

**Proposals for Up to 8 Units on Land West of Fontwell
Avenue Eastergate
Ecological Impact Assessment
30th November 2021**



LIZARD

Landscape Design and Ecology

ECOLOGICAL IMPACT ASSESSMENT

Proposals for Up To 8 Units on Land West of Fontwell Avenue Eastergate

On Behalf of: Reside Developments Ltd

Planning Issue

Prepared by	GS
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The Old Bank, 34 South Street, Tarring, Worthing, West Sussex, BN14 7LH
T. 01903 216033 E. lizardlandscape@btconnect.com W. lizardlandscapeecology.com

SUMMARY

Lizard Landscape Design and Ecology has been commissioned to undertake a Preliminary Ecological Appraisal and subsequent Protected Species Assessment of proposals for up to 8 units at Land West of Fontwell Avenue, Eastergate, West Sussex (*centred on Grid Reference: SU 94647 06137 – hereafter referred to as ‘the site’*). The results of these surveys were then used to inform an Ecological Impact Assessment.

A preliminary ecological appraisal (*PEA*) was undertaken on 24th November 2021, to appraise the existing ecological resource within the land and the surrounding area.

Bat Activity Surveys were undertaken on the adjacent site (*permitted under BN/50/20/PL*), which shares the treeline forming the main feature of interest to bats, and this data was also incorporated into this assessment. Surveys were carried out over 20no. nights between 20th-27th April, 27th-31st May, 23rd June-1st July 2020. Further information from badger and reptile surveys of the adjacent sites at Bayards and Northfields have also informed this assessment.

The development site is formed of common, widespread habitats of low ecological value. Floral diversity in general was very low, with the bulk of the site dominated by buildings, bare ground and amenity grassland. Boundary treeline/woodland habitats are of moderate value and shall be retained and enhanced through the development.

The buildings contain a number of bird nests, and a barn owl nestbox was noted to one building, although no evidence was noted at ground level to suggest this is in use. All nests must be removed outside of the bird nesting season (*March-August inclusive*) or following a check to ensure the nests are not in use. The barn owl box shall be removed following an inspection and walkover of the entire site outside of the nesting season, to ensure it is not in use. The box shall be installed to a nearby suitable tree.

The mature vegetation to the eastern boundary is utilised by common light-tolerant bat species of common and soprano pipistrelle and serotine. Barbastelle bat, a rare woodland bat for which local international sites are designated, have been recorded rarely within the adjacent site. The buildings on-site offer 'negligible' bat roost potential. With appropriate mitigation, compensation and enhancement as detailed above, there will be **no significant effects** upon any habitats or protected species within or adjacent to the site.

The impacts of the planned development upon biodiversity will be **negligible, non-significant**.

1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned to undertake a proposals for up to 8 units at Land West of Fontwell Avenue, Eastergate, West Sussex (*centred on Grid Reference: SU 94647 06137 – hereafter referred to as 'the site'*). The results of these surveys were then used to inform an Ecological Impact Assessment.
- 1.2 A preliminary ecological appraisal (PEA) was undertaken on 24th November 2021, to A preliminary ecological appraisal (PEA) was undertaken on 23rd November 2021, to appraise the existing ecological resource within the land and the surrounding area. Bat Activity Surveys were undertaken on the adjacent site (permitted under BN/50/20/PL), which shares the treeline forming the main feature of interest to bats, and this data was also incorporated into this assessment. Surveys were carried out over 20no. nights between 20th-27th April, 27th-31st May, 23rd June-1st July 2020. Further information from badger and reptile surveys of the adjacent sites at Bayards and Northfields have also informed this assessment.
- 1.3 The field survey data and analysis contained in this report was undertaken and prepared by George Sayer (*MCIEEM, Senior Ecologist; Lizard Landscape Design and Ecology*). The report has been reviewed by Catherine O'Reilly (*MCIEEM, Senior Ecologist; Lizard Landscape Design and Ecology*).

Site Information

- 1.4 The site consists of a group of horse stables and a sand school, surrounded by bare and hard surfaced access and amenity grassland. The main site area covers a total area of approximately 0.38 hectares (*Ha*).
- 1.5 The site is bounded by the approved residential development (permitted under BN/50/20/PL) to the north; Fontwell Avenue site to the east; land forming part of Bayards stables to the north-west and a track with residential dwellings to the south-west.

Surrounding Landscape

- 1.6 The wider landscape is largely rural; the area is dominated by a matrix of arable and pastoral farmland interspersed with hedgerows and small pockets of woodland. The nearest woodland area is a 0.68Ha plot of *Deciduous Woodland* 158.0 m north-west of the proposed development site.
- 1.7 There is 1 no. waterbody located within 500m of the proposed development site, located 67m south at Greenfields Farm.

Development Proposals

- 1.8 It is understood that the development proposals are for the development of 8 no. new dwellings. Access would come from the approved site to the north. Construction access would also come through the proposal site which is now underway. The houses would be accompanied by gardens and parking.

Survey Aims

- 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 EcIA 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 Policy ENV DM5 of the Arun Local Plan 2014-2031 states that:
- *Development will seek to achieve a net gain in biodiversity and protect existing habitats on site;*
 - *Development should incorporate elements such as green roofs / walls and bird and bat boxes;*
 - *Development shall be designed to provide links between habitats 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.*
- 2.6 The Aldingbourne Neighbourhood Development Plan 2019- 2031 is currently at Regulation 19 – post-examination stage. The plan includes strong reference to biodiversity. Relevant policies include the following:
- *Policy EH2 Green Infrastructure and Ecosystem Services which states that “New development within, or immediately adjacent to the Biodiversity Corridors identified on Maps A1 and A2 will only be supported where it can be clearly demonstrated that development proposals will not give rise to any significant harm to the integrity or function of the Biodiversity Corridors.” Policy EH4 Protection of watercourses which states that “Proposals that support and promote river catchment management, wildlife conservation and reduce flood risk will be supported.”*
 - *Policy EH6 Protection of trees and hedgerows which states that “Development that damages or results in the loss of trees of arboricultural and amenity value or loss of hedgerows and/or priority habitat, or which significantly damages ecological networks will be resisted, unless the need for, and benefits of, development in that location clearly outweigh the loss. Development proposals, where appropriate, must be designed to incorporate biodiversity within and around developments and enhance ecological networks, seeking to retain wherever possible ancient trees, trees of good arboricultural and amenity value and hedgerows to contribute to the Government’s target*

to halt the decline in biodiversity by aiming for a net gain for nature. Proposals which affect sites with existing trees or hedgerows should be accompanied by a survey that establishes the health and longevity of any affected trees or hedgerows and a management plan to demonstrate how they will be so maintained.”

- *Policy EH12 2019 Protection of bat habitats which states that “In order to be fully compliant with the Habitats Directive relating to the Singleton and Cocking Tunnels SAC qualifying features, proposals for the development of greenfield sites within the Parish (most of which falls within the SAC’s 12km Wider Conservation Area) must evaluate whether there is a potential for the loss of suitable foraging habitat and / or the severance of commuting flight lines, such as in the form of mature treelines, hedgerows and watercourses. If so, such features must be preserved unless surveys demonstrate that they are not used by Barbastrelle, Bechstein or other bats linked with nearby roosting sites. Care must also be taken through development design to ensure that such retained features are not affected by artificial lighting. Where these corridors are used by roosting feeding or commuting bats, development within 50 metres will be resisted.”*

- 2.7 The current development proposals have been designed to comply with all national and local planning policy with regards biodiversity. This compliance is discussed within the impact assessment section of this report.

3.0 METHODOLOGY

3.1 Desk Study

- 3.1.1 The Multi-agency Geographic Information for the Countryside (MAGIC) system was used for details of protected sites, habitats and protected species licences within 2.0km of the site. Due to the poor-quality habitats on site and immediately adjacent a full protected species search from SxBRC was not considered proportionate to the predicted impacts of the scheme. Further data on species present locally was obtained from other large planning applications within the immediate vicinity. The desk study was conducted on 23rd November 2021.

3.2 Field Survey

- 3.2.1 A preliminary ecological appraisal was undertaken on 24th November 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. A summary description of the habitat within the site following the *Phase 1 Habitat Survey Methodology* is presented in Section 4.0. 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 The results are summarised and accompanied in large part by photographic evidence contained in *Appendix A – Site Photographs*. Recommendations for further investigation and survey are made in the following report.

3.3 Preliminary Bat Roost Assessment

3.3.1 A Preliminary Bat Roost Assessment was undertaken on 24th November 2021 by an experienced bat surveyor who undertook an external and internal examination of the existing buildings and trees on site. 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.*

3.3.2 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.*

3.3.3 Once features had been assessed trees / buildings were then categorised in accordance with *Table 4.1 of the Bat Conservation Trust's Good Survey Guidelines (2016) (shown below).*

Table No. 01 – Categorisation Criteria

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

3.5 Preliminary Badger Survey

3.5.1 The site was systematically searched on 24th November 2021 for any evidence of badger such as:

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

4.11 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.

3.6 Ecological Impact Assessment

3.6.1 The methodology for Ecological Impact Assessment (*EclA*) 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.

3.6.2 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.*

3.6.3 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.*

- 3.6.4 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*".
- 3.6.5 The confidence that a certain activity will result in a significant adverse effect has been ranked as follows:
- *Highly probable;*
 - *Probable;*
 - *Unlikely;*
 - *Highly unlikely.*
- 3.6.6 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

Statutory Protected Sites

4.1.1 The nearest Statutory protected sites are detailed below.

Table No. 02 – Statutory Protected Sites

Site	Description	Location
South Downs National Park	A large area of varied habitats including chalk grassland and woodland which supports varied flora and fauna.	1.15km N
Eartham Pit, Boxgrove SSSI.	The area has undergone considerable geological and archaeological investigations. Immediately to the north of the pit there is a fossil shoreline.	3.15km NW
Fairmile Bottom SSSI.	The site contains yew <i>Taxus baccata</i> woodland and scrub as well as unimproved chalk grassland, which are all nationally rare communities.	4.1km NE
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-with-flints 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 N
Solent and Dorset Coast SPA	Designated for breeding colonies of, and open sea foraging habitat for internationally important colonies of: • common tern	6.75 km S

	• <i>Sandwich tern</i> • <i>little tern</i>	
<i>Pagham Harbour SPA, RAMSAR (also LNR, SSSI)</i>	<i>Areas of coastal and harbour habitat noted for its importance for over wintering birds. Designated an SPA for Common tern, Dark-bellied brent goose; Little tern and ruff.</i>	<i>9.7 km SW</i>

4.1.2 The site is located within the Impact Risk Zone of *Fairmile Bottom SSSI* however proposals do not meet the criteria which would require the LPA to consult with Natural England regarding potential impacts.

4.1.3 The Arun Valley SAC, SPA, Ramsar and Singleton and Cocking Tunnels SAC are located between 10-11 km from site and as such would usually be scoped out of this assessment. Following request from the nearby SDNPA, the potential for significant effects upon the Singleton and Cocking Tunnels SAC site is assessed.

Non-Statutory Protected Areas

4.1.4 *Sites of Nature Conservation Interest (SNCIs)* are designations applied to the most important non-statutory nature conservation sites. They are recognised by the *National Planning Policy Framework (2019)* and as such are material considerations when assessing planning applications. SNCI's located within 2.0km of the site are detailed below.

Table No. 03 – Non-Statutory Protected Sites

SNCI	Locations
<i>Fontwell Racecourse SNCI</i>	<i>0.02km NW</i>
<i>Slindon Bottom SNCI</i>	<i>1.15km N</i>

4.1.5 The proposed development site is neither located adjacent to or within any SNCI. The development proposals are highly unlikely to have an adverse effect upon any surrounding SNCI due to the intervening distances and lack of direct connectivity.

4.2 Habitats

4.2.1 Within 2.0km of the site there are *Priority Habitats* of *Lowland Meadow, Ancient Woodland, Traditional Orchard, Deciduous Woodland and Woodpasture and Parkland*. The site itself does not contain any *Priority Habitat*, with the wooded.

4.2.2 Habitats within and adjacent to the land include:

- *Amenity Grassland*;
- *Hard / Bare Ground*;
- *Scattered Scrub*;
- *Introduced Shrubs*;
- *Scattered Trees*;
- *Treelines*;
- *Defunct, Species-poor Hedges*.

Amenity Grassland

4.2.3 Areas of the site between buildings are laid to short amenity grassland. The habitat is largely formed of perennial rye-grass (*Lolium perenne*) with occasional patches of cocksfoot (*Dactylis glomerata*), fescue (*Festuca sp.*) and in more trafficked areas annual meadow grass (*Poa annua*). Forbs present include creeping buttercup (*Ranunculus repens*), white clover (*Trifolium repens*), dandelion (*Taraxacum officinale*) and selfheal (*Prunella vulgaris*). The habitat is of **site value** only.

Hard / bare Ground

4.2.4 Between buildings are patches of bare earth, and areas of hardstanding. A sand school is also present which forms a large proportion of the site. These areas offer **negligible value** to ecology.

Scattered Scrub

4.2.5 The western boundary consists of a mixed-treeline, below which are areas of scrub formed of bramble (*Rubus fruticosus agg.*), elder (*Sambucus nigra*), and young sycamore (*Acer pseudoplatanus*). The habitat is sparse and is of **site value**.

Introduced Shrubs

- 4.2.6 Within the site are areas of introduced shrub planting, containing species such as butterfly bush (*Buddleia davidii*), juniper (*Juniperus sp.*), silk tassel bush (*Garrrya elliptica*), and Oregon grape (*Mahonia aquifolium*). The habitat is small and of negligible **value**.

Scattered Trees

- 4.2.7 Several scattered trees including a maple (*Acer sp.*) lime (*Tilia sp.*), and a small fruit tree are noted within the site area. The trees do not offer any particular ecological habitat beyond for invertebrates and nesting birds, and are of **site value**.

Treelines

- 4.2.8 The western boundary is bounded by a mixed treeline, mostly formed of deciduous species including sycamore with occasional cypress (*Cupressus sp.*). The treeline displays sparse understorey with hawthorn (*Crataegus monogyna*) and holly (*Ilex aquifolium*) noted. The treeline is part of a larger feature of **local value**.
- 4.2.9 The eastern roadside boundary is lined with a semi-mature treeline which contains native species such as silver birch (*Betula pendula*), maple (*Fraxinus excelsior*) and pedunculate oak (*Quercus robur*). The treeline originally formed part of the roadside treeline but much of this has been removed as part of the adjacent development, leaving a small area of trees of **site value**.

Defunct, Species-poor Hedges

- 4.2.10 A well-maintained cypress hedge and another juniper hedge are present within the site. Beneath the eastern roadside treeline is an area of hawthorn hedge. Two short sections of well-maintained beech (*Fagus sylvatica*) hedge are present within the centre of the site. The hedges are not ecologically significant or connected to other habitats, and being within a garden and under 20m in length are not afforded protection under the *Hedgerow Regulations 1997* nor considered Priority Habitats. The hawthorn hedge is of **site value** whilst the evergreen hedges are of **negligible value**.

4.3 Protected Species

- 4.3.1 The following is based upon protected species records returned from desk study, field study and any further Phase 2 Protected Species Surveys which were undertaken on site.

Reptiles

Desk Study

- 4.3.2 There are records of Slow Worm (*Anguis fragilis*), Grass Snake and Common Lizard within 2.0km of the site. All species of UK reptile are protected against reckless or intentional killing or injuring under *The Wildlife and Countryside Act 1981 (as amended)*.

Site Assessment

- 4.3.3 The site is dominated by bare ground with only very small areas of amenity grassland. The adjacent boundary treeline offers some limited potential for reptiles in the form of debris and leaf piles; however, surveys of these areas in 2019 and 2021 suggest that these areas are not inhabited by reptiles. The site is of **negligible value** to reptiles.

Amphibians

Desk Study

- 4.3.4 Records of Common Toad, Common Frog, Smooth Newt exist within 2.0km. No records of Great Crested Newts (GCN) existing within 2.0km of the site. Surveys of ponds in the wider area were undertaken in 2014 in connection with a large development to the north-east; these surveys did not record GCN in any of the ponds surveyed.

Site Assessment

- 4.3.5 No waterbodies are present within the redline boundary. No access was available to the pond located 67m south-west, however inspection via satellite imagery suggests that this pond is surrounded by bare ground and possibly stocked with fish therefore is likely to be unsuitable as a breeding pond.

- 4.3.6 The site is dominated by hard / bare ground, buildings and only small areas of amenity grassland. The treeline to the western boundary may provide some limited terrestrial habitat for GCN and toads in the form of debris and leaf piles; this area is to be retained, protected and enhanced within the proposals with the exception of the debris piles. The construction zone is considered to be of **negligible value** to amphibians.

Bats

Desk Study

- 4.3.7 Bat species such as Common Pipistrelle (*Pipistrellus pipistrellus*); Soprano Pipistrelle (*Pipistrellus pygmaeus*); Nathusius' pipistrelle (*Pipistrellus nathusii*), Brown Long-eared (*Plecotus auratus*), Natterer's (*Myotis nattereri*), Bechstein's (*Myotis bechsteinii*) and Serotine bats (*Eptesicus serotinus*) have been recorded within 2.0km of the site and Barbastelle (*Barbastella barbastellus*) bats have also been recorded using Fontwell Avenue as a commuting route.

Site Assessment

- 4.3.8 The following tree offers bat roost potential:

Table No. 04 – Trees Offering Bat Roost Potential

Tree No.	Description	Potential
T01	Very large Monterey cypress, with no features noted but large enough to contain small, high features conducive to supporting small bat roosts.	Low.

4.3.9 The following tree offers bat roost potential:

Table No. 05 – Buildings Offering Bat Roost Potential

Building No.	Description	Potential
B01	<i>Large wooden stable/ pole barn building formed of timber poles holding a metal and fibre panel pitched roof. The building contains several different levels and is covered in timber weatherboarding. The building is largely single-skinned negating the potential for roosting behind weatherboarding. No evidence of bats such as droppings, urine splashes, dead bats or worn surfaces were noted. The building is open and could potentially be used by bats e.g. as a nighttime feeding perch, but the complete lack of evidence suggests this is not the case.</i>	Negligible
B02	<i>Smaller timber stable building with a corrugated roof. The building is relatively dark but devoid of any evidence of bats. A small timber bat box is noted to the northern external wall, but no evidence of use was noted.</i>	Negligible
B03	<i>Small timber potting shed with a corrugated metal roof. Large windows make the building bright internally. No evidence of bats or access points were noted.</i>	Negligible
B04	<i>Small metal log store, which is well sealed and unsuitable for bats.</i>	Negligible
B05	<i>Concrete block stables with corrugated metal pitched roof. Access into the building by bats was possible, but no evidence of bats was noted and no suitable crevices were present. Internal windows make the building very bright.</i>	Negligible
B06	<i>Small timber shed which is tightly sealed and displays no evidence of bats.</i>	Negligible

4.3.10 The mature treeline on the western boundary provides a strong linear landscape feature between the site and the wider environment, as well as offering a foraging resource in its own right. Bat activity surveys undertaken as part of the adjacent site to the east (*which shares this treeline feature*) found the treeline and adjacent site to be in use by a low number of common pipistrelles and serotine bats, and rarely by less common species of soprano pipistrelle, noctule, Myotis bats and barbastelle, an Annex II species.

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- 4.3.11 It is considered that similar numbers and species would use this similar, adjacent site which share the main boundary feature. The site is of **negligible value** to roosting bats, **site value** to foraging bats and the boundary woodland and treelines of **local value** for commuting and foraging bats.

Breeding Birds

Desk Study

- 4.3.12 56no. bird species have been recorded within 2.0km of the site, including skylark, kingfisher, swallow and barn owl.

Site Assessment

- 4.3.13 The site consists of buildings, hard / bare ground and amenity grassland, habitats with low potential for nesting birds. The majority of the site is of **site value** to nesting birds, with the adjacent woodland considered to be of **local value**. A number of bird nests were noted within the buildings, and are considered to be a mixture of sparrow and swallow nests. A barn owl box is present to the south-western aspect of B02, but no evidence was noted at ground level such as nesting material, feathers or down, pellets or other feeding remains. As such the box is not considered in use.

Badgers

Desk Study

- 4.3.14 Badger records are confidential; however, badgers are known to be present within 1.0km of the site.

Site Assessment

- 4.3.15 No signs of badger were recorded on or adjacent the site. The results of badger surveys of the adjacent developments suggest badger are not present in the immediate vicinity.
- 4.3.16 Given the lack of evidence on or near the site, the site is considered to be of **negligible value** to badgers, however they may very occasionally commute across the site.

Dormouse***Desk Study***

- 4.3.17 A small number of dormouse records exist within 2.0km of the site, from Wandleys copse (1.1km NE) and Potwell Copse (2.0km NE).

Site Assessment

- 4.3.18 The species-poor hedgerows to the frontage are routinely managed to a height of <2.0m and lack the size, connectivity and species diversity to support dormice. The boundary vegetation and scrub is too lacking in diversity and connectivity to support dormice. The western treeline may offer some limited habitat suitability however this is negated by the lack of direct connectivity between the site and areas of woodland in the wider environment, and general lack of suitable foraging species. The site is considered to be of **negligible value** to dormice.

Others

- 4.3.19 No suitable habitat for any other protected species (such as water vole) was recorded within or adjacent to the site area. Hedgehogs may occasionally use the site and hibernate in the leaf piles, but it is generally lacking in suitable foraging habitat.

5.0 ASSESSMENT OF EFFECTS AND MITIGATION MEASURES

5.1 Designated Sites

Potential Impacts

- 5.1.1 No impacts upon surrounding statutory protected sites are predicted due to the intervening distances and the discrepancy between habitats. The site is well outside the 3.5 km buffer zone for Pagham Harbour SPA/Ramsar and as such, significant recreational visits there are considered unlikely. Fontwell Racecourse is located 0.02 km north-west of the site; in the absence of mitigation impacts could include degradation of habitats by dust smothering. Due to the intervening distance, impacts would be of minor impact magnitude and are highly unlikely to occur.
- 5.1.2 The Singleton and Cocking Tunnels SAC are 10.8 km from the site, and the site therefore falls just within their 'Wider Conservation Area'. Significant impacts upon bat flightlines must be assessed as part of proposals. In the absence of mitigation; bats which hibernate or roost at the SAC might be disturbed through disruption/removal of commuting and foraging habitat. Given that no vegetation is being removed, this is considered highly unlikely.

Mitigation and Compensation

- 5.1.3 Works during the construction phase will be undertaken in accordance with guidance provided within *The Control of Dust and Emissions During Construction and Demolition SPG (July 2014)* to control any excess dust creation.
- 5.1.4 Lighting design and landscape proposals shall ensure the continued value of the site for bats. Full details are provided in section 5.5 below.

Residual Impacts

- 5.1.5 **No likely significant effect** upon surrounding designated sites will arise from the proposed development. It is considered that sufficient information to inform a Habitats Regulations Assessment has been provided.

5.2 Habitats

Potential Impacts

- 5.2.1 Development proposals will result in the loss of areas of amenity grassland, introduced shrubs, defunct species-poor hedge. These habitats are common and widespread and will be replaced during development. In the absence of mitigation, mature trees and treelien of local value may be affected by compaction, root damage, dust smothering and pollution events.

Mitigation and Compensation

- 5.2.2 All retained trees and hedges would be protected with tree protective fencing in accordance with BS5837:2012. All fuel and hazardous materials will be stored in an appropriate manner a minimum of 5.0m from hedge / tree lines. Works during the construction phase will be undertaken in accordance with guidance provided within *The Control of Dust and Emissions During Construction and Demolition SPG (July 2014)* to control any excess dust creation which may impact adjacent priority habitat.
- 5.2.3 Post-development, a landscape scheme would replace habitats lost with further areas of amenity grassland and introduced shrub areas within gardens with tree planting to frontages. Wildlife friendly planting will be utilised as much as possible, increasing the overall biodiversity value of the site.
- 5.2.4 The treeline shall be enhanced to increase its value and mitigate for any damage.

Residual Impacts

- 5.2.5 No priority or other important habitats or plant species will be affected by this development, the impact of which is **negligible, not significant**.

5.3 Reptiles

Potential Impacts

- 5.3.1 The site offers negligible potential for reptiles; impacts will be **negligible**.

Mitigation and Compensation

- 5.3.2 Any debris piles requiring removal shall be removed manually. In the highly unlikely event that any reptiles are found on site all works will cease while a suitably qualified ecologist is contacted for advice.

Residual Impacts

- 5.3.3 The overall impact of the scheme will be negligible in the short-term, with a **positive impact** in the long-term once vegetation has established.

5.4 Amphibians

Potential Impacts

- 5.4.1 None predicted, the site is of negligible value to amphibians.

Mitigation and Compensation

- 5.4.2 Any debris piles requiring removal shall be removed manually. In the highly unlikely event that GCN are found on site all works will cease while a suitably qualified ecologist is contacted for advice.

Residual Impacts

- 5.4.3 The overall impact of the scheme will be **negligible**.

5.5 Bats

Potential Impacts

- 5.5.1 In the absence of mitigation impacts may include habitat fragmentation and loss of foraging areas, including for an Annex II species which rarely visits the eastern boundary. No vegetation is proposed for removal and as such the only impacts would arise from accidental harm to trees or inappropriate lighting. A single timber bat box is noted to a tree but is thought not to be in use.

Mitigation and Compensation

- 5.5.2 All trees and boundary vegetation shall be protected with tree protective fencing in accordance with BS5837:2012. A full tree package accompanies the application.
- 5.5.3 New lighting proposals will accord with BCT/ILP Guidance Note 08/18. Any lighting in the vicinity of boundary vegetation (most particularly the gap made in the woodland) will be low level bollards or downlighters, if any.
- 5.5.4 Night-scented and night-flowering species shall be used within the planting scheme, and new hedge and shrub planting shall increase the value of the boundary vegetation for bats.
- 5.5.5 The timber bat box will be subject to a final check by a licenced ecologist, and carefully moved to a nearby tree at the same height and a better orientation (i.e. south-facing).

Residual Impacts

- 5.5.6 The overall impact of the scheme will be negligible / minor-adverse in the short-term, with a **positive impact** in the long-term once vegetation has established.

5.6 Breeding Birds

Potential Impacts

- 5.6.1 In the absence of avoidance / mitigation, the development could result in the damage / destruction of a bird nest.

Mitigation and Compensation

- 5.6.2 The clearance of any hedges, shrub or trees and removal of nests from the buildings will be undertaken outside the bird nesting season. Should this not be possible, vegetation and buildings will be checked prior to removal by a Suitably Qualified Ecologist. Any active nests found will be allowed to fledge before removal. The loss of small areas of treeline and hedge will be compensated through replacement planting and the installation of bird boxes to suit a range of species.

Residual Impacts

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

5.7 Badgers and Other Mammals

Potential Impacts

- 5.7.1 In the absence of mitigation, impacts would include the trapping of badgers in footings/trenches, fragmentation of habitat and disruption of commuting corridors. Impacts would be of minor impact magnitude and highly unlikely to occur.

Mitigation and Compensation

- 5.7.2 Trenches deeper than 1.0m will be covered overnight or have a ramp installed to avoid trapping any badgers or other mammals on site. Boundary vegetation around the site will be retained. Hedgehog gaps will be made through garden fences to allow continued hedgehog commuting.

Residual Impacts

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

5.8 Dormouse

Potential Impacts

- 5.8.1 None predicted.

Mitigation and Compensation

- 5.8.2 None required.

Residual Impacts

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

6.0 ENHANCEMENTS

6.1 The design of the proposed development includes ecological enhancements for the benefit of wildlife in line with the *National Planning Policy Framework* and *Local Planning Policy*. Full details of the ecological enhancements will be provided at reserved matters stage. Ecological enhancements which will be included as part of development proposals in addition to the mitigation measures above include:

- The use of flowering plants as listed within the RHS 'Plants for Pollinators' list to provide year-round interest for invertebrates;
- New tree and shrub planting throughout the site;
- The provision of nesting boxes for a variety of bird species within trees / the northern aspects of the new buildings;
- Integrated bat boxes to the southern aspect of new buildings and mature trees to suit a variety of species;
- Creation of log piles and other insect features to the corners of the site;
- Re-enforcement of existing boundary vegetation and new hedgerow planting to the western boundary with species-rich hedgerow and shrubs.

7.0 CONCLUSIONS

- 7.1 The development site is formed of common, widespread habitats of low ecological value. Floral diversity in general was very low, with the bulk of the site dominated by heavily grazed improved grassland. No protected species were recorded utilising the site, however the mature vegetation to the western boundary is likely to be utilised by common light-tolerant bat species such as pipistrelle sp. With appropriate mitigation, compensation and enhancement as detailed above, there will be **no significant effects** upon any habitats or protected species within or adjacent to the site.
- 7.2 The impacts of the planned development upon biodiversity will be **negligible, non-significant** with proposed ecological enhancements resulting in a minor **net gain**.

8.0 REFERENCES

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

Table No. 06 – Species List for Habitat Parcels

Amenity Grassland		
Common Name	Scientific Name	DAFOR
Broad-leaved Dock	<i>Rumex obtusifolius</i>	R
Cocksfoot	<i>Dactylis glomerata</i>	LF
Common Daisy	<i>Bellis perennis</i>	A
Common Nettle	<i>Urtica dioica</i>	R
Creeping Buttercup	<i>Ranunculus repens</i>	LA
Dandelion	<i>Taraxacum officinale</i>	F
Fescue	<i>Festuca sp.</i>	LF
Perennial Rye-grass	<i>Lolium perenne</i>	D
Ragwort	<i>Jacobaea vulgaris</i>	R
Selfheal	<i>Prunella vulgaris</i>	F
Spear Thistle	<i>Cirsium arvense</i>	R
White Clover	<i>Trifolium repens</i>	F
White Dead-nettle	<i>Lamium album</i>	O

Introduced Shrubs		
Common Name	Scientific Name	DAFOR
Butterfly Bush	<i>Buddleia davidii</i>	R
Cypress	<i>Cupressus sp.</i>	LD
Japanese Laurel	<i>Aucuba heterophylla</i>	R
Juniper	<i>Juniperus sp.</i>	LD
Oregon Grape	<i>Mahonia aquifolium</i>	R
Periwinkle	<i>Vinca minor</i>	LF
Silk Tassel Bush	<i>Garrya elliptica</i>	O

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

Trees, Treelines and Hedges		
Common Name	Scientific Name	DAFOR
Ash	<i>Fraxinus excelsior</i>	F
Beech	<i>Fagus sylvatica</i>	F
Common Hawthorn	<i>Crataegus monogyna</i>	A
Common Holly	<i>Ilex aquifolium</i>	O
Common Ivy	<i>Hedera helix</i>	LD
Common Lime	<i>Tilia x europaea</i>	R
Cypress	<i>Cupressus sp.</i>	LD
Elder	<i>Sambucus nigra</i>	LF
Field Maple	<i>Acer campestre</i>	O
Juniper	<i>Juniperus sp.</i>	LD
Leyland Cypress	<i>Cupressus x. leylandii</i>	R
Maple	<i>Acer sp.</i>	O
Monterey Cypress	<i>Cupressus macrocarpa</i>	R
Pedunculate Oak	<i>Quercus robur</i>	O
Poplar	<i>Populus sp.</i>	O
Silver Birch	<i>Betula pendula</i>	O
Sweet Chestnut	<i>Castanea sativa</i>	R
Sycamore	<i>Acer pseudoplatanus</i>	D

Scattered Scrub		
Common Name	Scientific Name	DAFOR
Bramble	<i>Rubus fruticosus agg.</i>	D
Elder	<i>Sambucus nigra</i>	LA
Holly	<i>Ilex aquifolium</i>	R
Ivy	<i>Hedera helix</i>	LF
Sycamore	<i>Acer pseudoplatanus</i>	LD

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

Table No. 07 - Target Notes

No.	Feature	Description
TN01	Debris	Debris, compost and leaf piles offering limited potential for reptiles and hedgehogs.
TN02	Bat Box	Bat box with no evidence of current use.
TN03	Barn Owl Box	Barn owl box with no evidence of current use.
TN04	Bird's Nests	Bird's nests within buildings.

APPENDICES

Appendix A – Site Photographs

Appendix B – Bat Activity Survey of Adjacent Site (2020)

Photograph 1 – Overview of the site looking west. Bare ground and sand school are visible with the treeline behind the site.



Photograph 2 – Amenity grassland and defunct, species-poor hedges.



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Photograph 3 – Building B01.



Photograph 4 – Buildings B02, B03, B04 (Left to right). Bat box visible to centre of gable end of B02 just beneath ridge.



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Photograph 5 – Building B05.



Photograph 6 – Building B06.



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Photograph 7 – Debris to the margins of the site.



Photograph 8 – Introduced shrubs at the frontage.



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Photograph 9 – Roadside treeline and hedge.



Photograph 10 – Barn owl box on B02.



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FIGURES:

Figure No. 01 – Site Habitat Plan

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BAT ACTIVITY SURVEY REPORT

Land at Fontwell Avenue, Fontwell

Prepared by	GS
Checked by	CO
Date	24 th December 2020
Project Reference	LLD1544
Revision	00

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FIGURES

Figure No. 1 – Bat Activity Survey

TABLES

Table No. 01 – Walked Transect Survey Details

APPENDICES

Appendix A – Bat Survey Data

Appendix B – Static Data Summary

SUMMARY

Lizard Landscape Design and Ecology has been commissioned by Reside Developments Ltd to undertake a Bat Activity Survey of Land at Fontwell Avenue, Fontwell, West Sussex (*Grid Reference: SU 946 061– hereafter referred to as ‘the site’*).

A preliminary ecological appraisal (*PEA*) was undertaken on 04th September 2018, to appraise the existing ecological resource within the land and the surrounding area. The boundaries of the site were considered to offer bat foraging and commuting potential; given the current proposals further surveys were not considered necessary at the time. Following changes to design which resulted in removal of further boundary trees, it was decided to undertake Bat Activity Surveys to establish levels of bat activity and bat species present at the site to guide mitigation.

The results of the Bat Activity Survey suggest that bat activity at the site is ‘low-moderate’, with the site boundaries being used for commuting and foraging, and the site itself being used for foraging by a low number of common bats, namely common pipistrelles and serotine bats, and rarely by less common species of soprano pipistrelle, noctule, Myotis bats and barbastelle, an Annex II species.

The design proposals include for mitigation including replanting of lost boundary vegetation and new SUDs features to mitigate for the loss of habitat and connectivity.

1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned by Reside Developments Ltd to undertake a Bat Activity Survey of Land at Fontwell Avenue, Fontwell, West Sussex (Grid Reference: SU 946 061– hereafter referred to as ‘the site’).
- 1.2 A preliminary ecological appraisal (PEA) was undertaken on 04th September 2018, to appraise the existing ecological resource within the land and the surrounding area. The boundaries of the site were considered to offer bat foraging and commuting potential; given the current proposals further surveys were not considered necessary at the time. Following changes to design which resulted in removal of further boundary trees, it was decided to undertake Bat Activity Surveys to establish levels of bat activity and bat species present at the site to guide mitigation.
- 1.3 This report has been prepared by George Sayer (*MCIEEM; Senior Ecologist; Lizard Landscape Design and Ecology*). The report has been reviewed by Catherine O'Reilly (*MCIEEM, Senior Ecologist; Lizard Landscape Design and Ecology*).

Site Information

- 1.4 The site contains a small number of stable outbuildings with large improved grassland fields which are currently in use as paddocks. The red-line boundary covers a total area of approximately 1.5 hectares (Ha).
- 1.5 The majority of the site is bounded by roads of varying traffic levels. Level Mare Lane bounds the site to the north; Fontwell Avenue to the east; and the Northfield Cottage and Farmhouse track to the south. Open grassland and arable fields lie beyond a mature tree lined western boundary.

Surrounding Landscape

- 1.6 The wider landscape has a rural feel; the area is dominated by a matrix of arable and pastoral farmland interspersed with hedgerows and small pockets of woodland. The nearest woodland area is a 0.68Ha plot of *Deciduous Woodland* located 130 metres (m) west of the proposed development site.

- 1.7 There is 1 no. waterbody located within 500m of the proposed development site, located 120m south.

Development Proposals

- 1.8 It is understood that the proposals include construction of a new residential development with '*low impact accommodation*' including renewable energies (*solar and air source*) with associated access and garden. The proposals involve removal of a proportion of the boundary vegetation (hedges with trees) along the eastern boundary.

2.0 SCOPE OF THE SURVEY

- 2.1 The aim of the survey has been:
- To establish which bat species use the site;
 - To assess the site for levels of bat activity;
 - To identify any key foraging or commuting areas within the site;
 - To provide suitable mitigation measures.

3.0 METHODOLOGY

3.1 Bat Activity Survey

Walked Transect Surveys

- 3.1.1 Bat activity survey visits were undertaken on 20th April, 19th May, 23rd June 2020 and 5th October.
- 3.1.2 2 no. bat surveyors were assigned a survey transect each to adequately gauge the level of bat activity across the site. Transects were walked around the margin of the site to monitor bat activity along each hedge / treeline.
- 3.1.3 Dusk surveys were started at sunset and terminated approximately 2 hours after sunset. Data including species; general patterns of activity; and number of passes were recorded throughout the survey. Details of the survey visits can be found in Table No. 03 below:

Table No. 01 – Walked Transect Survey Details

Date	20.04.20	19.05.20	23.06.20	05.10.20
Surveyors	George Sayer Joshua Harwood	George Sayer Catherine O'Reilly	George Sayer Joshua Harwood	George Sayer Caleb Fry
Survey Type	Dusk	Dusk	Dusk	Dusk
Weather	13°C Dry Clear WF 3	16°C Dry Clear WF0	20°C Dry Clear WF 0	15°C Dry Overcast WF 0
Sunset / Sunrise	20:07	20:51	21:21	18:29
Start	20:00	20:51	21:21	18:29
Finish	22:07	22:51	23:21	20:29

- 3.1.4 Bats were identified using Anabat SD2 and Ecometer Touch Pro bat detectors during transects.

Static Monitoring

- 3.1.5 A total of 28 no. nights static monitoring was carried out across the site, broadly as specified in Bat Surveys for Professional Ecologists – Good Practice Guidelines (BCT 2016). An Anabat Express was utilised for static monitoring.

- 3.1.6 A total of 3 no. different locations around the site were monitored, the location of static monitoring points is shown in Figure No. 01 – Bat Activity Survey.

Data Analysis

- 3.1.7 Sonogram analysis was undertaken using the AnalookW programme. The data for all visits has been collated and used to calculate bat activity indices.
- 3.1.8 Overall volume of bat passes, number of passes per night and species composition of passes were analysed to assess the significance of the site to bats.

3.2 Limitation and Constraints

- 3.2.1 No constraints were identified during the BAS; access was available to all parts of the site; all surveys were undertaken at the optimal time of year and in suitable weather conditions, though the first survey was undertaken during slightly windy weather. The levels of bat activity suggest this did not significantly impact the survey results.

4.0 BAT ACTIVITY SURVEY RESULTS

- 4.1 Walked transect surveys were undertaken on site during April, May, June and October 2020. These surveys revealed generally low-moderate levels of activity on site, with frequent passes by common pipistrelle and serotine with rarely soprano pipistrelle, Myotis sp., noctule and barbastelle also recorded. The bats in particular were found to forage within the northern and western portions of the site. The levels of activity along the eastern and southern boundaries were very low.

- 4.2 Static monitoring was undertaken for a total of 28no. nights between 20th-27th April, 27th-31st May, 23rd June-1st July and 10-18th October 2020. A minimum of 6no. bat species were recorded on site:

- Barbastelle (*Barbastella barbastellus*);
- Common pipistrelle (*Pipistrellus pipistrellus*);
- Soprano pipistrelle (*Pipistrellus pygmaeus*);
- Myotid bats (*Myotis spp.*);
- Noctule (*Nyctalus noctule*);
- Serotine (*Eptesicus serotinus*).

- 4.3 During April, Serotine were the most common bat recorded (56% of all calls) followed by Common Pipistrelle (28.9%). Noctule accounted for 11.7% of all passes. During May, Common Pipistrelle become the most common (68.5%) followed by Serotine (24.4%). Barbastelle activity peaked during May with 3.9 % of all calls from this species. During June, common pipistrelle was very dominant at 87.5 % of passes, with serotine next with 5.8%. In October, 57% of all bat passes were common pipistrelle, followed by serotine at 36%. Passes by Myotis sp. bats peaked at 4.3% of all passes.

- 4.4 Soprano Pipistrelle and Myotis sp. calls were very uncommon, with fewer than 1 call per night in April and fewer than 3 calls per night in May. Given the low numbers of calls and the brevity of calls, identification could not be confidently made beyond Myotis sp. Noctule and barbastelle passes were also infrequent. Passes by common pipistrelle and serotine were most frequent shortly after sunset, with these eventually reducing. Other bats were mostly recorded some time after sunset, often during the middle of the night or several hours before sunrise.

5.0 EVALUATION AND MITIGATION

- 5.1 The site is used regularly by low numbers of common bat species. Common pipistrelle and Serotine bats dominate the bat activity on-site. Noctule bats are present occasionally. Myotis sp. Bats, Barbastelle bats and Soprano pipistrelle bats are present very rarely. The habitats are of high value to a low number of common bats, and of low value to very low numbers of less common bats, including one Annex II species which visits rarely, and generally well after sunset. The data would suggest the site forms a major part of the home range of c.2 common pipistrelle and serotine and falls within the edge of the home ranges of low numbers of noctule, Myotis, barbastelle and soprano pipistrelle bats. Overall, the site is of significant value to bats within the **Site area** only.
- 5.2 The western treeline is used as a commuting feature and should be retained and protected. The northern section of site is used for foraging; as much vegetation as possible should be retained along this boundary. The eastern boundary is used less frequently but is still visited occasionally.
- 5.3 To mitigate the loss of grassland used by low numbers of bats, the open areas of the site should be enhanced with suitable seed mixes to provide more foraging opportunities for bats.
- 5.4 Given the infrequency of visits of less common and Annex II species, providing any vegetation loss is adequately replaced in a timely manner, the proposals are considered to have a negligible impact upon these species.

6.0 CONCLUSIONS

- 6.1 The site is used frequently by low numbers of common bat species, and rarely by less common species including one Annex II species. The habitats are of value to bats within the **site area** and immediate surroundings only. The mitigation measures as defined above will ensure the continued ecological functionality of the site for commuting and foraging bats in the local area.

7.0 REFERENCES

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);

Appendix A – Walked Transect Results

Date	20/04/2020
Survey Type	Dusk
Sunrise / Sunset	20:07
Start Time	20:00
End Time	22:07
Temperature	13 °C
Wind	f3
Weather	Clear & Sunny

Surveyor	GS	
Point	Clockwise	
Time	Species	Notes
20:27	CPip	Heard to N boundary by substation
20:28	CPip	2 bats foraging along N
20:37	CPip	Heard to SW corner
20:38	CPip	Flying through trees to W
20:40	CPip	Under large trees to W
20:41	CPip	Flying S along W boundary
20:45	CPip	Under large tree to NW
20:46	CPip	Flying along N boundary in NW corner
20:49	CPip	Along N boundary
20:50	CPip	Foraging along N boundary
20:51	CPip	2 bats in NE corner
21:12	CPip	Flew through gap to SE near shed
21:25	CPip	Foraging in NE corner
21:27	CPip	Feeding along N boundary
21:52	CPip	Feeding along N boundary

Surveyor	JH	
Point	Anticlockwise	
Time	Species	Notes
20:30	C.pip	Social call, Near rabbit hutch
20:39	Noctule	echo recorded, not seen or heard
20:48	C.pip	Seen not heard
20:49	C.pip	commuting call, by transformer
20:51	C.pip	Commuting by rear gate
20:59	N.pip	Commuting near rabbit hutch
21:14	C.pip	Commuting along back tree line, was heard during my movements from corner to transformer
21:17	C.pip	Commuting by transformer

21:20	C.pip	commuting by rear gate
21:50	C.pip	back tree line paste wire

Date	19.05.2020
Survey Type	Dusk
Sunrise / Sunset	20:51
Start Time	20:51
End Time	22:51
Temperature	16 °C
Wind	0
Weather	Clear & Sunny

Surveyor	GS	
Point	Anticlockwise	
Time	Species	Notes
2120	Cpip	Faint
2126	Cpip	To n
2128	sero	to n foraging
2132	sero	flying s along w
2141	sero and cpip	foraging along w
2200	sero	foraging along w
2210	cpip	along e
2219	cpip	along n
2227	Spip	Along w
2242	Cpip	Along w
2244	Sero	Sw corner

Date	23.06.20
Survey Type	Dusk
Sunrise / Sunset	21:21
Start Time	21:21
End Time	23:21
Temperature	20 °C
Wind	0
Weather	Clear & Sunny

Surveyor	Gs	
Point	Anticlockwise	
Time	Species	Notes
21:52	Cpip	Faint callsl
2154	Cpip	Foraging along n treeline
2155	Sero	3 bats Foraging to n
2213	Cpip	Flew n along w boundary
2215	Cpip	Flew n along w
2218	Serotine	Heard
2224	Cpip	W boundary
2235	Cpip	Heard
2236	Noct	Flying n over site
2247	Sero	Faint calls e boundary
2248	Cpip	Flew Along e boundary
2259	Sero	Heard
2302	Cpip	Heard ne corner
2309	Cpip and noct	Flying along n boundary
2314	Noct	Heard w boundary

Surveyor	JH	
Point	Clockwise	
Time	Species	Notes
21:48	C.pip	NhNS
21:48	Serotine	NhNS
21:50	Serotine	Flew from NE to south along hedgeline
21:53	Serotine	Flying up and down hedgeline
21:54	Noctule	3/4 pulses nhns
21:55	Serotine	Flew from north to eastern boundary over horse field
21:58	Serotine	HNS
21:59	Serotine	HNS
22:10	C.pip	hns in 2nd field from north
22:18	Noctule	eastern most field, circled field then excited to north
22:48	pip	eastern most field, hns
23:15	Noctule	2nd western field, hns

Date	05.10.20
Survey Type	Dusk
Sunrise / Sunset	18:29
Start Time	18:29
End Time	20:29
Temperature	15 °C
Wind	0
Weather	Overcast

Surveyor	Gs	
Point	Anticlockwise	
Time	Species	Notes
18:46	pip	flying s
18:48	Sero	Foraging nw corner
18:50	Sero	Foraging along n in grassland
18:51	Pip	Foraging over nw
18:52-56	Sero	2 foraging nw corner
18:58	pip	hns along w
18:59	pip	2 foraging along w
19:03	pip	hns se corner
19:06	poss noct	hns se
19:17	myotis	Hns n
19:17	myotis	Hns on Lane
19:18	myotis	Hns w of lane
19:20	pip	foraging nw corner
19:21	Sero	Flying s along w
19:21	Pip	2 foraging along w
19:23	Pip	Hns along w
19:25	Sero	sw corner
19:26	C.Pip	hns sw
19:29	C.Pip	Hns sw by conifer hedge
19:39	C.Pip	Hns e boundary
19:53	C.Pip	Hns nw corner
20:19	Noctule	Poss brief call

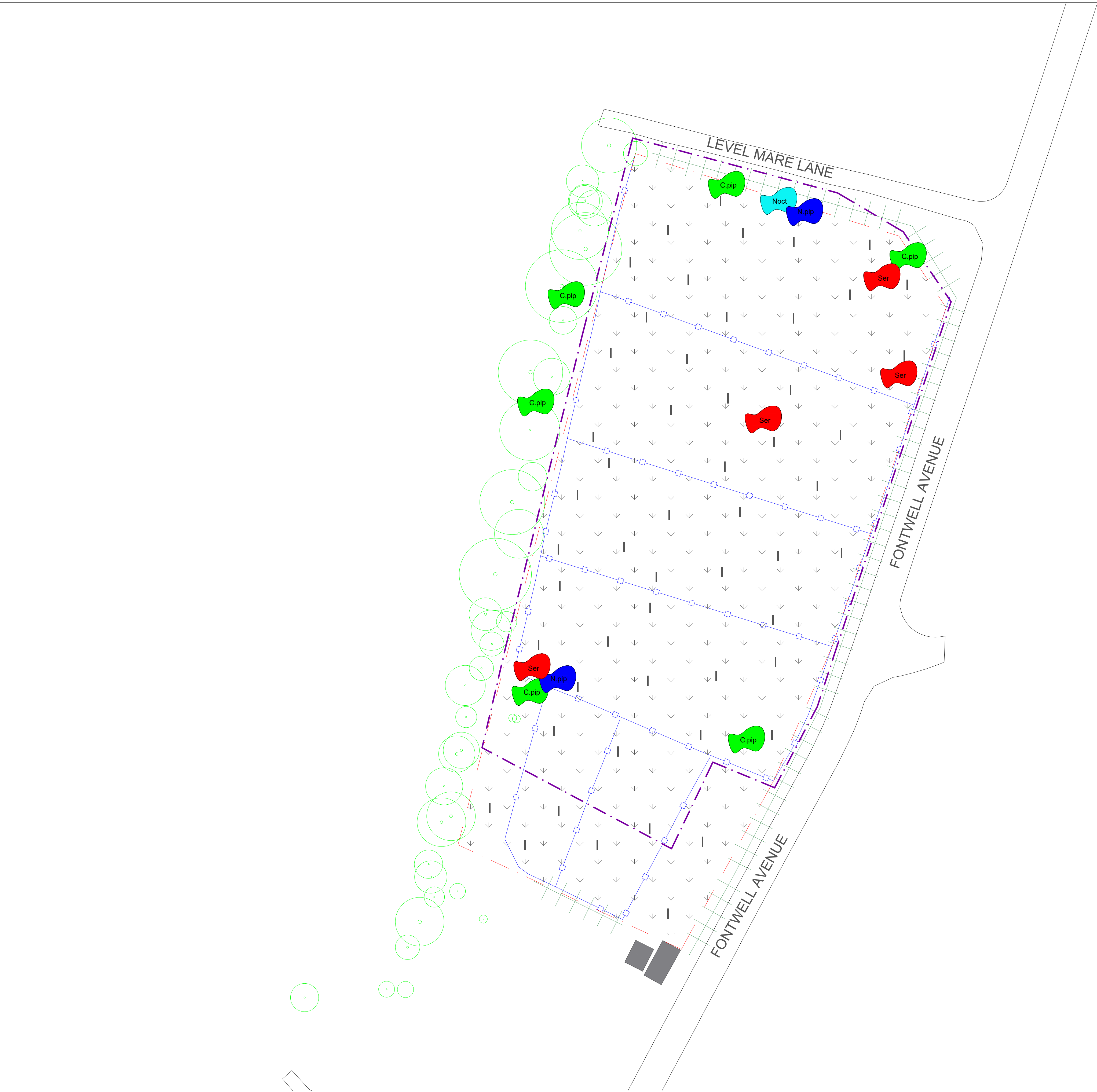
Surveyor	CF	
Point	Clockwise	
Time	Species	Notes
21:48	C.pip	
21:48	Serotine	
21:50	Serotine	Flew from NE to south along hedgeline
21:53	Serotine	Flying up and down hedgeline

21:54	noctule	3/4 pulses nhns
21:55	Serotine	Flew from north to eastern boundary over horse field
21:58	Serotine	HNS
21:59	Serotine	HNS
22:10	C.pip	hns in 2nd field from north
22:18	Noctule	eastern most field, circled field then excited to north
22:48	pip	eastern most field, hns
23:15	noctule	2nd western field, hns

Appendix B –Static Results

Appendix B - Summary of Static Bat Data

	Apr	7 Nights Monitoring		May	5 Nights Monitoring		June	8 Nights Monitoring		October	8 Nights Monitoring		Total	28 Nights Monitoring	
Species	April Total calls	April Calls Per Night	April % of all Bats	May Total calls	May Calls Per Night	May % of all Bats	June Total calls	June Calls Per Night	June % of all Bats	October Total calls	October Calls Per Night	October % of all Bats	All Nights Total calls	All Nights Calls Per Night	All nights % of all Bats
Noctule	32	4.6	11.4	14	2.8	3.0	22	2.75	3.389830508	4	0.5	0.667779633	40	0.142857143	6.677796327
Serotine	153	21.9	54.6	109	21.8	23.4	38	4.75	5.855161787	216	27	36.06010017	363	7.714285714	60.6
Common Pipistrelle	79	11.3	28.2	306	61.2	65.8	568	71	87.5192604	342	42.75	57.0951586	1216	12.21428571	203.0
Soprano Pipistrelle	5	0.7	1.8	11	2.2	2.4	16	2	2.465331279	10	1.25	1.669449082	37	0.357142857	6.2
Myotis species	4	0.6	1.4	7	1.4	1.5	0	0	0	26	3.25	4.340567613	33	0.928571429	5.5
Barbastelle	7	1.0	2.5	18	3.6	3.9	5	0.625	0.770416025	1	0.125	0.166944908	24	0.035714286	4.0
Total	280	40.0		465	93		649	81.125		599	74.9		1713	21.4	

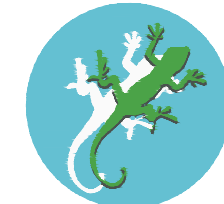


Legend

- Development Site Boundary / Survey Area.
- Existing Building.
- Fence.
- Improved Grassland.
- Species-Poor Hedgerow with Trees.
- Scattered Trees.
- Bat Activity Survey Transect (walked in both directions).
- Location of Static Detectors.
- Common Pipistrelle (*Pipistrellus pipistrellus*)
- Nathusius Pipistrelle (*Pipistrellus nathusii*)
- Serotine (*Eptesicus serotinus*)
- Noctule (*Nyctalus noctula*)

PLANNING ISSUE

Rev	Description	Date	Initials
00	Planning Issue	24.12.20	JH

**LIZARD**
Landscape Design and Ecology

The Old Bank, 34 South Street, Tarring, Worthing, West Sussex, BN14 7LH
T. 01903 216033 E. lizardlandscape@btconnect.com W. lizardlandscapeecology.com

Client Reside Developments Limited			
Project Title and Location Land at Fontwell Avenue Fontwell, Eastergate, West Sussex			
Drawing Title Bat Activity Survey			
Scale 1:500@A1	Drawn JH	Approved GS	Date 24.12.2019
Drawing No LLD1544-ECO-FIG-001			Revision 00

Figure No. 01 - Bat Activity Survey
Land at Fontwell Avenue, Fontwell, Eastergate, West Sussex



Legend

Development Site Boundary.

Existing Buildings.

Hard/ Bare Ground.

Amenity Grassland.

Introduced Shrubs.

Scattered Scrub.

Defunct, Species-poor Hedge.

Scattered Trees.

Target Notes.

Trees with Bat Roost Potential.

PLANNING ISSUE

Rev	Description	Date	Initials
01	Planning Issue	30.11.21	GS
00	Planning Issue	26.11.21	GS

LIZARD
Landscape Design and Ecology
The Old Bank, 34 South Street, Tarring, Worthing, West Sussex, BN14 7LH
T: 01903 216033 E: lizardlandscape@btconnect.com W: lizardlandscapeecology.com

Client Reside Developments Ltd			
Project Title and Location Land West of Fontwell Avenue Eastergate			
Drawing Title Site Habitat Plan			
Scale 1:250@A1	Drawn MG	Approved GS	Date 30.11.21
Drawing No LLD2494-ECO-FIG-001			Revision 01

Site Habitat Plan
Land West of Fontwell Avenue, Eastergate

Report Presented by:

Lizard Landscape Design and Ecology



Reside Developments Ltd