

Bat Presence / Likely Absence Report

75-81 Southampton Road, Reading, RG1 2QU

OCTOBER 2020



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Contents

1	Summary.....	4
2	Introduction	5
2.1	Background.....	5
2.2	Site Location and Description	5
2.3	Development Proposals	5
2.4	Legislation and Policy	5
2.5	Objectives.....	6
3	Methodology	7
3.1	Summary of Survey Methods.....	7
3.2	Surveyor Information	7
3.3	Data Search	7
3.4	Habitat Survey.....	7
3.5	Preliminary Roost Assessment.....	8
3.6	Nocturnal Surveys	8
3.7	Evaluation and Impact Assessment	9
3.8	Limitations and Assumptions	9
4	Results and Evaluation.....	10
4.1	Data Search	10
4.2	Habitats	11
4.3	Preliminary Roost Assessment.....	11
4.4	Nocturnal Surveys	13
4.5	Evaluation.....	13
5	Impact Assessment.....	15
5.1	Designated Sites	15
5.2	Bat Roosts.....	15
5.3	Foraging and Commuting Bats	15
6	Recommendations for Further Surveys, Avoidance, Mitigation and Enhancement.....	16
6.1	Further Surveys	16
6.2	Avoidance and Mitigation	16
6.3	Enhancements.....	17
7	Conclusion	18
8	References	19

Appendix

Appendix 1 Legislation and Policy

Appendix 2 Phase 1 Habitat Map

Appendix 3 Bat Roost Survey Results and Map

Appendix 4 Evaluating Bats in the Wider Ecological Context

Appendix 5 Planting for Bats

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1 Summary

Report:	Bat Presence / Likely Absence Report
Site:	75-81 Southampton Road, Reading, RG1 2QU
Central OS Grid Reference:	SU 7171 7280
Report Commissioned by:	Renew Planning Ltd. on behalf of Crossier Properties Ltd.
Date of Roost Assessment:	15/09/2020
Dates of Nocturnal Surveys:	Dusk emergence survey: 22/09/2020

Bat Survey Results	Bat Roost Assessment	No evidence of roosting bats was recorded, although building 1 was considered to hold low suitability for roosting bats (Appendix 1). One follow-up emergence survey was therefore undertaken in line with standard guidance (Collins, 2016).
	Nocturnal Surveys	No bats were recorded either emerging from or entering building 1. This building is therefore of low importance for bats. During demolition of the building if bats are located or suspected then all works are to cease immediately, and a licensed bat worker should be consulted.
	General Bat Activity	Low numbers of common pipistrelle were found to utilize the site for both foraging and commuting.
Further Surveys	-	If the condition of the building deteriorates and creates increased roosting opportunities for bats, then the building's roost potential should be re-evaluated. If it is considered that there is increased roost potential (i.e. 'moderate' or 'high'), then further nocturnal surveys would be recommended in line with professional guidelines (Collins, 2016).
Avoidance and Mitigation		Cease works immediately and seek advice from a suitably experienced ecologist (i.e. a bat licensed ecologist) in the event that a bat is discovered or suspected during demolition works.
Enhancements	Bat Boxes	Install two IFF and / or 2F Schwegler Bat Boxes onto new buildings to enhance roosting opportunities for bats within the development.

2 Introduction

2.1 Background

TSA Ecology was commissioned by Renew Planning Ltd. on behalf of Places for People to undertake bat surveys at 75-81 Southampton Road, Reading, RG1 2QU hereinafter referred to as the 'site'. The survey comprised a preliminary bat roost assessment (undertaken as part of the Preliminary Ecological Appraisal (PEA), TSA Ecology, October 2020), and a subsequent single dusk emergence based upon the recommendations included within the PEA of the single building located within the site. Recommendations for further surveys, avoidance, mitigation and enhancement measures for bats are included in this report where applicable. This report will support a planning application to develop the site into a 4-storey building containing 18 residential flats with associated external works.

2.2 Site Location and Description

The site is situated within an urban location and centred around Ordnance Survey Grid Reference SU 7171 7280. The site comprises one flat-roofed concrete and brick-built building (a former Funeral Director's practice) and adjacent yard / hardstanding (bare ground). The site is located immediately to the north by a hoarded plot of land which supports tall ruderal and dense buddleia bushes and sycamore saplings, presumably on hardstanding, and bare ground on all other elevations. Immediately to the south and east are residential / commercial properties, with a car park overlooking the property from the east. To the west the site lies immediately adjacent to the A327 Southampton – Reading road. The wider area comprises of urban residential and commercial properties, situated in the Reading city centre.

2.3 Development Proposals

The proposed development is for a 4-storey building containing 18 residential flat, with associated access, parking and soft landscaping. This will involve demolition the building and clearance of the site.

2.4 Legislation and Policy

All UK species of bats and their roosts are strictly protected under European and UK legislation (*Conservation of Habitats and Species (Amendment) Regulations 2017* (CHSR), and the *Wildlife and Countryside Act, (1981)* (WCA). Four UK bat species are also listed under Annex II of the Habitats Directive. Bat foraging / commuting habitat is not legally protected, although it is a

material consideration within the planning process under the *National Planning Policy Framework*. Refer to **Appendix 1** for further information about the legislation and planning policies that protect bats.

2.5 Objectives

The objectives of the survey and this assessment is to:

- Assess presence / likely absence of roosting bats within the building on site;
- Identify the species, numbers, usage and access points (if roosting bats are present);
- Determine habitat usage within the site by foraging and commuting bats;
- Assess any impacts that the development may have on any roosting and foraging / commuting bats;
- Determine the need for a Natural England European Protected Species Mitigation (EPSM) licence;
- Inform any avoidance, mitigation and enhancement measures, if required; and
- Feed into refinements for the masterplan.

3 Methodology

3.1 Summary of Survey Methods

A Preliminary Bat Roost Assessment (PBRA) of the site, undertaken in conjunction with the Preliminary Ecological Appraisal (PEA) concluded that the building held **Low suitability** for roosting bats (TSA Ecology 2020). Follow-up nocturnal surveys of the buildings and bat activity surveys of the habitats were therefore undertaken in line with the Bat Conservation Trust's *Bat Surveys for Professional Ecologists: Best Practice Guidelines* (Collins, 2016).

3.2 Surveyor Information

The bat roost assessment / surveys were undertaken / overseen by the following suitably experienced staff:

- Tony Stones BSc (Hons) MSc MCIEEM CEnv (17 years' bat survey experience);
- Daniel Bardey BSc (Hons) MRES (>1 years' experience bat survey experience)

3.3 Data Search

3.3.1 Designated Sites

The Multi-Agency Geographical Information for the Countryside (MAGIC) website was accessed on the 29th September 2020 for information on the location of any statutory sites designated for bats within 5km of the application site.

3.3.2 Bat Records

The Thames Valley Environmental Records Centre (TVERC) and Berkshire and South Buckinghamshire Bat Group (BSBBG) were consulted on the 29th September 2020 for bat records within 2km of the site. MAGIC (www.magic.defra.gov.uk) was also accessed on the 29th September 2020 to identify any bat Mitigation Licences granted by Natural England within a 2km radius.

3.4 Habitat Survey

The survey involved a site visit on 15th September 2020 to record and map habitat types and ecological features within the site. The survey was undertaken in accordance with *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2013), Preliminary Ecological Appraisal (PEA)¹

¹ Also referred to as Baseline ecological surveys, Phase 1 or Extended Phase 1 Habitat Survey/Constraints Survey/ Ecological Site Assessment/Ecological Site Appraisal/Ecological Scoping Survey/ Ecological Site Walkover Survey

methodology as set out in Guidelines for Preliminary Ecological Appraisal (GPEA) (CIEEM 2017), and the general principles and methods outlined in the *Handbook for Phase 1 Habitat Survey* (JNCC, 2010). Refer to the PEA Report for more detailed information (TSA Ecology, October 2020).

3.5 Preliminary Roost Assessment

A daytime roost assessment was undertaken on the 15th September 2020. The weather conditions during the survey were noted to be 23°C with a light breeze (Beaufort scale 2) and 10% cloud cover. A full external and internal assessment of the buildings within the site was carried out using, where relevant, binoculars, a ladder, an endoscope and a high-power torch. All buildings were described and surveyed for bats and their evidence, which includes droppings, staining, scratch marks and feeding remains. Each building was then assigned a level of suitability for roosting bats as outlined in **Table 1** below.

Table 1: Classifying the bat roosting suitability of buildings and trees (Collins, 2016)

High roosting suitability	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger number of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Moderate roosting suitability	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat, but unlikely to support a roost of high conservation status (with respect to roost type only).
Low roosting suitability	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and / or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Negligible roosting suitability	A structure or tree with few, if any features suitable for roosting.

3.6 Nocturnal Surveys

The building was subject to an emergence survey in line with standard guidance (Collins, 2016). The emergence survey commenced fifteen minutes before sunset and continued for 1.5 hours after sunset. Refer to **Table 2** for the survey date and weather conditions.

Two surveyors were situated at key points adjacent to the building (**Appendix 3**) to give suitable coverage. The hand-held equipment used consisted of a Wildlife Acoustics Echo Meter Touch 2, an active full spectrum bat detector.

Surveyors recorded any bat activity observed within the site, including species, flight direction and behaviour. Bat calls were then analysed using Kaleidoscope.

Table 2: Times and weather conditions of the emergence / re-entry surveys

Date (2020)	Sunset (24 Hrs)	Survey Duration	Weather Conditions
22 nd September	19.01	18.46 – 20.31	18oC, 100% cloud cover, Beaufort 3, Dry.

3.7 Evaluation and Impact Assessment

The evaluation of any bat roosts and foraging / commuting habitat is made with reference to *Valuing Bats in Ecological Impact Assessment* (Wray *et al.*, 2010) and the *Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial and Freshwater* (CIEEM, 2016). Refer to **Appendix 4** for the method of evaluation.

3.8 Limitations and Assumptions

- Time of year – The survey was conducted during a sub-optimal survey time as specified in the standard guidelines (Collins, 2016). However, the survey was conducted within optimal weather conditions and still within acceptable periods for bat surveys.

The survey results are therefore not significantly limited and are considered to represent a valid assessment of roosting, foraging and commuting bats within the site.

4 Results and Evaluation

The results of the background data search and field surveys are set out below, together with an evaluation of any bat roosts and foraging / commuting habitat identified on site.

4.1 Data Search

4.1.1 Designated Sites

No statutory sites designated for bats are located within 5km of the site.

4.1.2 Bat Records

The table below lists bat records within 2km of the site for the past ten years.

Table 3: Bat records within 2km of the site from the TVBRC and BSBBG for the last 10 years

Species	Number of Records	Maximum number of individuals	Closest known record (km)	Closest Roost to Site (km)
Brown long-eared	10	2	1.4 SW	1.4 SW
Common pipistrelle	109	87	0.2 N	0.2 N
Soprano pipistrelle	93	2	0.6 SE	0.9 NW
Noctule	58	2	0.6 SE	-
Daubentons	12	100	1.2 N	1.2 N
Serotine	7	1	0.7 W	-
Leislars	2	-	1.6 NW	-
Western barbastelle	2	-	1.6 NE	-
Nathusius' pipistrelle	11	1	0.6 SW	-
Unknown Myotis species	23	-	0.7 NW	-
Unknown Pipsitrelle species	12	2	0.6 W	0.8 SW
Unknown bat species	6	7	0.4 SW	-

The table below provides a list of bat Mitigation Licences granted by Natural England within 2km of the site (MAGIC, 2020).

Table 4: Bat mitigation licence applications granted within 2km of the site

Case Reference	Bat Species	Type of Roost	Distance & Direction	Licence Start & End Dates
2017-28045-EPS-MIT	Daubenton's Bat	Unknown	1km north	08/03/2017 – 08/03/2022
EPSM2013-6155	Common pipistrelle	Resting place	0.9km north	19/09/2013 – 31/08/2015
2016-22301-EPS-MIT	Common pipistrelle	Resting place	0.4km east	21/04/2016 – 20/04/2021
EPSM2010-2126	Common pipistrelle	Resting place	1.7km southeast	02/09/2020 – 31/08/2012
2014-3941-EPS-MIT	Common pipistrelle & Soprano pipistrelle	Resting place	1.1km southeast	21/10/2014 – 30/11/2019
2017-32379-EPS-MIT	Common pipistrelle	Resting place	0.8km west	04/12/2017 – 29/11/2022

4.2 Habitats

Habitats within the site's boundary comprise of a single building surrounded by bare ground. The site is therefore considered to be of **low suitability** for foraging and commuting bats. Refer to **Appendix 2** for a map of the habitats noted within the site and the PEA Report for detailed habitat descriptions (TSA Ecology, October 2020).

4.3 Preliminary Roost Assessment

The relevant buildings on-site have been described below. Refer to **Appendix 2** for the building locations.

4.3.1 Building 1

The only building (Photo 1) on site consists of a single-story brick built commercial property with a flat roof. The building's western elevation consists of a plaster rendered brick wall, the southern elevation comprised of interlocking concrete slabs, with the northern and eastern elevations being brick built. The building has a flat, felt-covered roof with wooden fascia boards being present on the northern and eastern elevations.



Photo 1: Southern elevation of building 1, taken facing northeast.

Several potential access points and roosting opportunities are available for bats within the building, which are described in **Table 5**. Based on the roost assessment, building 1 holds **low suitability** for roosting bats (before the nocturnal surveys were undertaken).

Table 5: Potential access points and roosting opportunities for bats

Building #	Potential Access Points	Location of building	Photo
1	Missing brick and damaged fascia board leading into roof void.	North-eastern corner	

1	Gap in brickwork below flat roof	Western elevation	
1	Gap leading into roof void above window	Northern elevation	
1	Degraded brickwork	Northwestern corner	

4.4 Nocturnal Surveys

No bats were recorded entering or emerging from any area of the buildings during the nocturnal surveys on 22nd September 2020. Refer to **Appendix 2** for the raw data tables and map of the buildings.

4.5 Evaluation

An evaluation of roosting, foraging and commuting bats within the site is provided below. Refer to **Appendix 4** for the process of evaluation.

4.5.1 Bat Roosts

4.5.1.1 Building 1

No evidence of roosting bats was recorded during any of the surveys. This building is therefore of **low importance** for roosting bats. No further surveys or mitigation are recommended.

4.5.2 Foraging and Commuting Bats

The site was noted to be used by low numbers (1-3 individuals) of common pipistrelle for foraging and commuting purposes (**Appendix 3**). Common pipistrelle was seen commuting west along the southern elevation of the site, and commuting north along the eastern elevation of the site. Analysis of the sonograms showed that common pipistrelles within the site used it for both foraging and commuting. Noctule, considered to be one of the rarer bats, was recorded once commuting over the site. With reference to Valuing Bats in Ecological Impact Assessment (Wray, et al., 2010; **Appendix 4**), the site is considered to be of **local importance** for foraging and commuting bats.

5 Impact Assessment

Potential impacts of the proposed development in the absence of mitigation during construction and operation are discussed below.

5.1 Designated Sites

No statutory sites designated for bats are located within 5km of the application site and therefore **no impacts** on designated sites are expected. No further mitigation is required.

5.2 Bat Roosts

5.2.1 Building 1

No bat roosts were identified within the building, therefore there are **no known impacts** to bat roosts. During demolition of the building, if bats are located or suspected then all works should cease immediately, and a licensed bat worker should be consulted.

Should demolition of the building be undertaken after 1 May 2022 (i.e at the start of the active season for bats), then further nocturnal surveys are recommended in relation to the building's current condition against its features and roosting potential (negligible, low, moderate or high) as described in professional guidelines.

5.3 Foraging and Commuting Bats

Artificial lighting used during both the construction and operational phases of the development has potential to disturb foraging and commuting bats within the site and the local area (Stone, 2013; and Fure, 2006). The area proposed for clearance is considered to represent bat foraging and commuting habitat. Further mitigation in **Section 6** has therefore been recommended for foraging and commuting bats.

6 Recommendations for Further Surveys, Avoidance, Mitigation and Enhancement

6.1 Further Surveys

No signs of bats were noted and the building is not currently considered to support roosting bats. Although ingress / egress points are present, the building is flat-roofed offering limited scope for roosting, other than occasional use under loose lead flashing, gaps between the fascia boards and potentially within part of the external walls etc.

6.2 Avoidance and Mitigation

6.2.1 Roosts

No bat roosts are considered likely to be impacted by the proposed development and therefore no further mitigation is required. In the unlikely event that a bat is discovered or suspected, works should cease immediately and the advice of a licensed bat worker should be sought.

6.2.2 Foraging and Commuting Bats

The following measures should be implemented within the development to reduce impacts on foraging and commuting bats caused by artificial lighting (BCT & ILP, 2018):

- Direct any task lighting used during construction away from boundary trees (retained or new) and any newly installed bat boxes;
- Set any necessary security lighting on short timers with a sensitivity to large moving objects only;
- Consider installing internal light fittings in a recess where installed in proximity to windows facing the boundary vegetation in order to reduce glare and light spill;
- Limit lighting times to provide dark periods;
- If appropriate to the final design, consider screening as a means of reducing light spill to boundary vegetation. This could take the form of soft landscaping, fences, walls or bunds. Fencing could also be overplanted with hedgerow or climbing species to add further ecological value to the site and soften its appearance;
- LED light sources should be used wherever possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capabilities. A warm spectrum light

(ideally <2700 Kelvin) should be used to reduce the blue light component. Lights should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2013). Luminaires should be mounted on the horizontal, i.e. with no upward tilt. Avoid the use of UV light and do not use metal halide, fluorescent light sources; and

6.3 Enhancements

Appendix 5 provides a table of suitable species that can be included within any new tree-lines / hedges or other planting to encourage bats to continue foraging and commuting within the site. The new road/tree-line should also be kept as a dark corridor for bats. Installation of Schwegler IFF and/or 2F Bat Boxes onto new buildings would enhance roosting opportunities within the development for bats. Install the bat boxes at least 5m above the ground and face them in a southerly direction, so that they receive sun for part of the day. Avoid placing near artificial lighting and ideally locate the boxes adjacent to commuting or foraging habitat, such as dark tree or hedge lines, ensuring that clear access is maintained to the boxes for bats.

7 Conclusion

The development can proceed with minimal impact to bats if the mitigation and avoidance measures outlined within **Section 6** are implemented. Linear native planting and the installation of bat boxes will also enhance the development for roosting and foraging / commuting bats in the long-term.

8 References

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ISSUE

Appendix 1 Legislation and Policy

All 18 British 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 (Amendment) Regulations 2017* as European Protected Species. Furthermore, the *Countryside and Rights of Way Act 2000* (Schedule 12, Paragraph 5) has amended Section 9 of the 1981 Act. Bats are therefore, fully protected under Section 9 of the 1981 Act and under Regulation 41 of the *Conservation of Habitats and Species (Amendment) Regulations 2012*, which transposes the Habitats Directive into UK law.

All European bat species are listed as protected under Annex IV of Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora, commonly referred to as the EC or EU Habitats Directive. In addition, four UK bat species are listed in Annex II of the EC Directive; the conservation of which requires the designation of Special Areas of Conservation under certain criteria. These four species are the greater horseshoe bat *Rhinolophus ferrumequinum*, the lesser horseshoe bat *Rhinolophus hipposideros*, Bechstein's bat *Myotis bechsteinii* and the barbastelle *Barbastella barbastellus*.

In England (and Wales) the EC Habitats Directive is transposed into national law by means of the *Conservation of Habitats and Species (Amendment) Regulations 2012*. The commonly used collective term for this above legislation is the 'Habitats Regulations' and all bats are European Protected Species (EPS).

All British bat species are also listed as protected under national laws via Schedule 5 of the *Wildlife and Countryside Act (WCA) 1981* (as amended). Furthermore, the *Countryside and Rights of Way (CROW) Act 2000* (Schedule 12, Section 5a) has amended Section 9 (subsection 4) of the WCA Act, 1981 thereby strengthening the level of protection further to include 'reckless' offences as well as 'intentional'.

Ultimately, the above EU and UK legislation makes it an offence to, or to attempt to do, any of the following:

- Deliberately capture, injure or kill a bat;

-
- Deliberately disturb a bat, including in particular any disturbance which is likely to impair a bat's ability to survive; breed or reproduce; or rear or nurture their young;
 - In the case of hibernating or migratory species, to impair their ability to hibernate or migrate;
 - Affect significantly the local distribution or abundance of the species to which they belong;
 - Damage, destroy or obstruct a breeding site or resting place of a bat whether intentionally or recklessly; and / or,
 - Possess, control, transport, exchange or sell a bat or parts of a bat, alive or dead.

Furthermore, where development will result in damage to, or obstruct access to, any bat roost (whether occupied or not) or risks harming or significantly disturbing bats an EPS licence is required from Natural England, the regulatory body responsible for protected species in England, to allow the development to proceed.

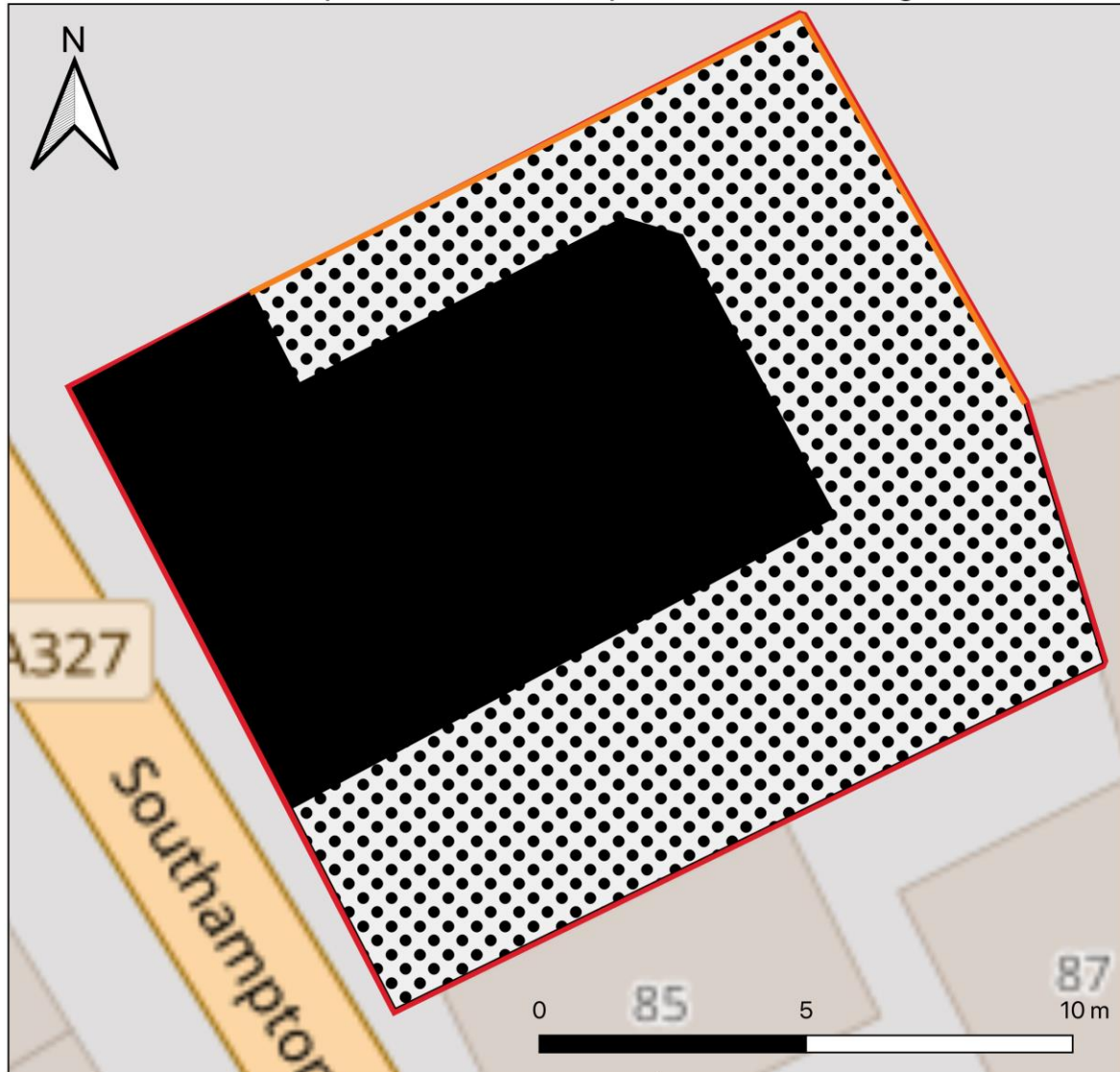
The legal interpretation of "development" in the context of EPS is not restricted to works requiring planning permission from LPAs but includes permitted development and can encompass works that do not require any formal permission.

Bats are also afforded more general protection in England (and Wales) within the *Natural Environment and Rural Communities Act, 2006*. This imposes a duty on all public bodies, including local authorities and statutory bodies, in exercising their functions, "to have due regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity" [Section 40 (1)]. It notes that "conserving biodiversity includes restoring or enhancing a population or habitat" [Section 40 (3)]. Consequently, attention should be given to dealing with the modification or development of an area if aspects of it are deemed important to bats, such as roosts, flight corridors and foraging areas.

Species of Principal Importance in England (SPIE) – formerly UK Biodiversity Action Plan Priority (BAP) include the barbastelle, brown long-eared bat *Plecotus auritus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula*, greater horseshoe, lesser horseshoe and Bechstein's bat.

Appendix 2 Phase 1 Habitat Map

Phase 1 Habitat Map: 75-81 Southampton Road Reading RG1 2QU



OSGR SU 7171 7280

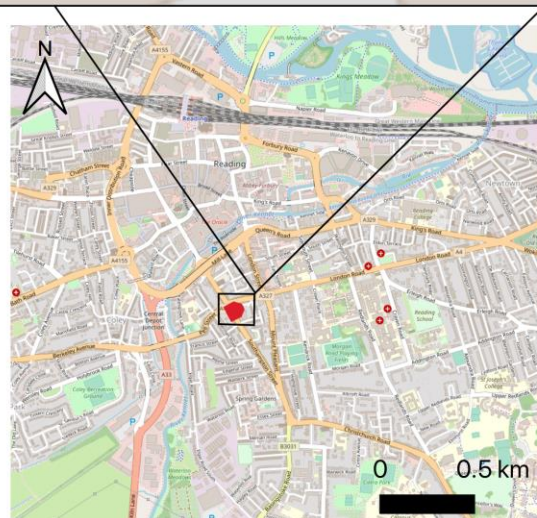
Legend

- J2.5 Wall
- Boundary
- J3.6 - Buildings
- J4 - Bare ground

Survey Conducted by:
Tony Stones BSc MSc MCIEEM CEnV
Principle Ecologist

Mapping Conducted by:
Daniel Bardey BSc (Hons) MRES
Ecologist

Survey Date: 22/09/2020
Map Generated: 29/09/2020

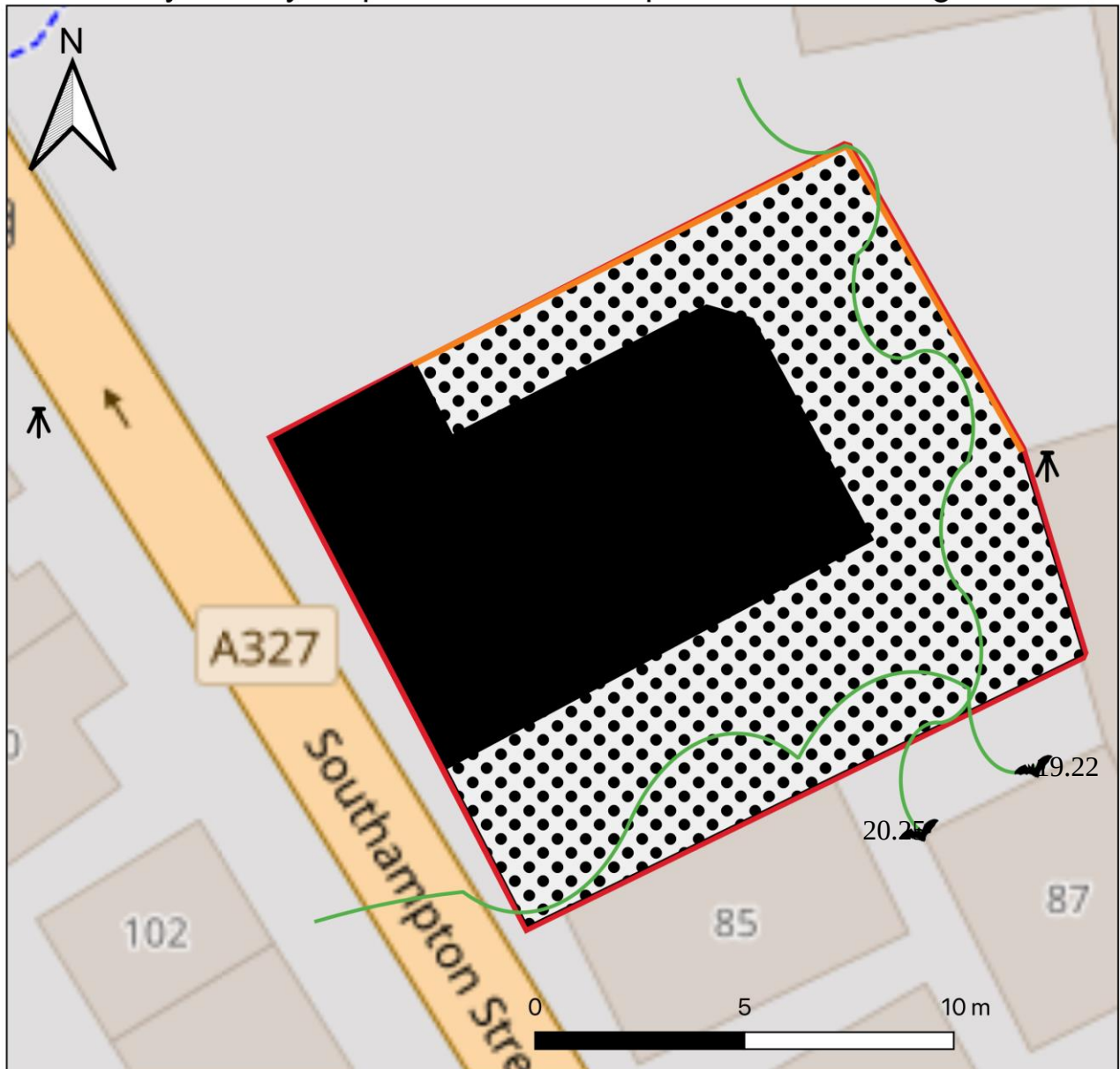


Appendix 3 Bat Emergence Survey Results and Map

Table 6: Bat emergence / re-entry survey results

Time	Notes (HNS = heard but not seen) (SNH = seen but not heard) (RTR = return to roost)
Emergence Survey 1: 22/09/2020 (Building 1)	
19:19	Common pipistrelle HNS commuting east of building 1.
19:20	Common pipistrelle HNS commuting east of building 1.
19:22	Common pipistrelle HNS commuting west along southern elevation of building 1.
19:24	Common pipistrelle HNS east of building 1.
19:28	Common pipistrelle HNS east of building 1.
19:30	Common pipistrelle HNS social calling east of building 1.
19:47	Common pipistrelle HNS foraging east of building 1.
19:56	Noctule HNS east of building 1.
19:59	Common pipistrelle HNS east of building 1.
20:20	Common pipistrelle HNS social calling east of building 1.
20:25	Common pipistrelle HNS commuting north along eastern elevation of building 1.
20:25 – 20:33	Common pipistrelle HNS foraging intermittently east of building 1.

Bat Activity Survey Map: 75-81 Southampton Road Reading RG1 2QU



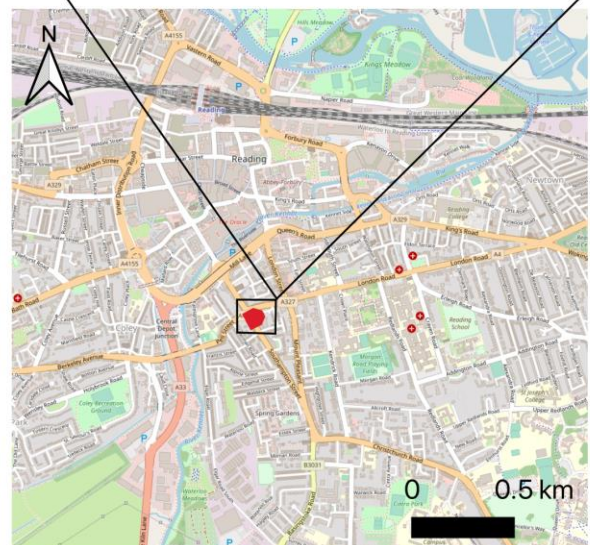
OSGR SU 7171 7280

Legend

- Surveyor Positions
- Bat Activity
- J2.5 Wall
- J3.6 - Buildings
- J4 - Bare ground
- Boundary

Survey Conducted by:
Tony Stones BSc MSc MCIEEM CEnv
Principle Ecologist

Mapping Conducted by:
Daniel Bardey BSc (Hons) MRES
Ecologist



Survey Date: 22/09/2020

Map Generated: 29/09/2020

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Page 25 of 30

Appendix 4 Evaluating Bats in the Wider Ecological Context

The evaluation of the bat population using the site is based on *Valuing Bats in Ecological Impact Assessment* (Wray *et. al.*, 2010). The text in **bold** indicates the process of evaluation for roosting, commuting and foraging bats on site.

Where bats (species and number) use certain habitats (to roost, commute or forage), their population is assigned a relative ecological value. The value to the species is partly based on habitat usage and the rarity of the bat species. For commuting routes or foraging areas, the number of roosts nearby is also a factor. Once the value of the bat population is calculated, mitigation for impacts on the bats can be determined.

British bat species have been subdivided into groups, dependant on their abundance within England; common, rarer and rarest.

Table 7: Categorising bats by abundance in England

Rarity	Bat Species
Rarest	Greater horseshoe bat Bechstein's bat Alcathoe's bat Greater mouse-eared bat Barbastelle Grey long-eared bat
Rarer	Lesser horseshoe bat Whiskered bat Brandt's bat Daubenton's bat Natterer's bat Leisler's bat Noctule Nathusius' pipistrelle Serotine
Common	Common pipistrelle Soprano pipistrelle Brown long-eared bat

Table 8: Evaluating bat roost

Geographic Frame of Reference	Roost Types
International	SAC sites.
National/UK	Maternity sites (rarest species). Sites meeting SSSI guidelines.
Regional	Mating sites (rarer/rarest species) including well-used swarming sites. Maternity sites (rarer species). Hibernation sites (rarest species). Significant hibernation sites for rarer/rarest species or all species assemblages.
County	Maternity sites (common species). Small numbers of hibernating bats (common and rarer species). Feeding perches (rarer/rarest species). Individual bats (rarer/rarest species). Small numbers of non-breeding bats (rarer/rarest species).
District, Local or Parish	Feeding perches (common species). Individual bats (common species). Small numbers of non-breeding bats (common species). Mating sites (common species).

To calculate the score for either commuting routes or foraging areas the numerical values from each column below are added together (**Tables 9 and 10** below).

Table 9: Evaluating commuting routes

Species	Number of Bats	Roosts / Potential Roosts Nearby	Type & Complexity of Linear Features
Common (2)	Individual bats (5)	None (1)	Absence of (other) linear features (1)
-	-	Small number (3)	Unvegetated fences and large field sizes (2)
Rarer (5)	Small number of bats (10)	Moderate number/Not known (4)	Walls, gappy or flailed hedgerows, isolated well grown hedgerows, and moderate field sizes (3)
-	-	Large number of roosts or close to a SSSI (5)	Well grown and well connected hedgerows, small field sizes (4)
Rarest (20)	Large number of bats (20)	Close to or within a SAC for the species (20)	Complex network of mature well-established hedgerows, small fields and rivers/streams (5)

Table 10: Evaluating foraging areas

Species	Number of Bats	Roosts / Potential Roosts Nearby	Foraging Habitat Characteristics
Common (2)	Individual bats (5)	None (1)	Industrial or other site without established vegetation (1)
-	-	Small number (3)	Suburban areas or intensive arable land (2)
Rarer (5)	Small number of bats (10)	Moderate number/Not known (4)	Isolated woodland patches less intensive arable and/or small towns and villages (3)
-	-	Large number of roosts or close to a SSSI (5)	Larger or connected woodland blocks, mixed agriculture and small villages/hamlets (4)
Rarest (20)	Large number of bats (20)	Close to or within a SAC for the species (20)	Mosaic of pasture, woodlands and wetland areas (5)

Finally, the evaluation of bat commuting routes and foraging areas on the site is based on the following scoring system.

Table 11: Scoring system for valuing commuting and foraging bats

Geographic Frame of Reference	Score
International	>50
National	41-50
Regional	31-40
County	21-30
District, Local or Parish	11-20
Not Important	1-10

Appendix 5 Planting for Bats

(Source: 'Gardening for bats', Bat Conservation Trust, 2004)

Aim to have flowers in bloom throughout the year, including annuals and herbaceous perennials. Below are suggestions, but this is not an exhaustive list. Flowering times are approximate, and vary depending on the region. Regular dead-heading extends flowering period in many flowers.

A= Annual, HA = Hardy annual, HHA = Half-hardy annual, P = Perennial, W = Wild flower.

Flowers for Borders			
St. John's wort	<i>Hypericum sp.</i>	P	March
Marigolds	<i>Calendula sp</i>	H/A	March-October
Aubrietia	<i>Aubrietia deltoidea</i>	P	March-June
Honesty	<i>Lunaria rediviva</i>	HB	March
Forget-me-not	<i>Myosotis sp.</i>	A/P	March-May
Elephant ears	<i>Bergenia sp</i>	P	April
Wallflowers	<i>Erysimum sp.</i>	B	April-June
Cranesbills	<i>Geranium sp.</i>	P	May-September
Yarrow	<i>Achillea millefolium</i>	P	May-
Poppies	<i>Papaver sp.</i>	A	May- July
Dames violet	<i>Hesperis matronalis</i>	P	May-August
Red valerian	<i>Centranthus ruber</i>	P	May-September
Poached egg plant	<i>Limnanthes sp.</i>	HA	June-August
Knapweed	<i>Centaurea nigra</i>	P	June-September
Phacelia	<i>Phacelia tanacetifolia</i>	HA	June-September
Ox-eye daisy	<i>Leucanthemum vulgare</i>	P	June-August
Evening primrose	<i>Oenothera biennis</i>	B	June-September
Candytuft	<i>Iberis umbellate</i>	HA	June-September
Sweet William	<i>Dianthus barbatus</i>	B	June-July
Blanket flowers	<i>Gaillardia sp.</i>	P	June -
Verbena	<i>Verbena bonariensis</i>	HHA	June-October
Scabious	<i>Knautia arvensis</i>	P	July-August
Night-scented stock	<i>Mattiola bicornia</i>	HA	July-August
Pincushion flower	<i>Scabious sp.</i>	A/P	July-September
Cherry pie	<i>Heliotrope sp.</i>	HHA	July-October
Mexican aster	<i>Cosmos sp.</i>	A/P	July-October
Cone flower	<i>Rudbeckia sp.</i>	A/P	August-November

Mallow	<i>Lavatera</i> sp.	P	August-October
Michaelmas daisy	<i>Aster</i> sp.	P	August-September
Ice plant 'Pink lady'	<i>Sedum spectabile</i>	P	September
Herbs – Both Leaves and Flowers are Fragrant			
Fennel	<i>Foeniculum vulgare</i>		July-September
Bergamont	<i>Monarda didyma</i>		June-September
Sweet cicely	<i>Myrrhis odorata</i>		April-June
Hyssop	<i>Hyssopus officinalis</i>		July-September
Feverfew	<i>Tanacetum parthenium</i>		June-September
Borage	<i>Borago officinalis</i>		May-September
Rosemary	<i>Rosmarinus officinalis</i>		March-May
Lemon balm	<i>Melissa officinalis</i>		
Coriander	<i>Coprianrum sativum</i>		June-August
Lavenders	<i>Lavendula</i> sp.		
Marjoram	<i>Origanum</i> sp.		
Trees, Shrubs and Climbers Important for Insects			
Oak	<i>Quercus</i> sp.		large gardens only
Silver birch	<i>Betula pendula</i>		
Common alder	<i>Alnus glutinosa</i>		Suitable for coppicing
Hazel	<i>Corylus avellana</i>		Suitable for coppicing
Elder	<i>Sambucus nigra</i>		Small
Goat willow	<i>Salix caprea</i>		Suitable for coppicing
Hawthorn	<i>Crataegus monogyna</i>		Suitable for coppicing
Honeysuckle	<i>Lonicera</i> sp.		Grow a variety for succession
Dog rose	<i>Rosa canina</i>		Climber
Bramble	<i>Rubus fruticosus</i> agg.		Climber
Ivy	<i>Hedera helix</i>		Climber
Guelder rose	<i>Viburnum opulus</i>		Shrub
Gorse	<i>Ulex</i> sp.		Shrub
Plants for Pond Edges and Marshy Areas			
Purple loosestrife	<i>Lythrum salicaria</i>	W	June-August
Meadow sweet	<i>Filipendula ulmaria</i>	W	June-September
Lady's smock	<i>Cardamine pratensis</i>	W	April-June
Water mint	<i>Mentha aquatica</i>	W	July-September
Angelica	<i>Angelica sylvestris</i>	W	July-September
Hemp agrimony	<i>Eupatorium cannabinum</i>	W	March-May
Marsh marigold	<i>Caltha palustris</i>	W	June-September
Creeping Jenny	<i>Lysimachia nummularium</i>	W	May-August
Fringed water lily	<i>Nymphoides peltata</i>	W	June-September
Water forget-me-not	<i>Myosotis scorpioides</i>	W	June-September