



LIZARD

Landscape Design and Ecology

NEAME SUTTON LIMITED

Sunnymead Farm, Yapton, West Sussex

- Ecological Impact Assessment

Planning Issue

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The Old Rectory, 24 South Street, Exeter, Devon, EX1 1 2JH

SUMMARY

Lizard Landscape Design and Ecology was commissioned by Neame Sutton Ltd to undertake an Preliminary Ecological Appraisal and subsequent Protected Species Surveys of the property at Sunnymead Farm, Yapton, West Sussex (*Grid Reference: SU 981 043 – hereafter referred to as 'the site'*).

A Preliminary Ecological Appraisal (*PEA*) was undertaken on 28th June 2018, to appraise the existing ecological resource within the site and the surrounding area. The following Phase 2 Protected species surveys were recommended:

- Reptile Surveys;
- Bat Emergence Surveys.

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 rank improved grassland. The site supports low numbers of slow worm, with a small number of common species of bat utilising the site boundaries therefore, an internal translocation exercise shall be required prior to the commencement of development. A full mitigation method statement is included in Section 5.0 below. This method statement has been devised to ensure that no reptiles shall be recklessly or intentionally killed or injured during the construction process, in line with *The Wildlife and Countryside Act 1981* (as amended).

No other protected species were recorded utilising the site area. 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.

With appropriate mitigation, compensation and enhancement as detailed within this report, 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 **non-significant** with proposed ecological enhancements resulting in a **net gain** and a **long-term positive increase** in biodiversity in line with national planning policy guidance.

1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology was commissioned by Neame Sutton Ltd to undertake an ecological appraisal of the property at Sunnymead Farm, Yapton, West Sussex (*Grid Reference: SU 981 043 – hereafter referred to as 'the site'*).
- 1.2 A preliminary ecological appraisal (*PEA*) was undertaken on 28th June 2018, to appraise the existing ecological resource within the site and the surrounding area. The following Phase 2 Protected species surveys were recommended:
- Bat Activity Surveys;
 - Reptile Surveys.
- 1.3 The field survey data and analysis contained in this report were undertaken and prepared by Louise Barker (*BSc MSc; Ecologist; Lizard Landscape Design and Ecology*) and Catherine O'Reilly (*MCIEEM, Senior Ecologist*). This report has been reviewed by Joe Jackson (*BA (Hons) LA DipLA CMLI; Director; Lizard Landscape Design and Ecology*).

Site Information

- 1.4 The site is roughly rectangular and situated off North End Road, to the immediate south of the railway line, to the north of the village of Yapton. The site comprises a detached bungalow, with an accompanying dilapidated store building; polytunnel / greenhouse; swimming pool and access drive. The property is surrounded by gardens, which are mostly formed of grassland; shrubs; scrub; and trees. The site contained a number of caravans and other debris. The site is approximately 0.26 hectares (ha) in size and is approximately 5.0metres (m) above sea level.
- 1.5 The site is bounded on all sides by a variety of fencing styles; mixed hedges; and trees. The western boundary adjoins North End Road; the northern boundary adjoins the railway line; the southern boundary adjoins an adjacent track and private dwelling; the eastern boundary adjoins an area of grassland, possibly used for grazing horses. Soils on site are described as *freely draining slightly acid loamy soils*.

Surrounding Landscape

- 1.6 The surrounding landscape is rural with and dominated by arable and pastoral fields, and large glasshouses. Woodland is relatively limited within the local area; however, the nearest block of woodland listed on the National Forest Inventory is a 4.39ha plot of young trees located 22.0m to the west of the site. Four ponds exist within 500.0m of the site with a number of drains and rife running through the landscape.

Development Proposals

- 1.7 It is understood that the development proposals include the demolition of the existing buildings and structures on the site, and the construction of 7 no. dwellings, with associated access and parking hard landscape areas, and soft landscape gardens. The proposals would require the removal of the majority of the habitats on the site, although several large trees and the boundary vegetation would be retained and protected.

Aims of the Survey

- 1.8 The aim of this ecological appraisal is;
- *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) 2018 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 Local Planning Policy relevant to this site include; Policies ENV DM3 and ENV DM5 of the *Arun Local Plan 2011 – 2031 (currently under review)* which state that planning permission will only be granted where:

- *The proposals have no adverse impacts upon the international, national and local designated sites (statutory and non-statutory) within the district;*
- *Development schemes seek to achieve a net gain in biodiversity and protect existing habitats on site;*
- *Proposals 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 should provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement;*
- *Sites have been screened for their potential to support protected species. Where there is evidence of a protected species on a proposed development site, planning applications 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. Developments must take into account Natural England's Standing Advice with regards protected species.*

Yapton Neighbourhood Development Plan

- 2.6 *Policy E4: Minimising the environmental impact of development* states that development will be expected to retain well-established features of the landscape, including mature trees, species-rich hedgerows and ponds. If there is significant loss of trees and shrubs as part of development, then new provision will be expected elsewhere on the site.

3.0 METHODOLOGY

3.1 Desk Study

- 3.1.1 The *Multi-Agency Geographical Information for the Countryside (MAGIC)* online resource was consulted for information on surrounding designated sites, priority habitats, protected species and Natural England Licence applications within 2.0 km of the site. The data search was conducted on 27th June 2018.

3.2 Field Survey

- 3.2.1 A Preliminary Ecological Appraisal was undertaken on 28th June 2018, 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, 2003)*. 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 28th June 2018 by an experienced, licenced bat surveyor who undertook an external and internal examination of the existing buildings 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 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
Negligible	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.
Moderate	A building with features which, could be used regularly by a small number of bats.
High	A building with features suitable for use by a large number of bats on a regular basis.

3.4 Reptile Survey

- 3.4.1 12 no. artificial reptile refugia (*roofing felt; 0.50 x 1.0 m²*) were laid out around the site on 28th August 2018 and allowed to settle for 4 weeks prior to commencement of the survey.
- 3.4.2 07 no. site visits were conducted, where the number, species, age and sex of the reptiles' present were recorded.
- 3.4.3 Surveys were undertaken where possible during recommended times (08:00–11:00 and 16:00-18:30) with suitable weather conditions for surveying reptiles (*guidelines recommend temperatures 9-18°C with intermittent or hazy sunshine during warm days*). Weather conditions recorded at each survey visit are shown in Table No. 03 below.

Table No. 02 - Details of Weather Conditions during the Reptile Surveys

Survey	Date of Visit	Time	Weather
01	24.09.18	11:00	14°C – Sunny, Dry, Wind F1
02	26.09.18	10:00	18°C – Sunny intervals, Wind F2
03	28.09.18	10:00	14°C – Sunny intervals, Wind F2
04	03.10.18	10:00	16°C – Sunny, Dry, Wind F1
05	08.10.18	09:45	15°C – Sunny intervals, Wind F1, 40% cloud
06	10.10.18	10:30	18°C – Sunny intervals, Wind F1
07	12.10.18	10:00	17°C – Sunny intervals, Wind F2, 40% Cloud

3.5 Bat Emergence Survey

- 3.5.1 One survey visit was undertaken on 28th August 2018 in accordance with guidelines outlined in *Bat Surveys for Professional Ecologists: Good Practice Guidelines (BCT 2016)*.
- 3.5.2 Each bat surveyor was assigned a survey point within the site area so as to best observe and record the level of bat usage of the habitat and features believed to be most relevant to the development proposals. Two survey points were utilised during the survey visits. **Survey Point SP01** was located to the west of the property; **Survey Point SP02** was located to the east of the property. The survey involved only SP01 and SP02, which provided a general overview of bat activity on site.
- 3.5.3 The single dawn re-entry survey started 1.5 hours before sunrise and terminated 15 minutes after.
- 3.5.4 Bats were identified using frequency-division and active full-spectrum bat detectors *Anabat SD2* and *Echo Meter Touch Pro 2*, and sound analysis was undertaken using *AnalookW* and *Kaleidoscope Viewer*. *Table No. 02* shows the details of the bat survey:

Table No. 03 – Bat Survey Details

Date	28 th August 2018
Survey Type	Dawn Emergence
Surveyors	Catherine O'Reilly / George Sayer
Weather conditions	12.5°C, WF1, 4.8 Cloud
Sunrise	06:05
Start time	04:35
Finish time	06:25

4.0 BASELINE ECOLOGICAL CONDITIONS

4.1 Designated Sites

Statutory Protected Sites

- 4.1.1 Statutory protected sites located within 2.0 km of the proposed development site are detailed below.

Table No. 04 – Statutory Protected Sites

Site	Description	Location
<i>South Downs National Park</i>	A large area of chalk down land and woodland which supports numerous species of fauna and flora.	1.5km NE

- 4.1.2 The site is located within the *Impact Risk Zone* of the *Site of Special Scientific interest (SSSI) Climping Beach & Arundel Park SSSI*. The proposed location does not meet the criteria requiring consultation with Natural England.

Non-Statutory Protected Areas

- 4.1.3 *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 (2018)* and as such are material considerations when assessing planning applications. No SNCI's were identified within 2.0 km of the site.

4.2 Habitats

- 4.2.1 Within 2.0 km of the site there are Priority Habitats of; *Coastal & Floodplain Grazing Marsh, Ancient Woodland (Semi-Natural), Deciduous Woodland, Traditional Orchards and Woodpasture & Parkland*. None of these habitats are present within the site, and no impacts upon these habitats are predicted.

4.2.2 Habitats within and adjacent to the land include:

- *Amenity Grassland;*
- *Bare Ground / Hardstanding;*
- *Introduced Shrubs and Scrub;*
- *Existing Buildings / Structures;*
- *Scattered Trees;*
- *Introduced Shrubs;*
- *Hedge with Trees;*
- *Tall Ruderal Vegetation.*

Amenity Grassland

4.2.3 Amenity grassland dominated much of the central portion of the site. The majority was mown short and used as lawn. Sections of the grassland to the west of the site have been left unmown to develop into rank grassland, with mown paths between. The sward was generally of low botanical interest, with grasses such as Timothy grass (*Phleum pratense*), perennial rye-grass (*Lolium perenne*) and forbs such as white clover (*Trifolium repens*). This common and widespread habitat is of value within the **site area** only.

Bare Ground / Hardstanding

4.2.4 Surrounding the buildings were paths made of concrete, whilst the vehicular access was formed of compacted gravel, both of **negligible** ecological interest.

Introduced Shrubs and Scrub

4.2.5 Surrounding the amenity grassland, were areas of large introduced shrubs and small native trees, largely overgrown with scrub. The scrub was largely formed of bramble (*Rubus fruticosus*); buddleia (*Buddleia davidii*); and elder (*Sambucus nigra*). The vegetation was dense and vigorous. This common and widespread habitat is of value within the **site area** only.

Existing Buildings / Structures

4.2.6 Three buildings / structures were located within the site; the bungalow; the dilapidated store; and the polytunnel / greenhouse, all are of **negligible** ecological interest.

Scattered Trees

- 4.2.7 A number of scattered trees were present within the site. These consisted of both native species such as field maple (*Acer campestre*); ornamental species such as spruce (*Picea sp.*) and a number of fruit trees, mainly apple (*Malus sp.*). Several large cypress trees (*Cupressus sp.*); a large willow tree (*Salix sp.*); and a mature walnut tree (*Juglans regia*) are dominant features of the site. The trees are generally overgrown and effectively screen much of the site. This common and widespread habitat is of value within the **site area** only.

Introduced Shrubs

- 4.2.8 Within the gardens are limited areas of introduced shrubs. The majority of the shrubs are garden privet (*Ligustrum ovalifolium*) formed into dense hedges, with other scattered shrubs such as rosemary (*Rosmarinus officinalis*). This common and widespread habitat is of value within the **site area** only.

Hedge with Trees

- 4.2.9 Along the southern and north-western boundaries of the site, are strips of vegetation which once would have constituted hedges. The vegetation has subsequently grown up into lines of trees with smaller shrubs between. The vegetation is largely native and dominated by common hedgerow species such as holly (*Ilex aquifolium*) and hazel (*Corylus avellana*). Several large hazel coppice stools within the garden suggest further hedges were previously present on the site. The vegetation provides some screening, the hedges provide connective to the wider environment and are of **local value**.

Tall Ruderal Vegetation

- 4.2.10 Limited patches of tall ruderal vegetation lined the amenity grassland and introduced shrubs with scrub. The vegetation was of limited botanical interest, being dominated by common nettle (*Urtica dioica*) and smooth meadow grass (*Poa pratensis*). This common and widespread habitat is of value within the **site area** only.

4.3 Protected Species Assessment

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

Amphibians

Desk Study

- 4.3.2 There are no records of great crested newts within 2.0km of the site, and previous surveys in the vicinity of Yapton by *Lizard Landscape Design and Ecology* in 2016 did not record any great crested newts. Great crested newts and their resting / breeding sites are protected under *The Conservation of Habitats and Species Regulations (2017)* and *The Wildlife and Countryside Act 1981 (as amended)*.

Site Assessment

- 4.3.3 The rank grassland habitat on the site may provide suitable terrestrial habitat for amphibians. The swimming pool on site is well-maintained and is not considered suitable for amphibians in its current state. A common frog (*Rana temporaria*) was noted beneath an empty water-butt at the entrance to the polytunnel. Overall the site is deemed unsuitable habitat for amphibians.

Reptiles

Desk Study

- 4.3.4 Common and widespread species of reptiles such as slow worm (*Anguis fragilis*); common lizard (*Zootoca vivipara*); grass snake (*Natrix helvetica helvetica*); and adder (*Vipera berus*) have been recorded 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

- 4.3.5 Full reptile presence / absence surveys were undertaken, consisting of 7 no. visits undertaken during September and October 2018. Five visits identified a peak count of 2 no. female adults and 3 no. juvenile slow-worms, within the amenity grassland in the centre of the site and to the northern boundary of the site. The site is considered to be of **site / local value** to common species of reptile.

Nesting Birds

Desk Study

- 4.3.6 There are total of 111 no. bird species have been recorded within 2.0km of the site, including 7 no. Schedule I species and at least 1 no. species listed on the BoCC Red List.

Site Assessment

- 4.3.7 Trees, hedges, and shrubs around the site provide suitable nesting opportunities for common bird species. A juvenile carrion crow (*Corvus corone*) was noted within a pear tree. A bird's nest was noted within a tree to the west of the site. A number of common garden birds, including greenfinch (*Carduelis chloris*) were noted feeding on bird feeders in the garden. The building offers some suitability for birds such as house sparrows; however, no evidence of nesting birds was observed within the building on-site. The area overall is likely to be of **site value** to breeding / foraging birds.

Bats

Desk Study

- 4.3.8 Bats relevant to the site such as serotine bat (*Eptesicus serotinus*); common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) have been recorded within 2.0km of the site, mainly in relation to buildings within the villages of Barnham and Eastergate.

- 4.3.9 All species of bats and their roosts are protected under *Regulation 41 of The Conservation of Habitats and Species Regulations (2017)*. It is an offence for anyone to intentionally kill or injure a bat; disturb a roosting bat; damage, destroy or obstruct access to any place used by bats for shelter; and / or to significantly alter the local distribution of bats.

Site Assessment

- 4.3.10 A small, brick-built bungalow, with a concrete interlocking-tile roof on site was subject to a full preliminary bat roost assessment. The roof was a gable-and-valley roof with a small chimney. The tiles were generally well-fitted, with only very small gaps that did not lead into the roof. The soffits and fascia's were of wood and were in varying condition. Several sections had rotted, and gaps were noted which could allow bats ingress into the roof.
- 4.3.11 No internal access into the loft was possible at the time of survey; the windows and walls were examined externally, and no evidence of bats, such as urine splashes, bat droppings, feeding remains or grease stains were noted. The building is surrounded by dense vegetation. Overall, it is considered unlikely that bats are roosting within the bungalow. Because full access was not possible; the building is surrounded by suitable bat habitat, and a very small number of potential access points was noted, the building was considered to offer 'low' bat roost potential.
- 4.3.12 The bat re-entry survey undertaken on 28th August 2018 recorded low numbers of common pipistrelle bats commuting around the site boundaries. No bats were recorded entering gaps in the building. The existing building within the site is therefore not considered to support an active bat roost.

Badgers*Desk Study*

- 4.3.13 There are no records of Badgers (*Meles meles*) within 2.0km of the site, however they are known to be present locally. Badgers are protected under *The Protection of Badgers Act 1992*.

4.3.14 *Site Assessment*

A dead badger was found on site during the initial walkover survey on 28th June 2018. No further evidence of badger such as setts, snuffle holes or latrines was identified on site. The site is likely to be of value to occasional commuting badgers only.

Water vole*Desk Study*

- 4.3.12 There are multiple records of water vole (*Arvicola amphibious*) within 2.0km of the site. The water vole is fully protected *under Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)*.

Site Assessment

- 4.3.13 No suitable watercourse was identified within or adjacent to the site, therefore the site is of **negligible** value to water vole.

Hazel Dormouse*Desk Study*

- 4.3.13 There are multiple records of hazel dormouse (*Muscardinus avellanarius*) within 2.0km of the site, mostly in association with hedgerows in Tortington. The hazel dormouse is fully protected under *Schedules 5 & 6 of The Wildlife and Countryside Act 1981 (as amended)* and *The Conservation of Habitats and Species Regulations (2017)*.

Site Assessment

- 4.3.14 There are limited mature trees and only a small variety of understorey flora associated with hazel dormouse foraging features, therefore due to the intervening distances between known dormouse populations and the site, the proposed area is found to be of **negligible** value to dormice.

Hedgehogs*Desk Study*

- 4.3.14 There are multiple records of Hedgehogs (*Erinaceus europaeus*) within 2.0km of the site. Hedgehog numbers are declining, and they have been a *UK Biodiversity Action Plan (BAP)* species since 2007.

Site Assessment

- 4.3.16 Areas of longer grassland/ vegetation and log piles on site may provide suitable habitat for hedgehogs. The site is considered to be of **site value** to hedgehogs.

Others

- 4.3.17 No suitable habitat for any other protected species was recorded on site. The proposed construction zone is dominated by amenity grassland, tall ruderal and scattered trees.

4.4 Survey Constraints / Considerations

- 4.4.1 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 The site is located within the *Impact Risk Zone* of *Climping Beach & Arundel Park SSSI* while the nearest statutory designated area is South Downs National Park, located 1.5km north-east. In the absence of mitigation potential impacts from this development could include increased localised reduction in air quality; and localised disturbance through noise and dust. Due to the small scale of the proposals however, these impacts are of low impact magnitude and highly unlikely to occur.

Mitigation and Compensation

- 5.1.2 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)*. The development proposal is for seven new residential dwellings with associated gardens and parking, which are unlikely to increase recreational pressure locally.

Residual Impacts

- 5.1.3 The development proposals will have **no likely significant effect** upon surrounding protected sites.

5.2 Habitats

Potential Impacts

- 5.2.1 Development proposals will result in the loss of very small areas of amenity grassland; tall ruderal and scattered trees. These habitats are common and widespread and will be replaced post development.

Mitigation and Compensation

- 5.2.2 Post-development, a landscape scheme would replace the minimal habitats lost with further areas of amenity lawn and introduced shrub areas. 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 the spread of any dust which may impact the nearby trees. Lighting during the construction and operational phases will be controlled with no light spill upon the surrounding tree lines.

Residual Impacts

- 5.2.3 Once mitigation measures are taken into account, the effects upon surrounding habitats will be **negligible, non-significant**.

5.3 Reptiles*Potential Impacts*

- 5.3.1 A single female slow-worm was noted during reptile surveys undertaken on the site. In the absence of mitigation, the proposals would result in the loss of low-quality habitat for reptiles and may result in the injury or death of a very low number of reptiles. The impact would be **moderate** but limited to the site area only.

Mitigation and Compensation

- 5.3.2 The reptile surveys have revealed that the site is utilised by 'low' populations of slow worms. As some of these areas of habitat will be removed, or become isolated by the development, a full translocation exercise shall be required prior to the commencement of work.
- 5.3.3 In-situ relocation schemes, where reptiles are retained in suitable areas of a development site or released into immediately adjacent habitat are preferable (*English Nature, 2004*). This will be the case for this development. During works on site, reptiles will be excluded from the area of impact and retained within the margins. Once development is completed reptiles will then be able to utilise the site once more.

- 5.3.4 An area to the north and north-eastern corner of the site covering c. 450m² will be utilised as the receptor site. This area is made up of grassland, scrub and scattered trees which provide suitable reptile habitat.
- 5.3.5 The receptor area will be enhanced with log piles suitable for reptiles. Sections of vegetation within the receptor zone should be cut annually with areas cut on a rotational basis. Occasional cutting of the area would prevent scrub encroachment and ensure that habitat on site remains suitable.
- 5.3.6 Once the reptile receptor area is established, a full reptile translocation will be undertaken. Temporary reptile exclusion fencing would be installed around the construction zone to prevent movement of reptiles into the construction zone area. The reptile exclusion fencing would be 750 mm in height and constructed using 1000-gauge UV-treated polythene fixed to 50 x 50 mm stakes and buried 250 mm underground.
- 5.3.7 The above works would be conducted under the supervision of a suitably qualified ecologist to ensure the welfare of any reptile species that may otherwise be adversely affected. The fencing would be maintained for the duration of the construction period and until all works have been completed on site. Fencing would be checked on a regular basis and repaired where necessary as soon as possible.
- 5.3.8 Following the erection of fencing, a reptile translocation exercise would be conducted of all reptiles within the construction zone prior to commencement of any site clearance / construction. Additional reptile refugia would be deployed within the construction zone and site visits undertaken in suitable weather conditions during the reptile active season (*March-October inclusive*). Any reptiles encountered would be stored in cloth bags and translocated to the receptor site.

- 5.3.9 In order to assist the reptile translocation exercise, habitat manipulation shall be utilised. Vegetation from sections of the site would be removed in stages with an initial trim reducing vegetation to no less than 15 cm. A subsequent cut would then reduce vegetation to a height of < 5 cm rendering the area unsuitable for reptiles. All arisings would be removed from the construction zone to prevent the creation of compost piles which are attractive to reptiles.
- 5.3.10 The reptile translocation exercise would continue until 5 no. consecutive visits in suitable conditions have been undertaken where no reptiles have been found. Once the site has been declared clear of reptiles, a destructive site search would be undertaken.
- 5.3.11 Vegetation on site would be maintained to a height of less than 5 cm before and during any construction activities to render the area unsuitable for re-colonisation by reptiles.

Residual Impacts

- 5.3.12 Once mitigation is taken into account, the overall impact of the scheme will be **non-significant**.

5.4 Nesting Birds

Potential Impacts

- 5.4.1 In the absence of avoidance / mitigation, the development could result in the damage / destruction of a bird nest. Given that no birds' nests were noted within the building, the potential for this impact is considered to be 'low'.

Mitigation and Compensation

- 5.4.2 Clearance of any hedges, shrub or trees will be undertaken outside the bird nesting season. Should this not be possible, vegetation will be checked prior to removal by a Suitably Qualified Ecologist.

Residual Impacts

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

5.5 Bats

Potential Impacts

- 5.5.1 In the absence of mitigation the proposals could result in the loss of a very small area of bat foraging and commuting habitat. Foraging areas and commuting routes may also be adversely impacted should a sensitive lighting scheme not be employed, causing loss of bat foraging areas and habitat fragmentation. The impact will be **minor** but would extend beyond the site to the local area.

Mitigation and Compensation

- 5.5.2 A sensitive lighting scheme will be employed with lighting kept to the minimum levels and angled down and away from surrounding hedge lines, mature trees and agricultural land. The landscape scheme includes reinforcement of existing boundary vegetation, with native '*bat-friendly*' planting to increase the foraging resource beyond the current baseline and create potential commuting routes, while bat boxes will be installed to mature trees to the site boundaries to increase potential roosting sites.

Residual Impacts

- 5.5.3 The overall impact of the scheme will be minor-adverse in the short-term, with a negligible impact in the long-term once vegetation has established and permanent bat roosting facilities are provided.

5.6 Badgers

Potential Impacts

- 5.6.1 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 low impact magnitude and unlikely to occur.

Mitigation and Compensation

- 5.6.2 Any trenches will be covered or have a ramp installed overnight to prevent any mammals becoming trapped. Commuting corridors around the margins of the site will be retained.

Residual Impacts

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

6.0 ENHANCEMENTS

- 6.1 The design of any proposed development should consider ecological enhancements for the benefit of wildlife in line with the *National Planning Policy Framework* and *Local Planning Policy*. Recommendations for ecological enhancements that could be considered as part of development proposals could include:

- *The use of flowering plants as listed within the RHS 'Perfect for Pollinators' plant list to provide year-round interest for invertebrates;*
- *The provision of nesting boxes for a variety of bird species within trees surrounding the site, or on proposed dwellings;*
- *The provision of bat boxes on existing mature trees;*
- *Use of a sympathetic lighting scheme across the site, with lighting angled down and away from hedge / tree lines;*
- *Provision of a hedgehog house to open spaces, to provide additional habitat for hedgehogs;*
- *Seeding of any areas of unused open space with a wildflower seed mix, to provide improved ecological resource for invertebrates; amphibians and reptiles;*
- *Holes of 13 cm x 13 cm should be left at the bases of fencing to allow free movement of hedgehogs across the site;*
- *Replacement native tree; shrub; and hedge planting to reinforce boundary planting; possible species might include: field maple; wild privet; hazel; hawthorn; willow; silver birch; guelder rose; cherry; blackthorn; crab apple; rowan; holly; hornbeam; spindle;*
- *Compost / log piles where space allows. Where this is not possible the placement of bug hotels such as NHBS Bee and Bug Biome or similar will provide additional habitat for invertebrates;*
- *The use of pale and night-scented species around the site will increase bat foraging potential. Species could include jasmine, Michaelmas daisy and evening primrose.*

7.0 CONCLUSIONS

- 7.1 The development site is formed of common, widespread habitats of low ecological value. Detailed reptile surveys recorded a peak count of 2 no. adult slow-worm on the site. Sections of the boundary vegetation offers habitat for commuting bats; and nesting birds. Areas of this vegetation require removal; the sections requiring removal are generally disconnected from other vegetation and do not form significant wildlife corridors. This removal would be mitigated by replacement planting and appropriate removal techniques. The mitigation and enhancements proposed above will ensure the continuing favorable conservation status of the local slow worm; bat and bird populations.
- 7.2 The overall impacts of the planned development upon biodiversity will be non-significant with proposed ecological enhancements resulting in a net gain and a potential long-term positive increase in biodiversity in line with national planning policy guidance.

8.0 REFERENCES

JNCC: Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit; (2003);

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.magic.gov.uk.

Table No. 05 – Species List for Habitat Parcels**Amenity Grassland**

Common Name	Scientific Name	DAFOR
Cocksfoot Grass	<i>Dactylis glomerata</i>	O
Common Daisy	<i>Bellis perennis</i>	F
Common Nettle	<i>Urtica dioica</i>	O
Creeping Buttercup	<i>Ranunculus repens</i>	F
Dandelion	<i>Taraxacum officinale</i>	F
Dock	<i>Rumex sp.</i>	F
Pendulous Sedge	<i>Carex pendula</i>	R
Perennial Rye-grass	<i>Lolium perenne</i>	LD
Timothy Grass	<i>Phleum pratense</i>	LD
White Clover	<i>Trifolium repens</i>	A

Introduced Shrubs

Common Name	Scientific Name	DAFOR
Buddleia	<i>Buddleia davidii</i>	LF
Cabbage Palm	<i>Cordyline australis</i>	O
Cherry Laurel	<i>Prunus laurocerasus</i>	LD
Cider Gum	<i>Eucalyptus gunnii</i>	R
Garden Privet	<i>Ligustrum ovalifolium</i>	LD
Hydrangea	<i>Hydrangea sp.</i>	LA
Japanese Aralia	<i>Fatsia japonica</i>	R
Kohuhu	<i>Pittosporum tenuifolium</i>	R
Rosemary	<i>Rosmarinus officinalis</i>	O

Introduced Shrubs and Scrub

Common Name	Scientific Name	DAFOR
Bramble	<i>Rubus fruticosus</i>	LD
Buddleia	<i>Buddleia davidii</i>	F
Common Elder	<i>Sambucus nigra</i>	LA
Ivy	<i>Hedera helix</i>	LD
Sycamore	<i>Acer pseudoplatanus</i>	F
Willow	<i>Salix sp.</i>	F

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

Tall Ruderal Vegetation

Common Name	Scientific Name	DAFOR
Bramble	<i>Rubus fruticosus</i>	LA
Cocksfoot Grass	<i>Dactylis glomerata</i>	O
Common Nettle	<i>Urtica dioica</i>	D
Ivy	<i>Hedera helix</i>	LA
Smooth Meadow Grass	<i>Poa pratensis</i>	F
Sycamore	<i>Acer pseudoplatanus</i>	O
Timothy	<i>Phleum pratense</i>	O

Scattered Trees and Hedge with Trees

Common Name	Scientific Name	DAFOR
Apple	<i>Malus sp.</i>	O
Common Elder	<i>Sambucus nigra</i>	LA
Common Hawthorn	<i>Crataegus monogyna</i>	O
Common Walnut	<i>Juglans regia</i>	R
Cypress	<i>Cupressus sp.</i>	O
Field Maple	<i>Acer campestre</i>	O
Hazel	<i>Corylus avellana</i>	LF
Lawson's Cypress	<i>Chamaecyparis lawsoniana</i>	R
Monterey Cypress	<i>Cupressus macrocarpa</i>	R
Pear	<i>Pyrus sp.</i>	O
Spruce	<i>Picea sp.</i>	O
Sycamore	<i>Acer pseudoplatanus</i>	LA
Willow	<i>Salix sp.</i>	LF
Yew	<i>Taxus baccata</i>	R

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

Table No. 06 – Target Notes (TN) for Ecology Phase 1 Habitat Survey and Protected Species Assessment

Ref.	Feature	Description
TN01	Bird's Nest.	A bird's nest in a tree.
TN02	Rank Amenity Grassland.	Vegetation with potential for reptiles.
TN03	Dead Badger.	A dead badger near the site entrance; cause of death is unknown; however, the badger had been dead some time.

APPENDICES

Appendix A – Site Photographs



Photograph No. 01 – The site as seen from the bungalow, with amenity grassland and introduced shrubs, as well as the swimming pool visible.



Photograph No. 02 – View of the bungalow **Building B2**, with the mature walnut tree behind. The building offers 'low' bat roost potential.



Photograph No. 03 – Introduced shrubs with scrub, and scattered trees along the western boundary.



Photograph No. 04 – Amenity grassland, both mown and rank.



Photograph No. 05 – **Building B2** is a dilapidated store offering '*negligible*' bat roost potential.



Photograph No. 06 – Introduced shrubs within the garden.



Photograph No. 07 – Tall ruderal vegetation within the site.



Photograph No. 08 – Hedge with trees along the southern boundary of the site.



Photograph No. 09 – **Building B3** is a polytunnel greenhouse, offering '*negligible*' bat roost potential. A common frog was found beneath the water butt to the centre.



Photograph No. 10 – Dead badger found near the site entrance.

Appendix B – Reptile Survey Results

Appendix B – Reptile Survey Results

Site	Sunnymead, Yapton			
Surveyor	Louise Barker			
Date	24 th September 2018			
Time	11:00			
Temperature	14° Centigrade			
Weather	Full Sun			
Wind	F1			
Tile No.	Species	Ad/J	Sex	Notes
-	-	-	-	-

Site	Sunnymead, Yapton			
Surveyor	Louise Barker			
Date	26 th September 2018			
Time	10:00			
Temperature	18° Centigrade			
Weather	Sun with scattered cloud			
Wind	F2			
Tile No.	Species	Ad/J	Sex	Notes
1	Slow Worm	Adult	Female	-

Site	Sunnymead, Yapton			
Surveyor	Louise Barker			
Date	28 th September 2018			
Time	10:00			
Temperature	14° Centigrade			
Weather	Sun with scattered cloud			
Wind	F2			
Tile No.	Species	Ad/J	Sex	Notes
8	Slow Worm	Juvenile	-	-
8	Slow Worm	Juvenile	-	-
8	Slow Worm	Juvenile	-	-

Appendix B – Reptile Survey Results cont...

Site	Sunnymead, Yapton			
Surveyor	Louise Barker			
Date	3 rd October 2018			
Time	10:00			
Temperature	16° Centigrade			
Weather	Full Sun			
Wind	F1			
Tile No.	Species	Ad/J	Sex	Notes
9	Slow Worm	Adult	F	-
2	Slow Worm	Adult	F	-

Site	Sunnymead, Yapton			
Surveyor	Louise Baker			
Date	8 th October 2018			
Time	09:45			
Temperature	15° Centigrade			
Weather	40% Cloud			
Wind	WF1			
Tile No.	Species	Ad/J	Sex	Notes
9	Slow Worm	Adult	Female	-

Site	Sunnymead, Yapton			
Surveyor	Catherine O'Rielly			
Date	10 th October 2018			
Time	10:00			
Temperature	18° Centigrade			
Weather	Scattered Cloud			
Wind	WF1			
Tile No.	Species	Ad/J	Sex	Notes
-	-	-	-	-

Site	Sunnymead, Yapton			
Surveyor	Louise Barker			
Date	12 th October 2018			
Time	10:00			
Temperature	17° Centigrade			
Weather	40% Cloud			
Wind	WF2			
Tile No.	Species	Ad/J	Sex	Notes
9	Slow Worm	Adult	F	-

Appendix C – Bat Re-entry Survey Results

Appendix C – Bat Re-Entry Survey Results

Site	Sunnymead, Yapton			
Date	28 th August 2018			
Sunrise	06:10			
Time	04:38 – 06:25			
Temperature	12.5° Centigrade			
Weather	Wind F1, 4.8 Cloud			
Surveyor	C.O'Reilly			
Point	SP01			
Time	Species	Frequency	Behaviour	Notes
05:42	C.Pip	45kHz	Commuting	Heard only.
05:56	C.Pip	45kHz	Commuting	
Surveyor	G.Sayer			
Point	SP02			
Time	Species	Frequency	Behaviour	Notes
05:05	C.Pip	45kHz	Commuting	Faint calls heard only.
05:12	C.Pip	45kHz	Commuting	Heard only.
05:47	C.Pip	45kHz	Commuting	Faint calls heard only.

FIGURES

Figure No. 01 – Site Habitat Plan

Figure No. 02 – Location of Artificial Reptile Refugia

Figure No. 03 – Bat Emergence Surveyor Location

Figure No. 04 – Location of Reptile Exclusion Fence

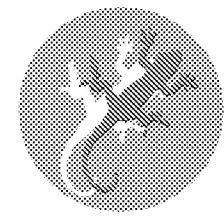


Legend

- Development Site Boundary.
- Target Notes.
- TN01 Building Number.
- B1 Existing Buildings.
- Tall Ruderal.
- Hard/Bare Ground.
- Intact Shrub.
- Amenity Grassland-Wildlife Managed.
- Amenity Grassland.
- Compost and Brash.
- Introduced Shrub & Scrub.
- Hedge/line w/ Trees.
- Scattered Trees.

Planning Issue

Rev	Description	Date	Initials
00	Planning Issue	23.11.18	LB



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Client
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Project Title and Location
Sunnymead Farm
Yapton, West Sussex

Drawing Title
Figure No.1 - Site Habitat Plan

Scale 1:200@A1	Drawn LB	Approved GS	Date 17.07.18
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Drawing No LLD1445-ECO-FIG-001	Revision 01
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Figure No.1 - Site Habitat Plan
Sunnymead Farm, Yapton, West Sussex



Legend

- Development Site Boundary.
- Target Notes.
- TN01
- Building Number.
- B1
- Existing Buildings.
- Tall Ruderal.
- Hard/Bare Ground.
- Intact Shrub.
- Amenity Grassland-Wildlife Managed.
- A
- Amenity Grassland.
- A
- Compost and Brash.
- Introduced Shrub & Scrub.
- Hedgeline w/ Trees.
- Scattered Trees.
- Refugia mats.
- 1

Planning Issue

Rev	Description	Date	Initials
00	Planning Issue	19.11.18	LB



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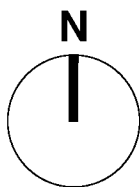
Client
Neame Sutton Ltd
Project Title and Location
Sunnymead Farm
Yapton, West Sussex

Drawing Title
Figure No.2 - Reptile Refugia Locations

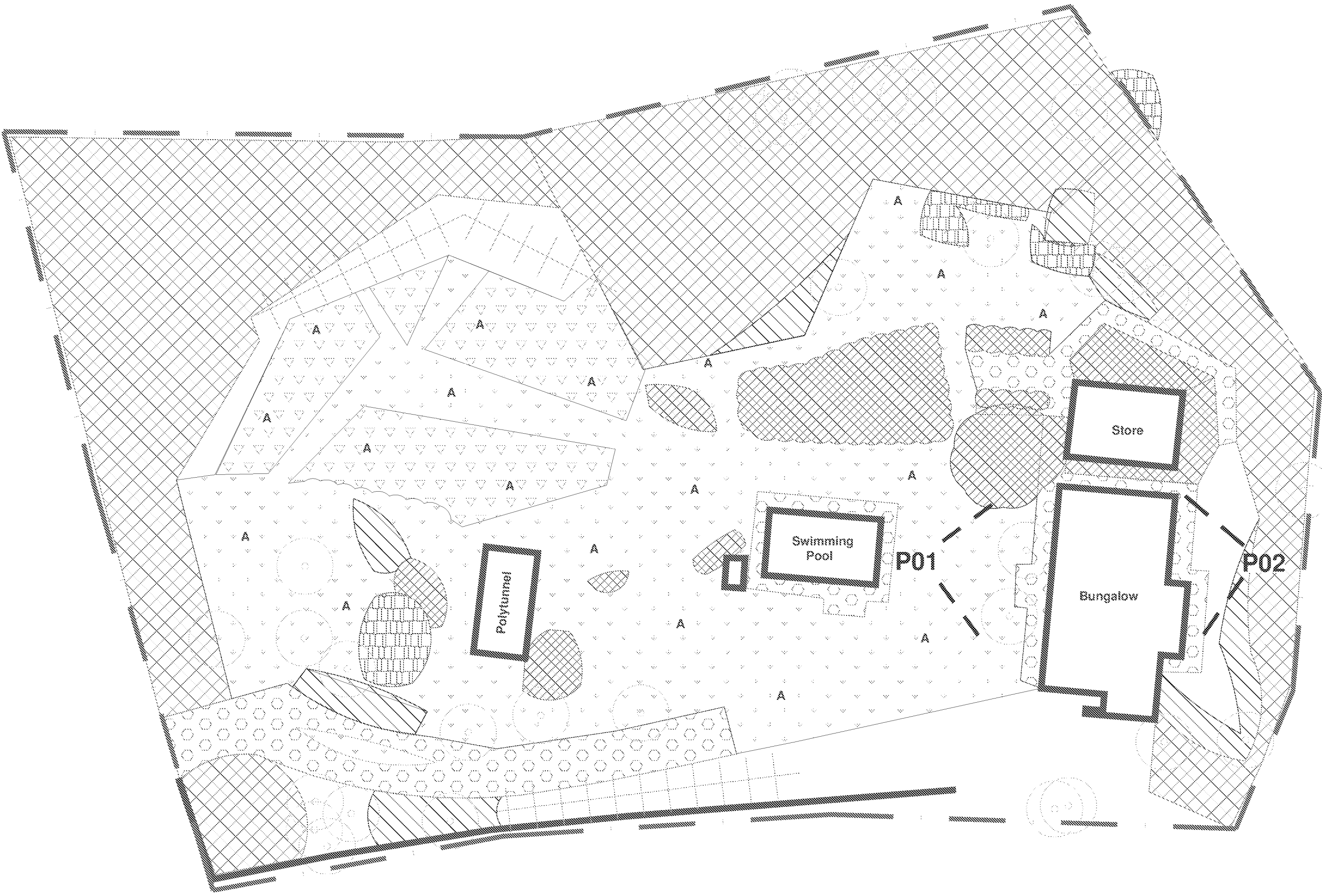
Scale 1:200@A1	Drawn LB	Approved GS	Date 23.11.18
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Figure No.2 - Reptile Refugia Locations
Sunnymead Farm, Yapton, West Sussex



0 5 10 m
Scale 1:200

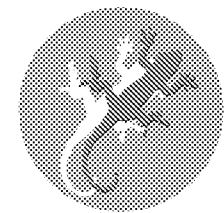


Legend

- Development Site Boundary.
- Target Notes.
- TN01 Building Number.
- B1 Existing Buildings.
- Tall Ruderal.
- Hard/Bare Ground.
- Intact Shrub.
- Amenity Grassland-Wildlife Managed.
- Amenity Grassland.
- Compost and Brash.
- Introduced Shrub & Scrub.
- Hedge/line w/ Trees.
- Scattered Trees.
- P01 Bat Survey Point Locations (Dashed Lines Represent Field of View).

Planning Issue

Rev	Description	Date	Initials
00	Planning Issue	23.11.18	LB



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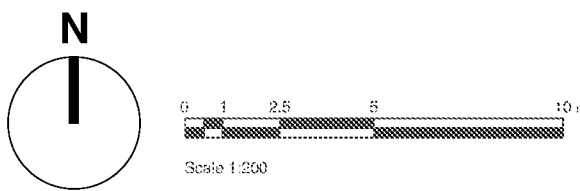
Client
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Project Title and Location
Sunnymead Farm
Yapton, West Sussex

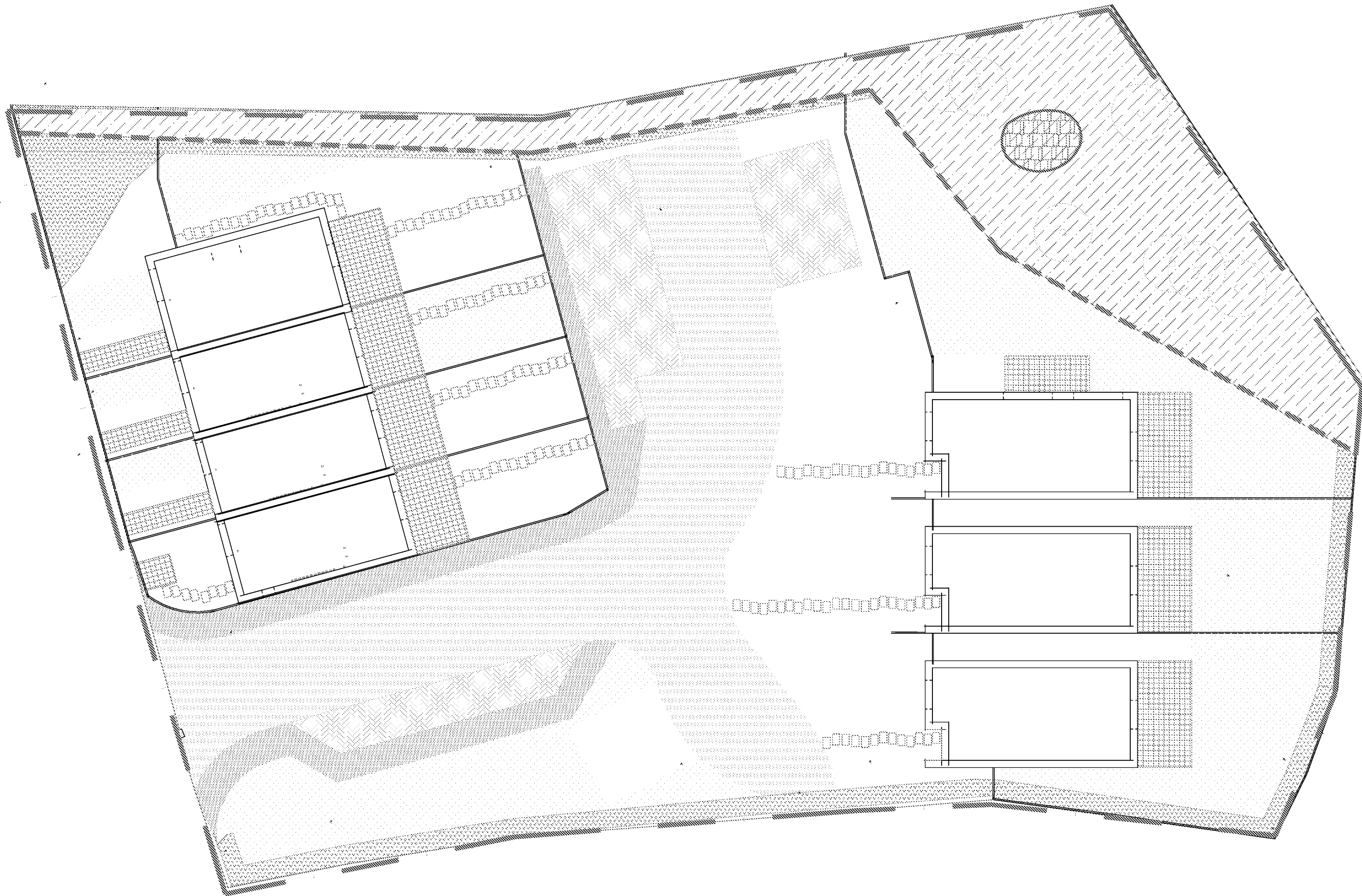
Drawing Title
Figure No.3 - Bat Surveyor Location

Scale 1:200@A1	Drawn LB	Approved GS	Date 23.11.18
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Drawing No LLD1445-ECO-FIG-003-00	Revision 00
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Figure No.3 - Bat Surveyor Location
Sunnymead Farm, Yapton, West Sussex





Legend

- Reptile Exclusion Fencing.
- Receptor Area.
- Logpile.
- Scattered Trees.

Planning Issue

Rev	Description	Date	Initials
00	Planning Issue	23.11.18	LB



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Drawing Title
Figure No.4 - Temporary Reptile Fencing

Scale 1:100@A1	Drawn LB	Approved GS	Date 23.11.18
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Drawing No LLD1445-ECO-FIG-004-00	Revision 00
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**Figure No.4 - Location of Temporary Reptile Fencing
Sunnymead Farm, Yapton, West Sussex**

