



LIZARD

Landscape Design and Ecology

ECOLOGICAL IMPACT ASSESSMENT

Land South of Eastergate Lane, Chichester

On behalf of: Mr R Smith

Planning Issue

Prepared by	GS
Checked by	CO
Date	17.03.2022
Project Reference	LLD2394
Revision	01

Contents

	Page No.
SUMMARY	01
1.0 Introduction	02
2.0 Planning Policy and Legislation	04
3.0 Methodology	10
4.0 Baseline Ecological Conditions	15
5.0 Assessment of Effects and Mitigation Measures	25
6.0 Ecological Enhancements	29
7.0 Conclusions	30
8.0 References	31

TABLES

Table No. 01 – Categorisation Criteria

Table No. 02 – Statutory Protected Sites

Table No. 03 – Non-Statutory Protected Sites

Table No. 04 – Bat Roost Potential of Trees

Table No. 05 – Species List

Table No. 06 – Target Notes

APPENDICES:

Appendix A – Site Photographs



The Old Rectory, 24 South Street, Exeter, Devon, EX1 1JH

SUMMARY

Lizard Landscape Design and Ecology has been commissioned by Mr R Smith to undertake a Preliminary Ecological Appraisal of Land south of Eastergate Lane, Chichester (*Grid Reference: SU 94799 06011. – hereafter referred to as 'the site'*). A preliminary ecological appraisal (PEA) and bat roost assessment was undertaken on the 30th July 2021, to appraise the existing ecological resource within the land and the surrounding area. This baseline data was then used to produce an ecological impact assessment.

The site largely comprises an area of orchard which is designated as Priority Habitat – Traditional Orchard. The orchard trees are old and largely in poor condition but display features which may be beneficial to deadwood dependent invertebrate species. Beneath the trees is a regularly maintained grassland sward. The remainder of the site is open semi-improved grassland and garden. Other features of ecological interest are the mature oak trees to the east of the site, which shall be retained and protected during construction.

The proposals would lead to a loss of Priority Habitat at the site, albeit one not of particularly high quality. The loss of this habitat cannot be directly compensated in a significant way, although new native fruit and oak tree planting would be undertaken at the site. Compensation of the loss of this priority habitat (which is in fair-poor condition) shall be undertaken through the planting of a native oak trees interspersed with native crab apple and wild cherry species along the eastern and southern boundaries with additional crab apple and wild cherry trees planted throughout the site. The core arisings from the felling of trees shall be retained on site and placed in piles around the boundaries of the site where possible. The site is of some potential to protected species, and these compensation measures will go some way to reduce possible harm to these.

Once avoidance and mitigation measures have been taken into account, the impacts of the planned development upon biodiversity will initially be negative, but will in the longer-term become more minor as the proposed planting matures.

1.0 INTRODUCTION

1.1 Lizard Landscape Design and Ecology has been commissioned by MR R Smith to undertake an Ecological Impact Assessment of the proposed development at Land south of Eastergate Lane (*Grid Reference: SU 94799 06011– hereafter referred to as 'the site'*).

1.2 A preliminary ecological appraisal (*PEA*) was undertaken on the 30th July 2021, to appraise the existing ecological resource within the land and the surrounding area. The *PEA* comprised a baseline survey conforming broadly to the *JNCC Ecology Phase 1 Habitat Survey* protocol, to identify the existing habitats. In addition, a protected species assessment was undertaken to identify the potential for European and nationally protected species within and adjacent to the land. As no potential habitat for protected species was recorded on site and no additional surveys were required, a full EclA was then undertaken using the baseline data.

1.3 A summary of the results and potential impacts of the proposals, and details of avoidance, mitigation and compensation measures have been detailed within this report. This report has been prepared by George Sayer (*Senior Ecologist; MCIEEM; Lizard Landscape Design and Ecology*). The report has been reviewed by Catherine O'Reilly (*Senior Ecologist; MCIEEM; Lizard Landscape Design and Ecology*).

Site Information

1.4 The site measures 0.4 hectares (ha). The site is an irregular shaped plot, located on the southern side of Eastergate Lane and to the west of Wayside – a detached dwelling associated with Eastergate Lane. The plot comprises the southern part of the cultivated garden area of the dwelling and an area of grassland and orchard to the rear.

1.5 The orchard on-site is protected under Arun District Council Tree Preservation Order TPO/BN/1/20.

Surrounding Landscape

- 1.6 The wider area is predominantly rural with varying land uses including arable and recreational. The surrounding fields are bound by a mixture of tree and hedgelines. The site is found directly to the north of the village of Eastergate and directly to the south of the village of Fontwell. The field to the west was originally an area of orchard but has since been converted to grassland.
- 1.7 There are no ponds onsite. One pond is found approximately 340 metres to the south of the site. No further ponds are found within a 250 metre or 500 metre radii.

Proposals

- 1.8 Development proposals for the site include the development of a number of residential dwellings.

Aims and Objectives

- 1.9 The aim of this ecological appraisal survey has been:
- *To identify habitats and protected species present, and any other features of ecological value;*
 - *Identify any potential ecological constraints;*
 - *Identify impacts of the proposed development and set out appropriate avoidance, mitigation and compensation measures.*
 - *To provide suggestions for enhancements to be incorporated into the scheme.*

2.0 PLANNING POLICY AND LEGISLATION

Legislation

2.1 Legislation relating to wildlife and biodiversity of particular relevance to this EclA includes:

- *The Conservation of Habitats and Species Regulations 2017;*
- *The Wildlife and Countryside Act 1981 (as amended);*
- *The Natural Environment and Rural Communities (NERC) Act 2006;*

2.2 This above legislation has been addressed, as appropriate, in the production of this report.

National Planning Policy

2.3 The National Planning Policy Framework (NPPF) 2021 sets out the government planning policies for England and how they should be applied. 'Chapter 15: *Conserving and Enhancing the Natural Environment*' states that development should be '*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.*'

2.4 The Government Circular 06/2005, which is referred to by the NPPF, provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

Local Planning Policy

2.5 The Arun District adopted Plan (adopted 2018) Policy H SP2 states development must:

- *Protect, conserve or enhance the natural environment, landscapes and biodiversity;*

Policy ENV SP1 states:

- *Arun District Council will encourage and promote the preservation, restoration and enhancement of biodiversity and the natural environment through the development process and particularly through policies for the protection of both designated and non-designated sites.*

Policy W SP1 states development will be supported when it:

- *Takes account of flood risk and promotes the incorporation of appropriate mitigation measures into new development, particularly Sustainable Drainage Systems that reduces the creation and flow of surface water and improves water quality;*

Policy ENV DM1 Designated Sites of biodiversity or geological importance states:

- *a. Proposed development likely to have an adverse effect on land with the designated features of any Site of Biodiversity or Geological Importance as listed in Tables 17.1 - 17.7 or any subsequently designated sites (either individually or in combination with other developments), will not normally be permitted. Consideration will be given to the exact designated features present on the site, their scarcity/rarity and recognition of the protection offered by their existing status. Development on wildlife sites with the highest value will only be permitted exceptionally where the following can be demonstrated:*
 - i. There is no alternative solution (which shall be adequately demonstrated by the developer).*
 - ii. There are reasons of public health or public safety or Adoption Arun Local Plan 2011-2031 (July 2018) Arun District Council 209 17 Natural Environment*

iii. There are benefits of primary importance to the environment or iv.

There are imperative reasons of overriding public interest.

Notwithstanding the above 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.

- *b. In determining any planning application affecting Sites of Biodiversity or Geological Importance the Council will ensure that the intrinsic natural features of particular interest are safeguarded or enhanced having regard to;*
 - i. The European, National or Local status and designation of the site;*
 - ii. The nature and quality of the site's features, including its rarity value;*
 - iii. The extent of any adverse impacts on the notified features of interest;*
 - iv. The need for compensatory measures in order to re-create remaining features of habitats on or off the site.*
- c. Where appropriate the Council will ensure the effective management of designated sites through the imposition of planning conditions or Section 106 agreements as appropriate.*

Policy ENV DM2 Pagham Harbour states:

- *a. Within Zone A (0-400m from the boundary) as identified on the Policies Maps, development will only be permitted in exceptional circumstances where the developer is able to demonstrate there will be no detrimental effects on Pagham Harbour, including non-native species and the water environment. Regard shall also be had to tests 1-4 as set out in Policy DM1 (Designated Sites of Biodiversity or Geological Importance).*
- *b. Within Zone B (0-5km) for all new residential development and development which is likely to have an impact on Pagham Harbour will be required to:*
 - i. Make developer contributions towards the agreed strategic approach to access management at Pagham Harbour.*
 - ii. create easily accessible new green spaces for recreation within or adjacent to the development site. These shall be capable of accommodating the predicted increases in demand for local walking,*

including dog walking. Good pedestrian links shall be provided between housing areas and new and existing green space in order to discourage car use.

- *c. Major developments (as defined in the GDPO 1995 as amended(61)) taking place outside Zone B and close to its boundary will be considered on a case by case basis to determine any potential effects on Pagham Harbour, and the need for any avoidance or mitigation measures.*

Policy ENV DM3 Biodiversity Opportunity Areas states that development shall:

- *a. Retain and sympathetically incorporate locally valued and important habitats, including wildlife corridors and stepping stones*
- *b. Be designed in order to minimise disturbance to habitats*
- *Development proposals that do not reasonably address opportunities for enhancing these through their design, layout and landscaping or access/management shall not be permitted. Where a development scheme would result in a habitat loss, mitigation measures will be proposed as part of the proposed scheme and such measures agreed with the Local Planning Authority prior to the determination of any planning application. Within Biodiversity Opportunity Areas (BOAs) identified on the Policies Maps or where likely to have an impact on species or habitats within the BOAs, any application for planning permission shall include a properly conducted survey of the presence of that species and habitat and impact(s) that development may have on the BOA.*

Policy ENV DM4 Protection of trees states that:

- *Development will be permitted where it can be demonstrated that trees protected by a Tree Preservation Order(s), (TPO) identified as Ancient Woodland, in a Conservation Area or contributing to local amenity, will not be damaged or destroyed now and as they reach maturity, unless development:*
- *a. Would result in the removal of one or more trees in the interests of good arboricultural practice. This shall be demonstrated by the developer following the advice of a suitably qualified person which shall*

be guided by BS 5837 (2012). Details of any advice received having regard to BS 5837 (2012) shall be submitted, in writing, as part of a planning application; or

- *b. Would enhance the survival and growth prospects of other protected trees;*
- *c. The benefits of the proposed development in a particular location outweigh the loss of trees or woodland, especially ancient woodland.*
- *Where planning permission is granted in any of the above instances, conditions shall be used to ensure that, for any trees which are removed as part of a development, at least an equivalent number of a similar species and age (where practical) are planted on the proposed development site. Sufficient space for replacement trees to mature without causing future nuisance or damage shall be provided. The planting of new trees shall form an integral part of the design of any development scheme. Proper provision must be made for the protection and management of trees or areas of woodland on-site when undertaking development. A management plan shall be provided as part of a planning application in accordance with BS 5837 (2012) in order to ensure that trees are adequately protected during development and appropriately maintained in the future. Conditions for the continued protection of trees on sites shall be included in any planning permission given. Where there are existing trees on or adjacent to a development site, developers shall be required to provide:*
 - *d. Land and tree surveys*
 - *e. A tree constraints plan*
 - *f. An arboricultural impact assessment to include a tree protection plan and arboricultural method statement*
- *These will ensure that development is planned to take a comprehensive view of tree issues at an early stage in the design process and that development works do not have a negative impact on existing trees.*

Policy ENV DM5 Development and biodiversity states that:

- *Development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls,*

roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not). Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces. Together, these provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement. Where there is evidence of a protected species on a proposed development site, planning applications shall include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. This involves consideration of any impacts that will affect the species directly or indirectly, whether within the application site or in an area outside of the site, which may be indirectly affected by the proposals. All surveys shall be carried out at an appropriate time of year and shall be undertaken by a qualified and, where appropriate, suitably licensed person. All developments shall have regard to Natural England's standing advice for protected species.

Policy GI SP1 Green Infrastructure and development states:

- *The existing Green Infrastructure Network, as shown on the Green Network Maps for each parish and town, must be considered at an early stage of the design process for all major development proposals.*
- *All major development must be designed to protect and enhance existing Green Infrastructure assets, and the connections between them, in order to ensure a joined up Green Infrastructure Network. The Green Infrastructure Network must be protected from light pollution to ensure that areas defined by their tranquillity are protected from the negative effects of light in development.*
- *Where compatible with nature conservation objectives, development proposals must identify opportunities to connect existing Green Infrastructure assets with the coast, the South Downs National Park or to the District's inland villages. Opportunities to enhance the network should take account of the multiple functions of Green Infrastructure assets and should be based upon those opportunities set out in the supporting text.*

3.0 METHODOLOGY

3.1 Desk Study

- 3.1.1 The Multi-Agency Geographic Information for the Countryside (*MAG/C*) was consulted for all designated sites, priority habitats and protected species licence records within 2.0km of the site. The desk search was conducted on the 17th September 2021. Due to the small scale of the proposals a full data search from SxBRC was not considered proportionate.

3.2 Field Survey

- 3.2.1 A preliminary ecological appraisal was undertaken on the 30th July 2021 and the site subjected to an ecology survey using guidelines set out in the *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit (JNCC, 2010)*. This has resulted in a Site Habitat Plan (*Figure No. 01*) and Species Lists for Habitat Parcels (*Table No. 05*).
- 3.2.2 Habitats within the land were classified and the presence, or potential presence, of certain protected and / or notable species of flora and fauna were identified. This involved identifying features that may be used by protected species, potential foraging areas and other signs of use. Water bodies were recorded wherever possible, within 500m of the proposed development site.
- 3.2.3 Due to the field survey consisting of only one site visit, certain species, particularly some of the flowering plants, may not have been visible or may have been otherwise inconspicuous at the time of the survey and hence overlooked. These are accepted constraints associated with the standard *Phase 1 Habitat Survey Methodology*.
- 3.2.4 The results are summarised and accompanied in large part by photographic evidence contained in *Appendix A – Site Photographs*.

3.3 Preliminary Bat Roost Assessment

3.3.1 A Preliminary Bat Roost Assessment was undertaken on 30th July 2021 by a licenced, experienced bat surveyor who undertook an internal and external assessment of the onsite buildings.

3.3.2 The bat surveyor assessed the existing buildings visually and searched for evidence such as:

- Grease Marks;
- Urine Stains;
- Bat Droppings;
- Feeding Remains;
- Dead or Live Bats.

3.3.3 Trees were visually identified from the ground, using binoculars where necessary, for features that could be used by bats such as:

- Woodpecker Holes;
- Knot Holes;
- Tear-outs;
- Flush Cuts;
- Double Leaders.

- 3.3.4 Once features had been assessed the trees were then categorised in accordance with *Table 4.1 of the Bat Conservation Trust's Good Survey Guidelines (2016)*:

Table No. 01 – Categorisation Criteria

Category	Buildings	Trees
Negligible	No suitable features identified.	No suitable features identified.
Low	A structure which could be used opportunistically, however, are not likely to be used on a regular basis / by a large number of bats.	Tree of sufficient size / age to support bat roost features; but with none identified from the ground.
Moderate	A building with features which, could be used regularly by a small number of bats.	Tree with features which, may support a bat roost of low conservation status.
High	A building with features suitable for use by a large number of bats on a regular basis.	A tree with several potential bat roost sites that are suitable for use by a large number of bats.

3.4 Badger Survey

- 3.4.1 The site was systematically searched on 30th July 2021 for any evidence of badger such as:

- Setts
- Latrines
- Snuffle Holes
- 'Push-unders' through boundary fencing
- Hair
- Prints
- Mammal tracks

- 3.4.2 All areas within the site, and where possible in the immediate surroundings were searched. Any evidence was then mapped to allow the status and distribution of badger activity to be assessed.

3.5 Ecological Impact Assessment

3.5.1 The methodology for Ecological Impact Assessment (EcIA) follows best practice guidelines set by the Chartered Institute of Ecology & Environmental Management (CIEEM): 'Guidelines for Ecological Impact Assessment' (CIEEM, 2018). This includes identifying the baseline conditions on the site and subsequently rating the potential effects of the development based on the sensitivity and value of the resource affected, combined with the magnitude, duration and scale of the impact (or change). This is initially assessed without mitigation measures, and then assessed again after allowing for the proposed mitigation measures; this provides the residual effects. The assessment is divided into construction effects and longer-term operational effects.

3.5.2 Each ecological feature within the site has been considered within a defined Geographic context such as:

- *International and European*
- *National*
- *Regional*
- *County*
- *District*
- *Local*
- *Site Level*
- *Negligible*

3.5.3 Based upon CIEEM guidance, value was determined with reference to the following factors:

- *Its inclusion as a Designated Site or other protected area;*
- *The presence of habitat types of conservation significance, e.g. Habitats of Principal Importance (NERC 2006);*
- *The presence (or potential presence) of species of conservation significance e.g. Species of Principal Importance (NERC 2006);*
- *The presence of other protected species e.g. those protected under The Wildlife and Countryside Act 1981;*
- *The sites social and economic value.*

- 3.5.4 The ecological impacts resulting from the proposals were then described according to a defined set of characteristics as defined within '*Guidelines for Ecological Impact Assessment in the UK and Ireland*' (CIEEM, 2018). This assessment considers residual impacts (once all mitigation has been taken into account), with any significant effects highlighted. A significant effect is defined as "*an effect which either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general*".
- 3.5.5 The confidence that a certain activity will result in a significant adverse effect has been ranked as follows:
- *Highly probable;*
 - *Probable;*
 - *Unlikely;*
 - *Highly unlikely;*
- 3.5.6 Where initial impacts have been identified as significant, avoidance, mitigation and compensation measures have been proposed to avoid, prevent or offset such effects. Enhancement has been proposed to ensure that the development represents a net gain in biodiversity in accordance with National Policy.

4.0 BASELINE ECOLOGICAL CONDITIONS

4.1 *Designated Sites*

- 4.1.1 The following designated sites are not necessarily representative of the existing site's ecology but are indicative of the ecological context of the surrounding area; a factor that may be important when assessing the presence / absence potential of certain species groups.

Statutory Protected Sites

- 4.1.2 The following potential zones of influence have been utilised when identifying designated sites in the local area: Local Nature Reserves and Sites of Special Scientific Interest (*within 2.0km of the site*) and European Designated sites including SAC's and SPA's (*within 12km of the site*). Statutory protected areas in the vicinity of the site include:

Table No. 02 – Statutory Protected Sites

Site	Description	Location
South Downs National Park	Over 1600skm of varied habitats including chalk grassland and woodland which supports varied flora and fauna.	1.3 km N
Duncton to Bignor Escarpment SAC	An example of mature beech <i>Fagus sylvatica</i> woodland located on the steep scarp face of the South Downs. The site has developed over chalk which is overlain in places by a clay-withflints capping. Beech dominates in a mosaic with ash <i>Fraxinus excelsior</i> woodland, scrub and grassland. Much of the beech woodland is high forest but with some old pollards. Rare plants present include white helleborine <i>Cephalanthera damasonium</i> , yellow bird's nest <i>Monotropa hypopitys</i> , green hellebore <i>Helleborus viridis</i> and limestone fern <i>Gymnocarpium robertium</i> . The woods also have a rich mollusc fauna.	7.3 km NE
Table Contd.....		

Pagham Harbour SSSI, SPA, RAMSAR	<i>This site comprises an extensive central area of salt-marsh and tidal mudflats with surrounding habitats including shingle, open water, reed swamp and wet permanent grassland. Pagham Harbour is of national importance for wintering wildfowl and waders and also for breeding birds both within the Harbour and the surrounding grazing pasture. The site supports nationally important communities of plants and invertebrates.</i>	9.8km SW
Arun Valley SAC, SPA, RAMSAR	<i>Undeveloped river valley containing significant wetlands, grazing marshes and a network of streams and ditches, significant for numbers of waterfowl. Designated an SAC for populations of Ramshorn snail <i>Anisus vorticulus</i>. Designated an SPA for populations of Bewick's swan.</i>	10.6 km NE
Solent European Sites (Chichester and Langstone Harbours RAMSAR, SPA, Solent Maritime SAC, Solent and Dorset Coast SPA	<i>Extensive areas of mudflats which support internationally important numbers of wintering wildfowl and waders, as well as the Annex II species desmoulin's whorl snail <i>Vertigo moulinsiana</i>.</i>	10.9km W
Singleton and Cocking tunnels SAC	<i>One of the three South Downs "Bat SACs". Disused railway tunnels in use by large numbers of bats both for hibernation and summer roosting.</i>	11.0 km NW

- 4.1.3 The site falls into the Impact Risk Zone (IRZ) of Fairmile bottom (SSSI) located 4.1 km NE. However, due to the nature of the proposals the LPA will not be required to consult with Natural England. The site is just within the 12km 'Wider conservation area' of the Singleton and Cocking Tunnels SAC, which means that significant impacts or severance to flightlines must be considered.

Non-Statutory Protected Areas

- 4.1.4 *Sites of Nature Conservation Importance (SNCIs)* are designations applied to the most important non-statutory nature conservation sites. They are recognised by the *National Planning Policy Framework (2021)* and as such are material considerations when assessing planning applications. The following SNCIs are found within a 2km radius of the site.

Table No. 03 – Non-Statutory Protected Sites

Site	Location
Fontwell Racecourse	0.34km NW
Slindon Bottom	1.3 km N

4.2 Habitats

- 4.2.1 Within 2.0 kilometres of the Site, there are UK Priority Habitats consisting of: Lowland Meadows, Lowland Fens, Deciduous Woodland, Traditional Orchards and Wood pasture and Parkland. Part of the site itself is classified as Traditional Orchard, as is the adjacent field (although this is now grassland) and areas to the south-east (now scrubby grassland). The condition and impacts upon this priority habitat are discussed further below.

- 4.2.2 Habitats within and adjacent to the land include:

- Amenity Grassland
- Introduced Shrubs
- Sei-improved Grassland
- Orchard
- Tall Ruderal
- Scattered Scrub
- Ephemeral / Short Perennial
- Intact, Species-poor Hedge
- Scattered Trees
- Existing Building
- Hard / Bare Ground

Amenity Grassland

- 4.2.3 The northern section of the site is a garden consisting largely of amenity grassland. The habitat is dominated by perennial rye grass (*Lolium perenne*) with abundant white clover (*Trifolium repens*) and frequent forbs such as ribwort plantain (*Plantago lanceolata*) and common daisy (*Bellis perennis*). This habitat is of **site value** at most.

Introduced Shrubs

- 4.2.4 The garden is bordered with several introduced shrub beds. These were well established. The habitat is limited in extent and formed of ornamental species, and is of **site value**.

Semi-improved Grassland (Species-poor Semi-improved)

- 4.2.5 The central portion of the site is formed of semi-improved grassland which appeared regularly maintained. The sward height was c.10cm at the time of survey and consisted of coarse grasses such as cocksfoot (*Dactylis glomerata*) with mostly common forbs such as ground ivy (*Glechoma hederacea*) and selfheal (*Prunella vulgaris*). Frequency of white clover and coarse grasses suggest this habitat is of poor quality, but just sufficiently diverse and likely lacking in nutrient inputs to be considered more than improved grassland. Very narrow margins with a longer sward are present to the edges of the site. The habitat continues underneath the orchard trees. The habitat is of **site value**.

Orchard

- 4.2.6 The western section of site is formed of orchard, which is designated on MAGIC as Traditional Orchard and covers c.0.3 Ha.
- 4.2.7 The trees within the orchard are believed to be relatively old; almost all contain cavities and other features, and a large number have been severely damaged by rabbits. The deadwood features may provide habitat for UK BAP priority deadwood-dependant invertebrate species such as the noble chaffer (*Gnorimus nobilis*). The grassland beneath is of low ecological value, lacking in structure and dominated by coarse grasses. The orchard habitat is considered to be in 'fair-poor' condition. The orchard was once part of a much larger orchard, the larger western portion of which has been removed. The habitat that remains is a

priority habitat, and therefore considered of up to '**district / county**' value. The trees are also not subject to regular maintenance or proposed for replacement.

Tall Ruderal

- 4.2.8 Stands of tall ruderal vegetation were located sporadically along the margins of the eastern and north-western boundary of the site. The habitat was dominated by stinging nettle (*Urtica dioica*) among other forbs such as stinking iris (*Iris foetidissima*), spear thistle (*Cirsium vulgare*) and ragwort (*Jacobaea vulgaris*) and is relatively sparse. This habitat is of **site value only**.

Scattered Scrub

- 4.2.9 Along the south-eastern boundary, just offsite, runs a length of scattered scrub. Species found include bramble (*Rubus fruticosus* agg.) and Blackthorn (*Prunus spinosa*). Small patches of scrub are also present to the north-western corner. This habitat is of **site value only**.

Ephemeral / Short Perennial

- 4.2.10 An area used for burning has been colonised by ephemeral and short perennial vegetation, including common chickweed (*Stellaria media*), young foxgloves (*Digitalis purpurea*) and grasses such as annual meadow-grass (*Poa annua*). The habitat is very limited and of **negligible value**.

Intact, Species-poor Hedge

- 4.2.11 A well-maintained garden hedge of beech (*Fagus sylvatica*) and hawthorn (*Crataegus monogyna*) runs just outside the site boundary to the east. The hedge is sufficiently long to be considered a Priority Habitat hedgerow, but being a garden boundary is not protected by the *Hedgerow Regulations 1997*. A well-maintained garden privet (*Ligustrum ovalifolium*) hedge separates the orchard from the garden. Overall, this habitat is of **site value only**.

Scattered Trees

- 4.2.12 The garden contains small fruit and ornamental trees, with several further trees of species such as walnut (*Juglans regia*), ash (*Fraxinus excelsior*) and elm (*Ulmus minor*) of no more than **site value**. The eastern boundary is lined with three large, mature oak trees of **local value** protected by Arun District Council

Tree Preservation Order TPO/BN/1/20.

Existing buildings

- 4.2.13 The site contains a caravan and several garden sheds, which are discussed further in the bat roost assessment but are of inherent **negligible value**.

Hard / Bare Ground

- 4.2.14 The site contains areas of bare ground such as old burn piles and bare ground beneath trees. These areas are of inherent **negligible value**.

4.3 Protected Species Assessment

Amphibians

Desk Study

- 4.3.1 There are limited records of great crested newt (*Triturus cristatus*) within a 2km radius of the site. Records are known from ponds south of Walberton, but extensive survey around the Wandleys Lane / Fontwell Avenue for adjacent developments has not recorded presence. Records of palmate newt (*Lissotriton helveticus*), smooth newt (*Lissotriton vulgaris*), common toad (*Bufo bufo*) and common frog (*Rana temporaria*) exist within a 2.0km radius.

Site Assessment

- 4.3.2 No ponds were identified onsite; the only pond within 500.0 m is west of the well-used Fontwell Avenue, which would act as a barrier to newt dispersal. Terrestrial habitat on site is sub-optimal for amphibians due to the low sward height and regular mowing regime. The scrub and hedgerow, and scrubby habitats off-site to the east may provide a refuge area for commuting amphibians, however the suitability of this area is negated by the absence of ponds in the local landscape.
- 4.3.3 The site is considered to be of **low value** to amphibians and **negligible value** to GCN. GCN presence will not be considered further within the assessment.

Reptiles

Desk Study

- 4.3.4 Records of grass snake (*Natrix helvetica*), slow worm (*Anguis fragilis*), adder (*Vipera berus*) and common lizard (*Zootoca vivipara*) exist within 2.0km of the site.

Site Assessment

- 4.3.5 The low sward height of the amenity and semi-improved grassland which covers the majority of the site reduces the potential for reptiles to use the site on a regular basis. Reptiles may commute through the grass or shelter and forage between cuts, but the habitat is too short to support a sustained population. The margins and tall ruderal habitats provide opportunities for commuting and foraging reptiles, whilst debris, log and compost piles might support occasional sheltering. Off-site scrubby habitats to the east appear optimal for reptiles. Overall the site offers **low potential** for reptiles.

Birds

Desk Study

- 4.3.6 A total of 191 records of bird species have been returned within 2.0km of the site, including several Schedule I species such as red kite (*Milvus milvus*). Relevant species to habitats present include woodlark (*Lullula arborea*), yellowhammer (*Emberiza citrinella*) and turtle dove (*Streptopelia turtur*).

Site Assessment

- 4.3.7 The grassland is too well-maintained to support ground nesting birds such as skylark. The mature oak trees are likely host to a number of bird species such as treecreeper and nuthatch. The orchard trees are generally too well-maintained and sparse to support nests. Other areas of trees, shrubs and scrub likely support small numbers of garden birds. The habitats are likely of **site value** only to birds.

Invertebrates

Desk Study

- 4.3.8 A wide range of invertebrates are present locally, including numerous woodland specialists and butterflies from areas such as Slindon and Binsted Woods.

Site Assessment

- 4.3.9 The site habitats offer some potential for invertebrates, with the orchard containing numerous small tree cavities in use by beetles and arthropods. The orchard also displays some dead/decaying wood features which may provide suitable habitat for invertebrate species, some of which are nationally rare/scarce UK BAP protected species associated with this habitat such as the noble chaffer (*Gnorimus nobilis*). Though the presence of these species was not noted at the time of survey, due to the nature of phase one survey methodologies. The grassland is too well-maintained and lacking in structure or diversity to support unusual or diverse assemblages. Given the presence of mature traditional orchard habitat and the scarce nature of dead/decaying wood features within the wider landscape, the site overall is considered to be likely of **district value** to invertebrates. The oak trees would support diverse communities and a moderate biomass of invertebrates and are of **local value**.

Badger

Desk Study

- 4.3.10 There are a number of badger records within a 2km radius of the site.

Site Assessment

- 4.3.11 No badger setts were identified onsite. No signs of badger were noted such as scuffle holes, latrines, hair or vegetation runs. The site may provide a foraging opportunity for badgers throughout, however due to the small scale of the site is unlikely to represent a significant part of a home range. Habitats to the east appear optimal for sett-building and foraging badgers.

Dormouse

Desk Study

- 4.3.12 A number of dormouse records exist within a 2.0km radius, mostly from Slindon and Binsted Woods where good populations exist and are regularly monitored.

Site Assessment

- 4.3.13 The dense scrub off-site to the east offers potential for dormice, but is generally disconnected from areas such as Binsted. Habitats on-site are unsuitable for dormice and well-isolated from suitable habitats. The site offers **negligible**

potential for dormice, which will not be considered further within this assessment.

Water Vole

Desk Study

- 4.3.14 There are very few records of water vole within a 2km radius of the site.

Site Assessment

- 4.3.15 The habitats on-site are unsuitable for water vole. There is **negligible potential** for water vole which will not be considered further in the assessment.

Bats

Desk Study

- 4.3.16 Within a 2km radius of the site there are records of barbastelle (*Barbastella barbastellus*), serotine (*Eptesicus serotinus*), Whiskered/Brandt's Bat (*Myotis mystacinus/brandtii*), Natterer's bat (*Myotis nattereri*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), and brown long-eared bat (*Plecotus auritus*). The nearby Binsted Woods are known to support c.14 species of UK native bats including many maternity colonies, whilst Slindon Woods is known to support a maternity colony of Barbastelle bats. The site is just within the 12km 'Wider conservation area' of the Singleton and Cocking Tunnels SAC, suggesting bats from this SAC may use the surrounding area but it does not form a key part of their range.

Site Assessment

- 4.3.17 The buildings on-site consist of a small caravan, and a pair of garden sheds. The sheds were assessed internally and externally and found to be too damp, draughty and lacking in suitable crevices to be suitable for roosting bats. The caravan was locked but is well-sealed and generally unsuitable for roosting bats. No evidence of bats was observed and the buildings offer **negligible** bat roost potential.
- 4.3.18 The orchard trees contain numerous small, shallow cavities. None of these displayed evidence of bats, but given their number, the orchard as a whole is considered to offer 'low' bat roost potential for occasional individual bats. mature

oak trees offer **low-moderate** bat roost potential as detailed in Table No. 04 below:

Table No. 04 – Bat Roost Potential of Trees

Tree	Description	Potential
<i>T01</i>	<i>Mature oak displaying deadwood with flaking bark.</i>	<i>Moderate</i>
<i>T02</i>	<i>Mature oak with major deadwood but no other significant features.</i>	<i>Low</i>
<i>T03</i>	<i>Mature oak with large failed limb, woodpecker holes and a tear-out noted.</i>	<i>Moderate</i>

- 4.3.19 The orchard is likely used by low numbers of common, light-tolerant bats such as pipistrelles and serotines. The woodland is likely too open for the rarer bats such as Barbastelle which are present in woodlands nearby. The oak trees and this boundary area generally connect to a larger scrubby area which is probably used by bats. Bats from woodland to the north may ultimately commute through the site to this area, but would have to cross several roads and residential areas to do so. As such the site is considered of **site value** whereas the oak trees and eastern boundary are likely of **local value** at the most.

Others

- 4.3.20 No suitable habitat for any other protected species was recorded on site. The site is highly suitable for hedgehogs (*Erinaceus europaeus*) and evidence of rabbits was observed.

4.4 Survey Constraints / Considerations

- 4.4.1 Due to the time of year when the survey took place, some species of plant and invertebrates may not have been visible however this is an accepted constraint of phase 1 surveying.
- 4.4.2 No major constraints which would cast doubt on these results were encountered, full access was available to all areas of the site.

5.0 ASSESSMENT OF EFFECTS AND MITIGATION MEASURES

5.1 Designated Sites

Potential Impacts

- 5.1.1 Given the scale of the proposals no significant direct impacts are anticipated on statutory or non-statutory sites. Minor increases in recreation might impact local sites such as Slindon Woods, but not at a level where this would be significant to their ecology. Significant impacts upon bats might constitute a significant effect upon the Singleton to Cocking Tunnels SAC, but given the proposals do not remove any significant flight lines or other bat habitat, this is considered highly unlikely.

Mitigation and Compensation

- 5.1.2 All light spill onto the boundary shall be avoided to ensure that bats can continue to use the trees as roosting, commuting and foraging features. All lighting on-site shall accord with the BCT/ILP Guidance Note 08/18 with light spill onto new boundary hedgerows and trees strictly avoided.

Residual Impacts

- 5.1.3 There shall be **No likely significant effect** upon surrounding European designated sites arising from the proposed development.

5.2 Habitats

Potential Impacts

- 5.2.1 The proposals would result in the loss of an area of Priority Habitat – Traditional Orchard. This habitat is currently considered to be in ‘fair-poor’ condition overall with the trees themselves being considered to be of a ‘high’ value due to the presence of dead/decaying wood features. The orchard is a relict of a once much-larger orchard, with the majority being removed fairly recently and the remainder being unmanaged. The proposals might also impact mature trees of **local value**. Other habitats such as amenity grassland and semi-improved grassland would be lost but this is of **site significance** only.

Mitigation and Compensation

- 5.2.2 The oak trees shall be retained and protected in accordance with BS:5837. A full tree protection package accompanies this application. Any lost habitats shall be replaced with new habitats of greater value. In the case of the Traditional Orchard, this priority habitat in 'fair-poor' condition shall be replaced with a native, species-rich hedgerow around the western and southern boundary of the site, which shall be managed to achieve 'good' condition and interplanted with native fruit trees and oaks. Further native fruit trees shall be planted throughout the site where possible. Hedgerow wildflower shall be seeded at the base to help achieve this. A further buffer zone within the RPAs of the oak trees shall have new shrub and tree planting and shade-tolerant wildflower planting, to compensate for loss of trees and grassland.

Residual Impacts

- 5.2.3 Initial impacts would be moderate at the local scale, but once mitigation is taken into account, the impacts will be **negligible, non-significant**.

5.3 Reptiles*Potential Impacts*

- 5.3.1 In the absence of mitigation, individual reptiles utilising log piles or commuting through the site might be injured or prevented from commuting, a moderate impact at the site scale.

Mitigation and Compensation

- 5.3.2 Site clearance will be undertaken in a slow methodical manner, directionally west to east to ensure any reptiles that may be present to disperse away from the works area. The grass shall be kept regularly mown prior to clearance, and all log, debris and compost piles manually dismantled and rebuilt in the eastern buffer zone.

Residual Impacts

- 5.3.3 The impacts will be negligible and **non-significant**. The new habitats in the buffer zone shall compensate for loss of habitat and also increase potential for a sustained reptile population, resulting in an enhancement.

5.4 Breeding Birds

Potential Impacts

- 5.4.1 The removal of the orchard and other trees and shrubs would result in the loss of foraging areas and potential nesting sites, and may result in disturbance of a bird's nest.

Mitigation and Compensation

- 5.4.2 The suitable habitats shall be subject to a check for any active bird nests within the 48hrs prior to works. Any active nests shall be left undisturbed until chicks have fledged. Grassland shall be kept regularly mown to prevent it becoming suitable for ground nesting birds. New hedge and tree planting shall replace lost habitats.

Residual Impacts

- 5.4.2 The overall impact of the scheme will be **negligible, non-significant**.

5.5 Badgers

Potential Impacts

- 5.5.1 Impacts may include minor loss of foraging and commuting habitat, and badgers becoming trapped in footings and trenches.

Mitigation and Compensation

- 5.5.2 The boundary shall be protected from disturbance to allow badgers to continue to commute around the site. The adjacent land to the east shall be checked for badger setts prior to commencement to ensure no off-site setts might be impacted. Habitat replacement shall adequately replace lost foraging habitat. Any trenches or excavations shall be covered or at the least fitted with ramps to allow mammals to escape.

Residual Impacts

- 5.5.3 The overall impact of the scheme will be **negligible, non-significant**.

5.6 Bats

Potential Impacts

- 5.6.1 The removal of the orchard and impacts upon the mature oaks might result in the loss of a roost, and disruption to commuting corridors and foraging habitat. Impacts would be of moderate impact at the site-local level.

Mitigation and Compensation

- 5.6.2 The orchard shall be replaced with a species-rich hedgerow with trees to re-provide foraging and commuting habitat. The oak trees shall be retained and protected. New habitats within a buffer zone shall re-provide foraging habitats. Boundary vegetation shall be retained to minimise the impacts upon bats, and any new lighting or lighting required for construction, shall be minimal, and designed in accordance with the BCT/ILP Guidance Note 08/18 avoiding uplighting or lightspill onto vegetation.

Residual Impacts

- 5.6.2 Initial impacts would be moderate at the local scale, but the overall impact of the scheme will be **negligible, non-significant**. The impacts upon the Singleton and Cocking Tunnels SAC are deemed to be negligible, With no significant impacts upon bats or loss of flightlines proposed or likely.

5.7 Invertebrates

Potential Impacts

- 5.7.1 Loss of orchard might impact upon local invertebrates, particularly for dead/decaying wood dependent species. Loss of grassland would have a minimal impact beyond the site level.

Mitigation and Compensation

- 5.7.2 Oak trees of local value to invertebrates shall be retained and protected. Wherever possible, logs cut from orchard trees shall be incorporated into log piles and buried hibernacula along the site boundaries, particularly to the east of the site. New tree planting, particularly with native fruiting species shall provide similar dead/decaying wood habitat over time.

Residual Impacts

- 5.7.3 The initial impact would be negative at the site-local level, but the overall impact of the scheme in the longer term will be **negligible, non-significant**.

6.0 ECOLOGICAL ENHANCEMENTS

- 6.1 In accordance with national and local planning policy, the scheme must provide ecological enhancements with the aim of achieving Biodiversity Net Gain. The following enhancements have been agreed above and beyond the requirements for mitigation and compensation:

- *Integration of bird boxes into each dwelling;*
- *Integration of bat boxes into each dwelling;*
- *Addition of bird boxes to the mature oak trees or other suitable habitats;*
- *Addition of bat boxes to the mature oak trees;*
- *The creation of log piles along the boundaries of the site using the core arising's from the removal of the orchard trees;*
- *The planting of oak, and native crab apple and wild cherry trees throughout the site;*
- *Addition of hedgehog boxes to corners of the site;*
- *Addition of buried reptile/invertebrate hibernacula to corners of the site.*

7.0 CONCLUSIONS

- 7.1 The site largely comprises an area of orchard which is designated as Priority Habitat – Traditional Orchard. The orchard trees are old and largely in poor condition but display features which may be beneficial to deadwood dependent invertebrate species. Beneath the trees is a regularly maintained grassland sward. The remainder of the site is open semi-improved grassland and garden. Other features of ecological interest are the mature oak trees to the east of the site, which shall be retained and protected during construction.
- 7.2 The proposals would lead to a loss of Priority Habitat at the site, albeit one not of particularly high quality. The loss of this habitat cannot be directly compensated in a significant way, although new native fruit and oak tree planting would be undertaken at the site. Compensation of the loss of this priority habitat (which is in fair-poor condition) shall be undertaken through the planting of a native oak trees interspersed with native crab apple and wild cherry species along the eastern and southern boundaries with additional crab apple and wild cherry trees planted throughout the site. The core arisings from the felling of trees shall be retained on site and placed in piles around the boundaries of the site where possible. The site is of some potential to protected species, and these compensation measures will go some way to reduce possible harm to these.
- 7.3 Once avoidance and mitigation measures have been taken into account, the impacts of the planned development upon biodiversity will initially be negative, but will in the longer-term become more minor as the proposed planting matures.

8.0 REFERENCES

JNCC: Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit; (2010);

Collins J (ed): Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed.) The Bat Conservation Trust (2016);

Mitchell-Jones and McLeish: Bat Workers Manual; JNCC, 3rd Edition (2004);

Streeter, D.: The Most Complete Guide to the Flowers of Britain and Ireland; Harper Collins, London (2010);

www.medic.gov.uk.

Natural England (2010) Technical Information Note TIN020 - Traditional Orchards: Orchards and Wildlife. www.naturalengland.org.uk.

Table No. 04 – Species List for Habitat Parcels**Amenity Grassland**

Common Name	Scientific Name	DAFOR
Daisy	<i>Bellis perennis</i>	F
Germander Speedwell	<i>Veronica chamaedrys</i>	O
Ground Ivy	<i>Glechoma hederacea</i>	F
Herb Robert	<i>Geranium robertianum</i>	R
Perennial Rye Grass	<i>Lolium perenne</i>	D
Red Fescue	<i>Festuca rubra</i>	O
Ribwort Plantain	<i>Plantago lanceolata</i>	F
Selfheal	<i>Prunella vulgaris</i>	O
White Clover	<i>Trifolium repens</i>	A
Yorkshire Fog	<i>Holcus lanatus</i>	LA

Semi-improved Grassland

Common Name	Scientific Name	DAFOR
Creeping Buttercup	<i>Ranunculus repens</i>	O
Creeping Thistle	<i>Cirsium arvense</i>	O
Daisy	<i>Bellis perennis</i>	O
Field Forget-me-not	<i>Myosotis arvensis</i>	R
Ground Ivy	<i>Glechoma hederacea</i>	F
Lesser Stitchwort	<i>Stellaria graminea</i>	R
Meadow Grass	<i>Poa sp.</i>	F
Nettle	<i>Urtica dioica</i>	O
Perennial Rye Grass	<i>Lolium perenne</i>	O
Prickly Sow-thistle	<i>Sonchus asper</i>	O
Ragwort	<i>Jacobaea vulgaris</i>	F
Selfheal	<i>Prunella vulgaris</i>	LF
Spear Thistle	<i>Cirsium vulgare</i>	R
Springy Turf-moss	<i>Rhytidiadelphus squarrosus</i>	LF
White Clover	<i>Trifolium repens</i>	F
Yorkshire Fog	<i>Holcus lanatus</i>	LD

Scattered Scrub

Common Name	Scientific Name	DAFOR
Blackthorn	<i>Prunus spinosa</i>	F
Bramble	<i>Rubus fruticosus</i> agg.	D
Elder	<i>Sambucus nigra</i>	R
Hogweed	<i>Heracleum sphondylium</i>	R
Thistle Sp.	<i>Cirsium</i> sp.	R

Tall Ruderal

Common Name	Scientific Name	DAFOR
Bindweed	<i>Calystegia sepium</i>	R
Bracken	<i>Pteridium aquilinum</i>	LA
Broadleaved Dock	<i>Rumex obtusifolius</i>	O
Burdock	<i>Arctium minus</i>	R
Caper Spurge	<i>Euphorbia lathyris</i>	R
Comfrey	<i>Symphytum officinale</i>	R
Fern	<i>Dryopteris</i> sp.	R
Field Forget-me-not	<i>Myosotis arvensis</i>	R
Ground Ivy	<i>Glechoma hederacea</i>	LF
Hellebore	<i>Helleborus</i> sp.	O
Nettle	<i>Urtica dioica</i>	LD
Petty Spurge	<i>Euphorbia peplus</i>	LF
Prickly Sow-thistle	<i>Sonchus asper</i>	LF
Ragwort	<i>Jacobaea vulgaris</i>	LF
Scarlet Pimpernel	<i>Anagallis arvensis</i>	O
Spear Thistle	<i>Cirsium vulgare</i>	LF
Stinking Iris	<i>Iris foetidissima</i>	LA
Violet	<i>Viola</i> sp.	O
Willowherb	<i>Epilobium</i> sp.	R
Yorkshire Fog	<i>Holcus lanatus</i>	LA

D – Dominant; A – Abundant; F – Frequent; O – Occasional; R – Rare; L – Locally

Ephemeral / Short Perennial

Common Name	Scientific Name	DAFOR
Annual Meadow-grass	<i>Poa annua</i>	O
Broadleaved Plantain	<i>Plantago major</i>	R
Chickweed	<i>Stellaria media</i>	LA
Cut-leaved Cranebill	<i>Geranium dissectum</i>	R
Dovesfoot Cranebill	<i>Geranium molle</i>	R
Foxglove	<i>Digitalis purpurea</i>	O
Garlic Mustard	<i>Alliaria petiolata</i>	R
Nettle	<i>Urtica dioica</i>	O
Yorkshire Fog	<i>Holcus lanatus</i>	O

Introduced Shrubs

Common Name	Scientific Name	DAFOR
Bamboo	<i>Fargesia sp.</i>	LF
Day Lily	<i>Heimerochallis sp.</i>	F
Fig	<i>Ficus carica</i>	R
Garden Privet	<i>Ligustrum ovalifolium</i>	LD
Lily	<i>Lilium sp.</i>	O
Mock Orange	<i>Philadelphus sp.</i>	R
Rose	<i>Rosa sp.</i>	F
Wisteria	<i>Wisteria sinensis</i>	O
Yucca	<i>Yucca sp.</i>	R

Scattered Trees and Hedges

Common Name	Scientific Name	DAFOR
Apple	<i>Malus sp.</i>	LD
Ash	<i>Fraxinus excelsior</i>	O
Beech	<i>Fagus sylvatica</i>	LA
Cypress	<i>Cupressus sp.</i>	R
Elm	<i>Ulmus minor</i>	R
Hawthorn	<i>Crataegus monogyna</i>	LF
Holly	<i>Ilex aquifolium</i>	O
Pedunculate Oak	<i>Quercus robur</i>	LD
Silver Birch	<i>Betula pendula</i>	O
Walnut	<i>Juglans regia</i>	R

D – Dominant; A – Abundant; F – Frequent; O – Occasional; R – Rare; L – Locally

Table No. 06 – Target Notes

Number	Description
TN01	<i>Evidence of rabbits.</i>
TN02	<i>Compost pile.</i>
TN03	<i>Log pile.</i>
TN04	<i>Debris pile.</i>

Appendix A – Site Photographs

Photograph 01 – The majority of the site consists of orchard with semi-improved grassland beneath.



Photograph 02 – Tall ruderal to the east of the site with scattered scrub behind.



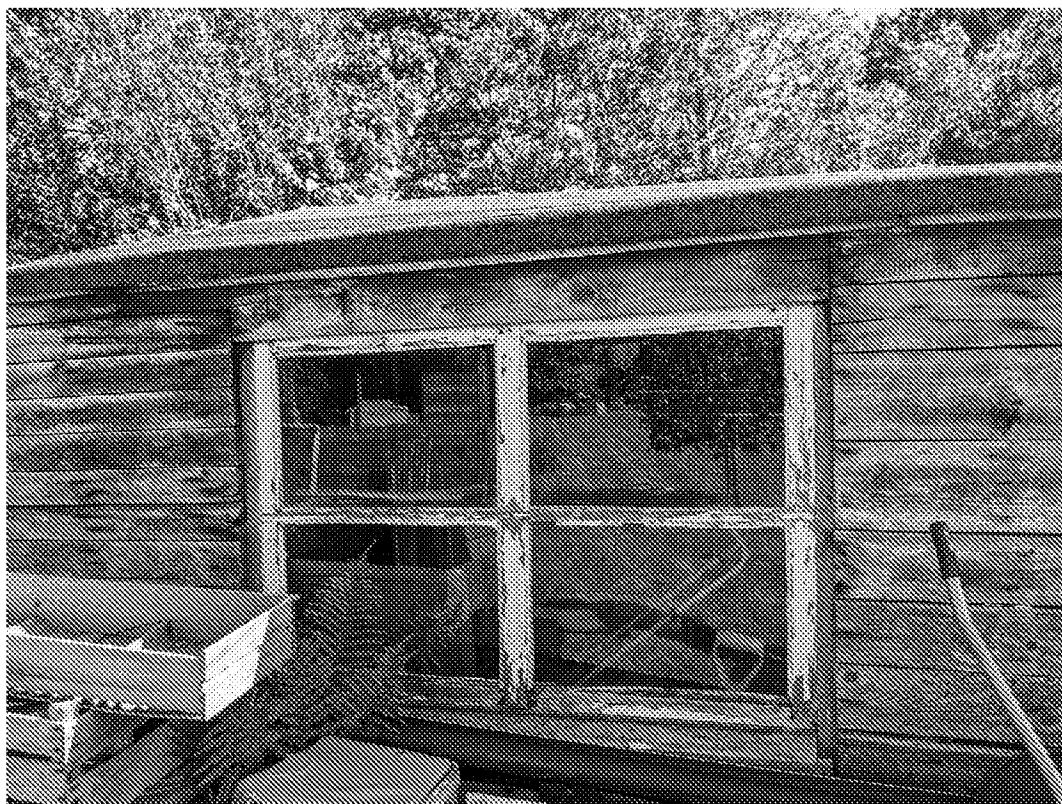
Photograph 03 – Mature oaks of local value offering low-moderate bat roost potential.



Photograph 04 – Garden sheds offering negligible bat roost potential.



Photograph 05 – Garden sheds offering negligible bat roost potential.



Photograph 06 – Caravan offering negligible bat roost potential.



Photograph 07 – Debris piles offering limited reptile potential.



Photograph 08 - Garden habitats of amenity grassland, hedge and trees.



Photograph 09 – Further view of orchard trees with oaks behind.



Figure No.1 – Site Habitat Plan