



ECOLOGICAL IMPACT ASSESSMENT

Stakers Farm Barns, North End Road, Yapton

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Date	31 st October 2019
Project Reference	LLD1742
Revision	01

Contents

	Page No.
SUMMARY	01
1.0 Introduction	02
2.0 Planning Policy and Legislation	03
3.0 Methodology	05
4.0 Baseline Ecological Conditions	09
5.0 Assessment of Effects and Mitigation Measures	16
6.0 Ecological Enhancements	20
7.0 Conclusions	21
8.0 References	22

TABLES

Table No. 01 – Bat Roost Suitability Guidelines (BCT, 2016)

Table No. 02 – Details of Bat Surveys

Table No. 03 – Statutory Designated Sites

Table No. 04 – Building Assessment

Table No. 05 – Species List for Habitat Parcels

APPENDICES:

Appendix A – Site Photographs

Appendix B – Full Bat Emergence / Re-entry Survey Results

FIGURES:

Figure No. 01 – Site Habitat Plan

Figure No. 02 – Location of Bat Survey Points



SUMMARY

Lizard Landscape Design and Ecology has been commissioned to undertake an Ecological Impact Assessment of land proposed for development at Stakers Farm Barns, North End Road, Yapton (*Grid Reference: SU 977 035 – hereafter referred to as 'the site'*).

A Preliminary Ecological Appraisal and Bat Roost Assessment was undertaken on 11th July 2019, to appraise the existing ecological resource within the land and the surrounding area. The barns were found to offer 'high' bat roost suitability; full bat emergence / re-entry surveys were subsequently undertaken July – August 2019. A full Ecological Impact Assessment was then undertaken using this baseline data.

The site is formed of existing building surrounded by hard / bare ground, scrub and improved grassland. The site itself is of **low ecological value** with no habitats of interest noted.

The site is of negligible value to dormice, amphibians, invertebrates, water vole, otter and crayfish. No suitable habitat exists for these species.

The site was found to be of **site / local** value to roosting bats, with a small bat roost noted within 2no. of the barns and small numbers of bats foraging over the buildings and grassland. The site was also found to be of **site / local** value to nesting birds, with evidence of swallows and other small passerines nesting within the buildings while areas of rough grassland and tall ruderal to the margins of the buildings may provide some suitable reptile habitat. No evidence of barn owl was noted in any building.

A series of mitigation / avoidance measures have been devised to ensure the development does not contravene any UK or European legislation, or cause harm to bats, reptiles and nesting birds.

Once avoidance and mitigation measures have been taken into account, the impacts of the planned development upon biodiversity will be negligible, 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.

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1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned to undertake an Ecological Impact Assessment of land proposed for development at Stakers Farm Barns, North End Road, Yapton (*Grid Reference: SU 977 035 – hereafter referred to as 'the site'.*
- 1.2 A Preliminary Ecological Appraisal and Bat Roost Assessment was undertaken on 11th July 2019, to appraise the existing ecological resource within the land and the surrounding area. The barns were found to offer '*high*' bat roost suitability; full bat emergence / re-entry surveys were subsequently undertaken July – August 2019. A full Ecological Impact Assessment was then undertaken using this baseline data.
- 1.3 A summary of the results of these surveys, potential impacts of the proposals, and details of avoidance, mitigation and compensation measures have been detailed within this report. This report has been prepared by Catherine O'Reilly (*MCIEEM, Senior Ecologist; Lizard Landscape Design and Ecology*) and reviewed by George Sayer (*PgDip, BSc, Project Ecologist; Lizard Landscape Design and Ecology*).

Site Information

- 1.4 The development site is located along North End Road, to the north-west of the village of Yapton. The site is approximately 6.0 metres above sea level and measures approximately 895.0m². The site comprises a group of barns and stables belonging to Staker's Farm. The site boundaries are edged by residential properties to the north and east, farm buildings to the west and open grassland to the south.
- 1.5 There are no areas of *Ancient Woodland* or woodland highlighted on *The National Forest Inventory* within or immediately adjacent to the development area. There are no public footpaths across the site and permission has been sought to access the area.

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Surrounding Landscape

- 1.6 The surrounding landscape is formed of the residential area of Yapton village, and arable farmland and paddocks, some of which are tree and hedge-lined. The nearest area of woodland listed on the *National Forest Inventory* is a 0.48-Ha patch of deciduous woodland 73.0m to the south-east of the site. The surroundings are relatively open with little extensive woodland.

Development Proposals

- 1.7 The development proposals involve the conversion and refurbishment of the barns and stables into residential dwellings. It is assumed that the proposals would involve the re-roofing of all buildings.

Survey Aims

- 1.8 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.

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National Planning Policy

- 2.3 The National Planning Policy Framework (NPPF) 2019 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 DM1 – DM5 of The Arun Local Plan 2011 – 2031 states that:
- *Development which will cause harm to designated sites will not normally be permitted unless there is no alternative solution, and there are reasons of overriding public interest, health and safety interest or benefits of primary importance to the environment.*
 - *Developments with 5.0km of Pagham harbour will be required to pay developer contributions towards the agreed strategic approach to access management at Pagham Harbour;*
 - *Within Biodiversity Opportunity Areas (BOAs) development shall:*
 - *Retain and sympathetically incorporate locally valued and important habitats, including wildlife corridors and stepping stones*
 - *Be designed in order to minimise disturbance to habitats*
 - *Trees shall be retained and protected;*
 - *Development schemes shall seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also 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).*
 - *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.*

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- 2.6 The current development proposals comply with all national and local planning policy with regards biodiversity.

3.0 METHODOLOGY

3.1 Desk Study

- 3.1.1 The Multi-Agency Geographic Information for the Countryside (*MAGIC*) was consulted for all designated sites, priority habitats and protected species licence records within 2.0km of the site. The desk search was conducted on 10th July 2019.

3.2 Field Survey

- 3.2.1 A preliminary ecological appraisal was undertaken on 11th July 2019, 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)*.
- 3.2.2 Habitats within the site 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.

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3.3 Preliminary Bat Roost Assessment

3.3.1 A Preliminary Bat Roost Assessment of buildings on site was undertaken on 11th July 2019 by an experienced, licenced bat surveyor who undertook an internal and external examination of the existing building and trees. The bat surveyors assessed the existing building and structures visually and searched for evidence such as;

- *Staining beneath or around a hole caused by natural oils in bat fur;*
- *Bat droppings beneath a hole, roost or resting area;*
- *Bat droppings and / or insect remains beneath a feeding area;*
- *Audible squeaking from within a hole;*
- *Insects (especially flies) around a hole;*
- *Dead bats.*

3.3.2 An external investigation assessed the fabric of the building to determine whether there were access points readily available for bats to utilise. Gaps / crevices identified within the structure were examined using a Clulite CB2 torch, ladder and endoscope where appropriate.

3.3.3 Once features had been assessed the trees and 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 – Bat Roost Suitability Guidelines (BCT, 2016)

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>

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3.4 Bat Emergence Surveys

- 3.4.1 Three survey visits of the buildings within the site were undertaken on 11th July, 24th July and 06th August 2019 in accordance with guidelines outlined in *Bat Surveys for Professional Ecologists: Good Practice Guidelines (BCT 2016)*. 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.
- 3.4.2 Three survey points were utilised during the survey visits. **Survey Point SP01** was located within the courtyard; **Survey Point SP02** was located to the south-western corner of the barns and **Survey Point SP03** was located to the north-western corner of the barn complex. All features of interest were incorporated into the sight-lines of these 3 no. points.
- 3.4.3 The dusk survey started 15 minutes before sunset and terminated 1.5 hours after. The dawn survey started 1.5 hours before sunrise and terminated 15 minutes after. Bats were identified using frequency division and full-spectrum bat detectors *Anabat SD2* and *Echo Meter Touch 2 Pro*, and sound analysis was undertaken using *AnalookW* and *Kaleidoscope Viewer*. Table No. 02 shows the details of the bat survey:

Table No. 02 – Bat Survey Details

Date	11st July 2019	24th July 2019	06th August 2019
Survey Type	Dawn	Dusk	Dusk
Surveyors	George Sayer Louise Barker Niall Walkden	Louise Barker Niall Walkden Josh Harwood	Catherine O'Reilly Louise Barker Will Mills
Weather conditions	15°C WF1 100% Cloud	22°C WF1 40% Cloud	15°C WF3 60% Cloud
Sunset / Sunrise	05:01	20:58	20:40
Start time	03:30	20:43	20:25
Finish time	05:16	22:28	22:10

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3.5 Ecological Impact Assessment

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

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

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

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

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

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

4.0 BASELINE ECOLOGICAL CONDITIONS

4.1 Designated Sites

Statutory Protected Sites

- 4.1.1 The following potential zones of influence have been utilised when identifying designated sites in the local area: Local Nature Reserves and Sites of Special Scientific Interest (within 2.0km) and European Designated sites including SAC’s and SPA’s (within 10km). Statutory protected areas in the vicinity of the site include:

Table No. 03 – Statutory Protected Sites

Site	Description	Location
Solent and Dorset Coast pSPA	A proposed SPA designated for the numbers of Common Tern, Sandwich Tern and Little Tern it supports.	3.7km S

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- 4.1.2 The site is located within the *Impact Risk Zone* of *Bognor Reef SSSI* however development proposals do not meet the criteria which would require the LPA to consult with Natural England.

Non-Statutory Protected Areas

- 4.1.3 *Sites of Nature Conservation Interest (SNCIs) / Local Wildlife Sites (LWS's)* 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; however, there are no LWS's within 2.0km of the site.

4.2 Habitats

- 4.2.1 Within 2.0 km of the site there are *Priority Habitats* of *Coastal and Floodplain Grazing Marsh; Deciduous Woodland, and Woodpasture and Parkland*.

- 4.2.2 Habitats within and adjacent to the land include:

- *Existing Building;*
- *Hard / Bare Ground;*
- *Improved Grassland;*
- *Tall Ruderal;*
- *Dense / Scattered Scrub;*
- *Amenity Grassland.*

Existing Building

- 4.2.3 The site is formed of 4 no. buildings arranged in a U-shape around a central courtyard. The buildings are partly interconnected and originally formed a stable-block for the farm.
- 4.2.4 Building B1 is a double-height open barn of brick and flint construction and timber frame. The building appears relatively old. The main barn door is not present, allowing light to enter the building. The roof is of timber construction with felt covering and clay peg-tiles.

- 4.2.5 Building B2 consists of a single-height stable, of more recent brick and flint construction. The stable consists of 4 no. blocks, of which 3 no. have no doors and are light internally. The southern pitch of the roof consists of clay peg-tiles, whilst the northern consists of more modern interlocking concrete tiles.
- 4.2.6 Building B3 consists of large barn of brick and timber construction, with a hayloft above. The roof is timber with clay peg-tiles. Some portions of the roof (*including a section of the south-facing pitch*) are felted.
- 4.2.7 Building B4 consists of a single-storey brick and flint stable block. This building connects to the extension of Building B3. The roof consists of a timber frame with clay tiles, a number of which have slipped or lifted over time. The building is divided into 4 no. stables, each of which has a traditional stable door.
- 4.2.8 Building B5 is a modern agricultural building used for tractor storage. The building is formed of steel frame construction clad with corrugated sheeting and is open to the southern aspect.
- 4.2.9 Building B6 is an agricultural building used for tractor, tools and wood storage. The building is formed of timber frame with brick and flint construction and concrete roof tiles. The building's interior is split into 5 sections, 4 no. of which are enclosed with a door and walls, with one section open fronted for storing wood with high levels of light though it. The eaves were open and easily inspected, no signs of bats noted.

Hard / Bare Ground

- 4.2.10 The central courtyard is formed of concrete hardstanding while a tarmac access driveway runs along the southern boundary of the survey area. This habitat is of **negligible value**.

Improved Grassland

- 4.2.11 The barn complex backs onto a large improved grassland field which is routinely grazed. Species composition was typical of the habitat type with rye-grass (*Lolium perenne*) dominating with occasional dock (*Rumex obtusifolius*) and creeping buttercup (*Ranunculus repens*). This common and widespread habitat is of **site value only**.

Tall Ruderal

- 4.2.12 Margins of the buildings are dominated by stands of nettle (*Urtica dioica*) with occasional hogweed (*Heracleum sphondylium*), cow parsley (*Anthriscus sylvestris*) and thistle (*Cirsium arvense*). This common and widespread habitat is of **negligible / site value only**.

Dense Scrub

- 4.2.13 Sections of the margins of the site have been colonised by species including bramble (*Rubus fruticosus*) and elder (*Sambucus nigra*) growing to a height of 3.0m. This common and widespread habitat is of **negligible / site value only**.

Amenity Grassland

- 4.2.14 Amenity grassland which form the existing gardens of Stakers Farm House lie to the north-eastern corner of the site. The grassland is routinely maintained resulting in a short, compact sward of limited diversity. Fescue (*Festuca* sp.) and bent (*Agrostis* sp.) grasses dominate with occasional daisy (*Bellis perennis*), buttercup (*Ranunculus repens*) and dandelion (*Taraxacum officinale*).

4.3 Protected Species

- 4.3.1 The following species assessment is based upon protected species records returned from desk study and the field study of the site. Those species for which no suitable habitat exists on site have been screened out of the assessment.

Amphibians*Desk Study*

- 4.3.2 A small number of records of GCN exist within 2.0km of the site, common toad and smooth newt are also known to be present.

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Site Assessment

- 4.3.3 There is one single pond shown on the map located 500m of the site (located 380m north-west), however upon inspection this pond found to no longer exist. No other ponds are located within 500m of the site.
- 4.3.4 The buildings and hard standing are of negligible value to amphibians. The small areas of tall ruderal and scattered scrub could provide some suitable habitat however this is negated by the isolation of the pond from suitable waterbodies, small size of terrestrial habitat on site and its isolation from other areas of suitable terrestrial habitat. The site is of '*negligible*' value to GCN and widespread amphibians such as common toad.

Reptiles*Desk Study*

- 4.3.5 There are records of slow worm, common lizard and adder within 2.0km of the site.

Site Assessment

- 4.3.6 The scrub and tall ruderal vegetation offer some potential habitat for reptiles; however, this is negated by the isolation of these areas from other suitable terrestrial habitat. Due to the small extent of the suitable areas the habitat is of value within the **site area only**.

Bats*Desk Study*

- 4.3.7 Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Serotine (*Eptesicus serotinus*), Noctule (*Nyctalus noctula*) and Daubentons (*Myotis daubentonii*) bats have been recorded within 2.0km of the site area.

Site Assessment

- 4.3.8 The existing buildings on site were subject to a preliminary roost inspection to assess their potential to support roosting bats, a summary of the assessment is shown below:

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Table No. 04 – Building Assessment

Ref.	Internal Assessment	External Assessment	Category
B01	Small number of <i>Pipistrelle</i> sp. droppings internally, suspected to be from internal foraging.	Numerous slipped / lifted tiles to the roof.	High
B02	No internal evidence.	Small number of gaps at the side of roof tiles.	Moderate
B03	Long-eared droppings and feeding remains on the first floor. Long-eared and <i>Pipistrelle</i> sp. droppings elsewhere.	Numerous slipped / lifted tiles to the roof. Gaps at the eaves. Gaps around windows / vents.	High
B04	Long-eared and <i>Pipistrelle</i> sp. droppings found internally. Live bat found during surveys in 2017.	Numerous slipped / lifted tiles to the roof.	Confirmed
B05	No internal evidence.	No suitable crevices or access points.	Negligible
B6	No internal evidence.	No gaps between concrete tiles. Open eaves checked throughout; no signs noted.	Negligible

4.3.9 Buildings B1 – B4 were subject to detailed bat surveys during the summer 2019 which revealed a single common pipistrelle bat roosting beneath roof tiles of Building No. 04, with a single brown long-eared bat utilising Building No. 03 as a feeding perch and night roost. The buildings support small numbers of a common species and therefore the roosts are considered to be **of ‘low conservation significance’**. No bats were seen to emerge or re-enter from any other buildings on site during the bat emergence surveys.

4.3.10 ‘Low’ levels of foraging activity by common pipistrelle bats (*Pipistrellus pipistrellus*), soprano pipistrelle bats and brown long-eared were recorded on the site. Single passes by noctule and serotine were also recorded. The proposed development would not eliminate any significant patches of bat foraging habitat and the impact on local bats is predicted to be **negligible**.

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Badger*Desk Study*

- 4.3.11 Badger records are confidential and therefore not available at the local scale. The local geography and geology are suitable for badgers.

Site Assessment

- 4.3.12 No evidence of badger such as snuffle holes, latrines, setts, tracks or prints were recorded anywhere within the site area. The site is of **negligible value** to badgers however they may occasionally commute across the area.

Birds*Desk Study*

- 4.3.13 Numerous bird species have been recorded within 2.0km of the site including schedule I species of Barn Owl, Kingfisher, Brambling and Firecrest.

Site Assessment

- 4.3.14 Numerous swallow nests were noted within the buildings with a small number of passerine nests built within gaps in rafters or to the top of wall plates. The surrounding grassland is too short and too frequently disturbed to be of any value to ground nesting birds however the scattered scrub may be of some value to small passerines. No evidence of barn owl such as pellets, feathers or white washing was present within any of the buildings surveyed. The habitats present are of **site value** to nesting birds.

Invertebrates*Desk Study*

- 4.3.15 Numerous species of invertebrates are recorded within 2.0km of the site including a number of bee; butterfly and dragonfly species; and stag beetle.

Site Assessment

- 4.3.16 Suitable habitat for invertebrates is limited to the scattered scrub and small areas of tall ruderal / rough grassland. The improved grassland lacks structure and is species poor, negating its suitability to support notable invertebrate species. The site in general lacks the floral diversity to support a good range of invertebrates and is likely to be of value within the **site area only**.

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Others

- 4.3.17 No suitable habitat for any other protected species was recorded on 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 *Bognor Reef SSSI* however development proposals do not meet the criteria which would require the LPA to consult with Natural England. Solent and Dorset Coast pSPA is located 3.7km south of the site. As this potential SPA is a marine site which seeks to protect the foraging grounds of 3 no. tern species, there will be no predicted impacts as a result of this development.

Mitigation and Compensation

- 5.1.2 None required; due to the intervening distances and nature of the surrounding protected sites no impacts are predicted.

Residual Impacts

- 5.1.3 **No likely significant effect** upon surrounding designated sites will arise from the proposed development.

5.2 Habitats*Potential Impacts*

- 5.2.1 Development will cause the loss of small areas of improved grassland, tall ruderal and scatter scrub; habitats which are of negligible or site level value only. In the absence of mitigation, impacts upon the off-site trees could include increased disturbance through noise, vibration and lighting, degradation of habitat through dust smothering and pollution events resulting from fuel spills etc. Given the small scale of the site, impacts would be of very minor impact magnitude.

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Mitigation and Compensation

- 5.2.2 All construction activities will be undertaken in accordance with best practice guidance with regards dust, vibrations and noise control. Construction lighting (if required) will be angled down and away from the surrounding vegetation. The construction compound and any storage of materials / fuel will be located away from adjacent trees with appropriate measures in place for the prevention of fuel spillage. The post-development landscape scheme will replace areas of grassland and scrub with like-for-like habitats.

Residual Impacts

- 5.2.3 Residual impacts after mitigation will be negligible and **non-significant**.

5.3 Bats*Potential Impacts*

- 5.3.1 In the absence of mitigation impacts would include the destruction of a small bat roost and potentially the killing or injuring of a small number of common pipistrelle and long-eared bats. Impacts could also include the disruption of commuting corridors and foraging habitat through inappropriate lighting.

Mitigation and Compensation

- 5.3.2 Mitigation shall include:
- Once planning permission is obtained, a licence shall be sought from Natural England to destroy the roost;
 - Temporary roost features (bat boxes) shall be installed to a nearby tree at the same height and aspect as the roosts;
 - The roof tiles in the location of the roost shall be hand-stripped under supervision of a licenced bat surveyor;
 - Any bats found shall be caught by hand and relocated to the temporary roost;
 - New bat roost features shall be incorporated into the proposals at as similar a location as possible to the existing roost.
- 5.3.3 All light spill upon adjacent trees, grassland and new roost entrance points will be avoided. All valuable foraging habitat will be retained within the scheme.

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Residual Impacts

- 5.3.4 Residual impacts after mitigation will be minor adverse in the short-term, with a **positive increase in the long-term** once new vegetation has established and permanent roosting opportunities are provided.

5.4 Breeding Birds*Potential Impacts*

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

Mitigation and Compensation

- 5.4.2 Any removal of dense vegetation and the start of conversion works should be undertaken outside the nesting season (*season: March-August, although pigeons may nest all year*) or should be checked prior to works beginning by a suitably qualified person. New birdboxes shall be integrated into the dwelling or installed to a nearby tree to provide replacement nesting opportunities.

Residual Impacts

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

5.5 Amphibians*Potential Impacts*

- 5.5.1 No impacts upon GCN or other amphibians are predicted.

Mitigation and Compensation

- 5.5.2 None required.

Residual Impacts

- 5.5.3 Residual impacts after mitigation will be negligible and **non-significant**.

5.6 Reptiles

Potential Impacts

- 5.6.1 In the absence of avoidance / mitigation, the development could result in the killing or injuring of widespread reptiles, or trapping of reptiles in trenches etc. Given the nature of the proposals and habitats surrounding the dwelling, this risk is considered to be very low.

Mitigation and Compensation

- 5.6.2 Rough grassland / tall ruderal vegetation to the margins of the buildings will first be stirmed to a height of 150mm before being left for 24 hours for any reptiles present to naturally disperse into adjacent habitat. Vegetation will then be cut to a height of <50mm and will be maintained at this height prior to works beginning to prevent any possible re-colonisation by reptile species.

Residual Impacts

- 5.6.3 Residual impacts after mitigation will be negligible and **non-significant**.

5.7 Badgers / Other Mammals

Potential Impacts

- 5.7.1 In the absence of avoidance / mitigation, the development could result in the trapping of badgers or other mammals in trenches.

Mitigation and Compensation

- 5.7.2 All footings and trenches over 1.0m deep shall be covered or fitted with a ramp overnight to allow badgers to escape should they fall in. Footings and trenches shall be inspected each morning by the contractor and an appropriate animal welfare organisation contacted should a badger or any other mammal be discovered within.

Residual Impacts

- 5.7.3 Residual impacts after mitigation will be negligible and **non-significant**.

5.8 Others

Potential Impacts

- 5.8.1 No impacts upon any other protected species including dormice or water voles are foreseen; there is no suitable habitat on site for these species.

Mitigation and Compensation

- 5.8.2 None required.

Residual Impacts

- 5.8.3 None.

6.0 ECOLOGICAL 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*. Ecological enhancements which will be included as part of development proposals include;

- *The use of flowering shrubs as listed within the RHS 'Plants for Pollinators' plant list within new planting to the gardens;*
- *Installation of bird boxes either to the dwellings or to a nearby tree;*
- *Installation of integrated bat roosting opportunities;*
- *Hedgehog friendly fencing to be used within the scheme;*
- *Planting of a new native species-rich hedge to the margins of the site;*
- *Use of seed and berry producing trees and shrubs within the scheme to provide a foraging resource for local birds.*

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STAKERS FARM BARN
NORTH END ROAD, YAPTON, WEST SUSSEX
LLD1742-ECO-REP-001-01-EcIA

7.0 CONCLUSIONS

- 7.1 The site is formed of existing building surrounded by hard / bare ground, scrub and improved grassland. The site itself is of **low ecological value** with no habitats of high interest noted.
- 7.2 The site is of no value to dormice, amphibians, invertebrates, water vole, otter and crayfish. No suitable habitat exists for these species.
- 7.3 The site was found to be of **site / local** value to roosting bats, with a small bat roost noted within 2 no. of the barns and small numbers of bats foraging over the buildings and grassland. The site was also found to be of **site / local** value to nesting birds, with evidence of swifts and other small passerines nesting within the buildings while areas of rough grassland and tall ruderal to the margins of the buildings may provide some suitable reptile habitat.
- 7.4 A series of mitigation / avoidance measures have been devised to ensure the development does not contravene any UK or European legislation, or cause harm to bats, reptiles and nesting birds.
- 7.5 Once avoidance and mitigation measures have been taken into account, the impacts of the planned development upon biodiversity will be **negligible, 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.

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LLD1742-ECO-REP-001-01-EcIA

8.0 REFERENCES

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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);

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus). Herpetological Journal 10 (4), 143-155

www.magic.gov.uk.

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

Common Name	Scientific Name	DAFOR
Cocksfoot Grass	<i>Dactylis glomerata</i>	LF
Common Nettle	<i>Urtica dioica</i>	O
Creeping Buttercup	<i>Ranunculus repens</i>	O
Dock	<i>Rumex obtusifolius</i>	O
Perennial Rye-grass	<i>Lolium perenne</i>	D
Ribwort Plantain	<i>Plantago lanceolata</i>	O
White Clover	<i>Trifolium repens</i>	O

Tall Ruderal

Common Name	Scientific Name	DAFOR
Cocksfoot Grass	<i>Dactylis glomerata</i>	LF
Common Hogweed	<i>Heracleum sphondylium</i>	LF
Common Nettle	<i>Urtica dioica</i>	LD
Cow Parsley	<i>Anthriscus sylvestris</i>	O
Creeping Thistle	<i>Cirsium arvense</i>	O
Dock	<i>Rumex obtusifolius</i>	O
Field Bindweed	<i>Convolvulus arvensis</i>	LD

Dense / Scattered Scrub

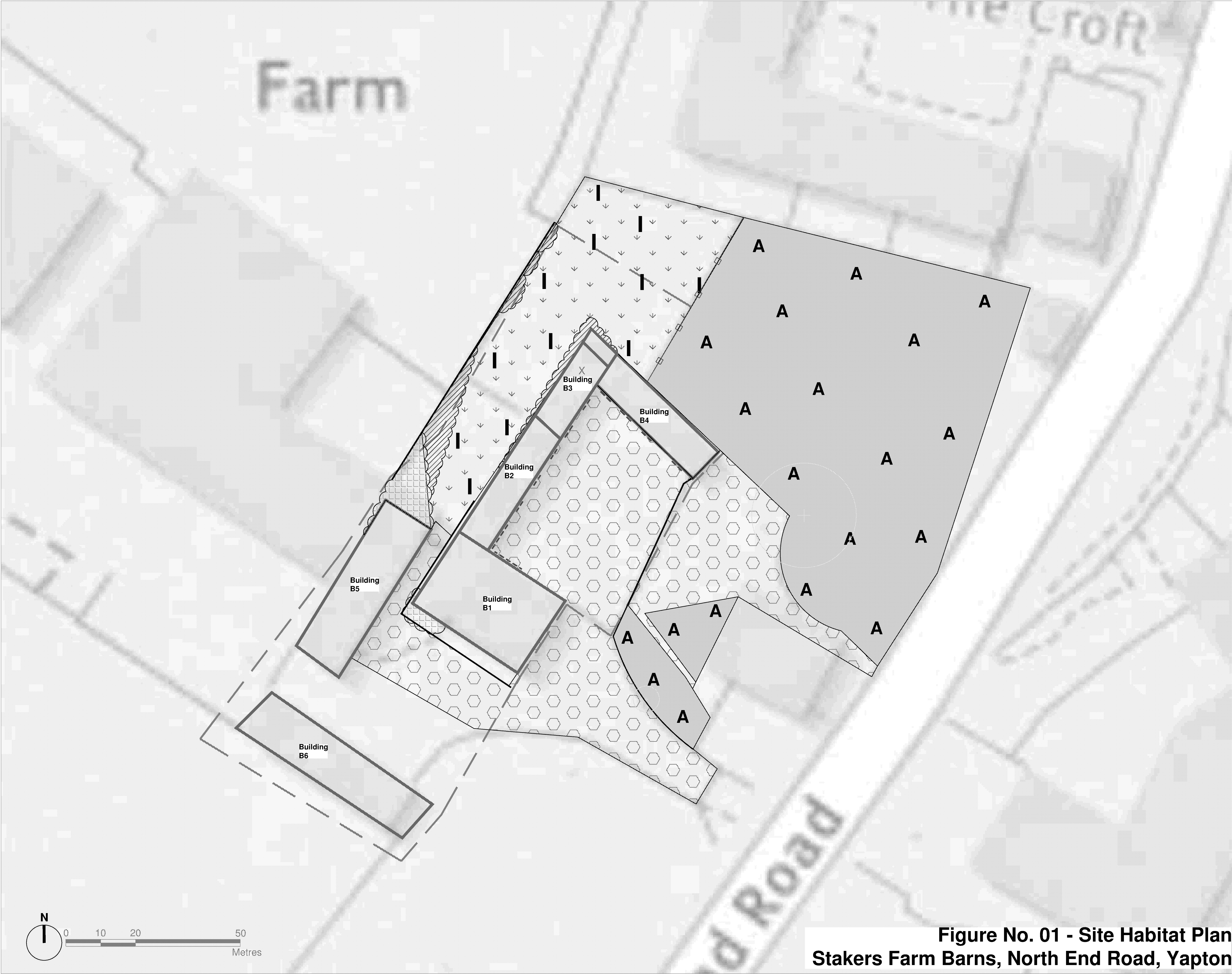
Common Name	Scientific Name	DAFOR
Bramble	<i>Rubus fruticosus</i>	LD
Buddleia	<i>Buddleia davidii</i>	LA
Elder	<i>Sambucas nigra</i>	LD

Amenity Grassland

Common Name	Scientific Name	DAFOR
Black medic	<i>Plantago medicago</i>	O
Creeping Bent	<i>Agrostis sp.</i>	D
Creeping Buttercup	<i>Ranunculus repens</i>	O
Daisy	<i>Bellis perennis</i>	F
Fescue	<i>Festuca sp.</i>	D
Yarrow	<i>Achillea millefolium</i>	O

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

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 NORTH END ROAD, YAPTON, WEST SUSSEX
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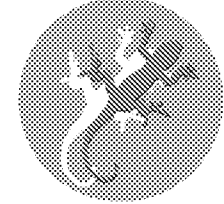
Legend

- Development Site Boundary / Survey Area.
- Existing Buildings and Walls.
- Doors/Openings into Buildings.
- Existing Walls.
- Fence.
- Improved Grassland.
- Amenity Grassland.
- Scattered Trees.
- Scrub.
- Hard/Bare Ground.
- Tall Ruderal.

Notes: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.
Habitat areas are indicative and for information only - please do not scale from this drawing.

PLANNING ISSUE

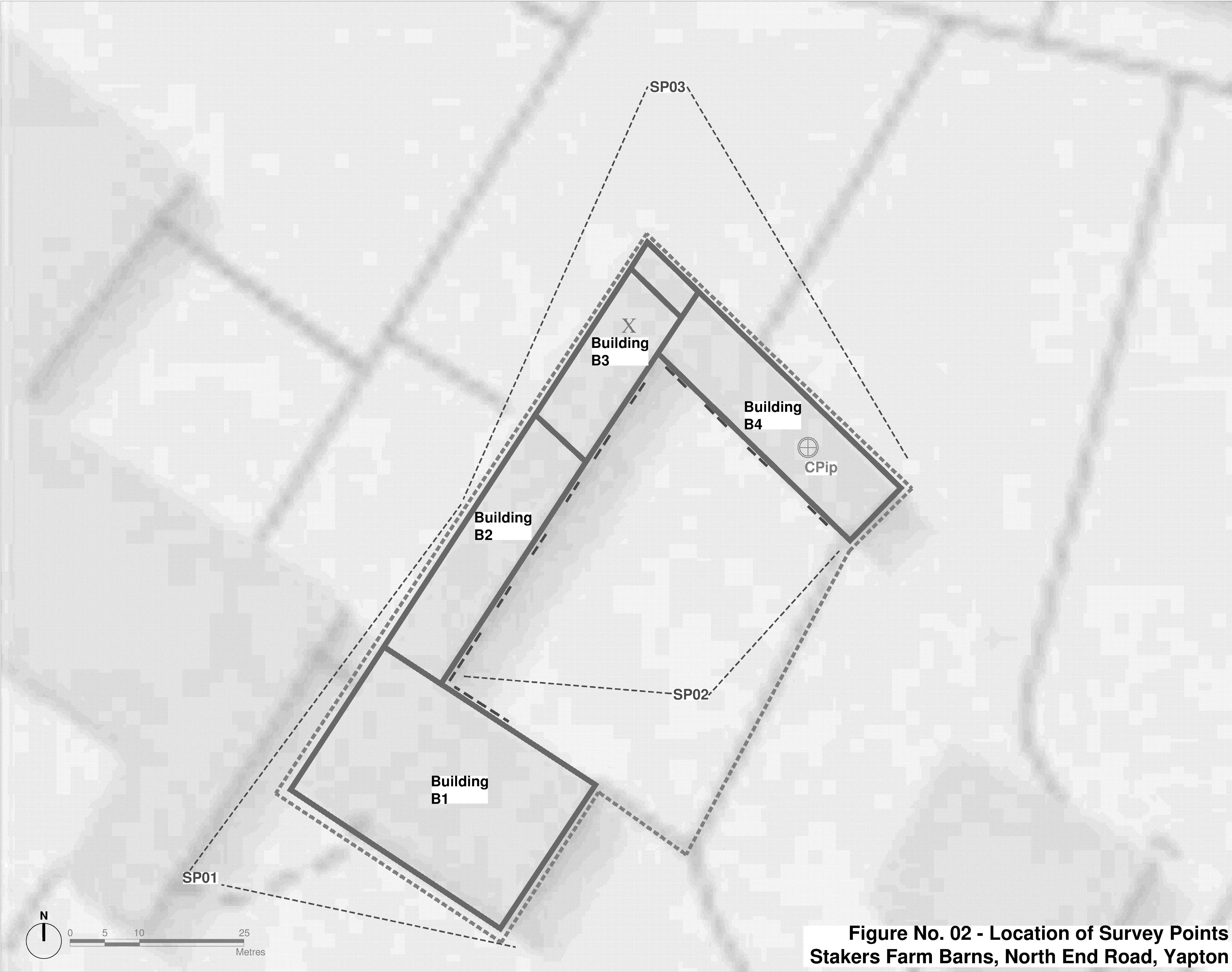
Rev	Description	Date	Initials
00	Planning Issue	31.10.19	JH

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Project title		
Stakers Farm Barns		
North End Road, Yapton		
Drawing title		
Site Habitat Plan		
Scale	Drawn	Date
1:500 @A1	JH	31.10.19
Approved		CO
Drawing No		Revision
Figure No. 01		00
CAD Filename		
LLD1742 / CAD		

Figure No. 01 - Site Habitat Plan
Stakers Farm Barns, North End Road, Yapton



Legend

Development Site Boundary / Survey Area.

Bat Surveyor Locations (With line of sight).

Location of Common Pipistrelle Bat.

BLE Roost.

Existing Buildings and Walls.

Doors/Openings into Buildings.

Notes: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

Habitat areas are indicative and for information only - please do not scale from this drawing.

PLANNING ISSUE

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00	Planning Issue	19.09.19	JH

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Project title

Stakers Farm Barns

North End Road, Yapton

Drawing title

Location of Survey Points

Scale

1:250 @A1

Drawn

JH

Approved

COR

Date

19.09.19

Drawing No

Figure No. 02

CAD Filename

LLD1742 / CAD

Revision

00

Figure No. 02 - Location of Survey Points
Stakers Farm Barns, North End Road, Yapton

APPENDICES:

Appendix A – Site Photographs

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NORTH END ROAD, YAPTON, WEST SUSSEX
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APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 1 - Buildings B1 (left) and B2 (right). Both buildings were subject to full bat surveys; no bat roost was found.



Photograph No. 2 - Building B3 (left) which supports a night roost / feeding perch of long-eared bats and Building B4 (right) which supports a day roost of common pipistrelle.

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APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 3 - View of the rear of the barn complex showing the surrounding improved grassland, tall ruderal and scrub.



Photograph No. 4 - Artificial swallow nests to the ground floor of Building B3. Evidence of bird nesting was noted throughout the buildings.

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APPENDIX A - SITE PHOTOGRAPHS



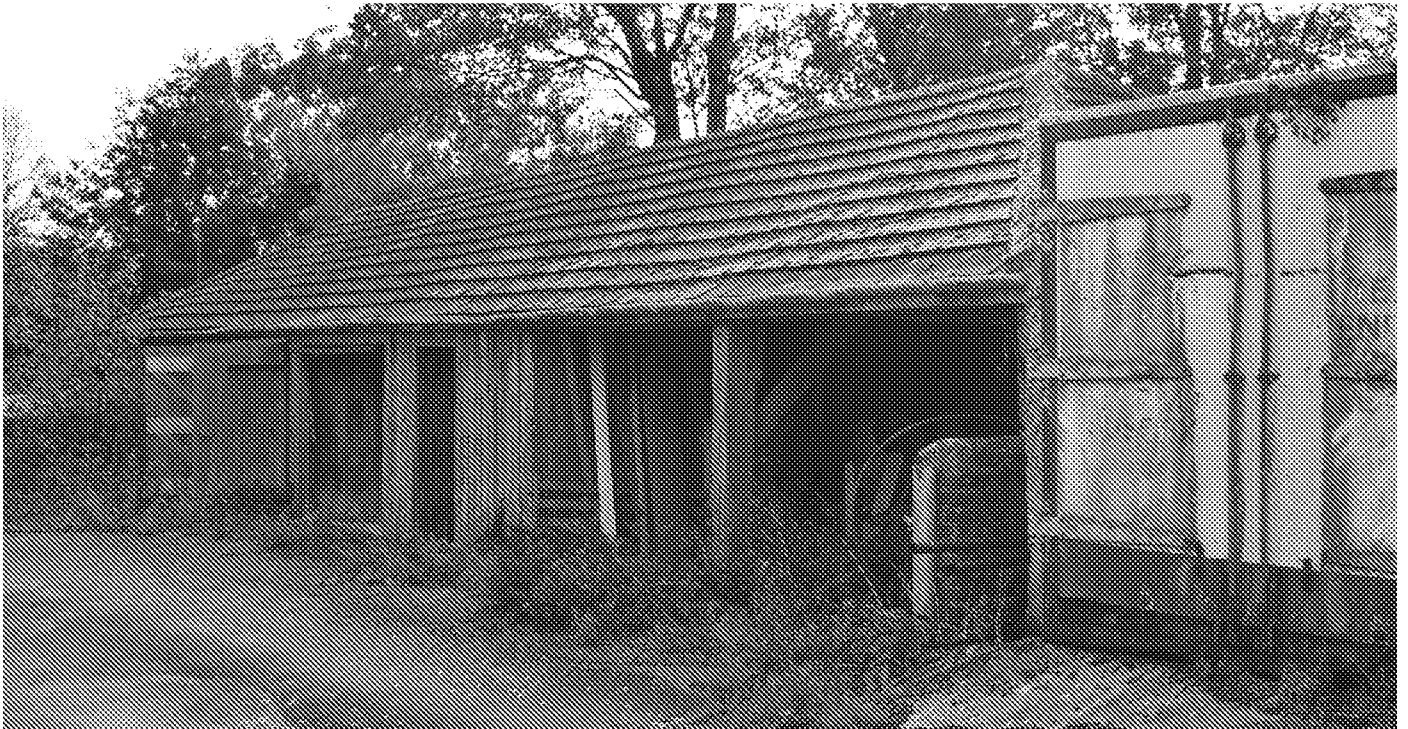
Photograph No. 5 - Long-eared bat droppings located beneath the eastern hip of Building B3. Feeding remains were also found.



Photograph No. 6 - Internal view of Building B3 which supports a night roost / feeding perch of Long-eared bat.

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APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 7 - Building B6, split into 5 enclosed sections, with only the wood store open fronted, with high levels of light throughout it.



Photograph No. 8 - Building B6, heavy concrete tiles and open eaves with no signs of bats noted.

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Appendix B – Full Bat Survey Results

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Visit No. 01			
Date	11-07-19		
Survey Type	Dawn		
Sunrise / Sunset	5:00		
Start Time	3:30		
End Time	5:15		
Temperature	15 °C		
Wind	1		
Weather	Overcast		
Surveyor	Louise Barker		
Point	SP02		
Time	Species	Behaviour	Notes
3:32	CPip	Foraging	
3:39	CPip	Foraging	
3:53	CPip	Foraging	Heard only.
4:01	CPip	Foraging	
4:04	CPip	Foraging	
4:07	CPip	Commuting	NW to NE.
4:12	CPip	Foraging	Around courtyard.
4:15	CPip	Commuting	NE to SE.
4:24	CPip	Commuting	W to N over rooftop.
4:27	CPip	Foraging	inside open barn.
4:38	CPip	Commuting	Heard not seen.
Surveyor	George Sayer		
Point	SP01		
Time	Species	Behaviour	Notes
3:42	CPip	Commuting	Heard faintly.
3:46	CPip	Foraging	Heard only.
3:49	CPip	Commuting	Heard only.
3:53	CPip	Foraging	Heard only.
4:01	CPip	Commuting	Heard only.
04:02-04:06	CPip	Foraging	2 bats circling above courtyard to south.
4:08	CPip	Commuting	Heard only.
4:12	CPip	Commuting	Flew west.
4:25	CPip	Foraging	2 bats foraged then flew west.
4:32	CPip	Commuting	Flew south then west.
4:33	CPip	Foraging	To west then flew east.

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 NORTH END ROAD, YAPTON, WEST SUSSEX
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Surveyor	Niall Walkden		
Point	SP03		
Time	Species	Behaviour	Notes
3.38	CPip	Commuting	Heard Not Seen.
3.47	CPip	Commuting	Heard Not Seen.
3.52-3.56	CPip	Foraging	Circling along north-western edge of building.
4.11-4.17	CPip	Foraging	Circling along north-western edge of building.
4.25-4.27	CPip	Foraging	Circling along north-western edge of building.
4.34	CPip	Re-Entry	Under eaves along north-western edge of building.

Visit No. 02			
Date	24-07-19		
Survey Type	Dusk		
Sunrise / Sunset	20:58		
Start Time	20:43		
End Time	22:28		
Temperature	22 °C		
Wind	1		
Weather	Light Cloud		
Surveyor	Louise Barker		
Point	SP02		
Time	Species	Behaviour	Notes
21:25	CPip	Commuting	Across lower rooftop N to W.
21:40	CPip	Commuting	Across rooftop into open barn.
21:44	CPip	Commuting	Across rooftop.
21:50	CPip	Foraging	Around Courtyard, exit via central lower roof.
21:55	BLE	Commuting	E to W direction across courtyard.
21:57	CPip	Commuting	S to N over lower rooftop.
21:59	CPip	Commuting	S to N over lower rooftop.
22:14	CPip	Commuting	Heard not seen.
22:15	CPip	Commuting	Heard not seen.
22:23	CPip	Commuting	Heard not seen.
22:26	CPip	Commuting	Heard not seen.
Surveyor	Niall Walkden		
Point	SP03		
Time	Species	Behaviour	Notes
21.47	CPip	Commuting	Passing from the east headed west.
21.55	CPip	Commuting	Passing north to south.
21.57	CPip	Commuting	Passing north to south.
22.16	CPip	Commuting	Passing South to North.
22.23	CPip	Commuting	Passing North to South.

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Surveyor	Josh Harwood		
Point	SP01		
Time	Species	Behaviour	Notes
21:58	CPip	Commuting	Flying south.
22:20	CPip	Foraging	Along track.
22:23	CPip	Foraging	Along track.
22:25	CPip	Foraging	Along track.
22:27	CPip	Foraging	Along track.
22:44	CPip	Commuting	Flying north.
22:55	CPip	Foraging	Over buildings.
22:59	CPip	Commuting	Flying west.

Visit No. 03			
Date	06-08-19		
Survey Type	Dusk		
Sunrise / Sunset	20:40		
Start Time	20:25		
End Time	22:10		
Temperature	15 °C		
Wind	4		
Weather	Light Cloud		
Surveyor	Louise Barker		
Point	SP02		
Time	Species	Behaviour	Notes
21:09	CPip	Commuting	Not seen.
21:18	CPip	Commuting	Over stable roof S to N.
21:23	Noctule	Commuting	N direction over central roof.
21:25	Serotine	Commuting	N direction over stable roof.
Surveyor	Catherine O'Reilly		
Point	SP03		
Time	Species	Behaviour	Notes
21:12	CPip	Emergence	From Building 04.
21:13	CPip	Foraging	Along back of barns.
21:19	CPip	Foraging	Around buildings.
21:22	CPip	Foraging	Along grassland corridor to the west of barns.
21:23	Noctule	Commuting	Flying west.
21:26	Serotine	Unknown	Heard not seen.
21:27	SPip	Commuting	East to West.
21:30	CPip	Commuting	Flying north.

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Surveyor Point	Will Mills SP01		
Time	Species	Behaviour	Notes
21:11	CPip	Foraging	Along northern track.
21:14	Serotine	Commuting	Flying north.
21:16	CPip	Foraging	Around buildings.
21:17	CPip	Foraging	Along northern track.
21:19	CPip	Foraging	Along northern track.
21:19	CPip	Foraging	Along northern track.
21:21	CPip	Foraging	Along northern track.
21:23	CPip	Foraging	Along northern track.
21:23	Serotine	Foraging	Over site.
21:25	SPip	Commuting	East to west.
21:28	CPip	Foraging	Along northern track.
21:33	CPip	Commuting	Flying north.

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