

**PURBROOK PARK SCHOOL, STAKES ROAD,
WATERLOOVILLE, HAMPSHIRE**

PHASE 2 ECOLOGICAL ASSESSMENT

Final Document

October 2015

Preliminary Ecological Appraisals • Phase 1 and 2 Surveys • NVC • EcIA • Management Plans • Protected Species Licensing
Habitats • Badger • Bats • Dormouse • Birds • Reptiles • Amphibians • Invertebrates • Riparian and Aquatic Species

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ECOSA Quality Assurance Record

This report has been produced in accordance with Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Report Writing 2015¹. The Preliminary Ecological Appraisal was undertaken in accordance with the following guidelines:

- Hundt L. (2012) Bat Surveys: Good Practice Guidelines, (2nd Ed.), Bat Conservation Trust
- Froglife (1999) Reptile Survey: A Guide to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation, Froglife Advice Sheet 10

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¹ Chartered Institute of Ecology and Environmental Management (2015). *Guidelines for Ecological Report Writing*. Technical Guidance Series. <http://www.cieem.net/publications/23/ecological-report-writing>

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EXECUTIVE SUMMARY

- A Preliminary Ecological Appraisal was undertaken at Purbrook Park School during August 2015 during which time, further Phase 2 surveys in relation to bats and reptiles were recommended. ECOSA subsequently undertook these surveys in September and October 2015. The exact details of the proposed works were unknown at the time of writing this report, however, it is understood the proposals will comprise redevelopment of the site to provide new residential housing, with associated landscaping and access.
- This report is based on the results of the Phase 2 bat transect and reptile surveys. These surveys are aimed at determining the status of these species supported by the site. This information allows an assessment of the status of these species at the site to be made.
- The site is situated within the town of Purbrook, approximately 2 kilometres (km) south of Waterlooville, 2km west of Leigh Park and 1km west of the A3 motorway, in an area predominately comprising residential development. The site itself consists of a single former playing field measuring approximately 0.72 hectares (ha) enclosed by wire mesh fencing. The site is bounded to the north, east and west by existing residential development and to the south by Stakes Road.
- The Phase 2 surveys undertaken indicate that the site and immediate surrounds supports foraging bats of four species, largely associated with the boundary vegetation within the site. The activity recorded was generally only limited with the vast majority of the registrations made attributable to common and soprano pipistrelle.
- No reptiles were recorded as part of the Phase 2 reptile survey undertaken. Therefore, it is considered that common reptiles are likely absent from the site.
- Given the findings of the Phase 2 surveys it is considered that the development is likely to result in small scale disturbance to foraging bat species, with potential loss of suitable foraging and commuting habitat. Recommendations have been made for retention of suitable foraging habitat and new native species planting in order to offer new foraging habitat for bats. In addition, recommendations have been made in order to enhance roosting opportunities for bats at the site through the erection of new bat boxes on retained mature trees.
- Recommendations have also been made for the inclusion of a sensitive lighting scheme in order to minimise any disturbance on foraging bat species.

- Should the development not have commenced by October 2017 then it is recommended that updating ecological surveys be undertaken at the site in order to assess any change in the species present.

1.0 INTRODUCTION

1.1 Background

Ecological Survey & Assessment (ECOSA) Limited have been contracted by Persimmon Homes South Coast to undertake a Phase 2 Ecological Assessment at Purbrook Park School, Stakes Road, Waterlooville, Hampshire, PO7 5LZ. The site is centred on National Grid Reference (NGR) SU 68283 07798 (**Map 1**).

The need to undertake further Phase 2 survey works was identified during the Preliminary Ecological Appraisal² carried out by ECOSA during August 2015. This report should be read in conjunction with the Preliminary Ecological Appraisal. The Preliminary Ecological Appraisal identified the potential for the site to support foraging/commuting bats and common species of reptile. It was therefore recommended that Phase 2 surveys in relation to bats and reptiles be undertaken to confirm the status of these species supported by the site.

1.2 Aims and Scope of Report

This report is based on the results of the Phase 2 bat transect and reptile surveys. These surveys are aimed at determining the presence / likely absence of these species and if present, to assess the status of the species at the site.

This report provides an assessment of the ecological value of the site in respect of these species, provides an assessment of potential ecological impacts of the proposed redevelopment works and provides recommendations based on the findings of the surveys and the potential identified impacts.

1.3 Site Setting and Description

The Purbrook Park School site is situated in the South Coast Plain & Hampshire Lowlands Natural Area, described by Natural England as follows³:

"The landscape of the South Coast Plain and Hampshire Lowlands is split between the generally open, often featureless landscape of the coastal plain and the more varied landscape in the west. The Natural Area contains a number of nature conservation features. Although relatively small in extent, the south-facing slopes of Portsdown Hill support some high quality chalk grassland, and the chalk rivers of the Itchen and Test flow through the Natural Area, supporting fine examples of threatened habitat and several key species. The floodplains of the Rivers Test and Itchen contain some botanically rich neutral grassland and elsewhere in the Natural

² ECOSA. (2015) Land South of Summertown, East Hanney – Extended Phase 1 Ecological Assessment

³ Natural Areas are defined by Her Majesty's Stationery Office as 'biogeographic zones which reflect the geological foundation, the natural systems and processes and the wildlife in different parts of England, and provide a framework for setting objectives for nature conservation' (Biodiversity: The UK Steering Group Report, HMSO, 1995).

Area fen and fen-meadows occur, especially where chalk springs arise at the foot of the downs."

The site is situated within the town of Purbrook, approximately 2 kilometres (km) south of Waterloooville, 2km west of Leigh Park and 1km west of the A3 motorway, in an area predominately comprising residential development.

The wider area comprises the towns of Purbrook and Waterloooville with open countryside comprising areas of agricultural fields and occasional blocks of woodland to the west. Langstone Harbour also lies approximately 2km to the south of the site.

The site itself consists of a single former playing field measuring approximately 0.72 hectares (ha) enclosed by wire mesh fencing. The site is bounded to the north, east and west by existing residential development and to the south by Stakes Road.

1.4 Site Proposals

The exact details of the proposed works were unknown at the time of writing this report, however, the proposals are understood to comprise redevelopment of the site to provide new residential housing with associated landscaping and access. The exact timescales associated with the construction of the development are currently unknown; for the purpose of this report it is assumed that planning permission will be sought in 2015 and that construction would commence within two years of the date of this report.

2.0 SURVEY METHODS

2.1 Introduction

This section details the methods used during the Phase 2 Ecological Assessment undertaken at Purbrook Park School, Stakes Road, Waterlooville, Hampshire in September and October 2015.

2.2 Phase 2 Bat Survey

2.2.1 Phase 2 Bat Survey Methods

Two Phase 2 bat transect surveys were carried out at the site in the months of September and October 2015.

The survey work involved a pair of surveyors walking a predefined transect route across the site. The transect surveys commenced at approximately sunset and lasted until up to 1 hour 30 minutes after sunset. The transect route ensured that surveyors were able to visit all areas of the site, with particular attention paid to walking the vegetated boundaries. Surveyors recorded the time, species, location and direction of flight for each bat encountered; all bat encounters were recorded on a site plan and survey sheet.

The transect surveys were punctuated by regular point counts, during which the surveyors stopped walking for a period of five minutes to record bat activity at that point; again, surveyors recorded the time, species, location and direction of flight for each bat encountered. Point count locations were chosen prior to each survey and were situated at key habitat. **Table 1** provides details of the Phase 2 bat transect survey visits undertaken.

Table 1: Phase 2 bat transect survey details

Survey Date	Survey Type	Duration	Weather Conditions	Sunset Time
15 th September 2015	Dusk	19:19 – 20:54	13°C, dry, 40% cloud cover, still	19:19
1 st October 2015	Dusk	18:42 – 20:27	14°C, dry and mild, 0% cloud cover, still	18:42

2.2.2 Phase 2 Bat Personnel

The Phase 2 bat surveys were led by Charlie Pottle and Georgina Timmis (Class Licence Reference 2014-4666-CLS-CLS), Ecologists of ECOSA assisted by suitably qualified and experienced surveyors.

2.2.3 Phase 2 Bat Survey Equipment

Each surveyor was equipped with a Pettersson D240x time-expansion bat detector attached to an Edirol solid state recording device. Recordings of bat echolocations were analysed using Sonobat[®] (v2.9.7) to confirm the identity of any species encountered.

2.2.4 Phase 2 Bat Survey Limitations

Determining the exact level of activity is often difficult as the numbers and age classes of bats utilising a site changing according to weather conditions and the time of year during which the survey is undertaken.

Due to the time of year when the survey work was commissioned, it was only possible to undertake Phase 2 bat transect surveys at the very end of the bat survey season with no surveys undertaken in the optimal survey period (May to August). Therefore, it is possible that the result of the surveys under represent the level of bat activity at the site. However, given the nature of the habitats present it is considered that the survey work undertaken provides a sound basis for assessing the potential impact of the proposals on foraging and commuting bats and for the provision of suitable mitigation.

Some bat species, e.g. long-eared bats, generally emerge from their roosts in total darkness and do not produce strong echolocations, and therefore these bats can be difficult to observe and record during Phase 2 bat surveys, leading to under-recording.

2.3 Phase 2 Reptile Survey

2.3.1 Phase 2 Reptile Survey Methods

The Phase 2 reptile survey works was carried out in accordance with the Herpetofauna Workers Manual⁴ and involved the distributing of 30 refugia in areas of suitable on-site habitat.

The refugia warm more rapidly than the surrounding environment and reptiles, being 'cold blooded', use them to thermoregulate. Inspection of refugia is most effectively carried out in marginal weather conditions such as cold but sunny weather or hazy and somewhat overcast conditions, as this will maximise the thermal value of the refugia for basking reptiles. Inspections are generally ineffective in cold, wet conditions or in very hot, sunny weather. The use of such refugia is an effective way

⁴JNCC (1998) Herpetofauna Workers Manual

of surveying for all species of reptile and current survey guidance⁵ states that seven inspections are sufficient to confirm presence/likely absence.

The refugia were distributed across the site on 9th September 2015. These refugia were inspected for reptiles on seven subsequent occasions following a “bedding in” period. During each survey visit the species, sex (if possible) and age of all reptiles encountered was recorded. The details of weather conditions for each Phase 2 reptile survey date are provided in **Table 2**.

Table 2: Phase 2 reptile survey details

Survey Date	Temp	Weather Conditions
16 th September 2015	16°C	10% cloud cover, cloudy, still
18 th September 2015	18°C	80% cloud cover, cloudy, still
21 st September 2015	13.5°C	100% cloud cover, overcast, still
25 th September 2015	18.5°C	10% cloud cover, sunny, still
28 th September 2015	17°C	0% cloud cover, sunny and clear, still
30 th September 2015	16°C	0% cloud cover, sunny and clear, light breeze
2 nd October 2015	18°C	0% cloud cover, sunny and clear, still

2.3.2 Phase 2 Reptile Survey Personnel

The Phase 2 surveys were carried out by suitably qualified and experienced ECOSA surveyors.

2.3.3 Phase 2 Reptile Survey Equipment

The Phase 2 reptile survey used approximately 30 refugia, comprising approximately 500 millimetres (mm) x 500mm sheets of bitumen roofing felt.

2.3.4 Phase 2 Reptile Survey Limitations

The reptile surveys were undertaken in the optimal season for reptile surveys and in optimal weather conditions in line with current best practice guidance. Therefore, it is considered that a robust assessment of the status of reptiles at the site has been undertaken.

⁵ Froglife (1999) Reptile Survey: An Introduction to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation. Froglife Advice Sheet 10

3.0 RESULTS AND EVALUATION

3.1 Introduction

This section details the results of the Phase 2 Ecological Assessment undertaken at the Purbrook Park School, Waterlooville during September and October 2015.

3.2 Phase 2 Bat Survey Results

A total of four bat species were recorded within or within close proximity of the site during the transect surveys: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, *Myotis* bat species⁶ and noctule *Nyctalus noctula*.

The transect surveys revealed that the site supports a relatively limited variety of foraging and commuting bats. The summarised results of the transect surveys are provided in **Table 3**.

Table 3: Summarised Phase 2 transect survey results

Survey Date	General Bat Activity
15 th September 2015	During the survey only very low levels of bat activity was recorded, with a total of 16 registrations. The vast majority of the registrations were attributable to common pipistrelle with single registrations of soprano pipistrelle, noctule and <i>Myotis</i> bat species. The activity was largely attributable to the vegetation margins of the site at the north and west.
1 st October 2015	The activity recorded during the survey was generally limited with a total of 21 registrations recorded during this survey. Species recorded during the survey were dominated by common pipistrelle with a smaller number of soprano pipistrelle registrations and a single registration of <i>Myotis</i> bat species. The activity recorded was largely recorded along the vegetation boundaries of the site with the area of relatively highest activity on the western boundary.

The results of the bat activity surveys undertaken indicate the site supports a relatively low level of foraging and commuting bat activity which is considered to be largely typical given the habitats present and the largely urbanised location. The species diversity recorded was largely attributable to common and widespread species specifically common pipistrelle with smaller numbers of soprano pipistrelle with only very occasional registrations from *Myotis* bat species and noctule. The results of the survey indicate that the area of relatively highest importance for foraging bats at the site level is the tree line on the western site boundary.

3.3 Phase 2 Reptile Survey Results

Table 4 provides a summary of the Phase 2 reptile surveys undertaken at the site in September and October 2015.

⁶ There are seven species of *Myotis* bats in Britain. *Myotis* bats are very difficult to identify specifically, this can generally only be done by examination of physical features and Phylogenetic Analysis Identification of bat droppings. Many of these bats are common and will utilise buildings for roosting often occupying small and inaccessible voids. For the purpose of this report all species shall be referred to as *Myotis* bats unless a specific identification has been possible.

Table 4: Phase 2 Reptile Survey Results

Survey Date	Number of Individuals Recorded			
	Slow-worm	Common Lizard	Grass Snake	Adder
16 th September 2015	0	0	0	0
18 th September 2015	0	0	0	0
21 st September 2015	0	0	0	0
25 th September 2015	0	0	0	0
28 th September 2015	0	0	0	0
30 th September 2015	0	0	0	0
2 nd October 2015	0	0	0	0
Peak Count	0	0	0	0

Given that no reptiles were recorded as part of the Phase 2 reptile survey it is considered that common reptiles are likely to be absent from the site. It is considered that this is likely as a result of the isolated and generally urbanised nature of the site. No recorded of reptiles were returned by HBIC as part of the desktop study undertaken during the Preliminary Ecological Appraisal.

4.0 SUMMARY EVALUATION, CONSIDERATION OF IMPACTS AND RECOMMENDATIONS

4.1 Introduction

This section presents a summary evaluation of the site based on the results of the Phase 2 Ecological Assessment carried out at the Purbrook Park School site during September and October 2015. The results and evaluation have been used to provide a provisional assessment of the ecological impacts of the proposed redevelopment works on bats and common species of reptile supported by the site. An outline of protected species legislation relevant to the findings of the ecological surveys is provided in **Appendix 1**.

4.2 Bats

4.2.1 Summary Evaluation

Only low levels of bat activity have been recorded at the site considered to be typical given the urbanised location of the site. The species recorded were dominated by common and widespread species common and soprano pipistrelle with only occasional registration of *Myotis* bat species and noctule. Whilst the survey work was undertaken at the end of the bat survey season, outside of the optimum season (May to August), it is considered that the site is unlikely to provide an important foraging or commuting resource for the local bat population given the urbanised location and generally limited vegetation which is present within the site. No trees with potential to support bats were recorded as part of the Preliminary Ecological Appraisal.

4.2.2 Impacts of Proposed Development

The details of the proposals were unavailable at the time of preparing this report. It is assumed that the majority of the vegetation will be lost with retention of the boundary vegetation. However, any boundary vegetation loss, and specifically any loss to the western site boundary, has the potential to result in a net loss of foraging habitat for bats at the site. The introduction of new lighting as a result of the development has the potential to result in increased disturbance to foraging and commuting bats. However, the vast majority of the registrations recorded as part of the survey were attributable to common and soprano pipistrelle, both of which are relatively more light tolerant species.

4.2.3 Recommendations

It is recommended that boundary vegetation and mature and semi-mature trees be retained as part of the development wherever possible in order to maintain the existing foraging habitat for bats.

Where losses are to occur, new native species planting should be undertaken in order to provide new foraging habitat for bat species in the local area.

It is recommended that the lighting to be installed comprises hooded luminaires directed away from vegetation. The bulbs will be LED and at the warmer end of the spectrum (i.e. avoiding blue or white light). LED lights emit much lower levels of UV and therefore have a lower impact on wildlife⁷. The new lighting will be motion-activated and task related. The lux level will be as low as possible to allow the task to be carried out safely and effectively. Guidance on task related lighting levels published by the Chartered Institution of Building Services Engineers (CIBSE)⁸ will be followed.

As an enhancement measure it is recommended that four new bat boxes of varying designs be erected on retained trees which would provide new roosting opportunities for roosting bats. The provision of four Schwegler 1FF and four Schwegler 2F bat boxes or similar would provide a good enhancement in roosting opportunities at the site. In addition, new roosting features could be installed within new buildings at the boundaries of the adjacent to be retained and new habitat.

4.3 Reptiles

4.3.1 Summary Evaluation

The results of the Phase 2 reptile survey indicate that reptiles are likely absent from the site.

4.3.2 Impacts of Proposed Development

Given the likely absence of common reptiles from the site no impacts are anticipated as a result of the proposed development.

4.3.3 Recommendations

Given the absence of any anticipated impacts no recommendations in relation to reptiles are considered necessary.

4.4 Updating Survey

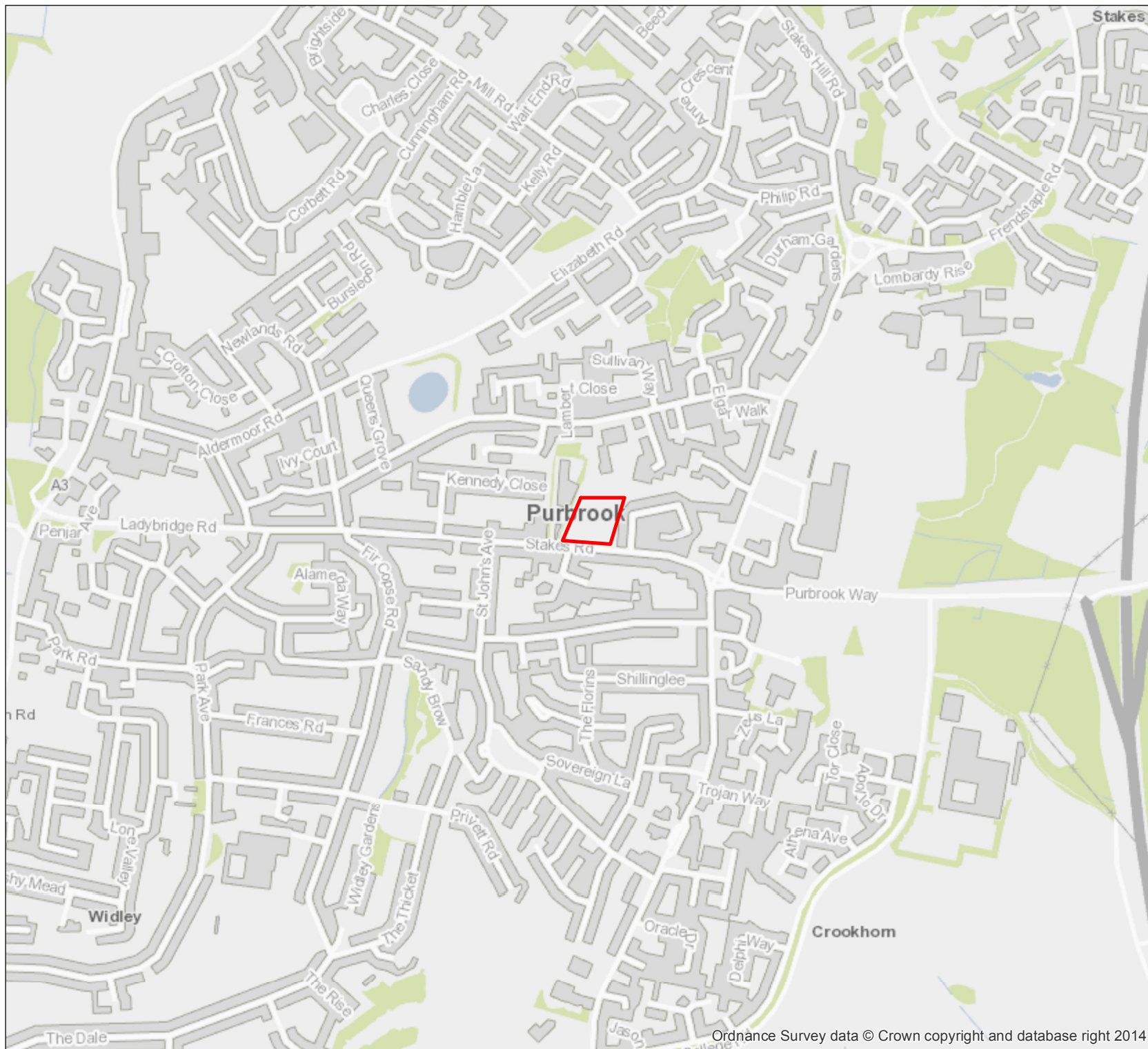
If works have not commenced by October 2017 it is recommended that the Phase 2 Ecological Assessment are updated. This is because the species considered during

⁷ *Wildlife and Artificial Lighting Seminar*, 21st – 22nd March 2014, Arup London, Bat Conservation Trust.

⁸ CIBSE (1992) *Lighting Guide 6: The Outdoor Environment*; CIBSE (2002) *Code for Lighting*, Butterworth-Heinemann, UK.

the current survey are highly mobile and the ecology of the site is likely to change over this period.

Map 1 Site Location



**PURBROOK PARK SCHOOL,
STAKES ROAD, WATERLOOVILLE,
HAMPSHIRE**
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ASSESSMENT

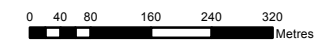
Map 1 - Site Location

Client:	Persimmon Homes South Coast
Date:	October 2015
Status:	Final

KEY

 Site Boundary

Scale at A4: 1:10,000



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Appendix 1 Protected Species Legislation

Bats

All UK bat species are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2010. They are afforded full protection under Section 9(4) of the Act and Regulation 41 of the Regulations. These make it an offence to:

- Deliberately capture, injure or kill any such animal;
- Deliberately disturb any such animal, including in particular any disturbance which is likely:
 - To impair its ability to survive, breed, or rear or nurture their young;
 - To impair its ability to hibernate or migrate;
 - To affect significantly the local distribution or abundance of that species;
- Damage or destroy a breeding site or resting place of any such animal;
- Intentionally or recklessly disturb any of these animals while it is occupying a structure or place that it uses for shelter or protection; or
- Intentionally or recklessly obstruct access to any place that any of these animals uses for shelter or protection.

In addition, five British bat species are listed on Annex II of the Habitats Directive. These are:

- Greater horseshoe bat *Rhinolophus ferrumequinum*;
- Lesser horseshoe bat *Rhinolophus hipposideros*;
- Bechstein's bat *Myotis bechsteinii*;
- Barbastelle *Barbastella barbastellus*; and
- Greater mouse-eared bat *Myotis myotis*.

In certain circumstances where these species are found the Directive requires the designation of Special Areas of Conservation (SACs) by EC member states to ensure that their populations are maintained at a favourable conservation status. Outside SACs, the level of legal protection that these species receive is the same as for other bat species.