaves are 3m high and the building is 4m wide and 5m long. The apex extends a further 1.5m above the eaves, which are sealed by a concrete plinth, but there is a large vertical air gap in the southern gable end, which is 100mm wide and 450mm high (See Figure 2). There was no access into this building.

5.16 All the sheds had no evidence of bats in them and the majority of the bungalows had no signs either. However, a few scattered bat droppings were found in three of the roofs, all of a similar size and shape, being 8-10mm long, 2.0-2.5mm in diameter and coarse in texture. There were 11 found in No. 21, along with 3 moth wings, 6 in No.37 and 34 in No. 32, plus 10 yellow underwing moth wings and one set of tortoiseshell wing in the latter. The droppings were at the wall next to the loft hatch (open) in No. 21 and No. 37, but beneath the ridge board in No.32. In the latter there were two small concentrations of 10 droppings each at the western wall and in the middle of the roof, with a further group of 14 scattered towards the eastern end of the roof space.

*Hard Standing*

5.17 Hard-standing occupies around 17.8% of the site, consisting of mainly tarmac roads and parking areas, plus a concrete apron around all the buildings and access paths across the lawns to the front doors. These areas are generally well maintained, but there is a small amount of ephemeral vegetation encroaching onto this around the paths.

*Amenity Grassland*

5.18 This forms around 60.2% of the site, consisting of tightly mown and well maintained lawns to the front of all the buildings (roughly a third of this habitat), with similar lawn areas to the rear of all the buildings, but these appear not to have been managed for over a year and have mainly long grass in them (See Figure 2).

5.19 Perennial Rye Grass is abundant throughout, with frequent Red Fescue, Yellow Oat Grass and Creeping Buttercup, occasional White Clover and Ribwort Plantain, plus rare occurrences of Self-heal, Tormentil, Cat's Ear and Bird's foot Trefoil.

*Bare Ground*

5.20 There is a small area of former grass that has been cleared in the northwest corner of the site around the small brick building. This currently consists of bare earth and mud where construction work is being carried out for a pumping station.

*Scattered Scrub/Shrubs*

5.21 Scrub and low shrubs in particular are scattered around the gardens of the buildings, consisting of garden shrubs, such as Pampus Grass, Cottonester, Buddleia and Bramble, plus saplings and one small palm tree.

5.22 In addition, there is a small area on the northern boundary where shrubs and woodland are growing through the fence, with a small stream beyond the fence.

*Standard Trees*

5.23 There are a number of semi-mature trees scattered around the site, mainly on the amenity grassland areas at the front of the houses, but with some small conifers in rear gardens as well. The trees include four conifers, two Silver Birch, two Hornbeam, one Ash and one Sycamore. All were well maintained with no rot holes, woodpecker holes, dead limbs, hollows or flaking bark.

## *Fauna Species*

5.24 No particular fauna species were noted during the survey visit, probably because of the rain.

# 6. Discussion

## *Sites*

6.1 There are no European or nationally designated sites within 2km of the site, and none designated for bats within 5km. There is one site of local importance identified within 2km of the site, but this is considered not to be impacted due to the small scale of development on an already developed area, as long as the proposed pet fencing around the flying field perimeter is installed to protect the important area of ground nesting birds.

## *Habitats*

6.2 The habitats on site are the result of human activity and are classified as semi-natural at best. These are easily replaceable, being of very little value for protected and notable species. The best habitat available on-site is the standard trees and the scattered scrub, which is very limited. This provides potential nesting sites for birds and some limited habitat for invertebrates. Therefore impacts are expected to be negligible if disturbance of birds whilst nesting is avoided (See the bird section below).

## *Species*

### *Amphibians*

6.3 There is one record of a Common Frog, one of a Common Toad, one of a Palmate Newt, one of a Smooth Newt and 13 of Great Crested Newt (GCN) within 2km of the site. From other surveys on the wider site and airfield (Satinet, 2012, 2014 and 2015) it is known that there is a large population of GCNs at the western end of the airfield (62 Records), and a medium meta-population in the Letchmere ponds to the east of the site (10 Records).

6.4 Most of the ponds are beyond 250m of the site, but nine ponds lie within 250m of the site. Of these, three in the Letchmere Farm complex (LE1, LE2 and LE3) were likely absent for GCNs from the surveys carried out there.

6.5 Water Body 2 (160m south-west) had a single GCN in it in 2007 and again in 2010, but none in 2012 or 2014 and has now been drained and removed. Water body A (7m north-west) had a juvenile GCN present in 2007, likely to have been washed there, with no other records during the other five surveys of it since. Therefore there can be a good degree of certainty in the likely absent result of the most recent surveys of these water bodies.

6.6 Similarly Water Body 3 (400m west of the site) had two GCNs present in 2005 and 2007, but none since. Water Body B had no records from 2005, 2014 and 2015, but a low number in 2007, 2010 and 2012 (6, 5 and 1), but no evidence of breeding.

6.7 Water Body 1 is a breeding pond with records from each of the six surveys and breeding confirmed in 2015. This lies 190m to the north-north-east of the site. Finally Water Body LE4 and LE5 have a medium size population of breeding GCNs from the 2014 survey, lying 130m and 160m to the east of the site.

6.8 The main habitat on site is amenity grassland, followed by buildings and hard standing. The latter habitats have no value for GCNs and would have a negligible impact if removed. The amenity grassland, forming the greater part of the habitat, would also offer very poor habitat for GCNs. This is still true of the well maintained front lawns, but where the rear gardens have been left unmanaged, some potential habitat is beginning to form.

6.9 The ponds and waterbodies are surrounded by optimal habitat for GCNs, in the form of scrub, coarse grassland and hedges, so it is unlikely that GCNs currently use the site, as the most critical areas are within 100m of breeding ponds and areas beyond 250m are regarded as having very little potential for GCNs to use. As the rear gardens make-up less than half a hectare, this is the maximum sub-optimal habitat that will be lost. The GCN Rapid Risk Assessment from Natural England has therefore been completed and indicates there is little risk of an offense occurring (See below).

**Table 1. GCN Rapid Risk Assessment**

| **Component** | **Likely effect** (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom) | **Notional offence probability** |
|---|---|---|
| Great crested newt breeding pond(s) | No effect | 0 |
| Land within 100m of any breeding pond(s) | No effect | 0 |
| Land 100-250m from any breeding pond(s) | 0.1 - 0.5 ha lost or damaged | 0.1 |
| Land >250m from any breeding pond(s) | 0.1 - 0.5 ha lost or damaged | 0.005 |
| Individual great crested newts | No effect | 0 |
| | Maximum: | 0.1 |
| Rapid risk assessment result: | **GREEN: OFFENCE HIGHLY UNLIKELY** | |

6.10 Therefore there is no need for a European Protected Species licence to conduct the works as an offence is highly unlikely result is obtained when the data is fed into the GCN Risk Assessment (NE, 2012). However, as GCNs may travel across the site in low numbers, a precautionary approach should be taken to the works.

6.11 It is recommended that before the active season begins the grass in the rear gardens of the bungalows is mown to return it to short grassland and prevent GCNs being encouraged onto the site. The works will then be conducted under a working method statement to minimise the likelihood of harming GCNs if present in the sub-optimal habitat present on the site.

*Bats*

6.12 There are no sites designated for bats within 5km of the site, and only two records of bats within 2km, of Common Pipistrelle and a Brown Long-eared bat. This is a low

number of records, but is a result of few records reaching the records centre previously, rather than a lack of bats.

6.13 Extensive surveys on the main Park to the west and south of the building has shown that there are low levels of roosting Pipistrelle and brown Long-eared bats there (Satinet, 2012).

6.14 The buildings on-site are all regarded as having low potential for roosting bats due to their construction and well-sealed roofs. However there are some places where the roofs have failed and evidence of bats was found in three buildings, numbers 21, 32 and 37, although this was a low level of droppings with only a few feeding signs.

6.15 The bat droppings were 2.0-2.5mm diameter and 8-10mm length, which is indicative of Long-eared bats, thought to be Brown Long-eared bats as Grey Long-eared bats have not been found this far north in the country (Entwistle & Swift, 2008). These bats are light testing bats that fly within a roost before emerging. As there were mainly scattered droppings, with a small area only in numbers 21 and 37, and two small concentrations of 10 droppings each, plus 14 scattered droppings in number 32, this would indicate that the roof space is rarely used and possibly as a night-time feeding roost only, (JNCC, 2004).

6.16 The fact that the doors into the loft hatch areas may have been open in the past, with the loft hatches all open, means that opportunist bats may have entered into No.s 21 and 37 and that these are not roosts. However with a hole in the roof of 32 and slightly higher numbers of bat droppings present this may be a night-time feeding roost, with a number of moth wings found with the droppings.

6.17 Crevice dwelling bats, such as Pipistrelles, could also be roosting in the buildings, their droppings, if present, being trapped by the felt lining (Jones and Racey, 2008). However, apart from the few tiles noted as missing, there is little potential for crevice dwelling bats to enter beneath the tiles and the eaves and gables are otherwise well sealed.

6.18 Therefore further emergence surveys are required on these three buildings to determine their use by bats. The signs indicate that these are used by bats occasionally, and probably a single bat only in each case. This would count as a low importance roost by a commonly occurring species and therefore the site is likely to be registered under a Bat Low Impact Class Licence to undertake the demolition, with a method statement and supervision for stripping the buildings and mitigation in the form of three integrated bat boxes built into the gables of buildings 355, 356 and 343 (See Figure 3).

6.19 It is also recommended that a double garage planned for the north-eastern corner of the site (G352) has a bat loft installed in it above the ceiling, with a cut roof construction to create a large roof void and two bat slates for access. This will ensure that any type of roost determined by the further emergence surveys will be fully mitigated for, or

created as a site enhancement. Details of the design and method statement are in the recommendations section.

6.20 The sheds are all regarded as having negligible potential for roosting bats, but the remaining single storey brick building has low potential. Although the roof is well sealed and the tiles are all intact, the air hole in the southern gable provides access into the building, which was not surveyed internally. This should be surveyed internally and emergence surveys carried out if evidence of bats is found. If access is not gained then an emergence survey is required during the peak of the active season, which is late May to mid-August.

6.21 In addition, as bats are present the 'three tests' required for a European Protected Licence must be satisfied. These are;

- That the work is for imperative reasons of overriding public interest
- There is no satisfactory alternative
- There is no detrimental effect to the population of bats at a favourable conservation status within their natural range.

6.22 In this case the first is covered by the planning permission when it has been granted, so that the properties can be upgraded to modern living standards and maintained as a dwellings, contributing to the housing stock in the area and fulfilling some of the principles of the NPPF, as well as the local strategic plans for the area.

6.23 For the second test, the site has current residence and rural planning policy allows for replacement or extensions to existing dwellings but would not allow new building to be built without demolition of the current ones. The site is already developed as buildings and hard-standing and to site the buildings elsewhere would involve the development of a green-field area, which goes against planning policy.

6.24 The final test is to maintain the conservation status of bats in the area. As bats are roosting in at least one building, a replacement roost is to be provided in a double garage as a site enhancement under the planning permission, as Brown Long-eared bats prefer a roof space where the bat can light test before emerging, and three integrated bat boxes are to be built into the new houses in line with the mitigation licence for the wider Park, to maintain and enhance the status of bats in the medium and long-term.

6.25 In addition the working method statement and ecological supervision will prevent detrimental effects occurring to individuals or the local population in the short-term.

*Badger*

6.26 There are no records of Badger within 2km of the site, but past surveys of Heyford Park indicate that the closest sett lies at Chilgrove Drive over 400m to the east of the Site. There is no evidence of Badgers on the site, with no setts identified. Only the

amenity grassland could be used by Badgers to forage in, but there was no evidence of snuffle holes or tracks on the site.

6.27 Therefore, Badgers are considered absent from the site and are not regarded as a constraint to development.

*Birds*

6.28 There are a number of records of protected and BAP birds in the area, such as Skylark, Yellowhammer and Tree Sparrow, however the habitats on-site are much poorer than on the Flying Field LWS, where the main of the records come from, so few of these species are expected on site. No nests were identified during the survey in the trees, although it is likely that some of the trees and scrub are used to nest in.

6.29 All breeding birds are protected by law. Therefore any tree or scrub removal should avoid the bird nesting season of March to August, or if this is not possible an ecologist should check the vegetation to be removed for nesting birds. If a nest is found it and 5m of habitat around it should be left undisturbed until the young have fledged before removal.

6.30 Enhancements to the site for breeding birds have been considered as part of the management plan for the wider site.

*Dormouse*

6.31 There are no records of Dormice within 2km of the site and there is no habitat on-site for them.

6.32 Dormice are likely absent from the site and are not considered a constraint to the development.

*Invertebrates*

6.33 There are 78 records of BAP butterfly and moth species within 2km of the site, mainly associated with the Flying Field LWS. However, the habitats found on site are limited, common and easily replaced, so it is expected that the invertebrate species present will reflect this.

6.34 Invertebrates are not regarded as a constraint to the development.

*Otter*

6.35 There no records of Otter within 2km of the site and there is no habitat for them on or near to the site. Therefore, Otters are considered absent from the site and are not considered a constraint to the development.

*Reptiles*

6.36 There are no records of reptiles within 2km of the site and past surveys on the flying field and the south-east of Heyford Park found no reptiles present. An update of this survey in 2014 determined Common Lizards (1) to be present 600m to the north-east on the flying field, with the more recent surveys in 2015 finding a medium population of these south-west of the southern bomb store, plus a low population of Grass Snake.

6.37 The habitats present on-site are deemed generally unsuitable for reptiles, although the unmanaged grassland is beginning to develop some potential habitat. Despite this the low levels of reptiles found at a distance from the site, with the isolation of the site from suitable habitat, means that it is unlikely reptiles have yet reached this new habitat.

6.38 Therefore, reptiles are considered absent from the site and are not a constraint to the development.

*Water Voles*

6.39 There are no records of Water Voles within 2km of the site and no habitat is present on-site for them. They are deemed absent from the site, so Water Voles are not considered a constraint to the development.

# 7. Further Surveys, Recommendations and Enhancements

## *Further Surveys*

7.1 An internal inspection of the single storey brick building is required to determine if there are bats roosting within the building.

7.2 A bat emergence survey is required on No.s 21 and 37 to determine if bats are using these buildings to roost in, plus a dusk and dawn, plus a further emergence survey a few weeks later in the active season is required on No. 32 to determine the type of roost present and inform the licence application or BLICL site registration.

## *Recommendations*

7.3 Scrub and tree removal/surgery will be carried out outside the bird nesting period, which is March to August. If this is not possible an ecologist will check the habitat to be removed for active birds' nests. If nests are found they will be left in place, with suitable surrounding habitat (e.g. 5m of surrounding hedgerow), until the birds have fledged before its removal.

7.4 Native plants will be used in any planting schemes for the site.

7.5 As there is a small chance that GCNs may cross the site on suitably mild and wet nights, the demolition and construction works should be carried out under a precautionary method statement, which is detailed below.

*GCN Method Statement*

7.6 The footprint of the development should be maintained in its current condition, of hard standing interspersed by areas of tightly mown amenity grassland until the development is started. This will prevent habitat developing for GCNs, which would then encourage them into the development footprint.

7.7 The contractors will be given a tool-box talk before works commence. This will describe the legal protection for GCNs, what they look like, what action should be taken if any are found and have the method statement explained to them clearly.

7.8 Ground-works will only take place in daylight hours when Great Crested Newts will not be moving around, as GCNs are nocturnal.

7.9 Materials should be stored on pallets or tarpaulin sheeting to prevent the creation of habitat suitable for GCNs to shelter in within 500m of Water Body 1.

7.10 All construction vehicles should access the site via the existing road system and remain on the hard standing and working footprint.

7.11 Excavations should be filled in as soon as possible after they are made. Excavations should be made when required, in a phased order, rather than all at the start of the development, to minimise the time holes are exposed for.

7.12 Any trenches, if left open, should always have ramps placed in them to allow GCNs and other wildlife to climb out of the trench if they fall into it.

7.13 Any excavated holes should be checked for GCNs if left open overnight. Any GCNs found should be moved to the nearest suitable habitat by a licensed ecologist.

*Bat Mitigation and Method Statement*

7.14 This will proceed under either a full European Protected Species Licence, or more likely the site will be registered under a Bat Low Impact Class Licence (BLICL).

7.15 The building demolition will be undertaken in September to October inclusive, when bats are still active, or in April, to avoid the maternity period, when bats are most vulnerable and most likely to be present and allow the continued use of the roost by bats during the main activity season.

7.16 One Schwegler 2FN bat box and one Schwegler 1FF bat box will be erected in retained trees on the site before work begins, as temporary roost sites during demolition and construction.

7.17 Lights will be placed in the roof spaces where roosts are present a week before demolition begins, but outside the peak activity period, to deter their use by Brown Long-eared bats ahead of stripping the roofs. Before works commence the BLICL holder or Ecologist named on the EPS Licence will inspect the internal roof spaces as a final check for roosting bats, removing any found by hand and placing them in the bat boxes.

7.18 A tool-box talk will be carried out by a qualified ecologist to inform the contractors of the method statement, the protection afforded bats, how to recognise bats and what course of action they will need to follow if a bat is found during the construction.

7.19 An ecologist licenced to disturb bats will oversee the initial removal of tiles and bat features, such as ridge tiles and soffits. All tiles will be lifted from the roof, not slid off, to avoid injury to bats if they are present beneath and other features removed carefully by hand after inspection by the licenced bat ecologist.

7.20 If, in the unlikely event that a bat is encountered, it will be taken by hand by the ecologist, who is very experienced in handling bats. The bat will be stored in a cotton bag to keep it calm and secure and moved into one of the newly erected bat boxes, depending on species.

7.21 The double garage in the north-west corner (G352) will have a steep twin-pitched roof that will have a ceiling put in it to create a bat roost for both crevice dwelling bats and light-testing bats, such as Brown Long-eared bats that have been identified on the site (See Figure 3).

7.22 The new roof to the garage will have a ridge board, a feature greatly favoured by Brown Long-eared bats. The roofing felt will be traditional bitumastic and hessian roofing felt so that bats can grip this without getting entangled, as modern roofing felts and membranes have a smooth and slippery surface which cannot be gripped by bats, or are fibrous membranes that can entangle bat claws, removing roosting opportunities or potentially creating a hazard for bats (Waring, 2011).

7.23 The roof will have two bat slates fitted into it to allow bat access, one on each aspect. The eaves will also be open, for the same reason.

7.24 The top batten for the tiles will be placed 20mm away from the ridge board and the ridge tiles will not be completely in-filled, just bedded-in at each joint to prevent a through draught, but create a void within the ridge tile that is favoured by most crevice dwelling bats.

7.25 For Brown Long-eared bats, the large roof void will be maintained, with an uncluttered roof space for internal flights achieved through a cut frame construction and a trussed roof will not be used. Timbers will be fitted into the new roof to create four double rafters with a 25mm spacing to form a gap. The gap to the upper section of the pitch will be closed off to form a long enclosed cavity.

7.26 There will be a loft hatch into the roost to allow inspection of them, but only 400mm by 400mm in size to restrict access and prevent storage there.

7.27 Integrated bat boxes will be built into the gables of three houses, the eastern one for 356, the northern one of 355 and the southern one of 343. The entrances will remain unlit.

### *Enhancements*

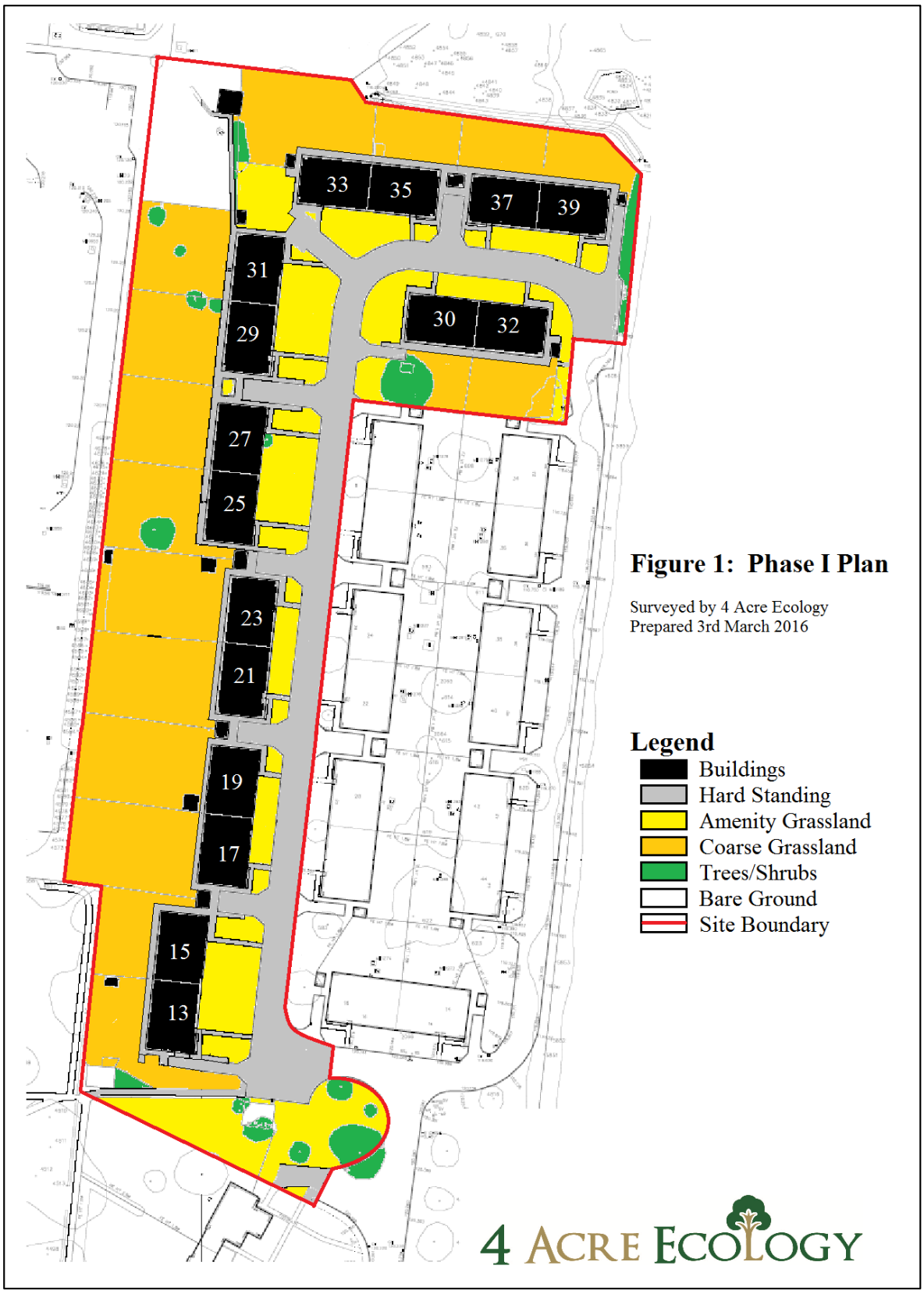
7.28 A management plan has been written to encourage biodiversity enhancements to the wider site and this area should be included within this.

7.29 Eight bird boxes could be erected around the site in the standard trees to improve nesting opportunities for small passerines.

7.30 Closed board fencing should have hedgehog gaps created at their bases to ensure hedgehogs, recorded widely across Heyford Park, can still move around the proposed gardens on the site, as well as maintaining access for other small animal species.

# 8. Figures

## Figure 1: Phase I Plan



# Figure 2: Site Images

1. Southern end of site looking north-west

2. Northern end of site looking east

3. A double shed

4. The rear gardens

5. Broken Tiles


6. Interior of shed

7. Gable end with grill above satellite dish

8. Detached single brick building with air hole

9. Ridge board under felt lining with sprayed concrete wall

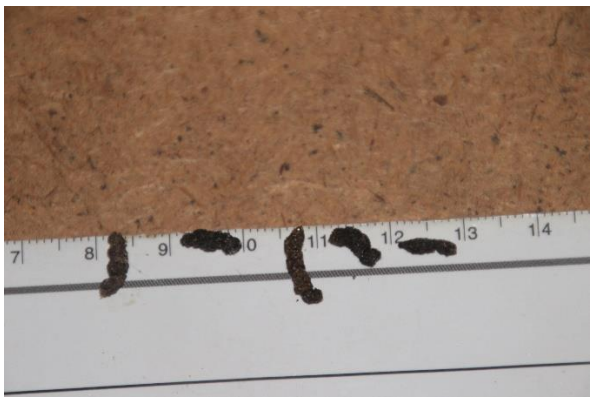
10. Collar roof space with well-spaced trusses

11. Interior view of gable end grill

12. Cob-webbed gap showing tightly fitting tiles

13. Scattered bat droppings on insulation

14. Butterfly wings




15. Close-up of bat droppings

16. Cobwebs in ridge in most buildings

Figure 3: Garage Roost Example

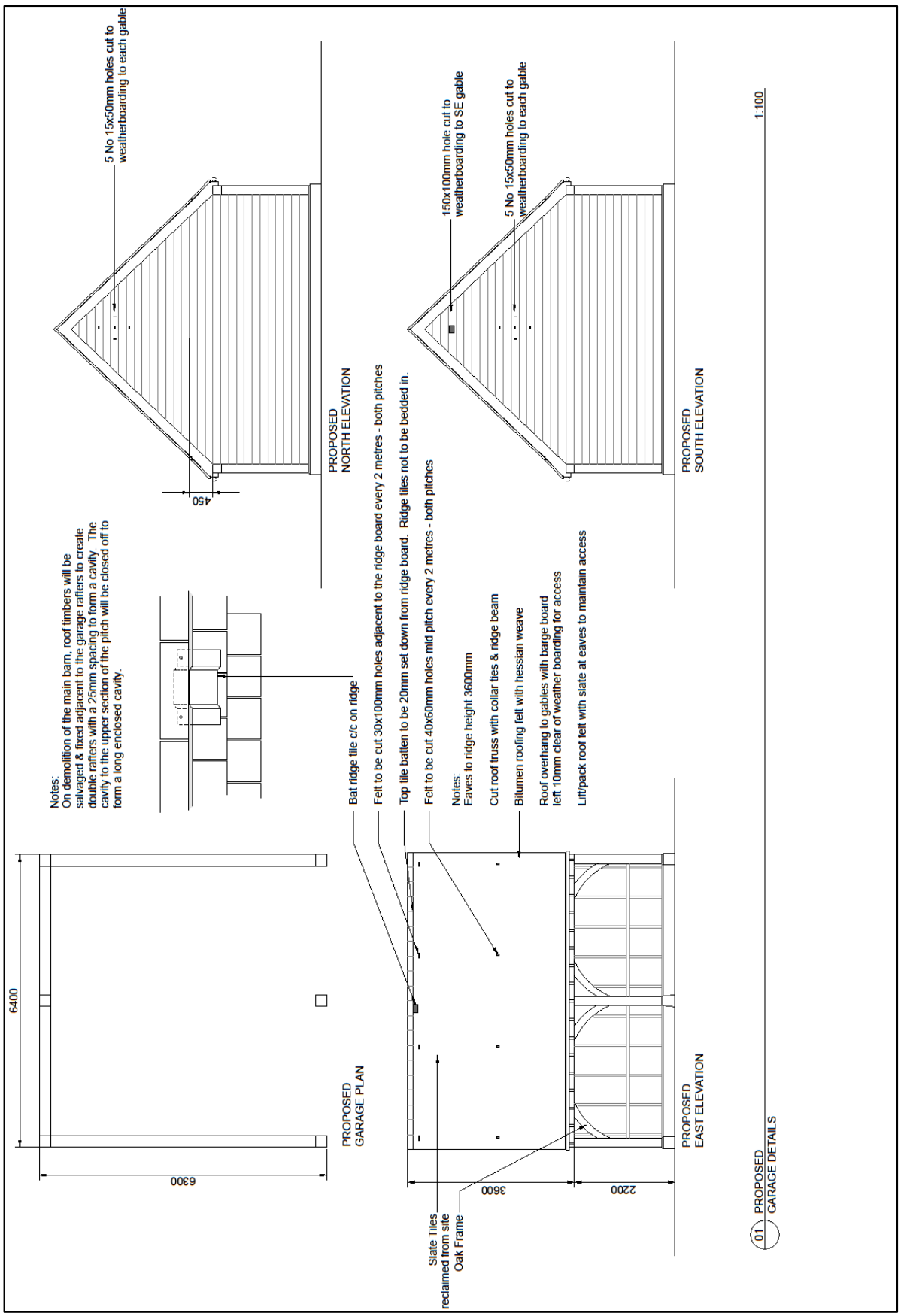


Figure 4: Bat Slate

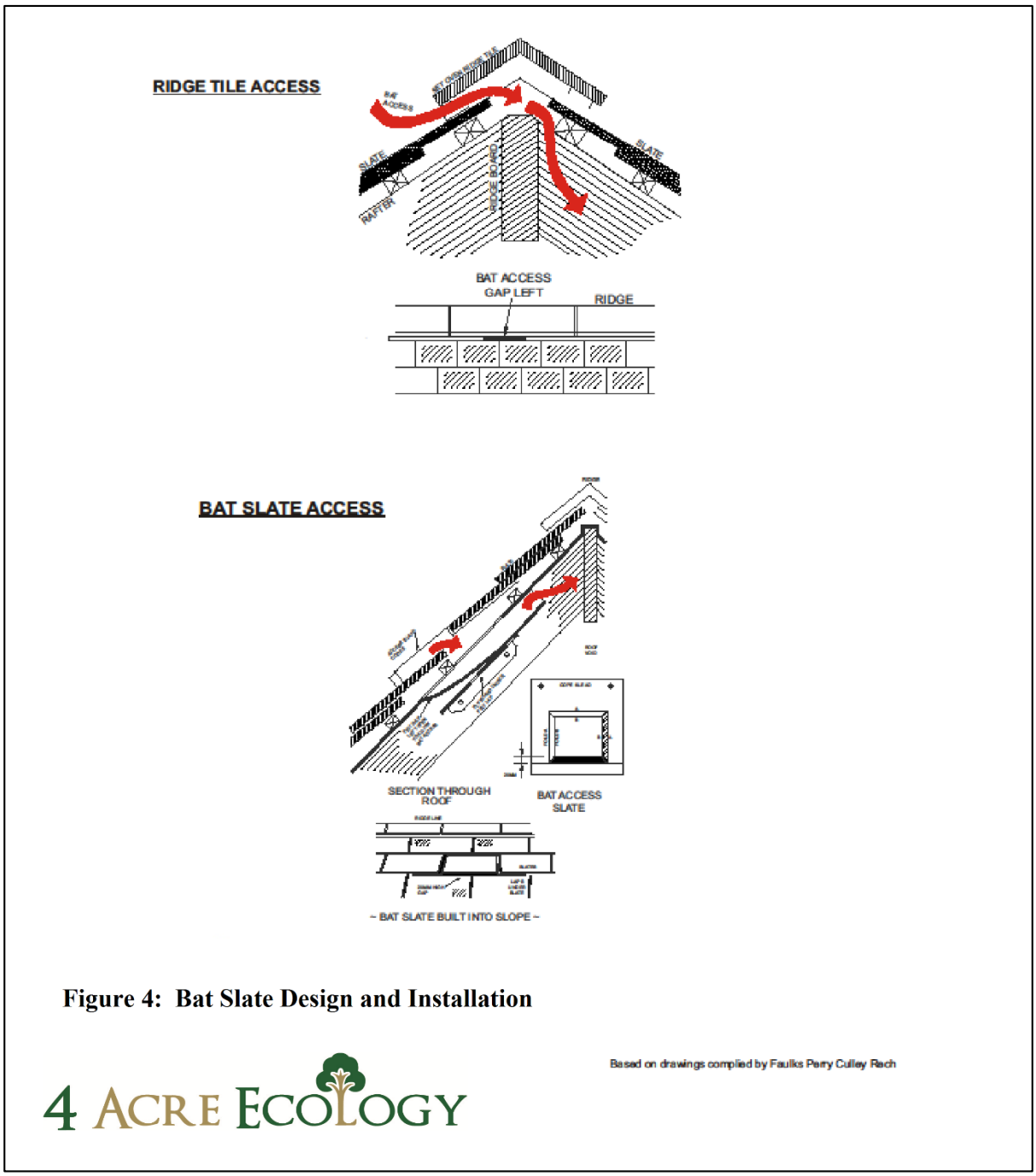



**Figure 4: Bat Slate Design and Installation**

Based on drawings compiled by Faulks Perry Culley Rach

4 ACRE ECOLOGY

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## Appendix 1: Information on British Bats

There are 18 species of bat in the UK (17 of which are known to be breeding here). They range from the tiny **Pipistrelle**, weighing in at around 5g (less than a £1 coin), to our biggest bat, the **Noctule**, which is still smaller than the palm of your hand.

All British bats eat insects exclusively, a **Pipistrelle** bat eating as many as 3,000 midges in one night, while **Long-eared** bats eat moths and **Noctule** or **Greater Horseshoes** also eat larger beetles.

The **Alcothoe** bat is the latest addition to the UK bat family, only being confirmed as a resident species in 2010 due to its similarity to the **Whiskered** and **Brandt's** bat species.

The **Daubenton's** bat is known as the 'water bat', as they fish insects from the water's surface with their large feet or tail. In England and Wales the majority of known summer colonies are in humid, more or less underground sites near water. These may be tunnels or bridges over canals and rivers, or in caves, mines and cellars. They are only occasionally found in buildings, usually old stone structures such as moated castles and waterworks.

Bats do not build nests, but use small spaces to shelter and rest in during the day, or hibernate in during winter. These places are known as roosts. There are a variety of different types of roost, from winter hibernation roosts, spring and autumn transitory roosts to summer maternity roosts. However, not all bats will roost within buildings, with the following being those most likely to:

**Pipistrelle** bats (both Common and Soprano species) are the most common bats in this country. They prefer to roost in very confined spaces around the outside of buildings, typically behind hanging tiles, soffits and barge boards, under roofing felt or in cavity walls. They do not usually enter roof spaces, although well-established large colonies in older buildings may do so.

**Brown Long-eared bats** are the third most commonly occurring species, after the two **Pipistrelle** species. They roost singly or in small groups among the roof timbers at the apex, particularly around ridge ends and chimneys, and in crevices in ridge tiles. These medium sized bats spend more time inside the roof space than many other bats, and are generally very quiet inside the roost, not leaving until after dark.

The **Serotine** bat, one of the largest bat species in the UK, is almost exclusively found roosting in houses across southern England and Wales. Rarer than **Pipistrelles** and **Brown Long-eared** bats, **Serotines** usually roost in crevices around chimneys and in cavity walls. Their favoured prey is large beetles, which they find over farmland and grassland.

**Horseshoe** bats, probably the most unusual looking of the UK's bats, are sometimes found roosting in houses in south-western England and Wales. **Greater** and **Lesser Horseshoe** bats hang free in the roost from their feet.

(Find further details from the Bat Conservation Trust Website at: www.bats.org.uk)