



## Bat Survey - Emergence and Activity Surveys

Sharpe Refinery Service, Arlington Works, 27A Arlington Rd, Twickenham TW1 2BB

Ms Dawn Roads

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## Executive summary

Arbtech Consulting Ltd. undertook a suite of emergence and activity surveys on Sharpe Refinery Service, Arlington Works, 27A Arlington Rd, Twickenham TW1 2BB on 23<sup>rd</sup> July and 6<sup>h</sup> August 2018.

The aim of the assessment was to confirm the presence/likely-absence of a bat roost and to provide a current status on all survey features.

This includes providing evidence for species, numbers and levels of activity, to identify any entrance and egress points, and to gain an understanding of the activity of bats using the site in the local landscape

The development proposals are for a planning application with the London Borough of Richmond upon Thames. It is described as:

- *Redevelopment of the site to provide 610sqm of commercial space (B class) within existing Buildings of Townscape Merit plus a new built unit, 24 residential units (5 x 1 bedroom, 12 x 2 bedroom and 7 x 3 bedroom) and associated car parking and landscaping.*

### **Recommendations**

Survey feature	Recommendation
B1	In the unlikely event that bats are unexpectedly found during any stage of the development, work should stop immediately and a suitably qualified ecologist should be contacted to seek further advice.
B2	

For full justification of these recommendations, please go straight to section [4.0 Conclusions, Impacts and Recommendations](#). Otherwise, the full report starts below.

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## 1.0 Introduction and Context

### 1.1 Background

Arbtech were commissioned by Sharpe Refinery Service to undertake a suite of emergence/re-entry and activity surveys at Sharpe Refinery Service, Arlington Works, 27A Arlington Rd, Twickenham TW1 2BB. The assessment is informed by the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).

These surveys were completed following recommendations made in the Preliminary Roost Assessment Survey report (Arbtech Consulting Ltd. June 2018).

### 1.2 Site Context

The site is located at National Grid Reference TQ 1693 7437 and comprises an area of approximately 0.3ha. There are two survey buildings assessed within the site boundaries:

- Building B1 – 110m<sup>2</sup>
- Building B2 – 110m<sup>2</sup>

This was the subject of the survey as this will be impacted by the proposed development.

### 1.3 Scope of the report

This report provides a description of the bat activity observed and recorded during each survey. The aim of the assessment was to confirm and/or characterise any roosts present including species, numbers and access points, roosting locations, timing of use and type of roost, and to gain an understanding of how bats use the site.

Robust data has been collected, following good practice guidelines, to inform an assessment of the potential impacts of the proposed development on bats, and inform mitigation and enhancement. This report provides information on constraints to the proposals as a result of roosting bats, and summarises any mitigation required to achieve planning permission, and statutory consent to comply with wildlife legislation.

To achieve the aims of the assessment, the following steps have been taken:

- A desk study has been carried out, including a request for information from the local bat group/Records Centre - please refer to the Preliminary Roost Assessment Survey report (Arbtech, 2018).
- A field survey has been undertaken, including an external survey and internal inspection.

- An outline of likely impacts on any known roosts has been provided, based on current development proposals.
- Recommendations for further survey and assessment have been made, along with advice on European Protected Species Mitigation Licensing if appropriate.

A survey plan is presented in Appendix 1 showing the location of each surveyor and the bat activity observed and recorded during each survey, the proposed plan is included in Appendix 2 (where available), desk study results are provided in Appendix 3, and a summary of relevant legislation can be found in the Appendix 4.

#### ***1.4 Project Description***

The development proposals are for a planning application with the London Borough of Richmond upon Thames. It is described as:

- *Redevelopment of the site to provide 610sqm of commercial space (B class) within existing Buildings of Townscape Merit plus a new built unit, 24 residential units (5 x 1 bedroom, 12 x 2 bedroom and 7 x 3 bedroom) and associated car parking and landscaping.*

The proposed site plan is included in Appendix 2 (where available).

## 2.0 Methodology

### 2.1 Site Survey methodology

The survey methods were informed by the Preliminary Roost Assessment Survey completed by Arbtech Consulting Ltd (June 2018). This survey identified the following survey requirements in line with best practice:

**B1 + B2: Moderate value for roosting bats – two roost presence/likely-absence surveys required.**

The surveys involved surveyors positioned around the building ensuring that all elevations and roof sections could be clearly observed. Particular attention was paid to the areas of the building identified as providing suitable access points to bat roosts. The location of each surveyor during each survey is shown in Appendix 1. Each surveyor was assigned an area of the building to observe for the duration of the survey. Surveyors used Heterodyne and Frequency Division bat detectors, and Wildlife Acoustics EM3+ and Echo Meter Touch detectors connected to iPads. Bat echolocation calls recorded during the surveys were analysed using Wildlife Acoustics sound analysis software Kaleidoscope V3.1.7 when required. That is, the Echo Meter Touch includes an Auto ID bat species, however this is not 100% accurate and further post-survey sound analysis is often required to confirm species misidentified by the Auto ID software during the survey. Surveyors also used survey record sheets, pens/pencils, head torches for recording all activity observed during the surveys including foraging and commuting behaviour as well as emergence/re-entries by bats. Surveyors equipped with night vision binoculars and/or thermal imaging equipment are identified by “NV” or “ThIm” in Table 7. All surveyors had hand held radios for communication between surveyors to assist with confirming obscure bat activity e.g. a bat emergence or a bat passing over the building.

In accordance with the latest bat survey guidelines (Collins, J. 2016) dusk emergence surveys commenced 15 minutes before sunset and continued for 1½ - 2 hours after sunset – depending upon bat activity and surveyor visibility. Dawn re-entry surveys commenced 2-1½ hours before sunrise and continued until 15 minutes after sunrise.

Surveys were completed during optimal weather conditions i.e. when temperatures were above 10°C, with no rain or strong winds, as these environmental variables can impact upon bat emergence and foraging behaviour.

### 2.2 Surveyors

The lead surveyor is Craig Williams MSc MRSB GradCIEEM [2018-33540-CLS-CLS] and was assisted by 4 other surveyors over the two visits, all with several years of bat survey experience.

Four surveyors were used to provide sufficient cover of the two buildings during each survey.

The designated position of each surveyor during each survey is detailed in the tables in Section 3.6 below, and shown on the plan in Appendix 1.

### 2.3 Survey Timings and Weather Conditions

The dates and times of each survey are presented in Table 5, along with sunset/sunrise times as applicable and the weather conditions at the start and end of each survey.

Table 5: Survey schedule and weather conditions

Reference	Survey date	Survey Start and End Times Sunset/sunrise time	Weather Conditions Start	Weather Conditions END
B1 + B2	23/07/18	20:47– 22:32 Sunset: 21:02	Temp: 26°C Humidity: 50% Cloud Cover: 20% Wind: 0m/s Rain: None	Temp: 23°C Humidity: 60% Cloud Cover: 3% Wind: 0m/s Rain: None
B1 + B2	06/08/18	04:11– 05:56 Sunrise: 05:41	Temp: 18°C Humidity: 67% Cloud Cover: 0% Wind: 1m/s Rain: None	Temp: 16°C Humidity: 81% Cloud Cover: 0% Wind: 1m/s Rain: None



#### *2.4 Limitations – evaluation of the methodology*

These surveys follow best practice guidance to confirm presence/absence of roosting bats and where present, characterise the roost. However, this information is collected at finite dates and times, and provides an indication of the conditions on site only. The use of the building/structure/tree, and the site as a whole by bats, at all times cannot be established based on this information.

There were no specific limitations to the survey.

## 3.0 Results and Evaluation

### 3.1 Desk Study Results

A summary of desk study results is provided in the preliminary roost assessment (Arbtech, June 2018).

### 3.2 field Survey Results

The results of each survey are provided in the tables below.

Table 6.1: Survey results – Dusk Emergence Survey

<b>Date</b>		23/07/18
<b>Start and End Times</b>		20:47– 22:32 Sunset: 21:02
<b>Surveyor (position) As shown in Appendix 1</b>		<b>Helen Worlock</b> - 4 years' experience of conducting these types of surveys <b>Position 1</b> – looking at the northern elevations of B1 and B2. <b>Craig Williams</b> - Natural England Bat Licence Number: 2018-33540-CLS-CLS <b>Position 2</b> – looking at the western elevation of B2. <b>Josephine McCarthy</b> - 6 years' experience of conducting these types of surveys <b>Position 3</b> – looking at the eastern elevation of B1 and southern of B2. <b>Carla de Sousa</b> - 2 years' experience of conducting these types of surveys <b>Position 4</b> – looking at the eastern elevation of B2.
<b>Building/Tree Reference</b>	<b>Surveyor Position</b>	<b>Notes/observations:</b>
B1 + B2	1	No bats seen or heard for the duration of the survey.
B2	2	No bats seen or heard for the duration of the survey.
B1	3	No bats seen or heard for the duration of the survey.
B2	4	No bats seen or heard for the duration of the survey.

Table 6.2: Survey results – Dawn Re-entry Survey

<b>Date</b>		06/08/18
<b>Start and End Times</b>		04:11– 05:56 Sunrise: 05:41
<b>Surveyor (position) As shown in Appendix 1</b>		<b>Helen Worlock</b> - 4 years' experience of conducting these types of surveys <b>Position 1</b> – looking at the northern elevations of B1 and B2. <b>Craig Williams</b> - Natural England Bat Licence Number: 2018-33540-CLS-CLS <b>Position 2</b> – looking at the western elevation of B2. <b>Josephine McCarthy</b> - 6 years' experience of conducting these types of surveys <b>Position 3</b> – looking at the eastern elevation of B1 and southern of B2. <b>Mark Taroni</b> – 4 years' experience of conducting these types of surveys <b>Position 4</b> – looking at the eastern elevation of B2.
<b>Building/Tree Reference</b>	<b>Surveyor Position</b>	<b>Notes/observations:</b>
B1 + B2	1	A long-eared bat ( <i>Plecotus</i> sp.) was observed to fly east to west over the site to the north of B1 at 05:04.
B2	2	No bats seen or heard for the duration of the survey.
B1	3	No bats seen or heard for the duration of the survey.
B2	4	A soprano pipistrelle ( <i>Pipistrellus pipistrellus</i> ) flew to the east of the site at 04:41 and 04:52.

## 4.0 Conclusions, Impacts and Recommendations

### 4.1 Informative guidelines

The surveys undertaken to date in and around B1 provide sufficient information to inform a European Protected Species Mitigation Licence (EPSML).

An EPSML **will not be required** to enable the proposed works to be lawfully undertaken, whilst ensuring the favourable conservation status of the species concerned in their natural range.

Appropriate justification for this assessment is provided in Section 3 and Tables 1 and 2 of this report.

## 4.2 Evaluation

Taking the desk based assessment and site survey results into account, the following recommendations are reached for each site survey feature.

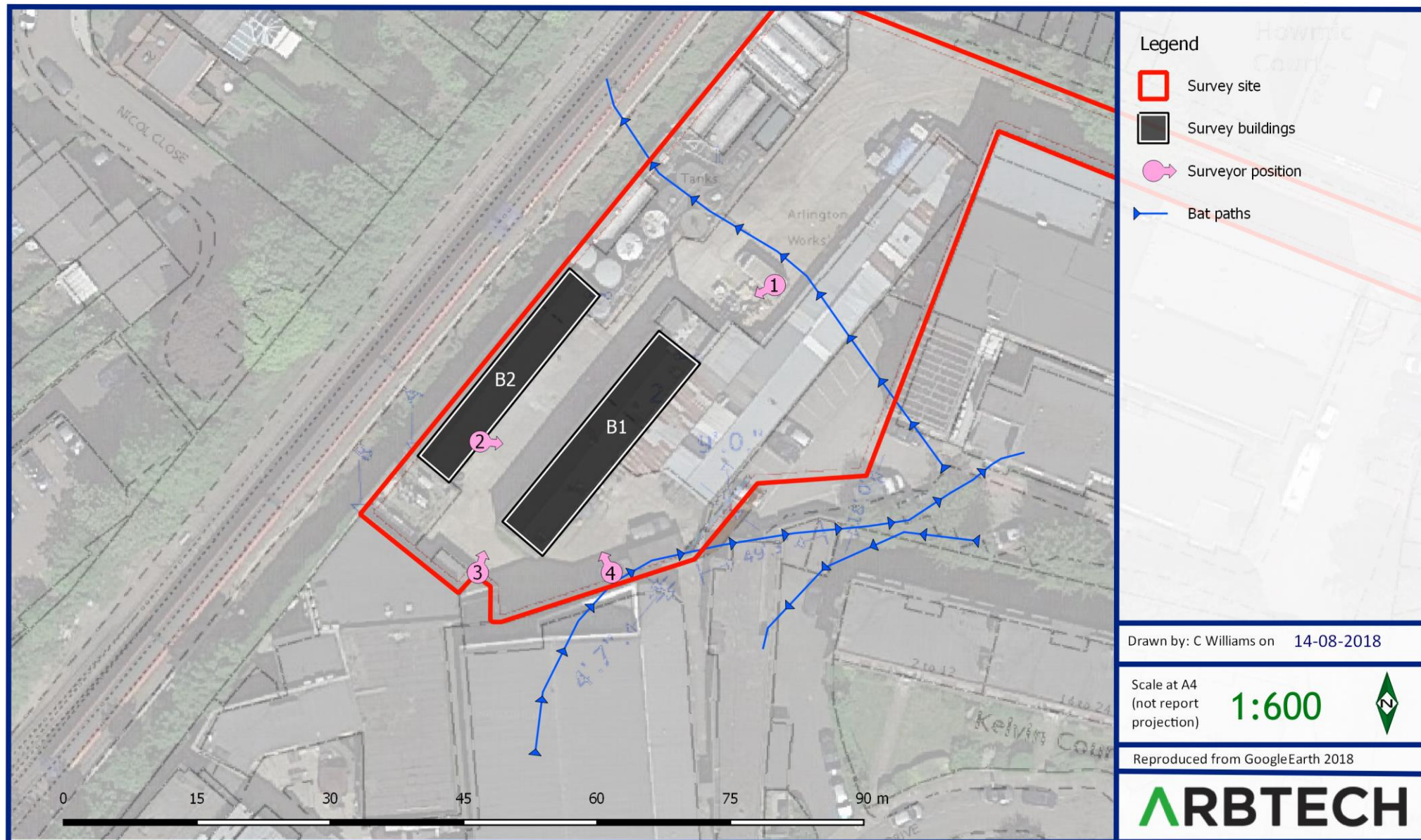
Table 7: Evaluation of buildings/trees/structures on site

Ref	Survey assessment conclusions (Type of bat roost present)	Foreseen impacts	Recommendations / Mitigation	Enhancements
B1 + B2	No roosts confirmed	No bat roost confirmed in B1 or B2. Bats are very unlikely to be roosting within B1 or B2 and as such, there are not anticipated to be any impacts on bats as a result of the proposed works.	In the unlikely event that bats are unexpectedly found during any stage of the development, work should stop immediately and a suitably qualified ecologist should be contacted to seek further advice.  Enhancements are also recommended.	<p>The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99</p> <p>The developed site can be enhanced for the bat species observed to be foraging and commuting across the site during the surveys by installing of a minimum of two bat boxes on trees around the site boundaries/retained buildings e.g.</p> <p>2F Schwegler Bat Box (trees only) 1FF Schwegler Bat Box (buildings &amp; trees) 2FN Schwegler Bat Box (trees only)</p> <p>Bat boxes should be positioned 3-5m above ground level facing in a south/south-westerly direction with a clear flight path to and from the entrance.</p> <p>Bat boxes should also be positioned away from any artificial light sources.</p>

## 5.0 Bibliography

- Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists —Good Practice Guidelines, 3<sup>rd</sup> edition, Bat Conservation Trust, London.
- Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected?
- Google Earth (2017)
- Magic database (2017) <http://www.magic.gov.uk/MagicMap.aspx>
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

### Appendix 1: Survey Plan



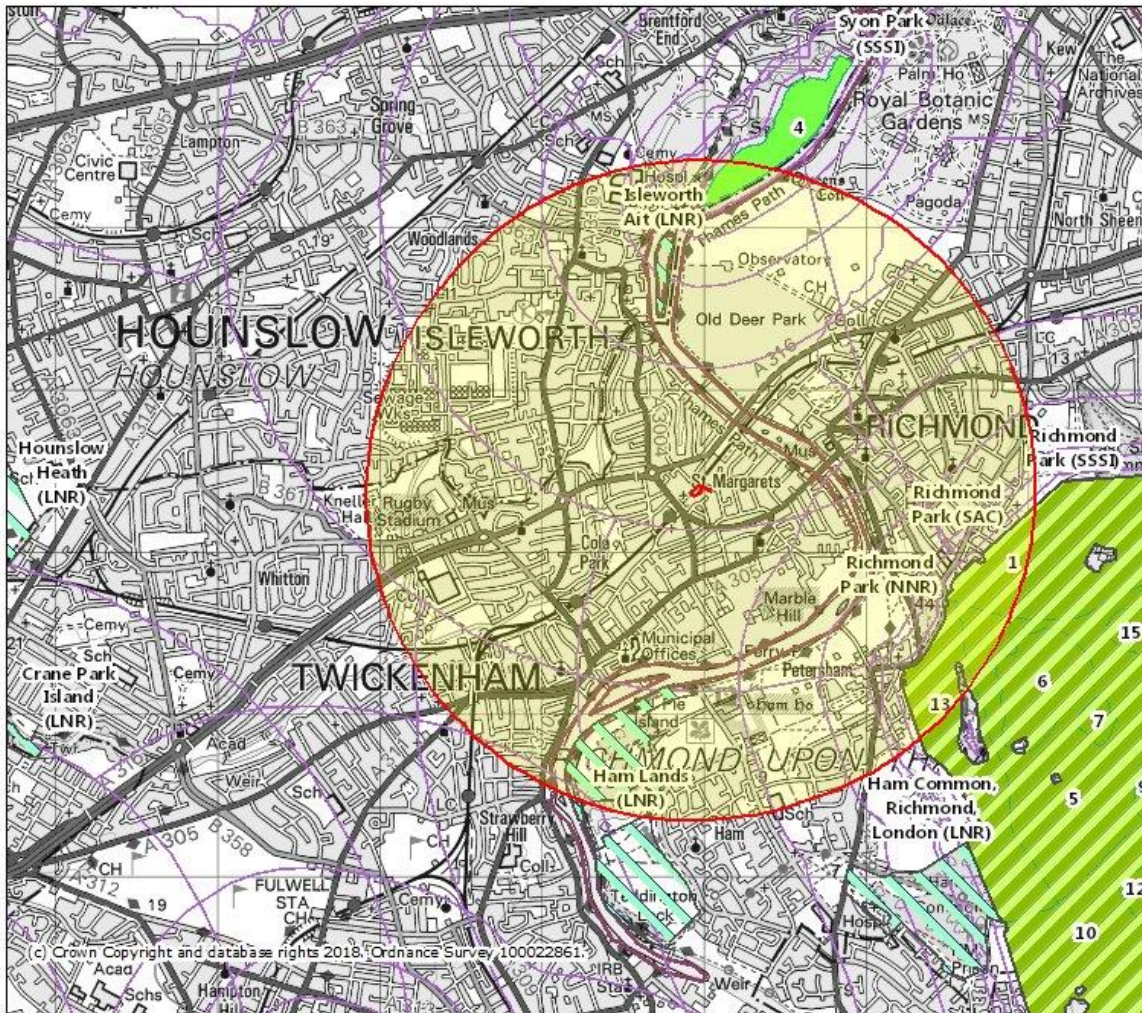




### Appendix 3: Desk study information

MAGiC

### Designated Sites



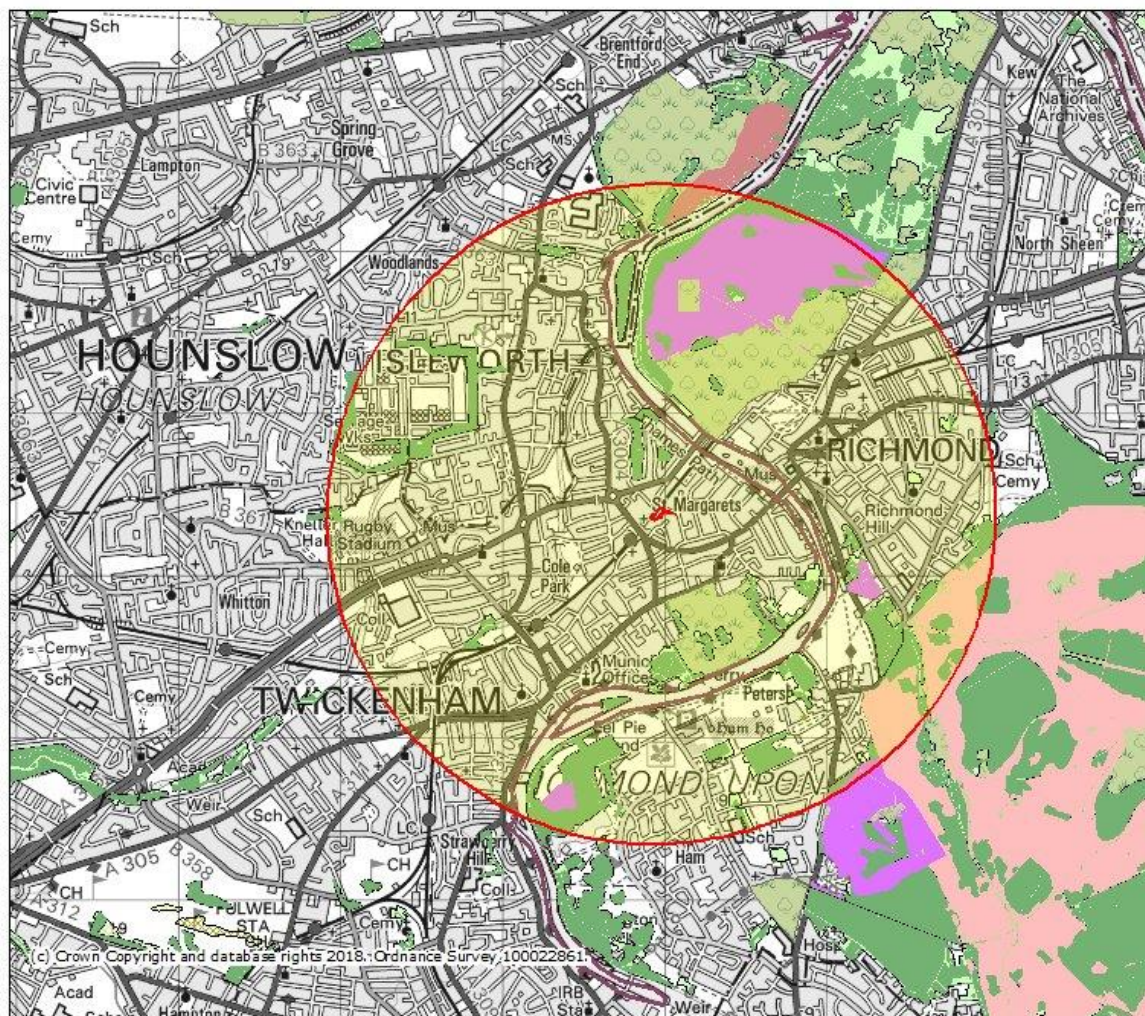
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MAGiC

# Habitats



**Legend**

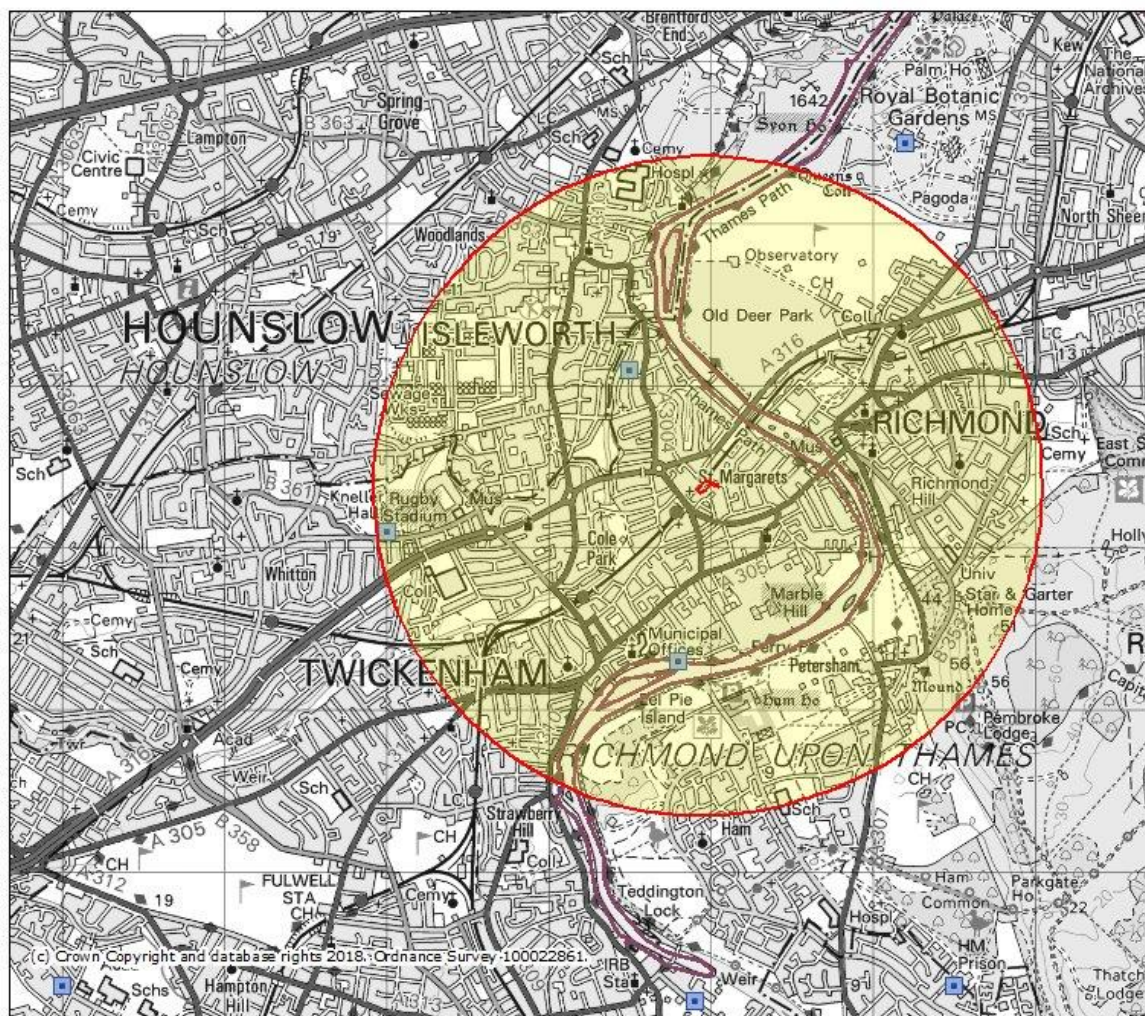
<ul style="list-style-type: none"> <li>Priority Habitat Inventory - Coastal and Floodplain Grazing Marsh (England)</li> <li>Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England)</li> <li>Priority Habitat Inventory - Lowland Calcareous Grassland (England)</li> <li>Priority Habitat Inventory - Lowland Dry Acid Grassland (England)</li> <li>Priority Habitat Inventory - Lowland Meadows (England)</li> <li>Priority Habitat Inventory - Purple Moor Grass and Rush Pasture (England)</li> <li>Priority Habitat Inventory - Lowland Heathland (England)</li> <li>Priority Habitat Inventory - Lowland Fens (England)</li> <li>Priority Habitat Inventory - Reedbeds (England)</li> <li>Ancient Woodland (England) <ul style="list-style-type: none"> <li>Ancient and Semi-Natural Woodland</li> <li>Ancient Replanted Woodland</li> <li>Priority Habitat Inventory - Deciduous Woodland (England)</li> <li>Forestry Commission Legal Boundary (England)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>National Forest Inventory (GB) <ul style="list-style-type: none"> <li>Assumed woodland</li> <li>Broadleaved</li> <li>Cloud \ shadow</li> <li>Conifer</li> <li>Coppice</li> <li>Coppice with standards</li> <li>Failed</li> <li>Failed</li> <li>Ground prep</li> <li>Low density</li> <li>Mixed mainly broadleaved</li> <li>Mixed mainly conifer</li> <li>Shrub</li> <li>Uncertain</li> <li>Windthrow</li> <li>Young trees</li> </ul> </li> <li>Priority Habitat Inventory - Traditional Orchards (England)</li> <li>Woodpasture and Parkland BAP Priority Habitat (England)</li> </ul>
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EPSLs

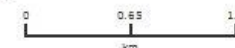


**Legend**

**Granted European Protected Species Applications (England)**

- Amphibian
- Bat
- Cetacean
- Invertebrate
- Other Mammal
- Plant
- Reptile

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## Appendix 4: Legislation and Planning Policy related to bats

### LEGAL PROTECTION

All species of bat are fully protected under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2.

Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. all bats)
- Deliberate disturbance of bat species as:
  - a) to impair their ability:
    - (i) to survive, breed, or reproduce, or to rear or nurture young
    - (ii) to hibernate or migrate
  - b) to affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Bats are also protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale

Effect on development works:

A European Protected Species Mitigation (EPSM) Licence issued by the relevant statutory authority (e.g. Natural England) will be required for works likely to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficiency/success to be monitored.

The legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost (Garland & Markham, 2008)

**NATIONAL PLANNING POLICY (ENGLAND)***National Planning Policy Framework*

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as UK Biodiversity Action Plan priority species) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

*The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty*

Section 40 of the Natural Environment and Rural Communities (NERC) Act, 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity.' This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.