The Former Stag Brewery, Mortlake

Protected Species Report

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This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

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Comments

Comments

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1. Introduction

1.1. Waterman Infrastructure & Environment Ltd (Waterman IE) was commissioned by Reselton Properties Limited ('the Applicant') to carry out a series of updated bat surveys at the former Stag Brewery Site in Mortlake ('the Site') within the London Borough of Richmond Upon Thames ('LBRuT').

The Site

1.2. The Site is centred on Ordnance Survey Grid Reference (NGR) TQ 204 760 and is bounded by Lower Richmond Road to the south, the River Thames and the Thames Bank to the north, Williams Lane to the west and Bulls Alley (off Mortlake High Street) to the east. The Site is bisected by Ship Lane and currently comprises a mixture of dis-used large-scale industrial brewing structures and buildings, large areas of hardstanding and playing fields.

Development Proposals

1.3. The re-development of the Site will provide homes (including an increase in affordable homes, as part of the latest scheme amendments), complementary commercial uses, community facilities, a new secondary school alongside new open and green spaces throughout. Associated highway improvements are also proposed, which include potential highways works at Chalkers Corner junction.

1.4. The planning applications are as follows:

- Application A – hybrid planning application for comprehensive mixed-use redevelopment of the former Stag Brewery site consisting of:
    i) Land to the east of Ship Lane applied for in detail (referred to as 'Development Area 1' throughout); and
    ii) Land to the west of Ship Lane (excluding the school) applied for in outline (referred to as 'Development Area 2' throughout).
- Application B – detailed planning application for the school (on land to the west of Ship Lane).
- Application C –highways and landscape works at Chalkers Corner anticipated to now be progressed under Section 278 of the Highways Act 1980.

1.5. Full details and scope of all these applications are described in the submitted Planning Statement, prepared by Gerald Eve LLP and associated addendums.

Previous Survey Assessments

Historical

1.6. Previous ecological assessments were undertaken at the Site by Waterman IE in 2016 and 2017 to inform the Ecology Chapter of the 2018 Environmental Statement (ES) and to address consultation comments from LBRuT. These assessments comprised:

- An ecological data search;
- An 'Extended' Phase 1 Habitat Survey;
- A search for common invasive floral species;

- Preliminary bat roost inspections of buildings and trees;
- Evening emergence and dawn re-entry bat surveys;
- Bat activity surveys;
- Automated detector bat surveys;
- River wall inspection for roosting bats; and
- Black redstart *Phoenicurus ochruros* survey.

1.7. The results of the above surveys (except the river wall inspection) were reported within the 2018 PEA (ref. WIE10667-100-R-1-3-1-RA) and PSR (ref. WIE10667-100-R-7-3-1-PSR) which were provided as Technical Appendices to the 2018 ES. The results of the river wall inspection for roosting bats were presented in a separate report (ref. WIE10667-103-BN-2-1-2-LM) which was written to address consultation comments from LBRuT and is appended to the May 2019 ES Addendum.

Current

1.8. In support of the current applications an updated PEA (ref. WIE15582-102-R-1-1-4-PEA) was undertaken in 2019 and comprised an ecological data search, 'Extended' Phase 1 Habitat Survey, a search for common invasive floral species and Preliminary Roost Assessment at the buildings/structures and trees on Site.

1.9. The PEA found the Site to comprise a large former brewery complex (the Stag Brewery Site) and a road junction known as Chalkers Corner. The brewery complex was dominated by buildings and hardstanding. Other habitats present at the Site include a small section of Mortlake Green, amenity grassland in the form of Watney's Sports Ground playing fields, scattered trees, ornamental planting, a hedge, and ephemeral and tall ruderal vegetation (**Figure 1**).

1.10. The PEA assessed the Site as having limited opportunities to support black redstart. The buildings offered little nesting areas, if any owing to their simple structure and the nesting bird prevention measures installed (spikes and netting), thus resulting in a lack of holes and singing posts. In addition, the habitats on Site that could be of value to black redstarts including the ephemeral vegetation / gravel were sparse in size. It is noted that the River Thames which lies adjacent to the northern boundary of the Site is known to be an important habitat corridor for black redstarts in London, however given the Sites current limited value and that no black redstarts were recorded in 2016 the need for additional surveys/assessment has been scoped out.

1.11. As part of the PRA the Site was assessed to still contain opportunities to support roosting bats. The PRA undertaken at the buildings recorded the following buildings/structures (**Figure 1**) as having potential:

- Stables Court (B3) - **Low potential**;
- Finishing Cellar / Chip Cellar / Brew House (B6) - **Low potential**;
- The Maltings (B8) - **Moderate potential**;
- Packaging Building (B9) - **Low potential**;
- L Block – former bottling building and former hotel (B10) - **Low potential**;
- CO2 Block (B12) - **Low potential**;

- Power House (B13) - **Low potential**;
- River Wall (Adjacent to River Thames) – **Moderate potential**; and
- River Wall (South-east corner of Site – Figure 1, Target Note 3) – **Low potential**; and
- Jolly Gardener's Pub (B14 - located outside of but adjacent to the Site) – **Moderate potential**.

1.12. All other buildings on-Site and adjacent were assessed as having **negligible** potential to support roosting bats. A description of each building is provided within the PEA.

1.13. The PRA undertaken at the trees was targeted upon those trees that will be removed as part of the Development. A total of five such trees (**Figure** 1, T48, T49, T67, T68 and T83 - ref. 10667-WIE-ZZ-XX-DR-L-7704-P03) were assessed to have **moderate** potential to support roosting bats. The remaining trees were assessed as having **low** or **negligible** potential to support roosting bats.

1.14. The PEA assessed the Site itself to offer limited foraging and commuting opportunities for bats (i.e. **low** suitability) owing to the predominant habitat type comprising buildings and hardstanding. The trees around the periphery and within the north-western corner of the Site offer some foraging and commuting opportunities for bats. However, given their context and limited extent at the Site, it is unlikely that the Site is an important foraging resource for local bat populations. The adjacent River Thames to the north, and Mortlake Green to the south of the Site are likely to provide a much greater foraging and commuting resource.

Aims and Objectives of this Assessment

1.15. As a result of the updated PEA the Site was assessed to still have the potential to support roosting bats and potentially be of value to commuting and foraging bats given the presence of the River Thames adjacent to the Site. Given the time elapsed since the previous bat surveys were undertaken by Waterman in 2017 (detailed within the 2018 PEA) and River Wall Inspections in 2018, and in light of the proposed amendments to the Development and update 'Extended' Phase 1 Habitat Survey, further update surveys for bats have been undertaken at the Site. This Protected Species Report now supersedes all previous versions with regards to bats.

1.16. The purpose of this report is to:

- Present the findings of the updated bat surveys undertaken at the Site and outline any resulting constraints to the Development;
- Allow any further ecological assessments (beyond those identified within the update PEA) needed to inform an Ecology Chapter in support of the EIA, to be identified and appropriately designed, as required;
- Allow any further likely mitigation measures (beyond those identified within the update PEA and in line with the Mitigation Hierarchy[1]) to be developed, to ensure compliance with nature conservation legislation and planning policy (**Appendix A**);
- Allow any further likely ecological opportunities and enhancement measures (beyond those identified within the updated PEA) to be developed to ensure compliance with nature conservation legislation and planning policy; and

[1] BS 42020:2013 Clause 5.2

- Form a basis for agreeing the scope of the Ecology Chapter in support of the EIA with relevant consultees, as/if required.

2. Methodology

River Wall Inspection

2.1. Two updated endoscope inspections of those potential bat roosting features present on the section of the river wall adjacent to the River Thames were undertaken on 17 July and 2 September 2019. During this time, any features present on the wall within the south-eastern corner of the Site that could be accessed by ladder were also subject to endoscope inspection.

2.2. Each potential Roosting Feature (PRF) was systematically inspected for evidence of bat use (e.g. droppings, scratch marks, staining and sightings as well as bats themselves) using a RIGID micro CA-350 inspection camera with a ladder used to access any PRF's present at height. The inspections were led by a Natural England Class Level 2 Bat Licence holder.

Evening Emergence and Pre-Dawn Re-entry Surveys

2.3. To confirm the presence or likely absence of roosting bats within buildings/structures (B3, B6, B8, B9, B10, B12, B13, B14, **Figure 1** and section of wall within the south-east corner of the Site, **Figure 1**, Target Note 3) and trees (T48, T49, T67, T68 and T83, **Figure 1**), updated evening emergence and / or pre-dawn re-entry surveys were undertaken based on current best practice guidelines (Collins. J, 2016)[2].

2.4. A sufficient number of surveyors were used during each survey to ensure all of the potential bat access/roosting features at the buildings/structures and trees were covered. The surveys were led by an ecologist who holds a Natural England Class Level 2 Bat Survey Licence for all counties and species in England. The positions of the surveyors during the evening emergence / pre-dawn re-entry surveys are presented on **Figure 2**.

2.5. The surveys were undertaken using full spectrum BatLogger M and time expansion (Pettersson D240X) bat detectors with calls recorded from the Pettersson D240X recorded to solid state MP3 recorders. This survey equipment is considered suitable for detecting all resident species of UK bats.

2.6. The surveys were undertaken in appropriate weather conditions and within the recognised bat active season for these types of surveys. The evening emergence surveys commenced at least 15 minutes prior to sunset and continued for at least an hour and a half thereafter. The dawn re-entry surveys commenced at least an hour and a half before sunrise and continued until sunrise. **Table 1** below provides a summary of the bat survey parameters.

Table 1: Summary of Evening Emergence and Dawn Re-Entry Bat Surveys

[2] Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London. ISBN-13 978-1-872745-96-1

Survey	Date	Sunset / Sunrise Time	Time Start / End (GMT+1)	Wind (Beaufort)	Cloud Cover (Oktas)	Temp Start / End (ºC)
Evening emergence (B8, T67, T68 and T83).	07.08.19	20:38	20:08 / 22:10	2-3	4	20ºC / 18ºC
Dawn re-entry (B12, B14, T48, T49).	08.08.19	05:35	04:05 / 05:35	1-2	1	16ºC / 13ºC
Evening emergence (B3, B9 and B10).	12.08.19	20:29	20:15 / 22:30	1	2	15ºC / 14ºC
Dawn re-entry (B6 and B13)	13.08.19	05:40	03:40 / 05:40	1	1	13ºC / 13ºC
Evening emergence (B14, T48, T49 and section of wall within south-east corner of Site)	27.08.19	20:00	19:45 / 21:30	1	0	28ºC / 26ºC
Dawn re-entry (B8, T67, T68, T83)	28.08.19	06:06	04:30 / 06:10	1-2	8 (light rain from 05:20-05:30)	18ºC / 18ºC
Evening emergence (B8)	09.09.19	19:30	19:05 / 21:15	0	8	14ºC / 14ºC

Bat Activity Surveys

2.7. The Site is assessed as comprising low habitat suitability for bats given its urban nature. To determine the use of the habitats along the northern boundary of the Stag Brewery component of the Site adjacent to the River Thames as well as Watney's Sports Ground, three updated bat activity surveys were undertaken.

2.8. The two evening activity surveys commenced from sunset to until two hours thereafter, with the dawn activity survey commencing two hours before, and continuing until, sunrise. A pair of surveyors, using a full spectrum BatLogger M detector, followed a pre-determined transect route (**Figure 3**).

2.9. All surveys were undertaken in appropriate weather conditions and within the recognised optimal bat active season for activity surveys at a Site of this nature. **Table 2** below provides a summary of the timings and weather conditions of the bat surveys undertaken. Any bats observed were recorded and information noted, where possible, included:

- time;
- direction of flight;
- use of landscape;
- flight characteristics;
- size;
- height; and
- behaviour.

Table 2: Summary of Bat Activity Surveys

Survey	Date	Sunset / Sunrise Time	Time Start / End (GMT+1)	Wind (Beaufort)	Cloud Cover (Oktas)	Temp Start / End (ºC)
1	30.07.19	20:53	20:53 / 22:53	2-3	7	18ºC / 18ºC
2	13.08.19	05:40	03:40 / 05:40	1	1	11ºC / 11ºC
3	02.09.19	19:46	19:46 - 21:46	2	6	20ºC / 19ºC

Automated Detector Surveys

2.10. To supplement the activity surveys, a single static automated bat detector (SM2BAT+) was deployed at the Site based on current best practice guidelines. The static detector was positioned beneath the Budweiser Sign (**Figure 3**) on the wall adjacent to the River Thames.

2.11. The static detector recorded for five consecutive nights in July, August and September 2019. The detector was programmed to record from 30 minutes before sunset until 30 minutes after sunrise. **Table 3** below provides a summary of the bat survey parameters[3] for each deployment session.

Table 3: Dates and Weather Conditions of Supplementary Automated surveys

Survey Month	Date	Sunset Time	Max Wind speed (mph)	Rain (inches)	Average Day Temp ºC
July 2019	17 July 2019	21:12	14	None	20
	18 July 2019	21:11	16	0.08	20
	19 July 2019	21:10	16	0.39	15
	20 July 2019	21:09	21	None	21
	21 July 2019	21:08	16	None	19
August 2019	13 August 2019	20:31	15	0.03	16
	14 August 2019	20:29	16	0.43	15
	15 August 2019	20:27	21	0.12	19
	16 August 2019	20:25	18	0.08	15
	17 August 2019	20:23	18	0.08	19

[3] Historical weather information sourced from www.wunderground.com

Survey Month	Date	Sunset Time	Max Wind speed (mph)	Rain (inches)	Average Day Temp ºC
September 2019	02 September 2019	19:45	17	None	16
	03 September 2019	19:43	16	None	18
	04 September 2019	19:40	21	None	17
	05 September 2019	19:38	14	None	15
	06 September 2019	19:36	20	None	14

Data Analysis

Evening Emergence and Pre-Dawn Re-Entry Surveys

2.12. All data was downloaded and BatSound 4.4 analysis software was used to manually identify bat echolocation pulses to species level, where possible. Manual analysis was undertaken using the parameters stated within Russ, 2012[4].

Activity Surveys

2.13. All data was downloaded and BatExplorer 2.1.5 analysis software was used to manually identify bat echolocation pulses to species level, where possible. Manual analysis was undertaken using the parameters stated within Russ, 2012.

Automated Detector Surveys

2.14. All data was downloaded and analysed in AnaLookW 4.1t to identify bat echolocation pulses to species level, where possible. The Zero Crossing Analysis (ZCA) sequence files were filtered using parameters set out in Russ, 2012 to facilitate analysis. However, all files were also manually checked by a suitably experience ecologist for bat passes fitting the outlined parameters.

2.15. The frequency of maximum energy, as described in Russ, 2012, is commonly the most useful characteristic of a bat call to aid in identification of a species. This has been calculated in AnalookW using the characteristic frequency of the body of the call (or constant frequency).

Constraints and Limitations

2.16. Given that all potential PRFs along the section of river wall adjacent to the River Thames could be accessed via ladder and endoscopic inspection this survey methodology was adopted over emergence/re-entry surveys as it increases the chances of evidence of occupation by bats (such as droppings) being discovered as well as bats themselves. As not all PRFs associated with the section of wall within the south-east corner of the Site could not be safely accessed via ladder and endoscopic inspection, this was also subject to an evening emergence survey.

[4] Russ, J. (2012): 'British Bat Calls. A guide to Species Identification'. Pelagic Publishing, Exeter.

2.17. No bat activity surveys were undertaken with regard to area at Chalkers Corner. This is due to the high level of associated street lighting present within this area and therefore any associated bat activity is likely to be on an infrequent and opportunistic basis from common species of bats adapted to urban environments. As such, it is considered that any adverse effects upon foraging and commuting bats as result to potential highways works to Chalkers Corner would be insignificant.

2.18. For the purposes of this report, when referring to the transect activity surveys a 'bat pass' refers to each sound file recorded by a surveyor, or where there was no ambiguity with regards to species identification if the bat pass was not recorded. With regard to the supplementary automated surveys, a bat pass was defined as a sequence of three or more bat echolocation pulses from the same bat species which had less than a five second interval between the first and last pulse within each ZC file. When two bat passes from the same species were found to be present within a single file, two labels were assigned.

2.19. There is considerable crossover between echolocation calls within British bat species (Russ, 2012). Given the close parameters of the frequency range of the calls of certain bat species, analysis of bat calls from the group *Myotis* is fraught with difficulties. Whilst slope, call duration and inter-pulse intervals have been used as indicators to separate *Myotis* calls from frequency modulated *Pipistrellus* calls, for the purposes of this assessment, identification has only been made down to the group *Myotis* level.

2.20. Both FM (Frequency Modulation)-qCF (quasi Constant-frequency calls) and qCF parameters are provided within Russ, 2012 for the *Nyctalus* species, however there is little definition for classifying the different nature of these vocalisations resulting in a large amount of crossover between the parameters of the *Nyctalus* species. The lower frequency vocalisation calls of noctule bats can be differentiated from Leisler's *Nyctalus leisleri* as the Leisler's bat does not echolocate below 20.9 kHz. However, as there is crossover between the parameters of vocalisations above this frequency, Leisler's bats can be particularly difficult to differentiate from noctule.

2.21. All other contractors, designers and the client should be aware of the following:

- The design recommendations within this report are assessed to be the most effective ecological solution at this stage of the project;
- No other pre-construction information has been provided, obtained or referred to during the preparation of this report (including, but not limited to, services information, geotechnical reports and ordnance reports);
- In deciding whether and how to progress with this project, it will be incumbent upon the client, designers and contractors to obtain and refer to relevant pre-construction and maintenance information, as required by the Construction (Design and Management) Regulations to ensure compliance;
- Waterman IE can assist with the development and co-ordination of this design to support effective risk management on this project upon request.

3. Results

River Wall Inspection

3.1. The results of the updated endoscope inspections undertaken upon the river wall are detailed in **Table 4** below. In summary a total of fifteen PRFs were recorded, both on the interior and exterior of the wall (Site and river side) and were assessed to be of between low and moderate bat roosting potential. The locations of those PRFs recorded are provided on **Figure 4**.

Table 4: Results of River Wall Endoscope Inspections

Description	Building Photographs	Bat Roost Rating
PRF 1 (River Side) Feature present on the river side of the wall. The front of 'Budweiser' sign comprises sheet metal wording attached to what appears to be wooden boarding. The rear of the sign comprises a steel frame and corrugated steel sheeting. Whilst the sign is assessed to be a solid structure with no cavities, gaps are present between the wooden boarding and 'Budweiser' lettering. The gaps are 4 to 5cm at their widest and open to the elements from above, below and the sides. During the inspection no signs of roosting bats were recorded.		**Low**
PRF 2 (Site Side) Feature present on the Site side of the wall. This section of the wall has areas of paint which are peeling, that may offer temporary sheltering opportunities for bats. During the inspection no signs of roosting bats were recorded.		**Low**
PRF 3 (Site Side) Feature present on the Site side of the wall. An open gap is present between steel support and the wall with 14 of these features present in close succession. The majority of the supports are flush with the wall or with a wide gap present, however several have a 1-3cm gap present along the length of the support. During the inspection no signs of roosting bats were recorded.		**Low**

Description	Building Photographs	Bat Roost Rating
PRF 4 (Site Side) Feature present on the Site side of the wall with 4 of these features present in close succession. The features are fully bricked up on the river side, with various heights of bricking up on the Site side, creating a cavities between approximately 40-80cm high. During the inspection no signs of roosting bats were recorded.	 	**Moderate**
PRF 5 (Site Side) Feature present on the Site side of the wall. An area of render has broken away from the wall and has created a linear gap between the render and the wall. The gap is 1cm wide at its greatest extent and protrudes up between 2 to 6cm. It is arguable if the cavity present is wide enough to provide an entrance point for bats, however spider webs are present both in the cavity and at the entrance. During the inspection no signs of roosting bats were recorded.		**Low/Moderate**
PRF 6 (Site Side) Feature present on the Site side of the wall. Linear gaps are present in the wall where mortar is missing, in the vicinity of PRF 5. The gaps are 1 to 1.5cm tall, 4cm at their widest and protrude into the wall 3-5cm. The gaps contain debris from the mortar and spider webs are present. During the inspection no signs of roosting bats were recorded.		**Moderate**
PRF 7 (Site Side) Feature present on the Site side of the wall. An open gap is present around the window frame with 3 of these features present in close succession. The gap is 3 to 4cm wide and 5cm deep. Spider webs are present. During the inspection no signs of roosting bats were recorded.		**Low**

Description	Building Photographs	Bat Roost Rating
PRF 8 (River Side) Feature present on the riverside of the wall. A crack is present in the wall running up the brickwork from 1m to 3m above ground level. The crack is assessed to be superficial and is 2cm at its widest and contains snails, woodlice and spider webs. The crack is 6cm at its deepest. During the inspection no signs of roosting bats were recorded.		**Low**
PRF 9 (River Side) Previously a moderate PRF (top photo) located on the river side of the wall and is one of the river side features of PRF 4. However, this feature has now been vandalised (bottom photo) and is considered too large exposed to support roosting bats.	 	**Negligible**
PRF 10a and 10b (River Side) Both features are present on the river side of the wall and again are river side features of PRF 4. The features are the same except that 10a comprises a horizontal access point in the bottom left hand corner and 10b comprises 2 no. vertical access points down the left-hand side. The features are present at between 0.5 and 1m above ground level. Where previous bricking up works were undertaken the resulting cavity has been filled with debris. Where external mortar has been lost, internal debris which filled the cavity has also been lost, creating small cavities behind. The access points are 2 to 3cm high and 2 to 7cm long, with the internally cavities protruding between 5 and 10cm back and 5 to 7cm across.		**Low**

Description	Building Photographs	Bat Roost Rating
Old spider webs are present within the cavities and during the inspection no signs of roosting bats were recorded.		
PRF 11 (River Side) Feature present on the riverside of the wall. A gap is present between the top of a 'new' wall (constructed from darker brick work as part of previous bricking up work) and a concrete lintel above. The gap is 5cm wide (2cm wide during previous survey) and goes up 2cm and back the width of a brick. No internal cavity is present behind. During the inspection no signs of roosting bats were recorded.		**Low**
PRF 12 (River Side) Feature present on the riverside of the wall. A large crack is present at the stone lintel at the top of the wall (above ladder). The crack has split the stonework in two and has expanded in width to 5-6cm at its widest. The cavity is therefore open to the elements and leaf little and spider webs are present and it is considered that the gap is now too open and exposed to be of value to roosting bats. During the inspection no signs of roosting bats were recorded.		**Negligible**

Description	Building Photographs	Bat Roost Rating
PRF 13 (River Side) Feature present on the river side of the wall and is a river side feature of PRF 4. The feature is present at 1.5m above ground level and is assessed to have formed due to bricking up work. The access point (created as a result of missing mortar) is 3 to 4cm high and 7 to 8cm wide and leads into a confined internal cavity. The cavity runs 1m along the top of the brick work and is 10cm wide but also drops down by 5cm on the site side of the wall. The cavity contains debris from the brick work including mortar and spider webs are present. During the inspection no signs of roosting bats were recorded, however a mouse was observed inside.		**Moderate**
PRF 14 (River Side) Feature present on the riverside of the wall. A crack is present above the bricked-up window. The crack is 1.5cm at is widest with spider webs and woodlice present. During the inspection no signs of roosting bats were recorded.		**Low**
PRF 15 (Site Side) Several areas of missing brick work within the south-eastern corner of the Site. The missing brick work has created cavities approximately 10cm in height, 15cm in width and 10-15cm in depth. At the higher feather there is also a crack in its top approximately 1cm in width and 1-cm deep. During the inspection spider webs were present with no signs of roosting bats recorded.		**Low**

Description	Building Photographs	Bat Roost Rating
PRF 15 (Site Side) Gaps in brick work between the wall and a buttress within the south-eastern corner of the Site. The gap is approximately 1.5cm wide at its widest and 20-25cm in height. No enclosed cavity is present with the gap running through to the other side of the buttress. During the inspection spider webs were present with no signs of roosting bats recorded.		**Low**

Evening Emergence and Pre-Dawn Re-entry Surveys

3.2. The following results section should be read in conjunction with the bat surveyor positions detailed on **Figure 2**.

3.3. In summary, a single soprano pipistrelle *Pipistrellus pygmaeus* bat was observed emerging from a gap within a boarded-up window on the second floor of the northern side of B8 (**Appendix B**, Plate 1).

3.4. No bats were observed emerging from or entering buildings B3, B6, B9, B10, B12, B13 and B14; the section of wall within the south-eastern corner of the Site; or those moderate potential trees proposed for removal (T48, T49, T67, T68 and T83). However, foraging and commuting activity by common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle, noctule *Nyctalus noctule* and serotine *Eptesicus serotinus* bats was recorded during the surveys, as detailed within **Table 5** below.

Table 5: Updated Evening Emergence and Pre-Dawn Re-Entry Survey Results

Building/ Tree Number	Survey Type / Date	Survey Results	Summary
B3	Evening emergence 12/08/19	Foraging and commuting activity (c.35 passes) from noctule, common pipistrelle and soprano pipistrelle bats. The majority of activity during the survey was by soprano pipistrelle bats and recorded to the north of B3 within the gardens of the adjacent residential properties along Williams Lane.	No bat roost present.
B6	Dawn re-entry 13/08/19	No bats recorded during the survey.	No bat roost present.

Building/ Tree Number	Survey Type / Date	Survey Results	Summary
B8	Evening emergence 07/08/19	Foraging and commuting activity (c.26 passes) from common and soprano pipistrelle bats recorded, with bats observed commuting between Mortlake Green and the River Thames. A single soprano pipistrelle bat was observed emerging from a gap within a boarded-up window on the second floor of the northern side of B8 (**Appendix B**, Plate 1).	Soprano pipistrelle day roost present.
	Dawn re-entry 28/08/19	Foraging and commuting activity (c.12 passes) from common and soprano pipistrelle passes recorded. One soprano bat was observed foraging along the tree line adjacent to the River Thames, all other bats recorded were single passes.	
	Evening emergence 09/09/19	Foraging and commuting activity (c.42 passes) from common pipistrelle and soprano pipistrelle. In addtion two serotine passes were recorded, however these bats were not seen. Two soprano bats were recorded flying along the southern edge of B8, whilst one common and one soprano pipistrelle were recorded flying towards the River Thames from Mortlake Green. A soprano pipstrelle was also recorded flying along the river towpath in an easterly direction.	
B9	Evening emergence 12/08/19	Foraging and commuting activity (c.6 passes) from common and soprano pipistrelle passes recorded, all heard not seen.	No bat roost present.
B10	Evening emergence 12/08/19	Foraging and commuting activity (c.14 passes) of common and soprano pipistrelle passes recorded. Common pipistrelle was observed briefly foraging the northern edge of the building.	No bat roost present.
B12	Dawn re-entry 08/08/19	Foraging and commuting activity (c.4 passes) of common pipistrelle passes recorded, all heard not seen.	No bat roost present.
B13	Dawn re-entry 13/08/19	Single pass from a single soprano pipistrelle bat recorded, heard not seen.	No bat roost present.

Building/ Tree Number	Survey Type / Date	Survey Results	Summary
B14	Dawn re-entry 08/08/19	Foraging and commuting activity (c.37 passes) from noctule, common pipistrelle and soprano pipistrelle bats recorded, with most activity from common pipistrelle. Soprano pipistrelle observed foraging in Mortlake Green and a common pipistrelle bat commuting west to east along the trees down the A3003.	No bat roost present.
	Evening emergence 27/08/19	Foraging and commuting activity (c.12 passes) of soprano pipistrelle passes and a single common pipistrelle pass. All bats were heard not seen.	
Wall (within south-eastern corner of Site)	Evening emergence 27/08/19	Foraging and commuting activity (c.9 passes) of common and soprano pipistrelle passes recorded. Both species were observed commuting along the Site side of the wall and then flying off Site.	No bat roost present.
T48 & T49	Dawn re-entry 08/08/19	Two soprano pistrelle and one common pipistrelle passes heard. The only bat observed was a soprano pipistrelle flying above the nearby security light and under the tree canopy.	No bat roost present.
	Evening emergence 27/08/19	Two soprano pistrelle and three common pipistrelle passes heard. The only bat observed was a common pipistrelle flying north towards the River Thames through the tree line.	
T67 & T68	Evening emergence 07/08/19	No bats recorded.	No bat roost present.
	Dawn re-entry 28/08/19	No bats recorded.	
T83	Evening emergence 07/08/19	Four soprano pistrelle and one faint noctule pass heard but not seen.	No bat roost present.
	Dawn re-entry 28/08/19	No bats recorded.	

Bat Activity Survey

3.5. Descriptions of bat activity recorded during each activity survey are provided below and illustrated on **Figures 5** and **6**.

Evening Activity Survey (30/07/19)

3.6. A total of 113 bat passes were recorded along the transect survey route (**Figure 5**). Of these, 75 passes were by common pipistrelle and 38 by soprano pipistrelle bats. The first bat call recorded was of a soprano pipistrelle at 21:01 (8 minutes after sunset) which was heard but not seen. The majority of bat passes recorded were not observed, however those bats which were observed are detailed within **Table 6** below:

Table 6: Bats Observed During July 2019 Evening Bat Activity Survey

Time	Species	Activity Description
21:07	Soprano pipistrelle	Single pass commuting east along river at 10m above ground level.
21:10	Soprano pipistrelle	Single pass commuting east along river at 3m above ground level.
21:31	Soprano pipistrelle	Two bats commuting east across Watney's Sports Ground at 5m above ground level.
21:33	Soprano pipistrelle	Single bat foraging around trees in the north of Watney's Sports Ground.

Dawn Activity Survey (13/08/19)

3.7. No bat activity was recorded during this survey.

Evening Activity Survey (02/09/19)

3.8. A total of 52 bat passes were recorded along the transect survey route. Of these, 34 passes were by common pipistrelle, 17 by soprano pipistrelle and one by noctule bats. The first bat call was recorded at 20:02 (16 minutes after sunset) and it was a soprano pipistrelle which was heard but not seen. The majority of bat passes recorded were not observed, however those bats which were observed are detailed within **Table 7** below:

Table 7: Bats Observed During September 2019 Evening Bat Activity Survey

Time	Species	Activity Description
20:05	Soprano pipistrelle	Foraging along the towpath at 3m above ground level.
20:10	Soprano pipistrelle and common pipistrelle	Foraging along the towpath at 3-5m above ground level.

Automated Detector Surveys

3.9. A total of six confirmed bat species were recorded by the automated detectors deployed across the Site, namely common, soprano and Nathusius' pipistrelle, together with noctule, Leisler's and serotine bats. *Myotis sp*. bats were also recorded however, and as detailed within the limitation section of this report, identification down to species level could not be made.

3.10. **Table 8** provides a summary of the number of passes recorded by each species during each automated bat detector survey session.

Table 8: Results of Supplimentary Automated Surveys

Recording Period	Common Pipistrelle	Soprano Pipistrelle	Nathusius' Pipistrelle	Noctule	Serotine	Leisler	Myotis Species	Total no. of Bat Passes
23/07/2017 – 27/07/2107	677	237	-	-	-	-	4	**918**
13/08/2017 - 17/08/2017	842	790	-	6	14	2	-	**1,654**
02/09/2019 – 06/09/2019	855	390	1	5	6	1	3	**1,261**
Total	**2,374**	**1,417**	**1**	**11**	**20**	**3**	**7**	**3,833**

3.11. **Table 9** provides a summary of the earliest and latest recording times of those bat species recorded during the automated bat detector surveys.

Table 9: Results of Supplimentary Automated Surveys

Bat Species	Earliest Time (mins before/after sunset)	Latest Time (mins before/after sunrise)
July 2019		
Common Pipistrelle	+20	-32
Soprano Pipistrelle	+16	-33

Bat Species	Earliest Time (mins before/after sunset)	Latest Time (mins before/after sunrise)
Myotis	+86	-152
August 2019		
Common Pipistrelle	+20	-28
Soprano Pipistrelle	+9	-25
Noctule	+88	-171
Serotine	+24	-94
Leisler's	+62	-382
September 2019		
Common Pipistrelle	+17	-29
Soprano Pipistrelle	+7	-24
Nathusius' Pipistrelle	+123	-511
Noctule	+19	-376
Serotine	+29	-468
Leisler's	+466	-168
Myotis	+225	-283

4. Discussion and Recommendations

Roosting Bats

4.1. As a result of those updated evening emergence and pre-dawn re-entry surveys undertaken in 2019, an active soprano pipistrelle day roost has been recorded within The Maltings (building B8). Roosting bats are assessed as to be likely absent from those remaining buildings on Site, in addition to trees T48, T49, T67, T68 and T83 and the river wall (including the section within the south-eastern corner of the Site).

4.2. The supplementary automated activity surveys recorded a number of early (with regards to minutes after sunset) and late (with regards to minutes before sunrise) passes of both common and soprano pipistrelle bats, and early recordings of noctule and serotine (**Table 9**). Whilst a soprano pipistrelle roost has been confirmed within The Maltings, which is likely to account for the recording times for this species, as no roosting bats were recorded within any other buildings on Site, it is also likely that a common pipistrelle, and potentially a noctule and serotine, roost is present within the local proximity of the Site.

4.3. Given the earliest (and latest) timings, and number of passes, of those other species recorded during the supplementary automated activity surveys, it is considered likely that no roosts of these species are present within the local proximity of the Site.

4.4. The average emergence time of those species recorded during the supplementary automated activity surveys are provided within **Table 10** below, together with the earliest time recorded during the survey.

Table 10: Earliest and Average Emergence Times

Bat Species	Earliest Time (mins before/after sunset)	Research on Emergence Times
Common Pipistrelle	+17	Mean emergence time of 24.8 minutes after sunset and a median time of 22.76 minutes. Standard deviation of 17.9 minutes, and some were noted emerging at seven minutes after sunset[5]
Soprano Pipistrelle	+7	Mean emergence time of 33.5 minutes after sunset and a median time of 25 minutes. Standard deviation was 21.5 minutes[5]
Nathusius' Pipistrelle	+123	11-50 minutes[6]
Noctule	+19	Typically, 0-40 minutes after sunset[7] and occasionally before

[5] Davidson-Watts, I. & Jones, G. 2006: 'Differences in foraging behaviour between *Pipistrellus pipistrellus* (Schreber, 1774) and *Pipistrellus pygmaeus* (Leach, 1825)'. Journal of Zoology, 268, 55-62.
[6] Gelhaus. M, & Zahn. A (2010): 'Roosting ecology, phenology and foraging habitats of a nursery colony of *Pipistrellus nathusii* in the southwestern part of its reproduction range'. Vespertilio 13-14: 93-102, 2010
[7] Racey, P. A. 1991: *The Handbook of British Mammals* (Ed. by G. B. Corbet & S. Harris), pp. 117-121. Oxford: Blackwell.

Bat Species	Earliest Time (mins before/after sunset)	Research on Emergence Times
		sunset. Median emergence time is 5 minutes after sunset[8]
Serotine	+24	Median emergence time of 20 minutes after sunset[6]
Leisler's	+62	Median emergence time of 20 minutes after sunset[30]
Myotis	+86	Median emergence times of between 32 and 84 minutes after sunset[6] (average of 56 minutes after sunset).

Roost Classification

4.5. Soprano pipistrelle is considered one of the most common and widespread bat species in England (population estimate of 2,980,000)[9]. As such this species is of a low conservation status and listed on the IUCN Red List as being a species of Least Concern[5].

4.6. A single soprano pipistrelle bat was recorded emerging from The Maltings on one survey occasion only. Consequently, it is assessed that this roost comprises a day roost which is utilised by a single, or very low numbers of, soprano pipistrelle bat(s). As such, this roost type is assessed to be of low conservation significance.

Licencing Requirements

4.7. The Maltings building will be refurbished and converted into residential apartments and community space as part of the Development. These works have potential to impact upon the soprano pipistrelle day roost recorded and therefore contravene the protection afforded to roosting bats by legislation (**Appendix A**). As a result, an approved Natural England (NE) European Protected Species (EPS) Mitigation Licence will be required to permit the proposed works to The Maltings.

4.8. Given that only a single bat was recorded as roosting within The Maltings; the low conservation status of this species; and low conservation significance of roost type i.e. a day roost of a common and widespread species, it is assessed that the criteria to use the NE Bat Low Impact Class Licence (CL21) is achieved, for which a detailed Method Statement and Mitigation Strategy is not required.

[8] Jones, G., & Rydell, J. 1994. Foraging Strategy and Predation Risk as Factors Influencing Emergence Time in Echolocation Bats. *Philosophical Transactions: Biological Sciences,* **346**, 445-455.
[9] Natural England Joint Publication (2018): 'A review of the Population and Conservation Status of British Mammals'. JP025

Refurbishment/Clearance Works, Timings and Update Survey

4.9. As part of the Bat Low Impact Class Licence those features suitable for supporting roosting bats, such as the window boarding's, will need to be subject to soft strip working practices and removed sensitively through the use of hand tools prior to the commencement of full refurbishment works.

4.10. Due to the current internal condition of The Maltings, no internal inspections have been undertaken to date. However, if possible, and safe to do so (in consultation with the Principal Contractor), it is recommended that a further internal inspection of the building is also undertaken as part of the above soft strip working practices and any other internal roosting features are also removed at this time.

4.11. It will be a requirement of the NE Bat Low Impact Class Licence that all building works at B8 will be undertaken in the presence of the suitably qualified and licenced ecologist to which the Bat Low Impact Class Licence is assigned.

4.12. It is recommended that the above works are undertaken at a time of year which avoid avoids the main bat hibernation period (November to February, weather dependent).

4.13. Further recommendations for the timing of works with regards to other faunal species, such as birds, are provided within the PEA.

4.14. It will be a requirement of the NE Bat Low Impact Class Licence for those evening emergence and dawn re-entry surveys detailed within this report to be updated within the year refurbishment works at B8 (The Maltings) are proposed to be undertaken in order to ensure as up to date survey information as possible is provided to allow for the licence to be determined.

4.15. In addition to the above, should there be a period of greater than 18 months since the time those remaining evening emergence and dawn re-entry surveys detailed within this report were undertaken and the commencement of preparation and construction/refurbishment works for each of the respective buildings; trees; and the wall, further update surveys should be undertaken as conditions at the Site may have changed and further bats roosts become established at the Site.

4.16. Furthermore, should any additional trees on Site be highlighted for removal, these trees should also be subject to update ground-based inspections and /or evening emergence or dawn re-entry surveys as necessary and at the correct time of year, in line with current best practice guidelines (Collins. J, 2016).

Mitigation and Enhancement

4.17. As the refurbishment works for The Maltings will be covered under a Bat Low Impact Class Licence, no compensatory measures are required to be implemented at the Site to compensate for the loss of the bat roosts present. However, it is recommended that a bat box is erected upon a retained tree at the start of the soft strip working practices so that a suitable receptacle is present on Site should any bats be discovered during the course of these works.

4.18. Nevertheless, in line with the NPPF, London Planning Policy and Local Planning Policy LP 15 *'Biodiversity'* the Development will include the following enhancement measures for roosting bats:

- A minimum of ten bat boxes shall incorporated in the Development Area 1 (number of bat boxes within the outline (Development Area 2) component of the Site would be determined following the reserved matters application).

4.19. Roosting bats are assessed as to be likely absent from those remaining buildings on Site, in addition to trees T48, T49, T67, T68 and T83 and the river wall (including the section within the south-eastern corner of the Site). It is therefore assessed that there is no licencing requirement to allow works at these buildings. However, there remains a chance that opportunist bats within in the vicinity of the Site could potentially start roosting within these buildings/trees/structures. Therefore, a toolbox talk should be provided to contractors during the demolition/refurbishment phase of the Development. This will cover all built structures (buildings and wall) and trees with the potential to support roosting bats.

4.20. Further to the above, the felling of those trees with moderate and low bat roosting potential should be undertaken using soft felling techniques and in accordance with the Arboricultural Association Guidance Note 1[10], with the felling of those trees with moderate bat roosting potential also carried out under an Ecological Clerk of Works.

4.21. In the unlikely event that bats are identified (given the current survey results) during the Development works, all works would cease, and an ecologist contacted. Liaison would then be undertaken between the ecologist, LBRuT and / or Natural England to agree a suitable way forward.

Foraging and Commuting Bats

4.22. A total of three bat species: common and soprano pipistrelle and noctule bats were recorded during the transect activity surveys. The majority of passes were of common and soprano pipistrelle bats, with only a single noctule pass recorded. Bat passes were predominantly recorded along the River Thames tow path during both surveys where bat activity was recorded. A small number of passes were recorded of bats foraging within the north of Watney's Sports Ground playing fields (during the survey on 30 July only) and along Ship Lane and Lower Richmond Road, most likely associated with foraging / commuting bats utilising the tree line along Ship Lane and Mortlake Green.

4.23. Whilst nearly all of the bat recordings from the automated detectors were of common and soprano pipistrelle (98.90% when combined). The supplementary automated activity surveys recorded a further three bat species which could be identified to species level – Nathusius' pipistrelle, Leisler's and serotine bats, together with unidentified *Myotis species.* Given that only low numbers of passes were recorded by these three further species (and noctule), including only a single pass by Nathusius' pipistrelle, it is considered that the Site, although more likely the adjacent River Thames, is used by these species on an infrequent basis only.

4.24. Whilst the Site itself provides some foraging and commuting opportunities, largely in the form of those trees and tree lines present, the adjacent River Thames and associated habitats are considered to provide a much greater resource for foraging and commuting bat species. This is also reflected within the results of the transect activity surveys. As such and given the presence of further habitats of value to bats: such as Mortlake Green and residential gardens, it is further considered that the Site itself does not present a resource upon which the local bat population would be dependent.

[10] Arboricultural Association (2011): 'Bats in the Context OF Tree Work Operations'. Guidance Note 1. ISBN 978-0-900978-54-8

4.25. Overall, bat activity levels associated with the Site itself are assessed to be low, as expected given the urban location of the Site and those habitats present within in it, with bat activity levels associated with habitats adjacent to the Site, in particular the River Thames to be moderate.

Mitigation and Enhancement

4.26. In line with the NPPF, London Planning Policy and Local Planning Policy LP 15 *'Biodiversity'* the Development will include the following mitigation and enhancement measures for foraging and commuting bats:

- During the demolition and construction phase of the Development lighting would be designed so that retained commuting and foraging habitats along the northern boundary of the Site and adjacent to the River Thames would remain dark and no excessive light spill on to these habitats would occur. The main hours of the Works would also be undertaken during typical working hours minimising the requirement for additional lighting during the night;
- Soft landscaping as well as artificial habitats (see Roosting Bats above) would be provided in the Development which would provide enhanced opportunities at the Site for bats. The Site would include:
  - up to 160 new trees and up to 51 retained trees;
  - hedge planting (1.5 m high) enclosing all ground level residential courtyards east of Ship Lane in the detailed part of the Development;
  - provision of new trees including the use of native species, or species of benefit to wildlife. This includes littoral plant species in areas close to the river edge responding to existing riverside vegetation and fruit / berry and nut bearing trees located in the community park south of the proposed school;
  - provision of biodiversity roofs, including a mix of extensive green and brown roofs; and
  - a green link connecting the River Thames and Mortlake Green.
- A sensitive lighting strategy would be implemented as part of the Development which will avoid light spill upon habitats currently utilised by bats (e.g. the River Thames).

Update Survey

4.27. Should there be a period of greater than 18 months since the time those activity surveys detailed within this report were undertaken and the commencement of Site preparation and construction/refurbishment works, further update surveys should be undertaken as conditions at the Site and therefore its utilisation by foraging and commuting bats may have changed.

5. Conclusions

5.1. As a result of those update evening emergence and dawn re-entry surveys undertaken at the Site a bat roost of low conservation significance comprise a single soprano pipistrelle bat has been recorded within The Maltings (B8). Consequently, in order to avoid the contravention of legislation, a Bat Low Impact Class Licence should be submitted to and granted from Natural England prior to refurbishment works being undertaken upon this building.

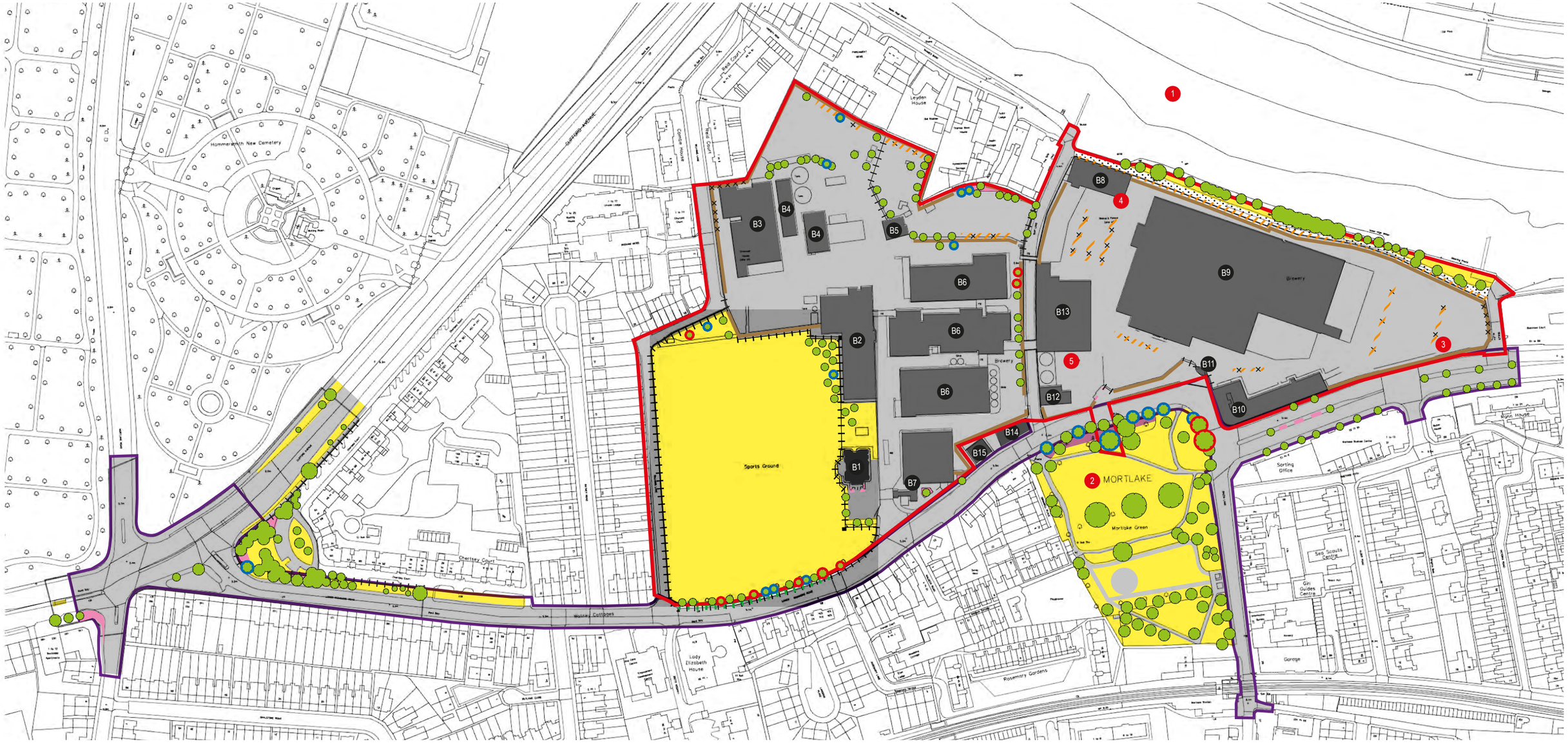
5.2. As part of the Bat Low Impact Class Licence soft strip works should be undertaken to remove those potential roosting features associated with this building in a sensitive manner and overseen by an Ecological Clerk of Works.

5.3. Whilst no roosting bats have been recorded within those trees highlighted for removal. Those trees of low bat roosting potential should be removed using soft felling techniques, with those trees of moderate and low bat roosting potential also removed under an Ecological Clerk of Works.

5.4. Further mitigation, together with proposed enhancement, measures for bats have also been detailed within this report.

5.5. Should there be a period of greater than 18 months since the time those surveys detailed within this report were undertaken and the commencement of Site preparation and construction/refurbishment works, further update surveys should be undertaken as conditions, and therefore utilisation, of the Site by bats may have changed and additional, or reduced mitigation measures required.

FIGURES



- Planning Application Boundary
- Section 278 Works
- Building with Building Numbers
- Hardstanding
- Ornamental Planting
- Amenity Grassland
- Ephemeral
- Scattered Tree
- Wall
- Bare Ground
- Hedge
- Fence
- Tall Ruderal Vegetation
- Target Note

Bat Roost Potential within Trees

- Negligible Potential
- Low Potential
- Moderate Potential

N

Project Details	WIE15582-102: Stag Brewery, Mortlake
Figure Title	Figure 1: Habitat Features Plan
Figure Ref	WIE15582-102_GR_EC_1D
Date	May 2020
File Location	\\lh-lncs\wiel\projects\wie15582\102\graphics\ec\issued figures

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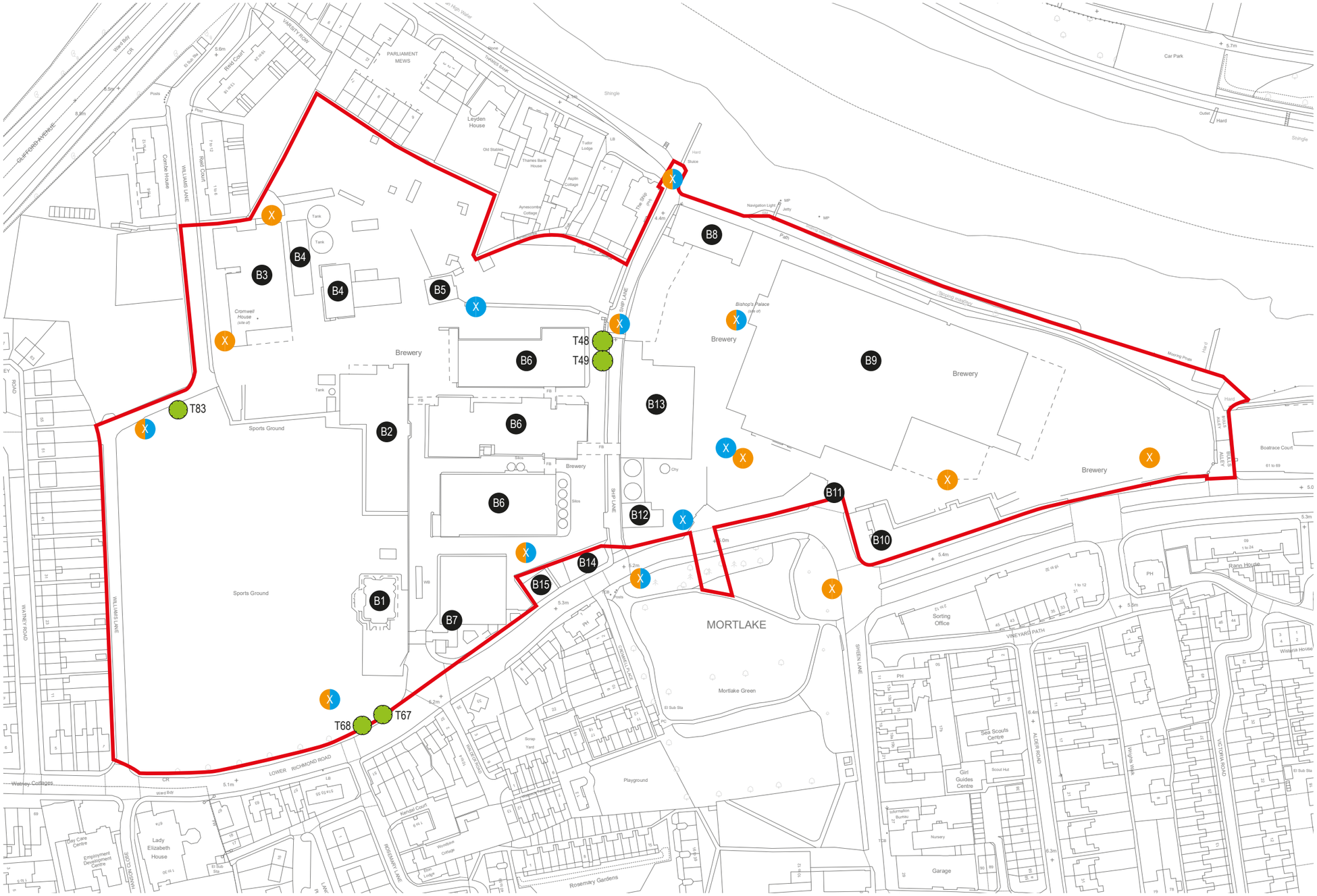
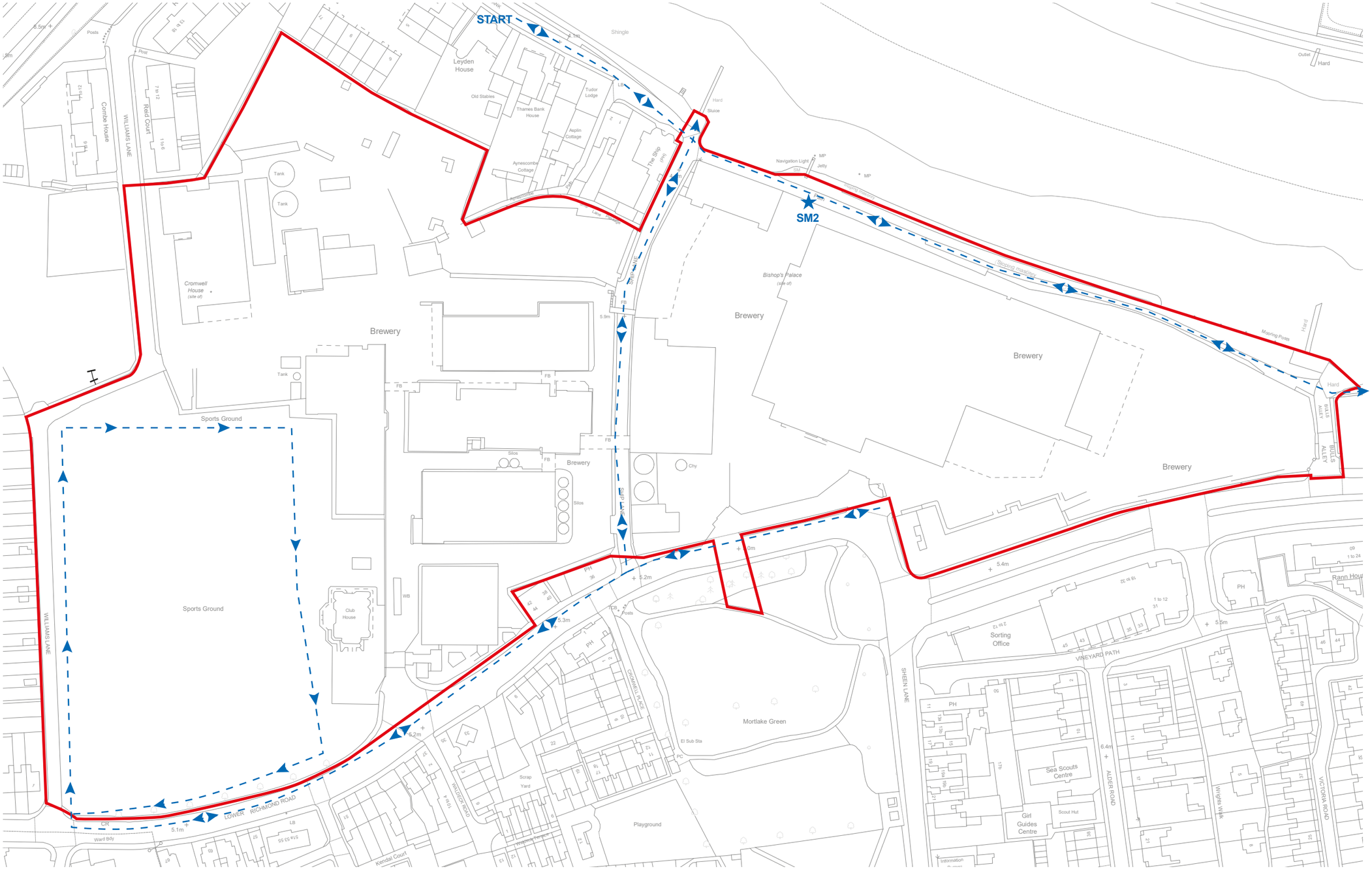


- The Site
- Evening Emergence Surveyor Location
- Dawn Re-entry Surveyor Location
- Evening Emergence and Dawn Re-entry Surveyor Location

Project Details	WIE15582-102: Stag Brewery
Figure Title	Figure 2: Evening Emergence & Dawn Re-entry Bat Surveyor Locations
Figure Ref	WIE15582-102_GR_EC_2A
Date	2019
File Location	\\s-lncs\wiel\projects\wie15582\102\graphics\ec\issued figures



N

The Site

Location of Automated Bat Detector (SM2)

Bat Activity Transect

Project Details	WIE15582-102: Stag Brewery
Figure Title	Figure 3: Bat Activity Survey Transect & SM2 Location
Figure Ref	WIE15582-102_GR_EC_3A
Date	2019
File Location	\\s-lncs\wiel\projects\wie15582\102\graphics\ec\issued figures

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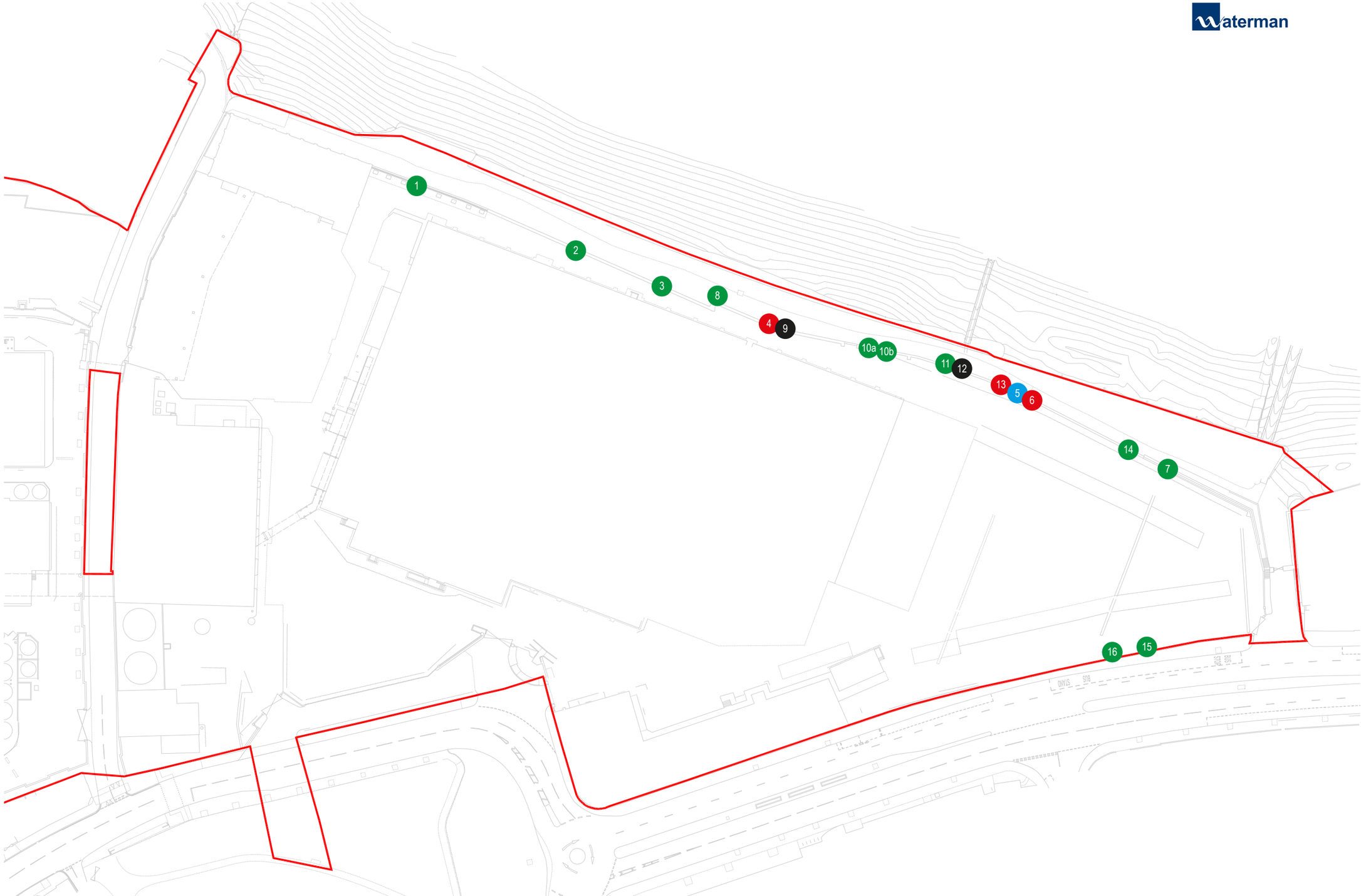

N

The Site

Potential Roosting Features

- Negligible Potential Roosting Feature
- Low / Moderate Potential Roosting Feature
- Low Potential Roosting Feature
- Moderate Potential Roosting Feature

Project Details	WIE15582-102: Stag Brewery
Figure Title	Figure 4: River Wall – Potential Roosting Features Locations
Figure Ref	WIE15582-102_GR_EC_4A
Date	2019
File Location	\\s-lncs\wiel\projects\wie15582\102\graphics\ec\issued figures

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

Site Boundary

Bat Activity Survey Transect

Dusk Bat Activity (July 2019)

- Pipistrellus pipistrellus
- Pipistrellus pygmaeus

N

0 25 50 100 150 m

Project Details	WIE15582-102: Stag Brewery, Mortlake
Figure Title	Figure 5: Dusk Bat Activity Survey Results (July 2019)
Figure Ref	WIE15582-102_GR_EC_5A
Date	2019
File Location	\\s-lncs\wiel\projects\wie15582\100\gr\ec\issued figures

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Site Boundary

Bat Activity Survey Transect

Dusk Bat Activity (September 2019)

- Nyctalus noctula
- Pipistrellus pipistrellus
- Pipistrellus pygmaeus

N

0 25 50 100 150 m

Project Details	WIE15582-102: Stag Brewery, Mortlake
Figure Title	Figure 6: Dusk Bat Activity Survey Results (September 2019)
Figure Ref	WIE15582-102_GR_EC_6A
Date	2019
File Location	\\s-lncs\wiel\projects\wie15582\100\gr\ec\issued figures

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APPENDICES

A. Planning Policy and Legislation

National Planning Policy

National Planning Policy Framework, 2019

The National Planning Policy Framework[11] (NPPF) was published in July 2018. Section 15 (outlined below) of the NPPF, 'Conserving and Enhancing the Natural Environment', replaces Section 11 of the previous NPPF 2012 revision[12]. However, Government Circular 06/2005[13] - "Biodiversity and Geological Conservation: Statutory Obligations and Their Impact within the Planning System", remains valid and is referenced within the NPPF.

The NPPF encourages the planning system to contribute to and enhance the natural and local environment. This should be achieved by:

- *"Protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan)*;
- *recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;*
- *maintaining the character of the undeveloped coast, while improving public access to it where appropriate*;
- *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
- *remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate".*

The NPPF also stipulates that Local Planning Authorities (LPAs), when determining planning applications, should apply the following principles:

- *"If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- *development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that*

[11] Ministry of Housing, Communities and Local Government. (2019). *National Planning Policy Framework*.
[12] Department of Communities and Local Government. (2012). *National Planning Policy Framework.*
[13] Department of Communities and Local Government. (2005). *Circular 06/05: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*.

make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

- *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*
- *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity."*

National Planning Practice Guidance, 2019

The Government's National Planning Practice Guidance[14] (NPPG) is intended to provide guidance to local planning authorities and developers on the implementation of the planning policies set out within the NPPF. The guidance of most relevance to ecology and biodiversity is the Natural Environment Chapter, which explains key issues in implementing policy to protect biodiversity, including local requirements.

Regional Planning Policy

Intend to Publish London Plan, December 2019

As the overall strategic plan for London, the Draft London Plan 2019[15] sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. Those policies set out within the draft London Plan 2017 of relevance to the Site and biodiversity include:

Policy GG2 – 'Making the best use of land' states *inter alia*:

"To create successful sustainable mixed-use places that make the best use of land, those involved in planning and development must:

F. protect and enhance London's open spaces, including the Green Belt, Metropolitan Open Land, designated nature conservation sites and local spaces, and promote the creation of new green infrastructure and urban greening, including aiming to secure net biodiversity gains where possible."

Policy G1 – 'Green Infrastructure' states *inter alia*:

A. "London's network of green and open spaces, and green features in the built environment such as green roofs and street trees, should be protected, planned, designed and managed as integrated features of green infrastructure."

Policy G5 – 'Urban Greening' states *inter alia*:

A. "'London's network of green and open spaces, and green features in the built environment should be protected and enhanced. Green infrastructure should be planned, designed and managed in an integrated way to achieve multiple benefits."

D. "*Development proposals should incorporate appropriate elements of green infrastructure that are integrated into London's wider green infrastructure network*".

[14] Department for Communities and Local Government. (2016). *National Planning Practice Guidance*. DCLG, London.
[15] Mayor of London (2019): 'The London Plan. The spatial Development Strategy for Greater London. Intend to Publish'. December 2019

Policy G6 – 'Biodiversity and Access to Nature' states *inter alia*:

b) "Sites of Importance for Nature Conservation (SINCs) should be protected.

c) Where harm to a SINC is unavoidable, and where the benefits of the development proposal clearly outweigh the impacts on biodiversity, the following should be applied to minimise development impacts:

1) avoid damaging the significant ecological features of the site

2) minimise the overall spatial impact and mitigate it by improving the quality or management of the rest of the site

3) deliver off-site compensation based on the principle of biodiversity net gain

d) Development proposals should manage impacts on biodiversity and aim to secure net biodiversity gain. This should be informed by the best available ecological information which should be considered from the start of the development process.

e) Proposals which reduce deficiencies in access to wildlife sites should be considered positively"

- *commensurate with their importance.*

Mayor of London: Environment Strategy, 2018

Mayor of London: London Environment Strategy, 2018[16] compliments the London Plan. It sets out how London's biodiversity can be protected and enhanced and contains a list of Priority Habitats and Species within the city. The relevant policy within the strategy is Policy 5.2.1 'Protect a core network of nature conservation sites and ensure a net gain in biodiversity'.

Local Planning Policy

London Borough of Richmond upon Thames: New Local Plan

LBRuT are currently preparing a new Local Plan for the borough, which will replace existing policies within the Core Strategy and Development Management Plan (see below). The Plan will set out policies and guidance for the development of the borough over the next 15 years. On 19th May 2017, LBRuT submitted the final draft of the Local Plan[17], along with other publication and submission documents, evidence and supporting documents to the Secretary of State for Communities and Local Government for independent Examination. The following strategic visions, objectives and policies within the final draft of the Local Plan are of relevance to biodiversity:

Strategic vision 'Natural Environment, Open Spaces and the Borough's Rivers' states:

"The outstanding natural environment and green infrastructure network, including the borough's parks and open spaces, biodiversity and habitats as well as the unique environment of the borough's rivers and their corridors will have been protected and enhanced where possible. Residents will continue to highly value and cherish the borough's exceptional environmental quality"

Strategic objective 'Protecting Local Character' states:

"…..3) Protect and improve the borough's parks and open spaces to provide a high quality environment for local communities and provide a balance between areas for quiet enjoyment and wildlife and areas to be used for sports, games and recreation;

[16] Mayor of London (2018) *London Environment Strategy*
[17] London Borough of Richmond Upon Thames (2017); 'Local Plan: Public version for consultation, 4 January – 15 February 2017'.

4) Protect and enhance the borough's network of green infrastructure that performs a wide range of functions for residents, visitors, biodiversity and the economy;

5) Protect and enhance the borough's biodiversity, including trees and landscape, both within open spaces but also within the built environment and along wildlife corridors; and

6) Protect and improve the unique environment of the borough's rivers, especially the River Thames and its tributaries as wildlife corridors, as opportunities for recreation and river transport where possible, increasing access to and alongside the rivers where appropriate, and gain wider local community benefits when sites are redeveloped."

Policy LP 12 'Green Infrastructure' states:

"Green infrastructure is a network of multi-functional green spaces and natural elements, which provides multiple benefits for people, nature and the economy.

A) To ensure all development proposals protect, and where opportunities arise enhance, green infrastructure, the following will be taken into account when assessing development proposals:

- *the need to protect the integrity of the green spaces and assets that are part of the wider green infrastructure network; improvements and enhancements to the green infrastructure network are supported;*
- *its contribution to the wider green infrastructure network by delivering landscape enhancement, restoration or re-creation;*
- *its contribution to the wider green infrastructure network by delivering landscape enhancement, restoration or re-creation*

*B) The hierarchy of open spaces, as set out in the table below (*refer to original document*), will be protected and used in accordance with the functions shown."*

Policy LP 15 'Biodiversity' states:

"A) The Council will protect and enhance the borough's biodiversity, in particular, but not exclusively, the sites designated for their biodiversity and nature conservation value, including the connectivity between habitats. Weighted priority interms of their importance will be afforded to protected species and priority species and habitats including National Nature Reserves, Sites of Special Scientific Interest (SSSI) and Other Sites of Nature Importance as set out in the Biodiversity Strategy for England, and the London and Richmond upon Thames Biodiversity Action Plans. This will be achieved by:

1) *protecting biodiversity in, and adjacent to, the borough's designated sites for biodiversity and nature conservation importance (including buffer zones), as well as other existing habitats and features of biodiversity value;*
2) *supporting enhancements to biodiversity;*
3) *incorporating and creating new habitats or biodiversity features, including trees, into development sites and into the design of buildings themselves where appropriate; major developments are required to deliver net gain for biodiversity, through incorporation of ecological enhancements, wherever possible;*
4) *ensuring new biodiversity features or habitats connect to the wider ecological and green infrastructure networks and complement surrounding habitats;*
5) *enhancing wildlife corridors for the movement of species, including river corridors, where opportunities arise; and*
6) *maximising the provision of soft landscaping, including trees, shrubs and other vegetation*

that support the borough-wide Biodiversity Action Plan.

B) Where development would impact on species or a habitat, especially where identified in the relevant Biodiversity Action Plan at London or local level, or the Biodiversity Strategy for England, the potential harm should:

1) *firstly be avoided (the applicant has to demonstrate that there is no alternative site with less harmful impacts);*
2) *secondly be adequately mitigated; or*
3) *as a last resort, appropriately compensated for."*

LP 16 'Trees, Woodlands and Landscape' states:

"A) The Council will require the protection of existing trees and the provision of new trees, shrubs and other vegetation of landscape significance that complement existing, or create new, high quality green areas, which deliver amenity and biodiversity benefits.

B) To ensure development protects, respects, contributes to and enhances trees and landscapes, the Council, when assessing development proposals, will:

Trees and Woodlands:

1) *resist the loss of trees, including aged or veteran trees, unless the tree is dead, dying or dangerous; or the tree is causing significant damage to adjacent structures; or the tree has little or no amenity value; or felling is for reasons of good arboricultural practice; resist development that would result in the loss or deterioration of irreplaceable habitat such as ancient woodland;*
2) *resist development which results in the damage or loss of trees that are considered to be of townscape or amenity value; the Council will require that site design or layout ensures a harmonious relationship between trees and their surroundings and will resist development which will be likely to result in pressure to significantly prune or remove trees;*
3) *require, where practicable, an appropriate replacement for any tree that is felled; a financial contribution to the provision for an off-site tree in line with the monetary value of the existing tree to be felled will be required in line with the 'Capital Asset Value for Amenity Trees' (CAVAT);*
4) *require new trees to be of a suitable species for the location in terms of height and root spread, taking account of space required for trees to mature; the use of native species is encouraged where appropriate;*
5) *require that trees are adequately protected throughout the course of development, in accordance with British Standard 5837 (Trees in relation to design, demolition and construction – Recommendations).*

The Council may serve Tree Preservation Orders or attach planning conditions to protect trees considered to be of value to the townscape and amenity and which are threatened by development.

Landscape:

1) *require the retention of important existing landscape features where practicable;*
2) *require landscape design and materials to be of high quality and compatible with the surrounding landscape and character; and*
3) *encourage planting, including new trees, shrubs and other significant vegetation where*

appropriate."

Policy LP 17 'Green Roofs and Walls' states:

"Green roofs and / or brown roofs should be incorporated into new major developments with roof plate areas of 100sqm or more where technically feasible and subject to considerations of visual impact. The aim should be to use at least 70% of any potential roof plate area as a green / brown roof.

The onus is on an applicant to provide evidence and justification if a green roof cannot be incorporated. The Council will expect a green wall to be incorporated, where appropriate, if it has been demonstrated that a green / brown roof is not feasible.

The use of green / brown roofs and green walls is encouraged and supported in smaller developments, renovations, conversions and extensions."

Policy LP 18 'River Corridors' states:

"A) The natural, historic and built environment of the River Thames corridor and the various water courses in the borough… will be protected. Development adjacent to the river corridors will be expected to contribute to improvements and enhancements to the river environment.

B) Development proposals within the Thames Policy Area should respect and take account of the special character of the reach as set out in the Thames Landscape Strategy and Thames Strategy as well as the Council's Conservation Area Statements, and where available Conservation Area Studies, and / or Management Plans."

London Borough of Richmond upon Thames: Supplementary Planning Documents and Guidance

A series of Supplementary Planning Guidance (SPG) and Supplementary Planning Documents (SPDs) has been produced by LBRuT to provide greater detail on existing local planning policies to support decisions on planning applications. LBRuT no longer produces SPGs as they have been replaced with SPDs since 2004. However, they remain material considerations in planning decisions. With regards to biodiversity, a SPG titled 'Nature Conservation and Development'[18] has been published by LBRuT. This SPG states:

i. *"It is important that nature conservation should be integrated at the planning stage with all new development. Schemes should be designed to retain existing features and habitats of wildlife value on site, and to create new habitats where appropriate."*

Currently, the only parts of the UDP that remain saved and have not been superseded are those Proposal sites that were originally saved. The eastern part of the Site is allocated on the Proposals Map as site S4 (Budweiser Stag Brewery)[19].

The LBRuT adopted a planning brief for the Site in July 2011 with SPD[20] status. This document sets out opportunities and constraints regarding the redevelopment of the Site. With regard to biodiversity, this SPD states:

"Opportunities should be taken to enhance biodiversity throughout the site and particularly along the River."

[18] London Borough of Richmond upon Thames (no-date); 'Design Guidelines for Nature Conservation & Development'.
[19] London Borough of Richmond upon Thames (2005); 'Unitary Development Plan. Chapter 12 – Local Strategies and Plan Proposals'.
[20] London Borough of Richmond upon Thames (2011); 'Stag Brewery, Mortlake, SW14 Planning Brief. Supplementary Planning Guidance'.

Site Allocations

LBRuT have also produced a suite of 14 Village Plan SPDs, one for each Village Area in the Borough. Each Village Plan SPD provides a vision for the area, identifying the local character and setting out key policies and design principles that will apply to both new development and changes to existing buildings. These are used as material considerations in determining planning applications in each area.

The Site is located within the 'Mortlake Village Plan'[21]. It sets out that the vision for Mortlake is to create a new heart to the village by the redevelopment of the Stag Brewery Site creating a recreational and living quarter and a vibrant link between the village and the riverside.

Biodiversity Action Plans

UK Post-2010 Biodiversity Framework

The Environment Departments of all four governments in the UK work together through the Four Countries Biodiversity Group. Together they have agreed, and Ministers have signed, a framework of priorities for UK-level work for the Convention on Biological Diversity. Published on 17 July 2012, the 'UK Post-2010 Biodiversity Framework'[22] covers the period from 2011 to 2020. This now supersedes the UK Biodiversity Action Plan (UK BAP)[23]. However, many of the tools developed under UK BAP remain of use, for example, background information about the lists of priority habitats and species. The lists of priority species and habitats agreed under UK BAP still form the basis of much biodiversity work in the countries.

Although the UK Post-2010 Biodiversity Framework does not confer any statutory legal protection, in practice many of the species listed already receive statutory legal protection under UK and / or European legislation. In addition, the majority of Priority national (English) BAP habitats and species are now those listed as Habitats of Principal Importance (HoPI) and Species of Principal Importance (SoPI) in England listed under Section 41 (S41) of the NERC Act 2006. For the purpose of this report, habitats and species listed under S41 of the NERC Act are referred to as having superseded the UK BAP. All public bodies have a legal obligation or 'biodiversity duty' under Section 40 of the NERC Act 2006 to conserve biodiversity by having particular regard to those species and habitats listed under S41.

Richmond Biodiversity Action Plan

The Biodiversity Action Plan for the London Borough of Richmond upon Thames (LBRuT)[24] sets out the framework for the protection, conservation and enhancement of wildlife within the borough. Through its implementation, the plan protects and manages habitats and species of national, regional or local significance, or those that are in the Red Data Books and on the Red Lists. Based on the results of the PEA the following Habitat and Species Action Plans are considered to be of relevance to the Site:

21 London Borough of Richmond upon Thames (2015); 'Mortlake Village Planning Guidance. Supplementary Planning Guidance'.

22 JNCC and DEFRA (on behalf of the Four Countries' Biodiversity Group). (2012). *UK Post-2010 Biodiversity Framework*.

23 HMSO. (1994) *Biodiversity The UK Action Plan*.

24 Richmond Biodiversity Partnership (2019): 'London Borough of Richmond Upon Thames. Biodiversity Action Plan)

Guidance

Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services

In October 2010, over 190 countries signed an historic global agreement in Nagoya, Japan to take urgent and effective action to halt the alarming global declines in biodiversity. This agreement recognised just how important it is to look after the natural world. It established a new global vision for biodiversity, including a set of strategic goals and targets to drive action. England's response to this agreement was the publication of '*Biodiversity 2020: A strategy for England's wildlife and ecosystem services*'[25]. The mission for this strategy is:

"to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people."

BS 42020: 2013 Biodiversity: Code of Practice for Planning and Development

The UK commitment to halt overall loss of biodiversity by 2020 in line with the European Biodiversity Strategy and UN Aichi targets[26], is passed down to local authorities to implement, mainly through planning policy. To assist organizations affected by these commitments, BSI has published BS 42020 which offers a coherent methodology for biodiversity management.

This British Standard sets out to assist those concerned with ecological issues as they arise through the planning process in matters relating to permitted development and activities involved in the management of land outside the scope of land use planning, which could have site-specific ecological implications.

The standard has been produced with input from a number of organisations including the Chartered Institute of Ecology and Environmental Management (CIEEM) and the Association of Local Government Ecologists (ALGE) and provides:

- Guidance on how to produce clear and concise ecological information to accompany planning applications;
- recommendations on professional ethics, conduct, competence and judgement to give confidence that proposals for biodiversity conservation, and consequent decisions/actions taken, are sound and appropriate; and
- direction on effective decision-making in biodiversity management a framework to demonstrate how biodiversity has been managed during the development process to minimize impact.

Legislation

Bats receive legal protection in England under various pieces of legislation, including:

- The Conservation of Habitats and Species Regulations 2017[27];
- The Wildlife and Countryside Act 1981 (as amended)[28]; and
- The Natural Environment and Rural Communities Act 2006[29];

[25] Defra. (2011) *Biodiversity 2020: A strategy for England's wildlife and ecosystem services.*

[26] https://www.cbd.int/sp/targets/

[27] HMSO (2017) The Conservation of Habitats and Species Regulations 2017.

[28] HMSO (1981) 'Wildlife and Countryside Act 1981 (as amended)'

[29] ODPM (2006) 'Natural Environment and Rural Communities Act (2006)'

Bats

In summary, all UK bat species are protected by the Conservation of Habitats and Species Regulations 2017 and by the WCA 1981. Taken together it is an offence to deliberately, intentionally or recklessly:

- Kill, injure or capture a bat;
- Disturb bats in such a way as to be likely significant to affect:

  (i) the ability of any significant group of bats to survive, breed, or rear / nurture their young; or

  (ii) the local distribution of that species;
- Damage or destroy any breeding or resting place used by bats; or
- Obstruct access to any place used by bats for shelter or protection and disturbing bats while occupying such as place.

B. Photographs

Plate 1 – Soprano pipistrelle emergence location from a second-floor window on the northern façade of The Maltings (B8).

UK and Ireland Office Locations