Environmental Assessment Report

Stag Brewery, Mortlake - Permanent Filming Use Application

February 2023

Waterman Infrastructure & Environment Limited
Pickfords Wharf, Clink Street, London, SE1 9DG
www.watermangroup.com

Client Name:	Reselton Properties Ltd
Document Reference:	WIE18671-116-R.19.2.1.EnvR
Project Number:	WIE18671

Quality Assurance – Approval Status

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)

Issue	Date	Prepared by	Checked by	Approved by
02	February 2023	Various	Ellen Smith Principal Consultant	Ros Boalch Associate Director

Comments

Disclaimer

This report has been prepared by Waterman Infrastructure & Environment Limited, with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporation of our General Terms and Condition of Business and taking account of the resources devoted to us by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at its own risk.

Contents

Tables

Figures

Appendices

*Please note, the above appendices (other than Appendix C and G) were prepared for the March 2022 hybrid planning application (Application A, planning ref: 22/0900/OUT) and Detailed Application School (Application B, planning ref: 22/0902/FUL), and have been deemed applicable in support of the permanent use planning application.

1. Introduction

This Environmental Assessment Note has been prepared by Waterman Infrastructure & Environment Limited ('Waterman IE'), on behalf of Reselton Properties Limited ('the Applicant').

The Applicant intends to submit a planning application for the permanent use of land at the former Stag Brewery (the 'Site'), for film production operations and ancillary activities (sui generis). The Site is located in Mortlake, south west London within the administrative boundary of the London Borough of Richmond upon Thames (LBRuT) (refer to **Figure 1**).

The Applicant is seeking planning permission, for the use of the whole Site for film production operations and ancillary activities. Initially, it is envisioned that the operator will only utilise Buildings 11, 12 and yard areas in the east of the Site (including parking) (refer to **Figure 2**). Filming will also take place externally adjacent to the Maltings (refer to **Figure 2** on the external filming use extent). The East Gatehouse (Building 15) will be used for security purposes. The Sports Pavilion (Building 14) will be used intermittently for filming set locations.

All buildings are being applied for use, with full details provided at this stage for Buildings 11, 12, 14 and 15 (with the other buildings only to be used following the submission of further details via condition). The application would be limited in duration by a legal agreement, so that it would not preclude the hybrid 2022 planning application being considered at the Site (Application A, planning ref: 22/0900/OUT) and the Detailed Application School (Application B, planning ref: 22/0902/FUL) coming forward as and when these are granted planning permission.

In the future, if an additional tenant and/or filming and associated operations are required in the western areas of the Site, or within other buildings, this would be subject to a review of the environmental implications and would be secured by a suitably worded planning condition.

1.1 Proposed Operations and Activities

The following describes the operations and activities associated with the proposed use of the Site by an operator:

- Other than the external area adjacent to the Maltings building, filming will be within the existing buildings within the Stag Brewery site;
- The Bottling Plant / Packaging Building (refer to Building 12 of **Figure 2**) will be used as 'closed set'. The Sports Pavilion Building (refer to Building 14 of **Figure 2**) will be used intermittently for set location filming. Ancillary offices will be located within the Former Engineers Store / Former Bottling Hall (refer to Building 11 of **Figure 2**);
- No pyrotechnics or other noise or light generating effects anticipated to be visible or audible outside the existing buildings;
- No modifications to the existing buildings will be required;
- No breaking of ground or vegetation clearance is required;
- Vehicles will be parked in existing yard areas;
- Operational hours will be between 06:00 and 21:00 Monday to Friday, and 08:00-16:00 Saturday and Sunday;
- No overnight sleeping accommodation will be required, although security attendance on Site will be 24 hours, 7 days a week;
- Servicing and deliveries will be limited to between 06:00 and 21:00 Monday to Friday and 08:00 to 16:00 Saturday and Sunday, including Bank Holidays;

- Access and egress will be the existing site access points, with car parking accessed through a gate adjacent to the East Gatehouse (refer to Building 15 of **Figure 2**), to the south of the Site off Lower Richmond Road. The intensity of vehicular movements on and off Site will vary. A total of 20 Heavy Goods Vehicle (HGV) two-way trips are anticipated per day, and a total of 112 two-way car trips are anticipated per day;
- No power generators will be required with all power supplied from the mains grid;
- Waste will be stored in a designated waste disposal area on Site; and
- No chemicals/paints, fuel or oil are anticipated to be stored on the Site.

2. Existing Environmental Conditions at the Site and Surrounds

The Site comprises the former Stag Brewery estate. This includes 15 industrial buildings surrounded largely by hardstanding, which was used for vehicle movements and parking, and a 3m Above Ground Level (AGL) brick wall perimeter. The Stag Brewery ceased operations in late 2015 and decommissioning of brewery infrastructure was undertaken following cessation of brewery activities. Works on-Site were undertaken in 2017 to remove the brewery fixtures and fittings. The layout of the existing buildings within the Site is shown in **Figure 2.**

The majority of the buildings within the Site are twentieth century industrial structures. However, the Maltings, the (former) Hotel and the (former) Bottling Hall date from the late 19th and early 20th centuries, which are non-statutorily designated Buildings of Local Townscape Merit.

The Mortlake Conservation Area covers an area within the east of the Site which includes the Maltings, the (former) Hotel and (former) Bottling Hall. The Site is located within an Archaeological Priority Area (APA) designated by LBRuT. The Site is located within defended Flood Zone 3.

The Site is located within a borough wide Air Quality Management Area (AQMA) designated by LBRuT owing to high levels of nitrogen dioxide (NO_2) and fine particulate matter (PM_{10}).

The Site is located in a predominantly residential area with an area of public open space known as Mortlake Green located to the south of the Site. The River Thames is located immediately north of the Site. Watney's Sports Ground is a playing field located to the south west of the former Stag Brewery.

Railway infrastructure including Mortlake Train Station is located to the south of the Site beyond Mortlake Green.

Further details in respect of the existing environmental conditions at the Site are presented as necessary within Section 3 and 4.

It should be noted issues related to transportation are detailed in a separate assessment document prepared by Stantec, however the information considered herein in respect of trip generation is consistent.

3. Potential Environmental Issues

A summary of the potential environmental issues associated with the permanent use planning application are set out below, and include those topics which require further assessment, namely noise and vibration, air quality and ecology. The ecological baseline is based on the findings of the Preliminary Ecological Appraisal (PEA Ref WIE18761-103-1-2-4-PEA – see **Appendix E**) and Protected Species Report (PSR Ref: WIE18671-103-R-4-2-3-PSR – see **Appendix F**) undertaken between August and October 2021 (in respect of the March 2022 Environmental Statement submitted for the hybrid planning application – planning ref: 22/0900/OUT). Further surveys for roosting bats, peregrine falcon and breeding birds have been completed between June to August 2022 to provide a complete set of surveys to accompany the new planning application. The findings of these surveys form **Appendix G** of this report.

As indicated previously, the brewery ceased operation in 2017 and has been decommissioned in agreement with the Environment Agency and with contamination from the remaining buildings and plant removed. On the basis that no intrusive works are proposed, should any contamination be present beneath the Site, hardstanding and other structures will provide a barrier to future Site users. The risk to future Site users is therefore low as the proposed filming use does not include any intrusive works with the potential to penetrate this barrier.

Whilst it is not anticipated that chemicals/paints, fuel or oil would be stored on the Site and therefore would not pose a potential contamination risk, if they were required on Site, fuels, chemical/paints or oils would be appropriately stored in double-skinned, bunded tanks or cabinets with drip trays situated above hardstanding, and with spill kits retained nearby.

Taking account of the low risk to future Site users associated with the planning application and the appropriate storage of fuels, chemical/paints or oils (if required) it is considered that no significant adverse ground conditions and contamination effects would arise.

As stated above, the Site is located within Flood Zone 3, indicating a high probability of tidal/fluvial flooding. However, it is protected by the River Thames defences to a 1 in 1000 year standard reducing the risk of flooding to the Site to low.

The existing Site is classed as 'less vulnerable'[1] as it falls under the '*general industry, storage and distribution*' classification as defined in the National Planning Policy Framework (NPPF). There are no 'more vulnerable' uses proposed, such as residential, as part of this permanent use planning application, given the proposed use of the Site for filming would be classified as '*non-residential institution not included in the 'more vulnerable' class*'. Therefore, the vulnerability of users at the Site would remain as per the existing use. In the highly unlikely event of a breach in the flood defences Buildings 11, 12, 14 and 15 could be affected by less than 300mm of flooding, however as the uses are 'less vulnerable' this is acceptable in policy terms. Users of the Site would also be able to walk a short distance to the west of Building 15 and south of Building 12 to areas that would remain dry in a breach scenario.

Furthermore, there will be no changes to the existing buildings or existing drainage network as part of the proposals. Therefore, there would be no significant adverse surface water drainage and flood risk effects would arise as a result of the planning application.

No modifications to existing buildings on Site in terms of extent, scale, massing and character would be required. It is anticipated that the maximum height of the erected external sets will be 11.6m, with a suggested cap of 11.9-12.2m at the rear (i.e. towards the maltings building) and 10.7-11m at the front. A visual assessment on the impacts to the 'Metropolitan Open Land' and 'Other Open Land of Townscape Importance' (OOLTI) (report ref: WIE18671-116-TN.19.2.1-Visual Assessment) has been undertaken and concluded that the Development does not protrude above the existing skyline and sits within the heights

[1] Ministry of Housing, Communities and Local Government (2014). Available at: https://www.gov.uk/guidance/flood-risk-and-coastal-change#Table-2-Flood-Risk-Vulnerability-Classification

of the existing buildings. The Development is screened to some extent by the vegetation which forms the boundary to Mortlake Green. The Development matches the scale, character and industrial appearance of the existing brewery buildings. Although the Development is visible from Mortlake Green, this does not affect the character and openness of Mortlake Green. Therefore, it is considered that no significant adverse townscape and visual effects would arise as a result of the planning application.

Similarly, a Built Heritage Statement (report ref: 10202/R01-Rev5) has been undertaken and concluded that no significant adverse effects on the setting of the Buildings of Townscape Merit, listed buildings and structures and Mortlake and Mortlake Green Conservation Areas would arise as a result of the permanent use planning application. No alterations would be required to the fabric of known heritage assets within the Site. Furthermore, as no intrusive groundworks are proposed, no significant archaeological effects would arise as a result of the planning application.

4. Assessment

4.1 Noise and Vibration

This section provides an assessment of the potential noise impacts resulting from operational noise associated with filming, fixed external plant that may be introduced as part of the permanent use and changes in road traffic noise. The assessment methodology is presented as are the baseline conditions against which the noise assessment is undertaken. Potential impacts are identified, and mitigation is discussed where relevant.

A Glossary of Acoustic Terminology used in this Section is presented in **Appendix A**.

4.1.1 Assessment Methodology

Filming Operational Noise

There are no specific standards or guidelines for the assessment of operational noise associated with on-location filming. In the absence of specific standards or guidelines the likely significant impact is based on change in the prevailing noise level, as presented in **Table 1**.

Table 1: Significance Criteria for Change in Prevailing Noise Level

Significance	Change in Prevailing Noise Level dB(A)	Definition
Insignificant	< 3.0	The impact is not of concern
Adverse Impact of Minor Significance	3.0 to 4.9	The impact is undesirable but of limited concern
Adverse Impact of Moderate Significance	5.0 to 9.9	The impact gives rise to some concern but is likely to be tolerable depending on scale and duration
Adverse impact of Major Significance	≥ 10	The impact gives rise to serious concern which should be considered unacceptable

The criteria are widely used by acoustic practitioners and are based on human perception and response to changes in environmental noise levels. Where specific detail is not known, then a qualitative assessment using the significance criteria in **Table 1**, is undertaken, which is the approach adopted for this assessment.

Car Park Noise

There is no British Standard or guidance detailing the method for assessment of car park noise. On this basis the potential impact has been predicted by calculating the potential change to the prevailing noise level, having regard to the criteria used in the assessment of changes in road traffic noise as detailed within The Design Manual for Roads and Bridges, LA 111 'Noise and Vibration' (DMRB)[2]. The significance of the change in prevailing noise level due to car park usage is presented in **Table 2**.

[2] Highways England (2020 version 2) Design Manual for Road and Bridges, Sustainability and Environment Appraisal 'Noise and Vibration', Crown Copyright.

Table 2: Significance Criteria for Change in Noise Levels from Car Park Usage

Significance	Change in Noise Level due to Car Park Usage, dB(A)
Insignificant	<1.0
Adverse Impact of Minor Significance	1.0 to 2.9
Adverse Impact of Moderate Significance	3.0 to 4.9
Adverse Impact of Major Significance	≥ 5.0

Road Traffic Noise

The Design Manual for Roads and Bridges, LA 111 'Noise and Vibration' (DMRB) provides significance criteria for changes in operational road traffic noise levels which are reproduced in **Table 3** and were used in this assessment.

Table 3: Significance Criteria for Change in Road Traffic Noise Level

Significance	Change or Difference in Road Traffic Noise Level, dB(A)
Insignificant	<1.0
Adverse Impact of Minor Significance	1.0 to 2.9
Adverse Impact of Moderate Significance	3.0 to 4.9
Adverse Impact of Major Significance	≥ 5.0

It is generally accepted by acoustic practitioners that subjectively an increase of 3dB in environmental noise is just noticeable, whereas an increase of 10dB, a tenfold increase in intensity is judged by most people as a doubling of loudness.

The calculation methodology of 'The Calculation of Road Traffic Noise'[3] (CRTN) is used to predict changes in road traffic noise levels. A doubling is traffic volume, all other things being equal, would result in a 3dB increase in road traffic noise. An increase in traffic volume of less than 25% on the relevant road link, all other things being equal, would result in an increase of less than 1dB and is considered insignificant.

Fixed External Plant

The principal British Standard for the assessment of fixed external plant is BS4142:2014+A1:2019[4] '*Methods for rating and assessing industrial and commercial sound*'. BS4142 states that the potential impact from industrial sound is based on the level difference between the source, known as the 'specific sound' level ($L_{Aeq,Tr}$), compared with the 'background sound level ($L_{A90,T}$) that exists in the absence of the source in question. Where the sound contains any acoustic characteristics such as tonality, impulsiveness and intermittency then the specific noise level is adjusted in-line with BS 4142 advice to determine the rating level ($L_{Ar,Tr}$).

Where specific details on potential fixed external plant are unknown, as is the case for this application, then plant noise limits are recommended having regard to guidance within BS4142 and requirements of LuBRT, which are that the rating level be 10dB below the prevailing background level at the nearest sensitive receptor. A recommended minimum night-time noise limit of 35dB $L_{Ar,Tr}$ where prevailing background noise levels are less than 45dB $L_{A90,T}$ with a maximum daytime noise limit of 45dB $L_{Ar,Tr}$

[3] DoT (1988) Calculation of Road Traffic Noise, HMSO
[4] BSI. (2019) BS4142:2014+A1:2019. 'Methods for rating and assessing industrial and commercial sound'. BSI.

where prevailing background noise levels are greater than 55dB L_{A90}, would adequately safeguard the existing residential amenity.

4.1.2 Baseline Conditions

Sensitive Receptors

The existing residential receptors within the vicinity of the Site that may be impacted by the proposed operations and activities are presented as **Table 4** and illustrated in **Figure 3**.

Table 4: Sensitive Receptors

Sensitive Receptor Reference	Type of Receptor	Address / Name	Approximate Distance from Site Boundary
SR A	Residential	Williams Lane	10 m west and north-west of Stag Brewery Site Boundary.
SR B	Residential	Lower Richmond Road	10m south of Stag Brewery Site Boundary.
SR C	Residential	Mortlake High St	25m south of Stag Brewery Site Boundary.
SR D	Residential	Boat Race House	10m east of Stag Brewery Site Boundary.
SR E	Residential / PH	Thames Bank / The Ship	10m west of Stag Brewery Site Boundary.

Environmental Noise Levels

A noise survey was undertaken from Thursday 11th July to Tuesday 16th July 2019, covering a typical weekday and weekend period in order to establish and quantify the existing noise climate at and within the vicinity of the Site. This was pre-Covid-19, the data is considered representative of prevailing conditions given that transport in London is understood to be back to pre-Covid levels[5].

Table 4 presents a summary of the measured noise levels. Full survey details are presented in **Appendix B**.

Table 5: Summary of Baseline Survey

Monitoring Location (Figure 3)	Period	Duration	dB $L_{Aeq,T}$ Ave[1]	dB $L_{A10,T}$ Ave[2]	dB $L_{A90,T}$ Ave[2] (Mode)	dB $L_{AFmax,5min}$ 90th Percentile[3]
LT1	Day	12hr	71	74	59 (60)	86
	Evening	4hr	71	74	55 (52)	87
	Night	8hr	66	66	41 (37)	84
LT2	Day	12hr	68	69	61 (62)	85
	Evening	4hr	69	69	57 (59)	86
	Night	8hr	63	64	42 (36)	77
LT3	Day	12hr	59	60	51 (50)	75

[5] How's the Traffic? It's Back to Normal in London and New York - Bloomberg [accessed 24/5/2022]

Monitoring Location (Figure 3)	Period	Duration	dB $L_{Aeq,T}$ Ave[1]	dB $L_{A10,T}$ Ave[2]	dB $L_{A90,T}$ Ave[2] (Mode)	dB $L_{AFmax,5min}$ 90th Percentile[3]
LT4	Evening	4hr	55	56	49 (50)	72
	Night	8hr	53	50	41 (41)	70
	Day	12hr	56	57	48 (48)	74
	Evening	4hr	55	56	47 (47)	73
	Night	8hr	53	48	38 (35)	72
CRTN	Day	3h	58	61	45 (44)	74

Notes: [1] Logarithmic average over the day/evening/night survey periods; [2] Arithmetic average over the day/evening/night survey periods; [3] The 90th percentile L_{AFmax} value (equivalent to the 10th highest measured L_{AFmax} level) is presented and considered representative of typical L_{AFmax} levels experienced. All figures rounded to nearest whole decibel, only full periods reported

In the southern part of the Site and surrounds the dominant noise source is road traffic noise from Lower Richmond Road and Mortlake High Street. The prevailing noise levels proximate to Lower Richmond Road and Mortlake High Street are relatively high, being 68-71dB $L_{Aeq,16h}$ during the daytime period and 63-66dB $L_{Aeq,8h}$ during the night-time period.

The northern part of the Site and surrounds the dominant noise source is distant road traffic together with contributory noise from aircraft. The measured noise levels are significantly lower, approximately 10dB lower, than those measured at the southern boundary.

The north-western part of the Site and surrounds the dominant noise source is road traffic noise from Clifford Avenue. Due to screening and distance from the source, the prevailing noise levels are approximately 10dB lower than those in the south of the Site.

4.1.3 Noise Assessment

Filming Operational Noise

It is understood that filming will be undertaken within the existing buildings predominantly within Building 12 and Building 14 (sports pavilion) on the Site with ancillary office accommodation within Building 11. Further to this, it is understood that no activity involving pyrotechnics will be visible or audible outside the existing buildings. Given filming will be undertaken within the existing brick buildings, it is reasonable to assume that noise break-out from filming operations would be insignificant against the prevailing noise levels. Both break-in and break-out of noise, should this be required depending on the type of filming operations, could be reduced with the boarding up of the windows internally to increase their overall sound insulation.

The potential impact at the nearest sensitive receptors from internal filming operations is therefore considered to be insignificant, due to screening afforded by the building structure itself, with windows boarded internally, if required to increase the sound insulation of this 'weakest' façade element, to break-out noise together with distance separation from the buildings to the nearest sensitive receptors.

In addition to the above, it is proposed to create an external film set in the space between Building 12 and Buildings 6 and 9, extending to the north of Building 12 to the brick wall at the northern boundary. Due to screening afforded by the buildings themselves, and that this would not include audible pyrotechnics without prior consent, noise from filming operations is not anticipated to result in adverse effects on the receptors at Thames Bank and The Ship Public House.

Car Park

There is the potential of noise from vehicle movements on Site, be that from servicing / deliveries or parking of vehicles by film crew and staff. At this stage, exact details on routing through the Site or exact parking locations is not known, although it is likely parking would be predominantly within hard standing areas proximate to Buildings 11 and 12 accessed via the East Gatehouse off Lower Richmond Road. This parking area is considered to be sufficient to provide ample space for staff and visitors to park for the proposed filming and ancillary office use.

As detailed in the Transport Parking Management Plan, access to the site will utilise the existing site access points. Vehicle access will be from Lower Richmond Road (as per the access of the previous use of the site), with larger vehicles using the same entrances as HGVs for the brewery. Staff vehicles are able to utilise existing parking on site which is provided within the western section of the site accessed from Ship Lane.

The existing Stag Brewery car park located via Ship Lane will be re-opened and used for the filming use of the Site. As reported in the Transport Statement, the existing number of car parking spaces on site is 130 and based on the predicted demand for an operator's staff, approximately 56 staff will drive a car and use the car park. This provides an opportunity to close off a section of the car park adjacent to the residential properties to the north on Thames Bank which will reduce the impact on local residents. ll drivers will be reminded to be sensitive to those living around the site and notices will be provided in order to emphasise this.

As reported in the Transport Statement, the majority of vehicles will be private cars or vehicles under 7.5t and are therefore anticipated to be able to enter the site under its current vehicular access arrangement. There is however, anticipated to be 8-10 26t vehicles used by the shooting crew.

Taking account of screening afforded by the 3m brick perimeter wall and screening from the building themselves, noise from car park usage is not anticipated to result in adverse impacts on the surrounding residents. Notwithstanding this, a quantitative assessment has been undertaken using the assessment criteria presented in **Table 2**.

Noise from car-park usage is based on all 56 spaces being used within a 1-hour period during either the day (07:00-19:00), evening (19:00-23:00) or night-time (23:00-07:00) period. Calculations are based on noise source data for a car-by pass within a car park and closing of the car door. This is then adjusted for the number of events, namely 56 cars and 112 shutting of car doors (allowing for 2 doors per car). The predicted noise level has been combined with the prevailing noise level during the respective time period, to determine the potential change in the prevailing noise level. **Table 6** presents a summary of the results with an example calculation presented in **Appendix B**. The measured noise levels at LT3 were used for assessment purpose, as this was the nearest noise monitoring location to residential properties on Thames Bank (refer to **Figure 3**). The distance from the parking area to the nearest residential receptor is approximately 20m.

Table 6: Assessment of Car Park Noise

Period	LT3 Measured Noise Level dB $L_{Aeq,T}$	Car Park Noise Level dB $L_{Aeq,1\ hour}$	Change in Prevailing	Significance
Day (07:00-19:00)	59	49	0	Insignificant
Evening (19:00-23:00)	55	49	1	Minor
Night (23:00-07:00)	53	49	2	Minor

The calculations are based on all 56 cars using the car park in the same one hour period. This is not a continuous noise source but intermittent and likely to occur pre and post filming.

The predicted noise level from car park usage, when combined with the prevailing noise level, would result in no change in the prevailing noise level during the daytime period with up to 2dB increase in noise level during the night-time period, the latter being when residents are indoors and therefore benefit from the sound attenuation afforded by the building façade itself. Noise level increases of this level are regarded as insignificant to minor and are therefore considered acceptable in noise terms.

With regard to servicing / deliveries which are understood to occur between 06:00-21:00, the forecast number is 20 Heavy Goods Vehicle (HGV) two-way trips (10 in 10 out per day). Assuming they are distributed equally over the day this would equate to 0-1 delivery per hour. Again, screening afforded by the existing 3m perimeter brick wall and on-site intervening buildings, is anticipated to afford screening to on-site servicing and delivery vehicles. On this basis adverse impacts on the surrounding residents is not anticipated.

Fixed External Plant

It is understood that fixed external plant would not be introduced as part of the proposed filming usage. Should this occur however, **Table 7** presents recommended plant noise limits at the nearest sensitive receptors based on the established prevailing background sound levels.

Table 7: Recommend Plant Noise Limits

Location (Ref Figure 3)	Period	Representative $L_{A90,5min}$	Plant Noise Emission Limit ($L_{Ar,Tr}$ as defined by BS4142)
SR A (noise limit inferred from LT4)	Daytime	48 (mode 48)	38
	Night-time	38 (mode 35)	35
SR B (noise limit inferred from LT1)	Daytime	59 (mode 60)	45
	Night-time	41 (mode 37)	35
SR C, D (noise limit inferred from LT2)	Daytime	61 (mode 62)	45
	Night-time	42 (mode 36)	35
SR E (noise limit inferred from LT3)	Daytime	51 (mode 50)	40
	Night-time	41 (mode 41)	35

Provided the recommended noise limits are satisfied by any fixed external plant that may be introduced, the potential noise impacts would be insignificant.

Road Traffic Noise

Table 8 presents the predicted change in road traffic noise levels during the filming usage based on traffic forecast data provided by the transport engineers Stantec which was submitted in support of the previous temporary filming use applications 19/3870/FUL and 22/1860/FUL. Although it is appreciated this is based on forecast traffic data for the year 2020, it is understood to be reflective of that for the proposed permanent filming use application. Full calculation details are presented in **Appendix C**.

Table 8: Predicted Change in Road Traffic Noise Levels

Road Link	Do Minimum 2020 Noise Level dB $L_{A10,18hr}$ (Basic Noise Level)	Do Something 2020 Noise Level dB $L_{A10,18hr}$ (Basic Noise Level)	Change In Road Traffic Noise Level
A316 Clifford Ave	74.8	74.8	0.0
A316 Lower Richmond Road	72.9	72.9	0.0
South Circular (north of A316)	69.1	69.1	0.0
South Circular (south of A316)	70.0	70.0	0.0
A3003 Lower Richmond Road (Watney's Sports Ground)	70.5	70.6	0.1
A3003 Lower Richmond Road (Mortlake Green)	70.6	70.6	0.0
Williams Lane	Flow below predictive range of CRTN.		
Mortlake High Street	71.0	71.0	0.0
The Terrace (west of Barnes Bridge Station)	70.7	70.7	0.0
White Hart Lane (south of Mortlake High Street)	64.5	64.5	0.0
Sheen Lane (north of Level Crossing)	64.5	64.6	0.1
Sheen Lane (south of Level Crossing)	64.1	64.1	0.0
Sheen Lane (south of South Circular)	63.0	63.0	0.0
South Circular Road (west of Sheen Lane)	70.8	70.8	0.0

The predicted change in road traffic noise levels during the proposed filming usage is expected to be less than 1dB on all road links and therefore insignificant. On Williams Lane the traffic flow for both the Do Minimum (699) and Do Something scenario (735), is below the predictive range of Calculation of Road Traffic Noise (CRTN). The percentage increase in traffic volume is anticipated to be low,~ 5%. At this level of increase this would result in an increase in road traffic noise of significantly below 1dB and therefore insignificant.

4.1.4 Mitigation

Filming Operational Noise

The potential noise impact resulting from filming operations are anticipated to be insignificant, due to screening afforded by the building envelopment and the intervening buildings surrounding the proposed external film set. It is anticipated that noise from filming operations would to be controlled through planning condition comparable to NS16 (A and B) and NS17, of the decision notice of the existing temporary usage (22/1860/FUL); namely:

NS16: Noise Control Condition *(A) Unless otherwise agreed in writing by the Local Planning Authority through the submission of a discharge of conditions application, no amplified music, megaphones, tannoys or speakers or other forms of amplification equipment shall be used outside of the existing buildings / externally on site. (B) Operational Noise - Best Practicable means must be employed at all times to minimise airborne noise audible beyond the site boundary and to ensure that airborne and*

impact noise levels do not exceed NR 35 Leq,5minutes as measured or predicted at the boundary of the nearest ground floor noise sensitive premises or 1 meter from the facade of the nearest first floor (or higher) noise sensitive premises.

NS17: Pyrotechnics and noise generating *Unless otherwise agreed in writing with the Local Planning Authority through the submission of a discharge of condition application no pyrotechnics or other noise or light generating effects shall be visible or audible outside the existing buildings. REASON: To safeguard the amenity of occupiers of nearby properties.*

Qualitatively no additional mitigation is proposed, although should this be required to reduce break-in or break-out, this should be possible through measures such as boarding up the windows, which are the weakest element of the existing building facades.

Car Park and Vehicle Movements

Noise arising from servicing and delivery vehicles occurring between 06:00-21:00 together with parking areas for staff and film crew, are not anticipated to result in adverse impact on the surrounding residents due to screening afforded by the 3m perimeter brick wall and intervening buildings. No further mitigation is proposed.

Fixed External Plant

Table 7 presents recommended plant noise limits should fixed external plant be introduced as part of the usage. Mitigation, should this be required, may consist of procurement of 'low noise' plant, provision of screening or enclosure. It is expected that this would be controlled through planning condition comparable to NS16 (B) of the decision notice of the existing temporary usage (22/1860/FUL19); namely:

NS16: Noise Control Condition *(B) Fixed External Plant - No new fixed external plant shall be installed and used other than in accordance with a scheme that shall have been previously submitted to and approved in writing with the local planning authority and which is in strict accordance with the recommended plant noise limits as set out in the Environmental Assessment Report (Waterman, August 2022). Where mitigation is necessary, consideration should be given to the following: (i) Quiet non-tonal plant (ii) Air vents away from sensitive receptors (iii) Include in-duct attenuators (iv) Acoustic louvres, screening and/or enclosure (v) Isolation of plant (to avoid vibration) REASON: To safeguard the amenity of occupiers of nearby properties.*

Road Traffic Noise

Based on the previous assessment in support of the extant permission (refer to **Appendix C**), the predicted impact resultant from changes in road traffic noise is anticipated to be insignificant on all road links and therefore mitigation is not proposed.

4.1.5 Conclusions

The noise assessment of the proposed usage of Stag Brewery for filming indicates that the potential noise impacts are predicted to be insignificant. The main reasons for this are as follows:

- Filming within the existing buildings does not include pyrotechnics audible external to the building without prior permission, and therefore break-out noise is anticipated to be adequately screened by the existing building envelope.
- Filming at the proposed external set, due to its location, would be screening by the on-site buildings.
- Screening to servicing and delivery vehicles and car park areas is afforded by the 3m high perimeter brick wall and intervening on-site buildings.

- Any fixed external plant introduced as part of the usage, although it is understood that none is currently planned, will meet the recommended plant noise limits based on the established prevailing noise levels presented within this report. This will safeguard the existing residential amenity.
- Forecast changes in traffic flow are anticipated to be comparable to the extant filming usage and therefore would not give rise to significant increases in road traffic noise. All predicted changes in road traffic noise from the extant use were less than 1dB and therefore not perceptible.

4.2 Air Quality

This section provides an assessment of the potential air quality impacts resulting from operational traffic associated with filming. The assessment methodology is presented as are the baseline conditions against which the assessment is undertaken. Potential impacts are identified, and mitigation is discussed where relevant.

4.2.1 Baseline Conditions

Due to the COVID-19 pandemic, 2020 and 2021 monitoring data was not considered representative of baseline air quality conditions at and surrounding the Site. 2020 and 2021 monitoring data has, therefore, not been considered further in this report.

In 2019, LBRuT undertook monitoring of NO_2 and PM_{10} at three automatic monitoring locations and NO_2 at 62 locations using diffusion tubes within the Borough.

The only static roadside automatic monitor within the Borough is located at Castelnau Library, Barnes, approximately 2.4km to the northeast of the Site (OS Grid Reference 522845, 177904). Monitored concentrations at the Castelnau Library roadside monitor are presented in **Table 9**.

Table 9: Monitored Concentrations at the LBRuT Castelnau, Library Road Automatic Monitor

Pollutant	Averaging Period	AQS Objective	2015	2016	2017	2018	2019
NO_2	Annual Mean	40µg/m^3	34	36	31	31	27
	1-Hour Mean (No. of Hours)	200µg/m^3 not to be exceeded more than 18 times a year	0	0	0	0	0
PM_{10}	Annual Mean	40µg/m^3	22	20	18	19	15
	24-Hour Mean (No. of Days)	50µg/m^3 not to be exceeded more than 35 times a year	5	7	4	1	3

Notes: Data obtained from LBRuT Air Quality Annual Status Report for 2020, May 2021
Exceedances of the AQS Objectives shown in **bold** text.

The monitoring results in **Table 9** indicate the annual mean NO_2 and PM_{10} objectives were met in all years.

NO_2 was also measured at 62 locations using diffusion tubes. The results for the 10 NO_2 diffusion tube roadside and kerbside locations within 1 km of the centre of the Site are presented in **Table 10**.

Table 10: Measured Concentrations at the LBRuT Diffusion Tubes Within 1km of the Site

Site ID	Location	Distance to Site	Classification	Annual Mean NO_2 ($\mu g/m^3$)				
				2015	2016	2017	2018	2019
51	Sheen Lane (railway crossing), Sheen^	0.3 km	Kerbside	28	32	35	33	30
21 (74)	Lower Richmond Road, Mortlake (Nr. Kingsway)^	0.4 km	Roadside	37	39	36	**50**	**52**
55	Mortlake Rd (adj. to cemetery gates), Kew	0.6 km	Kerbside	**55**	**50**	**45**	**41**	**40**
58	London Road, Twickenham	0.6 km	Kerbside	**46**	**50**	**47**	**43**	**40**
36	Upper Richmond Road West (URRW), Sheen Lane	0.6 km	Kerbside	**49**	**50**	**60**	**63**	**61**
49	URRW War Memorial, Sheen Lane, Sheen	0.6 km	Kerbside	39	**44**	31	closed	
52	Clifford Avenue, Chalkers Corner	0.7 km	Kerbside	**55**	**57**	**50**	**59**	**55**
50	URRW (Nr. Clifford Avenue, Sheen)	0.8 km	Kerbside	**57**	**55**	**53**	**52**	**50**
54	Mortlake Rd (adj. to West Hill Rd) Kew	0.9 km	Kerbside	**51**	**51**	**48**	**40**	**40**
25	URRW (Nr. Sheen School)	0.9 km	Roadside	**45**	**46**	38	38	36

Notes: Data obtained from directly from LBRuT 2019 Air Quality Annual Status Report
^ site 21 and 51 were moved closer to Chalkers Corner junction in 2018
Exceedances of the AQS Objectives shown in **bold** text.

The monitoring results in **Table 8** indicate that nine of the 10 diffusion tube monitoring locations closest to the Site were at, or exceeded, the annual mean NO_2 objective of $40\mu g/m^3$ between 2015 and 2019. However, eight of the nine diffusion tubes, where data is available, recorded a reduction in the monitored annual mean NO_2 concentration from 2018 to 2019. The annual mean NO_2 concentration at the other diffusion tube on Mortlake Road remained the same.

4.2.2 Project Specific Air Quality Monitoring

In addition to the monitoring undertaken by LBRuT, a short-term air quality monitoring study for nitrogen dioxide (NO_2) was undertaken within the Site around Chalkers Corner and on Lower Richmond Road, for a 6-month period, from July 2018 to January 2019. This study was undertaken as part of the air quality assessment of the redevelopment of the Site for subject to a separate planning application, but the data is applicable to the planning application. The results from this monitoring are presented in **Table 11** below with the full details presented in **Appendix D**.

Table 11: Measured Concentrations at the LBRuT Diffusion Tubes Within 1km of the Site

ID	Site Description	Monitor Classification[(a)]	Relevant AQS Objective[(b)]	Annual Average 2019 Result
DT1	Lower Richmond Road	Kerbside	$60\mu g/m^3$	**40.0**
DT2	Chertsey Court metal railings	Roadside	$60\mu g/m^3$	34.3
DT3	Chertsey Court Lower Richmond Road	Façade	$40\mu g/m^3$	31.8
DT4	Chalkers Corner Junction	Kerbside	$60\mu g/m^3$	39.7

ID	Site Description	Monitor Classification[(a)]	Relevant AQS Objective[(b)]	Annual Average 2019 Result
DT5	Chertsey Court	Carpark	60µg/m^3	37.5
DT6	Clifford Avenue	Kerbside	60µg/m^3	**45.7**
DT7	Clifford Avenue metal railings	Roadside	60µg/m^3	39.2
DT8	Chertsey Court Clifford Avenue	Façade	40µg/m^3	30.5
School 1	Stag Brewery Sports Club (future school façade)	Roadside	40µg/m^3	28.1
School 2	Stag Brewery Sports Club (future school façade)	Roadside	40µg/m^3	28.0

Note: (a) Kerbside = monitor 1m from kerb of a road;
Roadside = monitoring within 1-5m from kerb of a road;
Façade = monitor on residential property and at a location of relevant residential and school exposure;
Carpark = monitor located within an open-air car park
(b) As set out in Box 1.1 of LAQM.TG(16)
Results denoted in **bold** are above annual mean NO_2 AQS objective of 40µg/m^3

As shown in **Table 9**, the highest concentrations measured at all the diffusion tubes in the study are located on the kerbside (DT1, DT4 and DT6, monitored concentrations of 40.0µg/m^3, 39.7µg/m^3 and 45.7µg/m^3, respectively in 2019). The NO_2 results at these locations relate to these monitors being located directly above vehicle tailpipe emissions at Chalkers Corner. The annualised data shows a reduction in annual mean NO_2 concentrations from 2018 to 2019.

The results in **Table 9** show monitored concentrations at the façade of Chertsey Court (DT3 and DT8) are below the relevant annual mean NO_2 AQS objective of 40µg/m^3, as 31.8µg/m^3 and 30.5µg/m^3, and as such existing conditions at Chertsey Court are considered to be acceptable as the AQS objective is met.

Table 9 shows existing NO_2 concentrations at the location of the proposed school are below the annual mean NO_2 AQS objective of 40µg/m^3, as 28.1µg/m^3 and 28.0µg/m^3, and as such existing conditions across the site are considered to be good.

4.2.3 Assessment

Section 1.1 Proposed Operations and Activities states *'no power generators would be required with all power supplied from the mains grid*'. As such, air quality emissions from energy plant has not been considered further.

The Environmental Protection UK and Institute of Air Quality Management (EPUK/IAQM) guidance document[6] sets out criteria for when an air quality assessment is required. The guidance states that an air quality assessment is required if:

'There is a change of more than 100 Light Duty Vehicles (LDV's) in Annual Average Daily Traffic (AADT) for developments within or adjacent to an AQMA'.

The vehicles associated with the planning application would not result in a change of 100 LDV's or 25 HDVs a day on any individual road link, so in accordance with the EPUK/IAQM guidance, the use of the Site for filming is not expected to give rise to air quality impacts. As such the operational effect of road traffic emissions has not been considered further and the likely effect of traffic emissions associated with the operational Development on local air quality is not significant.

Mitigation measures are not required.

[6] Environmental Protection UK & Institute of Air Quality Management (2017), 'Land-Use Planning & Development Control: Planning for Air Quality', EPUK & IAQM, London.

4.3 Ecology

This section provides an assessment of the potential ecological impacts resulting from use of the Site for filming and ancillary uses. The assessment methodology is presented along with the baseline conditions against which the assessment is undertaken. Potential impacts are identified, and ecological mitigation and enhancement measures are discussed where relevant.

4.3.1 Baseline Conditions

As discussed in **Section 3** of this report, the ecological baseline presented within this report is based on the findings of the Preliminary Ecological Appraisal (Ref: WIE18761-103-1-2-4-PEA – refer to **Appendix E**) and Protected Species Report (Ref: WIE18671-103-R-4-2-3-PSR – refer to **Appendix F**) undertaken between August and October 2021 (in respect of the March 2022 Environmental Statement submitted for the hybrid planning application – planning ref: 22/0900/OUT). Further surveys for roosting bats, peregrine falcon and breeding birds have been completed between June to August 2022 to provide an up to date survey baseline as detailed in a Protected Species Report (Ref: WIE18671-116-R-19-2-1-PSR – refer to **Appendix G**).

A suite of ecological surveys and assessments have been undertaken for the 'Site' (planning application works area only), refer to **Appendix E, F and G**. It should be noted that other than the further roosting bats surveys completed in June to August 2022 (**Appendix G**) the surveys and assessment undertaken to date were carried out over a 'larger extended assessment area'. This is due to the proposed operations and activities as part of the planning application being insufficiently detailed when the ecological surveys and assessment were required to be undertaken, and therefore a conservative approach was utilised.

The surveys and assessments undertaken to date comprise:

- Preliminary Ecological Appraisal (Ref: WIE18761-103-1-2-4-PEA) - Ecological data search, 'Extended' Phase 1 Habitat Survey (with habitats recorded to the UK Habitat Classification (UK Hab) system), Preliminary Roost Assessment (PRA) for roosting bats at buildings, walls and trees (external and ground based) and a survey for common invasive plant species;
- Protected Species Report (Ref: WIE18671-103-R-4-2-3-PSR) – Northern boundary wall inspections, evening emergence roosting bat surveys and bat activity and automated detector surveys; and
- Protected Species Report (Ref: WIE18671-116-R-19-2-1-PSR) – Northern boundary wall inspections (within the Site), evening emergence and pre-dawn re-entry roosting bat surveys (at buildings10/11, 12 and 14 assessed to have roosting bat potential, within the Site) and peregrine falcon and breeding bird surveys.

Habitats

Using the information obtained in the PEA, during the 'Extended' Phase 1 Habitat Survey (**Appendix E**) the larger extended assessment area was found to be dominated by buildings and hardstanding, comprising a large former brewery complex. Other habitats present (not defined to UK Habs for clarity) at the larger extended assessment area include trees; ornamental planting; and small areas of ephemeral and tall ruderal vegetation. The Site was found to be dominated by buildings and hardstanding only.

Invasive plant species were recorded within the larger extended assessment area, including several species listed under Schedule 9 of the WCA (as amended) including Virginia creeper, Himalayan balsam and false-acacia. The Virginia creeper appeared to be spreading from adjacent properties rather than originating from the larger extended assessment area itself. Furthermore, several floral species listed under the London Invasive Species Initiative (LISI), comprising butterfly bush, tree of heaven and false-

acacia were also recorded at the larger extended assessment area. No invasive plant species were recorded at the Site.

All of the habitats present on larger extended assessment area and the Site are both nationally and locally common, a full description of which is provided within **Appendix E**.

Protected and Notable Faunal Species

The below sections summarise the findings of ecological surveys undertaken with regard to protected species. A full description of the baseline conditions of the larger extended assessment area and Site in relation to each species group is provided within **Appendix F and G**.

Bats

Based on the results of the bat surveys undertaken in 2021 at the larger extended assessment area (that included the Site) and in 2022 at the Site (surveys at the northern boundary wall and buildings 10/11, 12 and 14) no roosting bats were confirmed to be present on Site. However, and with due regard to the historical surveys, undertaken at the larger extended assessment area as a precautionary approach, building 9 (the Maltings, identified as Building 8 in **Appendix E** and **F**) off Site, is assessed to be a historical day roost for a low number of soprano pipistrelle bats as recorded back in 2019. In addition, the habitats at the larger extended assessment area and the River Thames, directly adjacent to the northern boundary of the larger extended assessment area, are used by a low level of bat species typically considered not to be light sensitive. Nonetheless, a diverse group of bat species were recorded.

Peregrine Falcon and Breeding Birds

Based on the results of the peregrine falcon and breeding bird surveys undertaken at the larger extended assessment area (that included the Site) between June and July 2022, no peregrine falcons were confirmed to be present. However, and as a precautionary approach and with due regard to the incidental recording of peregrine falcon roosting at building 9 (the Maltings) this building is assessed to be a historical roost (non-breeding) site.

The results of the peregrine falcon and breeding bird surveys undertaken at the larger extended assessment area (that included the Site) between June and July 2022 also confirmed breeding feral pigeons at building 3. In addition, feral pigeon nesting was confirmed at building 6, 8, 9 and 17 and other activity (perching flying in/out etc) confirmed at buildings 3, 4, 5, 12 (on Site) and 13. Grey wagtail were recorded signing and lesser black backed gull perching on/from the roof of building 12 (on Site). During the bird surveys a total of 12 bird species were seen either on or immediately adjacent to the larger extended assessment area. Birds seen overflying the larger extended assessment area but not interacting with it were not recorded. Species recorded at the larger extended assessment area and their likely breeding status include;

- Lesser black-backed gull *Larus fuscus* - Possible breeding
- Feral pigeon *Columba livia* - Confirmed breeding
- Wood pigeon *Columba palumbus* - Probable Breeding
- Magpie *Pica pica* - Possible breeding
- Carrion crow *Corvus corone* - Possible breeding
- Wren *Troglodytes troglodytes* - Possible breeding
- Starling *Sturnus vulgaris* - Possible breeding
- Robin *Erithacus rubecula* - Possible breeding

- House sparrow *Passer domesticus* - Probable breeding
- Grey wagtail *Motacilla cinerea* - Probable breeding
- Pied wagtail *Motacilla alba* - Possible breeding
- Goldfinch *Carduelis carduelis* - Possible breeding

The peregrine falcon and breeding bird surveys detailed above were undertaken due to the recorded presence of peregrine falcon at the larger extended assessment area at building 3 and 9 on the 4th October 2021. On this day, a single peregrine falcon was heard calling from the direction of building 3 (referred to as building B2 in **Appendix E** and **F**) during the day and then during an evening emergence bat survey on the same day at building 9, where a single peregrine falcon was observed entering the south west corner (Appendix B; Plate 2 of **Appendix F**) (8 storeys high).

It is assessed that the peregrine recorded entering building 9 had only recently started to roost at this building, and it is very unlikely that a breeding pair had taken residence. This assessment was based on the results of the PEA data search as extended through consultation with London Peregrine Partnership (LPP). Furthermore, this was the only evidence / sighting of peregrine falcon at the larger extended assessment area (that includes the Site) during a six-year period (when ecologists have been present undertaking various surveys for previous planning applications). In consultation with the LLP on the 28th September 2021, regarding the presence of peregrine falcon at the vicinity of the larger extended assessment area and Site, LPP stated that no known records of breeding pairs are in the local area either recent or historical.

4.3.2 Assessment

Filming will be limited to inside the Bottling Plant / Packaging Building (Building 12 of **Figure 2**) and the Sports Pavilion (Building 14 of **Figure 2**). Building 12 will have a 'closed set' erected. An external area adjacent to the Maltings building (Building 9) will be used for filming. Ancillary offices will be located within the Former Engineers Store / Former Bottling Hall (Building 11 of **Figure 2**) and the East Gatehouse (Building 15 of **Figure 2**) will be used for security purposes.

Habitats

No vegetation removal works are required to be undertaken to facilitate filming activities and any works to buildings will be limited to set construction only. Consequently, any effects upon those habitats present would be **insignificant**.

Bats

As a result of the bats surveys undertaken in 2021 and 2022 on Site (at the northern boundary wall and at buildings 10/11, 12 and 14) roosting bats are assessed to be likely absent from these structures and direct impacts would be **insignificant**.

Nonetheless, and in the absence of mitigation, indirect impacts from the lighting associated with external filming within the areas identified in **Figure 2** could have a significant effect if any light spill occurs to building 9 (the Maltings) located directly adjacent to the Site, as it is recorded to be a historical roost site. In addition, indirect impacts from lighting could have significant indirect effect if any light spill occurs to the southern boundary wall located directly adjacent to the Site (to the east of building 10/11) as two roost sites (single pipistrelle recorded to re-entering during a pre-dawn re-entry survey on 3rd August 2022) have been recently recorded as part of surveys to accompany the 2022 planning applications. Consequently, effects from light spill on these historical and recently recorded roost sites could be **significant** in the absence of appropriate mitigation.

Peregrine Falcon and Breeding Birds

As a result of the peregrine falcon and breeding bird surveys undertaken at the larger extended assessment area that includes the Site between June and July 2022, no peregrine falcons were confirmed to currently be present on Site. In addition, no breeding birds or nesting activity was recorded on Site. As such direct impacts would be **insignificant**.

Based on current survey results it is considered unlikely that the proposed filming activities would result in any indirect impacts from disturbance should the single roosting peregrine move back into building 9 (the Maltings). This is due to the current level of disturbance on Site (and from the wider urban area) from filming activities at building 12 that commenced and continue to function dating back to 2017 prior to any recordings of peregrine falcon being present on Site or the larger extended assessment area. Consequently, it is assessed that any effects upon such species would be **insignificant**. With regards to legislation regarding 'disturbance' afford to peregrine falcon, a Schedule 1 species as listed on the Wildlife & Countryside Act (WCA) an offence would only occur if the peregrine was disturbed when building a nest or is in a nest, on or near a nest containing eggs or young or disturbs dependent young of such a bird.

4.3.3 Mitigations Measures and Conclusions

The following ecological mitigation and enhancements will be provided as part of the Development. No mitigation is proposed for habitats given none are to be removed from Site.

Bats

There will be a requirement for some minimal lighting of the external film sets, as well as minimal lighting for safety purposes for vehicular and pedestrian routes. At present, the exact specification and details of the set lighting (including exact location and heights) are unknown. In order to mitigate for any potential significant indirect effects, the Applicant has committed to:

1. Any lighting would be directional on to the sets only, and would avoid upwards light spill;
2. No lighting rigs would be used;
3. There would be no lighting of semi-natural habitats such as trees;
4. There would be no lighting of the Maltings Building; and
5. No lighting of the sets would occur other than within the hours of operation of the Site (i.e. 6am-9pm Monday to Friday and 8am-4pm Saturday and Sunday), unless otherwise agreed in writing with the local planning authority.

Consequently, and the above mitigation actioned, it is assessed that effects upon roosting, foraging and commuting bats would be **insignificant**.

Ecological enhancement measures for roosting bats are to also be provided. As agreed with LBRuT 5 bat boxes will be provided at the adjacent Mortlake Green off Site. This shall be delivered by way of a legal agreement.

Peregrine Falcon and Breeding Birds

Although no significant impacts direct or indirect are assessed to occur to breeding birds a precautionary mitigation measure will be provided. At building 12 and although no breeding or nesting birds were recorded but given the grey wagtail, lesser black backed gull and feral pigeon (single bird recorded to be flying out of the east side of the building) activity witnessed, the Applicant has committed to an Ecology Clerk of Works (ECoW) undertaking a final nesting/breeding bird inspection at building 12 prior to the development works commencing. The inspection will be undertaken to ensure that no birds have started

to breed/nest at the building that could be directly impacted from film set activity that could cause the intentional killing or injury to/of the bird or destruction of its nest whilst in use.

No precautionary mitigation measures are assessed to be required for peregrine falcon.

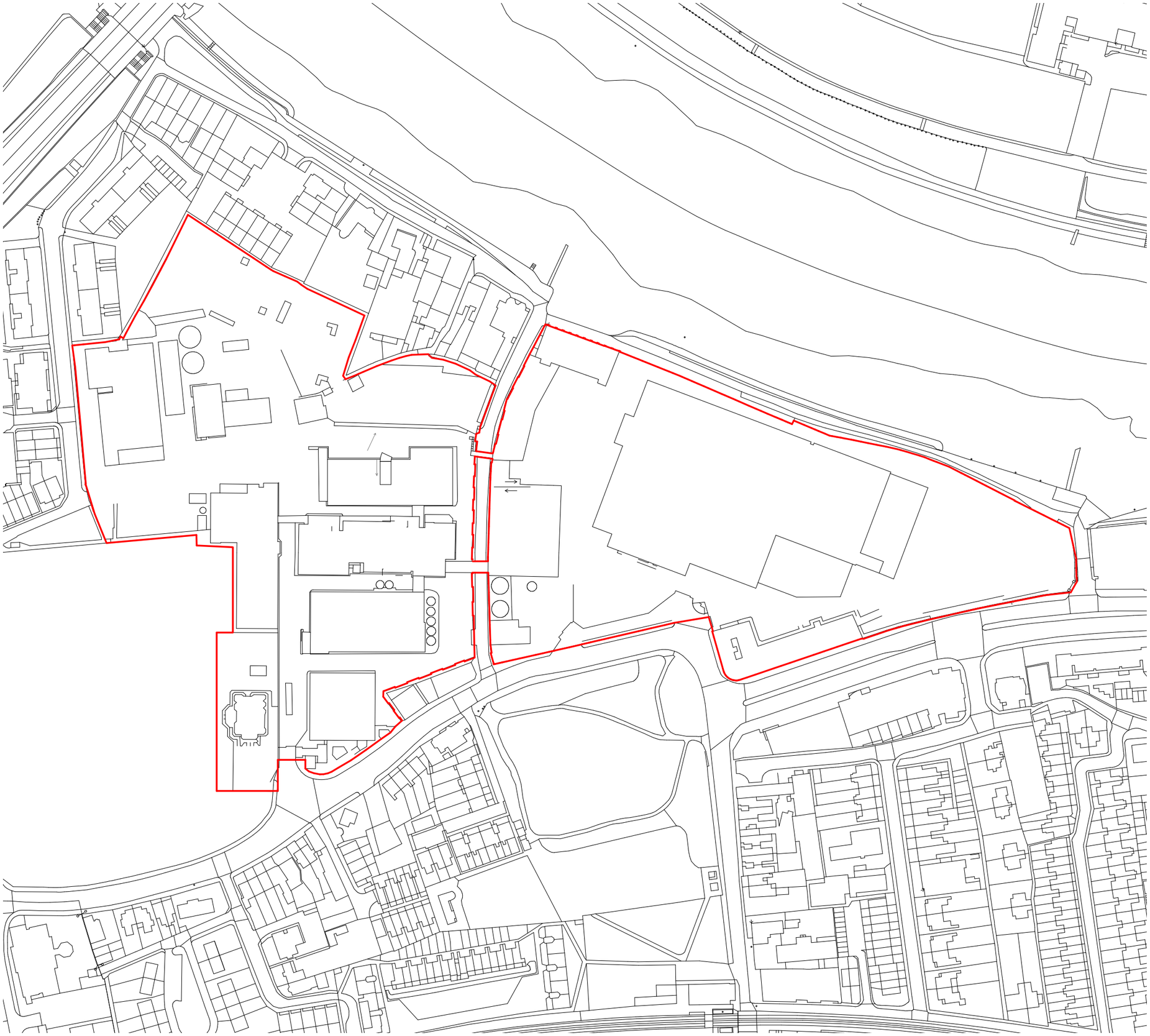
Ecological enhancement measure for breeding birds are to also be provided. As agreed with LBRuT 5 bird boxes will be provided at the adjacent Mortlake Green off Site. This shall be delivered by way of a legal agreement.

5. Summary of Proposed Mitigation Measures

The following mitigation measures are proposed as part of the permanent use of the Site for filming activities:

- Should fixed external plant be introduced as part of the usage, mitigation should consist of the procurement of 'low noise' plant, provision of screening or enclosure;
- Should fuels, chemical/paints or oils brought on to the Site they would be appropriately stored in double-skinned, bunded tanks or cabinets with drip trays situated above hardstanding, and with spill kits retained nearby;
- A number of mitigation measures with respect to lighting have been committed to by the Applicant to minimise the indirect impacts, thus:
    1. Any lighting would be directional on to the sets only, and would avoid upwards light spill;
    2. No lighting rigs would be used;
    3. There would be no lighting of semi-natural habitats such as trees;
    4. There would be no lighting of the Maltings Building; and
    5. No lighting of the sets would occur other than within the hours of operation of the Site (i.e. 6am-9pm Monday to Friday and 8am-4pm Saturday and Sunday), unless otherwise agreed in writing with the local planning authority.
- At building 12 and although no breeding or nesting birds were recorded but given the grey wagtail, lesser black backed gull and feral pigeon (single bird recorded to be flying out of the east side of the building) activity witnessed, the Applicant has committed to an Ecology Clerk of Works (ECoW) undertaking a final nesting/breeding bird inspection at building 12 prior to the Development works commencing. The inspection will be undertaken to ensure that no birds have started to breed/nest at the building that could be directly impacted from film set activity that could cause the intentional killing or injury to/of the bird or destruction of its nest whilst in use.

FIGURES



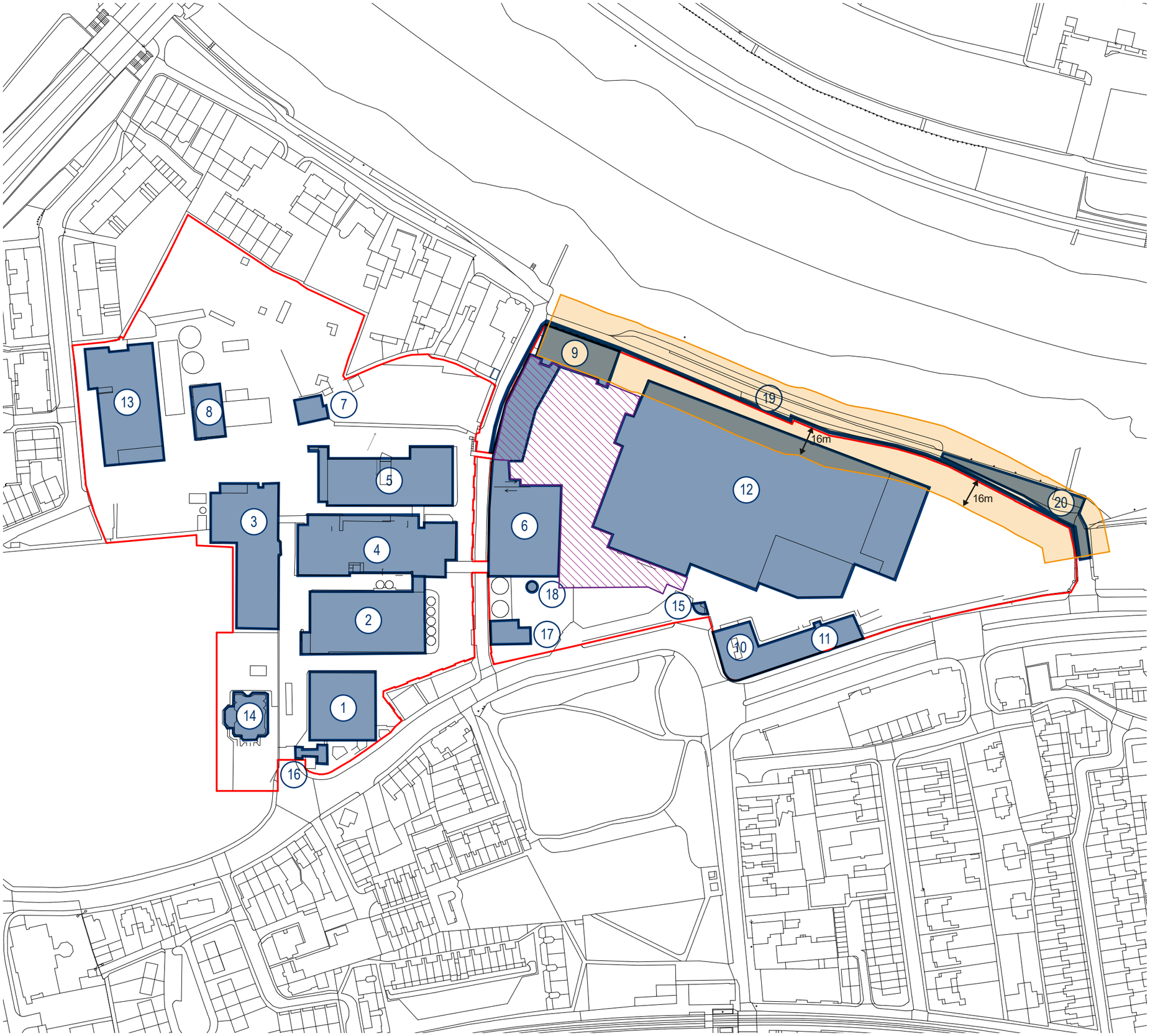
Site Boundary

N

Project Details	WIE18671-116: Stag Brewery Permanent Filming Use Application
Figure Title	Figure 1: Planning Application Boundary
Figure Ref	WIE18671-116_GR_EnvR_1A
Date	February 2023
File Location	\\s-lncs\wiel\projects\wie18671\100\graphics\19\issued figures

www.watermangroup.com

Source: Squire & Partners



- Site Boundary
- 16m Exclusion Zone from Tidal Flood Defence
- 1 P.O.B
- 2 Brewhouse
- 3 Process Buillding
- 4 Chip Cellar
- 5 Finishing Cellar
- 6 Power House
- 7 Powder Store
- 8 Effluent Treatment
- 9 Maltings
- 10 Former Hotel
- External Filming Use Area
- 11 Former Bottling Hall
- 12 Packaging
- 13 Stable Court
- 14 Sports Club
- 15 East Gatehouse
- 16 West Gatehouse
- 17 CO2 Block
- 18 Chimney Stack
- 19 Flood Defence Wall
- 20 Railway Tracks, Granite Paving and River Moorings

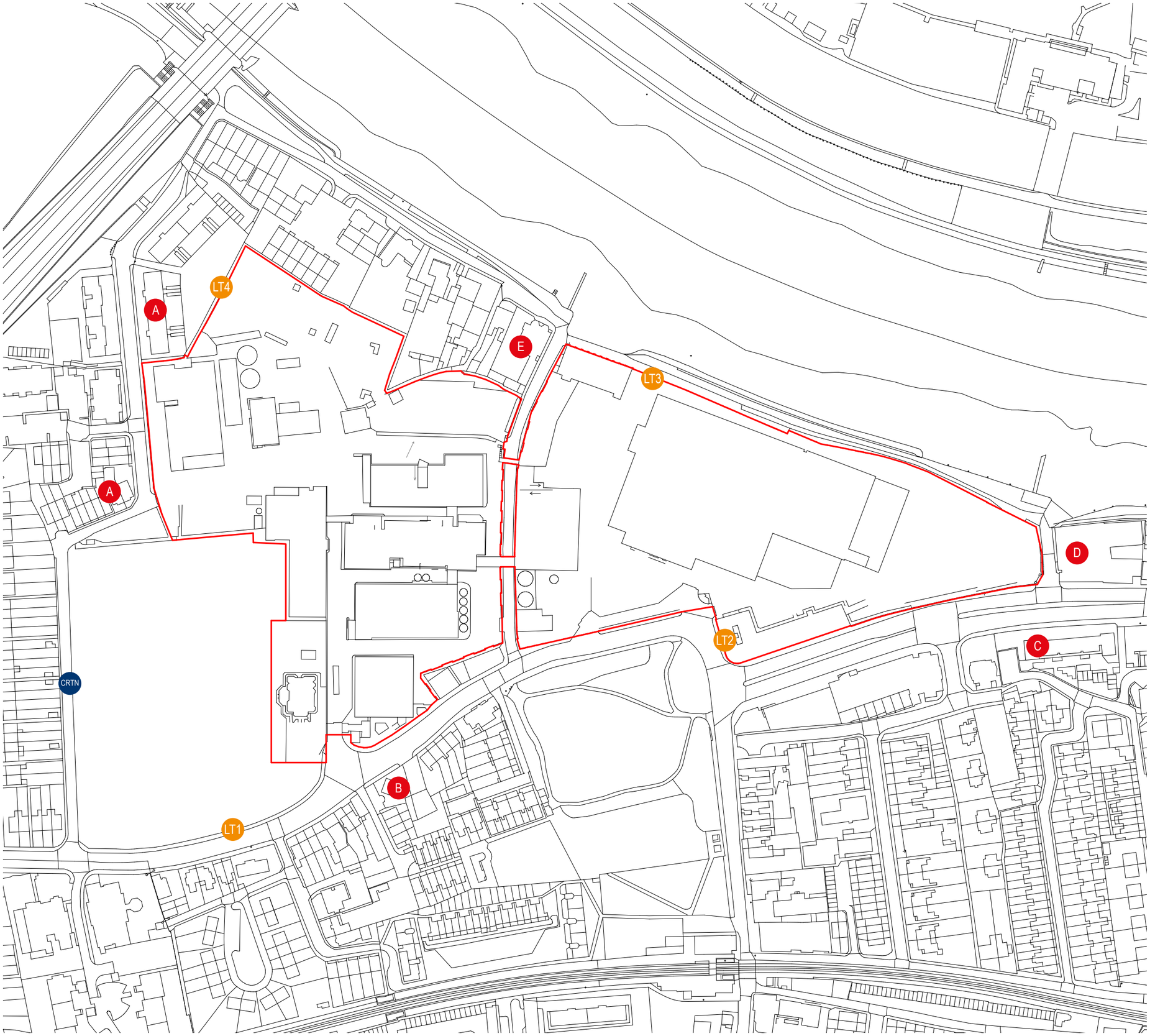
N

0 25 62.5 125

Metres

Source: Squire & Partners

Project Details	WIE18671-116: Stag Brewery Permanent Filming Use Application
Figure Title	Figure 2: Existing Buildings and Structures on the Site
Figure Ref	WIE18671-116_GR_EnvR_2A
Date	February 2023
File Location	\\s-lncs\wiel\projects\wie18671\100\graphics\19\issued figures



Source: Squire & Partners

waterman

- Site Boundary
- LT — Long Term Noise Monitoring Location
- CRTN — CRTN Noise Monitoring Location
- X — Noise Sensitive Receptor

N

Project Details	WIE18671-116: Stag Brewery Permanent Filming Use Application
Figure Title	Figure 3: Noise Monitoring and Sensitive Receptor Locations
Figure Ref	WIE18671-116_GR_EnvR_3A
Date	February 2023
File Location	\\s-lncs\wiel\projects\wie18671\100\graphics\19\issued figures

www.watermangroup.com

APPENDICES

A. Glossary of Acoustic Terminology

Appendix A: Glossary of Acoustic Terminology

Decibels (dB)

Noise can be defined as unwanted sound. Sound in air can be considered as the propagation of energy through the air in the form of oscillatory changes in pressure. The size of the pressure changes in acoustic waves is quantified on a logarithmic decibel (dB) scale firstly because the range of audible sound pressures is very great, and secondly because the loudness function of the human auditory system is approximately logarithmic.

The dynamic range of the auditory system is generally taken to be 0dB to 140dB. Generally, the addition of noise from two sources producing the same sound pressure level, will lead to an increase in sound pressure level of 3dB. A 3dB noise change is generally considered to be just noticeable, a 5dB change is generally considered to be clearly discernible and a 10dB change is generally accepted as leading to the subjective impression of a doubling or halving of loudness.

Examples of typical sound intensity levels within the decibel range of 0 to 120dB are listed below:

- Four engine jet aircraft at 100m 120dB
- Riveting of steel plate at 10m 105dB
- Pneumatic drill at 10m 90dB
- Circular wood saw at 10m 80dB
- Heavy road traffic at 10m 75dB
- Telephone bell at 10m 65dB
- Male speech, average at 10m 50dB
- Whisper at 10m 25dB
- Threshold of hearing, 1000Hz 0dB

Frequency

Frequency (or pitch) of sound is measured in units of Hertz. 1 Hertz (Hz) = 1 cycle/second. The range of frequencies audible to the human ear is around 20Hz to 18,000Hz. The capability of a person to hear higher frequencies will reduce with age. The ear is more sensitive to medium frequency than high or low frequencies.

A-Weighting

The auditory system is not equally sensitive throughout this frequency range. This is taken into account when making acoustic measurements by the use of A-weighting, a filter circuit which has a frequency response similar to the human auditory system. All the measurement results referred to in this report are A-weighted.

Sound Power Level (L_W) and Sound Pressure Level (L_P)

These two units are used to express sound level. Sound power level is the inherent property of a source, whilst sound pressure level is dependent on surroundings/distance/directivity etc. The sound level that is measured on a meter is the sound pressure level, L_P.

$L_{Aeq,T}$

The A-weighted sound pressure level of the steady sound which contains the same acoustic energy as the noise being assessed over a specific time period, T.

L_{A10}	The noise level exceeded for 10% of the measurement period. It has been used in the UK for the assessment of road traffic noise.
L_{A90}	The noise level exceeded for 90% of the measurement period. It is generally used to quantify the background noise level, the underlying level of noise which is present even during the quieter parts of the measurement period.
L_{Amax}	Maximum value that the A-weighted sound pressure level reaches during a measurement period. $L_{Amax\ F}$, or Fast, is averaged over 0.125 of a second and $L_{Amax\ S}$, or Slow, is averaged over 1 second. Maximum noise levels were all monitored using the Fast response.
$L_{10,1\text{-hour}}$	The L_{10} level measured over a 1-hour period.
$L_{10,18\text{-hour}}$	The arithmetic average of the $L_{10,1\text{-hour}}$ levels for the 18-hour period between 06:00 hours and 24:00 hours on a normal working day. It is a common traffic noise descriptor.
Ambient noise	The totally encompassing sound in a given situation.
Free Field	Free field noise levels are measured or predicted such that there is no contribution made up of reflections from nearby building façades.
Façade Noise Level	A noise level measured or predicted at the façade of a building, typically at a distance of 1m, containing a contribution made up of reflections from the façade itself (+3dB).
Sound Reduction Index (R)	The sound reduction index is a single-number rating of the sound reduction through a wall or other building element. Since the sound reduction may be different at different frequencies, test measurements are subjected to a standard procedure which yields a single number that is about equal to the average sound reduction in the middle of the human hearing range.
Weighted Sound Reduction Index (R_W)	The R_W incorporates a correction for the ears' response. It is derived from comparing the window sound insulation to frequency curve with a family of reference curves.
R_{TRA}	Traffic noise reduction – by adopting an idealised but typical spectrum of road traffic noise dominated by low frequencies, an index R_{TRA} (reduction of road traffic noise) is derived. By comparing this with the sound reduction of the window in dB(A) it represents the likely in service performance for road traffic noise attenuation.
$D_w + C_{tr}$	An on-site measure of airborne sound insulation. The C_{tr} correction is a spectrum adaptation term which 'penalises' low frequency noise.
Vibration	A to-and-fro motion; a motion which oscillates about a fixed equilibrium position.
VDV	Vibration Dose Value is a measure of vibration exposure.
PPV	Peak Particle Velocity is the parameter normally used to assess ground vibration measured in mm/s. Peak particle velocity refers to the maximum speed of a particular particle as it oscillates about a point of equilibrium.

B. Baseline Environmental Noise Survey

Appendix B: Environmental Baseline Noise Survey

A baseline environmental noise survey was undertaken from Thursday 11th July to Tuesday 16th July 2019, covering a typical weekday and weekend period in order to establish and quantify the existing noise climate at and within the vicinity of the Site. The monitoring locations are described in Table B1 and illustrated in Figure 3.

Table B1: Description of Baseline Noise Monitoring Locations

Monitoring Location (Refer to Figure 3)	Description	Observations and Predominant Noise Sources
LT1	Free-field measurement at the south-western Site boundary overlooking Lower Richmond Road (the A3003). Microphone located approx. 1.2m above ground level (AGL).	Noise climate dominated by constant vehicular traffic on Lower Richmond Road / Mortlake High Street. Although intermittent in comparison, noise from low flying aircraft movements in to Heathrow Airport (located approx. 11km to the west) was significant. Contributory noise from human activities, distant road noise and distant aircraft also influence the noise climate to some extent.
LT2	Façade measurement on the second floor of the Stag Brewery Co. building at the south-eastern Site boundary overlooking Mortlake High Street. Microphone located approx. 6.0m AGL.	
LT3	Façade measurement on the boundary wall to the north-east of the Site overlooking the River Thames. Microphone located approx. 4.0m AGL.	Noise climate dominated by aircraft noise, as detailed above. Contributory noise from local and distant road traffic and occasional passing cyclists and pedestrians on the footpath over the river.
LT4	Free-field measurement at the south-western boundary of the Site orientated towards Clifford Avenue/Chiswick Bridge (the A316). Microphone located approx. 2.5m AGL.	Noise climate influenced by constant vehicular traffic on Clifford Avenue. Contributory noise from domestic activities at nearby residential dwellings.
CRTN	Free-field measurement along Williams Lane approx. 1m from road edge. Microphone located approx. 1.2m AGL	Noise climate in the area dominated by distant road traffic from Lower Richmond Road and the surrounding transport network. Occasional cars passing along Williams Lane and aircraft passing overhead also contributed to the noise climate at this location.

A summary of the measured daytime (07:00 to 23:00) and night-time (23:00 to 07:00) noise levels are presented in Table B2, with full results displayed in graphically (long-term) in time history format in Graphs B1 to B4. Summary of the CRTN measurement is are presented in Table B3 and illustrated in Graph B5.

Table B2: Summary of Measured Noise Levels

Monitoring Location (Figure 3)	Date	Period	$L_{Aeq,T}$ dB		$L_{A10,T}$ dB		$L_{A90,T}$ dB		$L_{AFmax,5min}$ dB	
			Range	Ave[1]	Range	Ave[2]	Range	Ave[2] (Mode)	Range	90th Percentile[3]
LT1	Thursday (11/07/2019)	Night (8-hr)	51 – 73	66	45 – 76	67	34 – 63	43 (37)	70 – 87	84
	Friday (12/07/2019)	Day (16-hr)	65 – 81	72	68 – 76	74	50 – 66	60 (60)	75 – 110	86
		Night (8-hr)	54 – 78	66	51 – 74	68	35 – 55	43 (40)	73 – 103	83
	Saturday (13/07/2019)	Day (16-hr)	66 – 77	70	70 – 75	73	46 – 63	56 (57)	76 – 104	84
		Night (8-hr)	35 – 79	66	36 – 74	66	31 – 55	39 (36)	43 – 101	84
	Sunday (14/07/2019)	Day (16-hr)	67 – 82	72	72 – 79	75	41 – 66	57 (59)	78 – 105	86
		Night (8-hr)	45 – 72	66	41 – 76	65	33 – 58	40 (34)	56 – 91	84
	Monday (15/07/2019)	Day (16-hr)	66 – 79	71	70 – 76	75	40 – 66	57 (58)	78 – 103	87
		Night (8-hr)	54 – 77	67	37 – 77	65	33 – 63	40 (36)	72 – 101	85
LT2	Thursday (11/07/2019)	Night (8-hr)	84 – 70	62	50 – 72	64	33 – 63	45 (37)	64 – 93	78
	Friday (12/07/2019)	Day (16-hr)	64 – 83	69	67 – 73	69	51 – 64	61 (62)	71 – 103	86
		Night (8-hr)	53 – 82	65	54 – 73	64	32 – 58	44 (39)	63 – 102	77
	Saturday (13/07/2019)	Day (16-hr)	62 – 82	68	65 – 71	69	49 – 64	59 (59)	69 – 103	85
		Night (8-hr)	37 – 80	64	39 – 69	63	28 – 58	40 (36)	54 – 100	75
	Sunday (14/07/2019)	Day (16-hr)	62 – 81	69	66 – 77	69	49 – 65	59 (61)	69 – 101	84
		Night (8-hr)	44 – 69	62	38 – 71	63	31 – 63	41 (63)	58 – 87	78
	Monday (15/07/2019)	Day (16-hr)	61 – 75	67	65 – 72	69	45 – 65	59 (62)	69 – 98	85
		Night (8-hr)	37 – 75	63	38 – 73	63	32 – 64	42 (34)	46 – 95	77
LT3	Thursday (11/07/2019)	Night (8-hr)	39 – 64	54	42 – 68	51	32 – 53	40 (37)	48 – 81	73
	Friday (12/07/2019)	Day (16-hr)	54 – 68	60	57 – 68	63	49 – 57	53 (54)	63 – 94	76
		Night (8-hr)	42 – 63	54	46 – 67	53	36 – 51	43 (41)	49 – 87	74
	Saturday (13/07/2019)	Day (16-hr)	50 – 66	59	51 – 69	60	47 – 55	51 (52)	55 – 86	73
		Night (8-hr)	39 – 52	47	43 – 55	48	61 – 48	40 (39)	46 – 73	60

Monitoring Location (Figure 3)	Date	Period	$L_{Aeq,T}$ dB		$L_{A10,T}$ dB		$L_{A90,T}$ dB		$L_{AFmax,5min}$ dB	
			Range	Ave[1]	Range	Ave[2]	Range	Ave[2] (Mode)	Range	90th Percentile[3]
LT4	Sunday (14/07/2019)	Day (16-hr)	49 – 65	54	51 – 68	55	46 – 54	50 (50)	55 – 87	72
		Night (8-hr)	41 – 57	48	44 – 63	49	37 – 50	42 (38)	47 – 68	64
	Monday (15/07/2019)	Day (16-hr)	46 – 73	55	49 – 63	54	41 – 53	49 (48)	53 – 92	72
		Night (8-hr)	36 – 65	54	41 – 69	49	29 – 54	37 (34)	44 – 82	72
	Thursday (11/07/2019)	Night (8-hr)	37 – 63	54	39 – 68	48	30 – 51	38 (38)	43 – 80	73
	Friday (12/07/2019)	Day (16-hr)	48 – 68	59	50 – 67	63	45 – 53	49 (50)	60 – 95	76
		Night (8-hr)	37 – 62	54	40 – 67	51	31 – 50	39 (37)	44 – 76	73
	Saturday (13/07/2019)	Day (16-hr)	48 – 62	57	50 – 67	58	44 – 53	48 (48)	53 – 81	74
		Night (8-hr)	36 – 50	44	40 – 53	46	28 – 47	38 (38)	43 – 67	60
	Sunday (14/07/2019)	Day (16-hr)	45 – 63	52	47 – 66	53	43 – 51	47 (48)	51 – 78	67
		Night (8-hr)	38 – 55	46	41 – 57	47	31 – 51	39 (35)	45 – 70	58
	Monday (15/07/2019)	Day (16-hr)	44 – 69	52	46 – 62	52	38 – 52	46 (45)	50 – 94	71
		Night (8-hr)	38 – 55	46	41 – 57	47	31 – 51	39 (35)	45 – 70	58

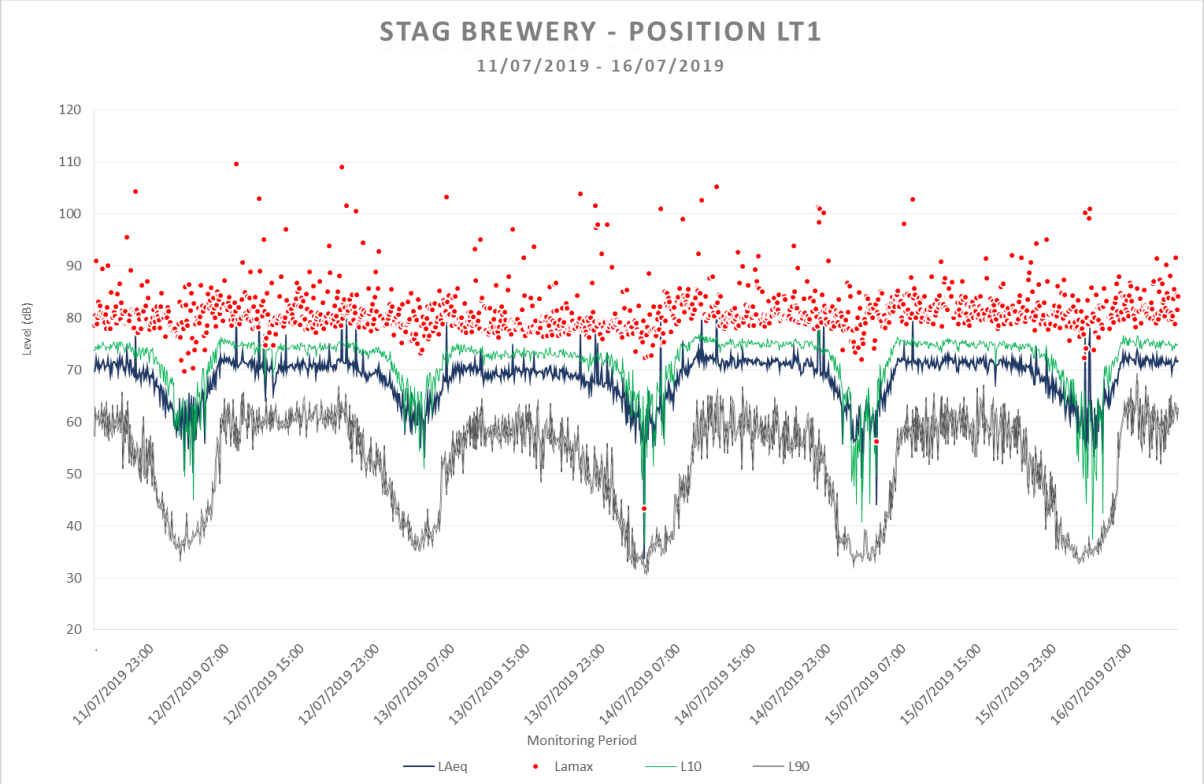
Notes: [1] Logarithmic average over the day/evening/night survey periods; [2] Arithmetic average over the day/evening/night survey periods; [3] The 90th percentile L_{AFmax} value (equivalent to the 10th highest measured L_{AFmax} level) is presented and considered representative of typical L_{AFmax} levels experienced. All figures rounded to nearest whole decibel, only full periods reported.

Table B3: Summary of CRTN Measured Noise Levels (Williams Lane)

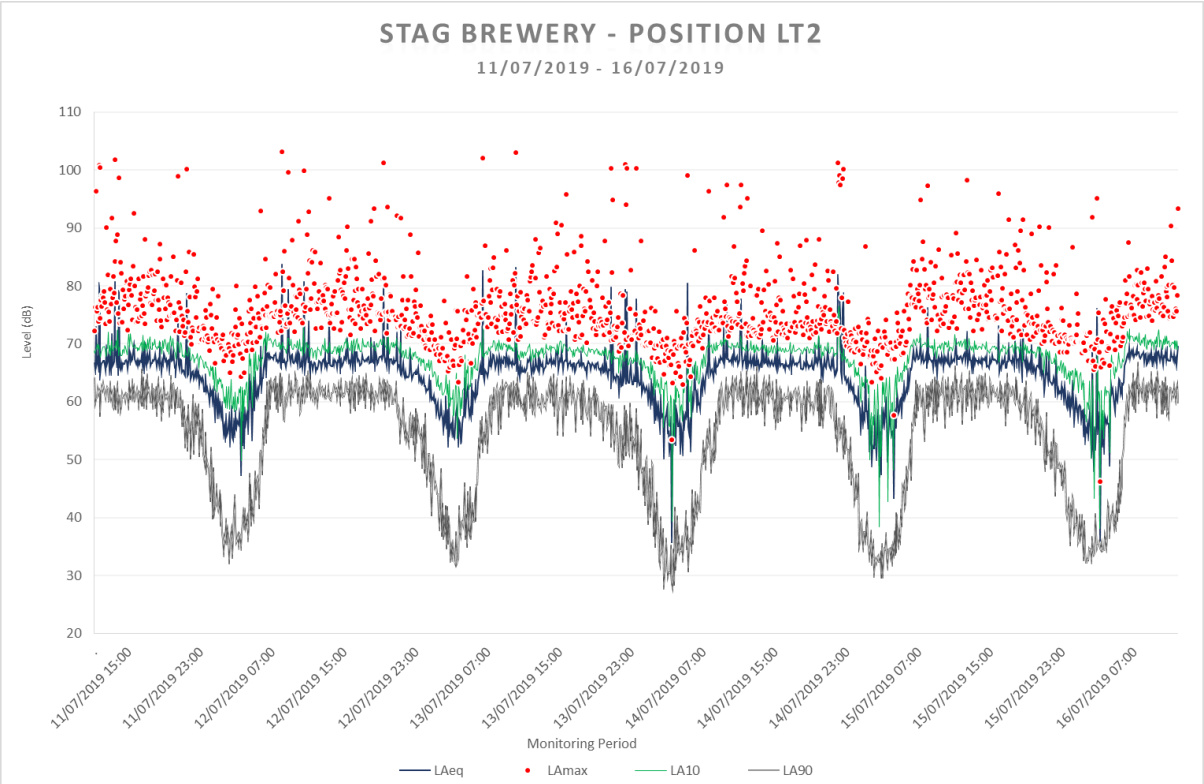
Monitoring Location (Figure 3)	Period	Duration	$L_{Aeq,T}$ dB	$L_{A10,T}$ dB	$L_{A90,T}$ dB	$L_{AFmax,5min}$ dB
			Ave[1]	Ave[2]	Ave[2]	Ave[2]
CRTN2	Day	3-hour	58	61	45	74

Notes: [1] Logarithmic average over the daytime survey periods; [2] Arithmetic average over the daytime survey periods. All figures rounded to nearest whole decibel.

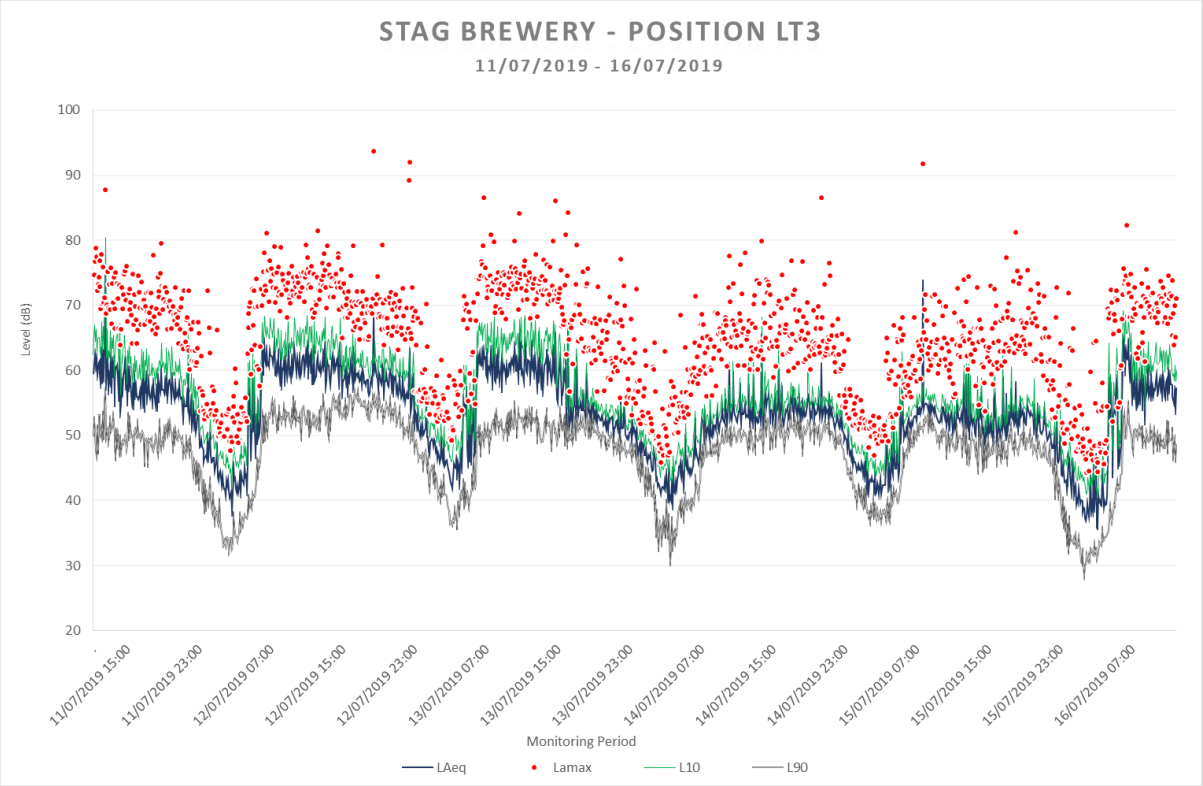
Graph B1: LT1 Time History Plot – Lower Richmond Road



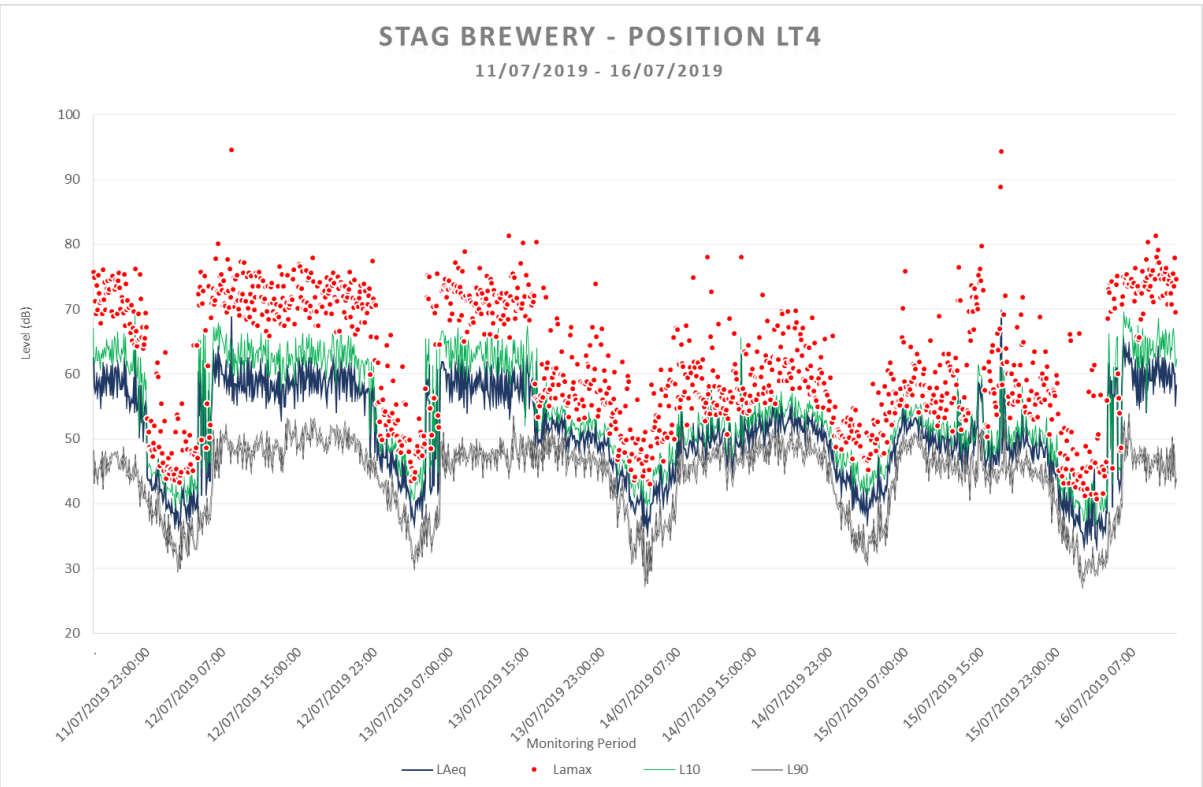
Graph B2: LT2 Time History Plot – Mortlake High Street



Graph B3: LT3 Time History Plot – River Thames



Graph B4: LT4 Time History Plot – Northwest Near Williams Lane



Graph B5: CRTN Plot – Williams Lane

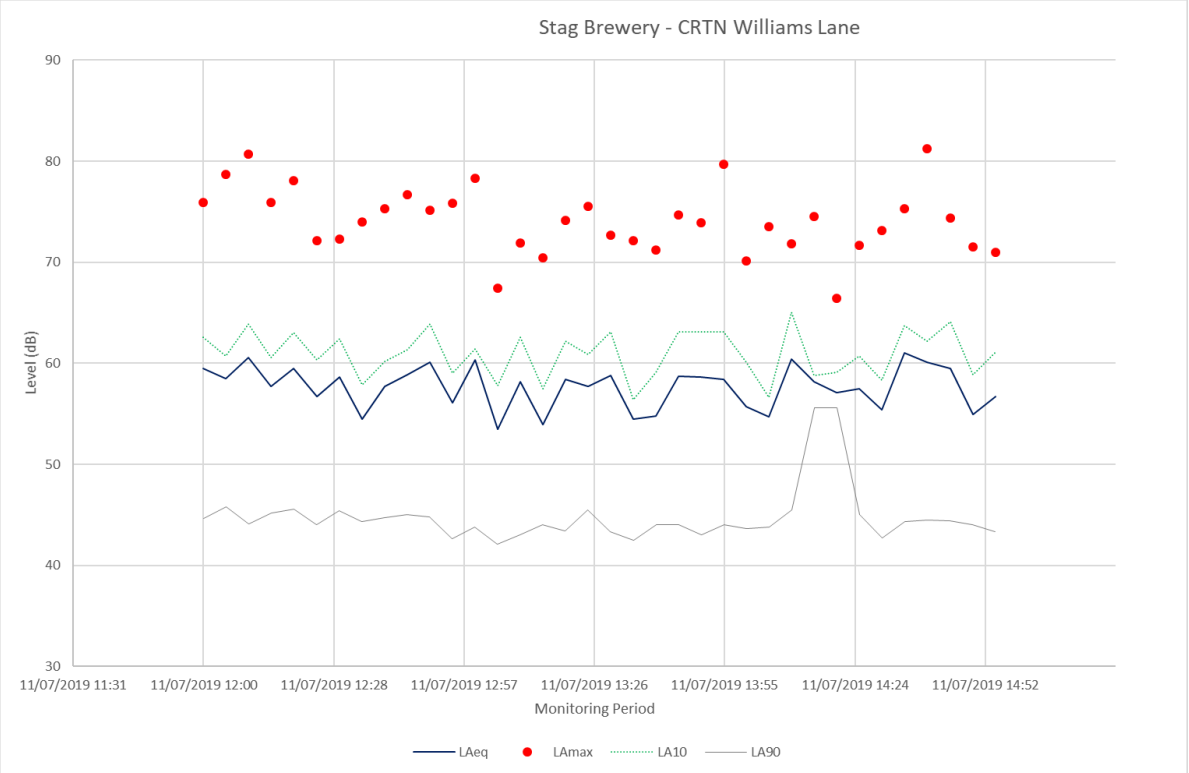


Table B4 presents details for the equipment used for the baseline noise survey.

Table B4: Equipment Details

Measurement Location	Equipment	Model	Serial No.
LT1	Sound Level Meter (Type 1)	Rion NL-32	00503263
	Pre-amplifier	Rion NH-21	32877
	Microphone	Rion UC-53A	316668
LT2	Sound Level Meter (Type 1)	Rion NL-32	00613614
	Pre-amplifier	Rion NH-21	35799
	Microphone	Rion UC-53A	321552
LT3	Sound Level Meter (Type 1)	Rion NL-52	00632037
	Pre-amplifier	Rion NH-25	32065
	Microphone	Rion UC-59	14750
LT4	Sound Level Meter (Type 1)	Rion NL-52	00610211
	Pre-amplifier	Rion NH-25	10205
	Microphone	Rion UC-59	105742
CRTN	Sound Level Meter (Type 1)	Rion NA-28	01170649
	Pre-amplifier	Rion NH-25	70667
	Microphone	Rion UC-59	02929
All	Calibrator	Rion NC-74	34536109

C. Road Traffic Noise Assessment Calculations

Appendix C: Road Traffic Noise Assessment Calculations

Table C1: Road Traffic Noise Calculation With and Without Permanent Filming Use

Road		Without Permanent Filming Use			With Permanent Filming Use			% Flow Change	BNL 18hr		
		2020			2020						
		% HGV	Speed (kph)	Flow	% HGV	Speed (kph)	Flow		2020 Without	2020 With	Change
1	A316 Clifford Ave	10.0	64.0	34283	10.0	64.0	34308	0.1	74.8	74.8	0.0
2	A316 Lower Richmond Road	6.0	48.0	37568	6.0	48.0	37597	0.1	72.9	72.9	0.0
3	South Circular (north of A316)	6.4	48.0	15197	6.4	48.0	15209	0.1	69.1	69.1	0.0
4	South Circular (south of A316)	4.1	48.0	21640	4.1	48.0	21645	0.0	70.0	70.0	0.0
5	A3003 Lower Richmond Road (Watney's Sports Ground)	8.9	45.5	18990	9.0	45.5	19061	0.4	70.5	70.6	0.1
6	A3003 Lower Richmond Road (Mortlake Green)	10.0	41.7	19174	10.0	41.7	19247	0.4	70.6	70.6	0.0
7	Williams Lane	7.1	41.1	699	7.4	41.1	735	5.0	50.9	51.5	0.6
8	Mortlake High Street	10.8	41.6	20190	10.8	41.6	20240	0.2	71.0	71.0	0.0
9	The Terrace (west of Barnes Bridge Station)	8.9	46.4	19383	9.0	46.4	19426	0.2	70.7	70.7	0.0
13	White Hart Lane (south of Mortlake High Street)	8.0	39.8	5446	8.0	39.8	5453	0.1	64.5	64.5	0.0
14	Sheen Lane (north of Level Crossing)	3.4	48.0	6544	3.4	48.0	6566	0.3	64.5	64.6	0.1

D. Air Quality Monitoring Report

Stag Brewery

Air Quality Monitoring Report

January 2019

Waterman Infrastructure & Environment Limited
Pickfords Wharf, Clink Street, London SE1 9DG, United Kingdom
www.watermangroup.com

Client Name:	Reselton Properties Limited
Document Reference:	WIE10667-104-AQMR-1-1-1
Project Number:	WIE10667-104

Quality Assurance – Approval Status

This document has been prepared and checked in accordance with Waterman Group's IMS (BS EN ISO 9001: 2008, BS EN ISO 14001: 2004 and BS OHSAS 18001:2007)

Issue	Date	Prepared by	Checked by	Approved by
Issue	January 2019	Andy Fowler Senior Consultant	Guido Pellizzaro Associate Director	Guido Pellizzaro Associate Director

Comments

Comments

Disclaimer

This report has been prepared by Waterman Infrastructure & Environment Limited, with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporation of our General Terms and Condition of Business and taking account of the resources devoted to us by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at its own risk.

Contents

Figures

Tables

Appendices

1. Introduction

1.1. A short-term air quality monitoring study for nitrogen dioxide (NO_2) was undertaken around Chertsey Court, Chalkers Corner in the London Borough of Richmond Upon Thames (LBRuT) (hereafter referred to as the 'Site').

1.2. The NO_2 diffusion tube monitoring study was undertaken by Waterman Infrastructure & Environment Limited ('Waterman IE') for a 6-month period, from July 2018 to January 2019. NO_2 monitoring was completed at eight locations around the Site, and at a further two monitoring locations at the approximate location of the proposed school to be introduced as part of the redevelopment proposals of the Stag Brewery development. The 10 monitoring locations are shown on **Figure 1**.

1.3. The monitoring locations were chosen to:

- Determine NO_2 concentrations at the façade of Chertsey Court to determine relevant residential exposure to traffic emissions;
- Ascertain whether NO_2 concentrations fall-off with distance from the roadside to the façade of Chertsey Court;
- Evaluate the effect of the existing landscaping at Chertsey Court on traffic emissions and thus NO_2 concentrations; and
- Ascertain the baseline conditions for the proposed school.

2. Methodology

2.1. In May 2016, Defra published the London Local Air Quality Management Technical Guidance (LLAQM.TG(16))[1] which sets out the approach to reviewing and assessing local air quality in the UK. The methodology, and processing of the results, of this monitoring are in accordance with LLAQM.TG(16).

2.2. The air quality monitoring study was undertaken for a six-month period from 9th July 2018 to 3rd January 2019 and consisted of deploying two NO_2 diffusion tubes at each of the 10 locations as shown in **Figure 1**.

2.3. At Chalkers Corner, the monitors were located on existing street furniture away from the road to form three transects (see **Figure 1**). This included:

- Three monitors at the kerbside of Chalkers Corner, located on traffic signage (IDs DT1; DT4 and DT6);
- Two monitors at the roadside of Chalkers Corner, located on the existing metal railings of Chertsey Court and facing the road (IDs DT2 and DT7);
- One monitor located in the carpark of Chertsey Court (ID DT5), located on existing signage; and
- Two monitors located on the façade of Chertsey Court on drain pipes, representative of concentrations residential users of Chertsey Court would be exposed to (ID DT3 and DT8).

2.4. The two school diffusion tubes were located on traffic signage in the carpark of the Stag Brewery Sports Club and are classified as roadside monitoring locations.

2.5. In addition to the monitoring at the Site, three tubes were deployed at the London Borough of Wandsworth (LBW) Putney automatic monitor (Grid Reference 524035, 175519) to evaluate the accuracy of the diffusion tubes (discussed further below under sub-heading 'Diffusion Tube Co-Location'). All diffusion tubes were changed monthly throughout the monitoring period, as per the guidance in LLAQM.TG(16).

2.6. The diffusion tubes were mounted approximately 2.0 metres (m) above ground level around the Site.

Diffusion Tubes

2.7. Diffusion tube monitoring is a method for screening the air quality in an area to give an indication of average air pollutant concentrations. The method consists of a tube with an appropriate absorbent material at one end, mounted on to street furniture. The preparation method used is 20% TEA (triethanolamine) in water and the tubes are exposed by removing the bottom cap to allow sampling.

2.8. Following the relevant exposure period, the cap is replaced, and the tube sent to a laboratory for analysis. For this study, the tubes were obtained from Gradko International Ltd (a UKAS Accredited laboratory) and, following exposure, were returned to Gradko for analysis.

Diffusion Tube Co-location

2.9. Diffusion tubes may systematically under or over-read NO_2 concentrations when compared to an automatic analyser. To improve accuracy, it is best practice to deploy duplicate / triplicate tubes specifically co-located with an automatic monitor to enable inter-comparison of monitored results

1 Defra, 2016, London Local Air Quality Management Technical Guidance LLAQM.(TG16)

and determine the 'bias' in diffusion tube results. This bias can then be corrected to improve the accuracy of the diffusion tube results, using a suitable bias-adjustment factor.

2.10. As part of the monitoring study, triplicate diffusion tubes were located at the LBW Putney automatic monitor to derive a local bias adjustment factor. This was the closest monitor to the Site with historic good data capture. A locally derived bias adjustment factor is more appropriate than using a national factor available from Defra[2] for the following reasons:

- The survey has not been carried out over a calendar year (the national factors have been determined on a calendar year basis); and
- NO_2 concentrations at the diffusion tube sites are significantly influenced by emissions from nearby roads. In accordance with existing diffusion tube guidance[3], the bias adjustment factors should be determined from co-location studies at similar monitoring locations.

2.11. The local bias spreadsheet tool, developed by Defra to help Local Authorities calculating precision, accuracy and bias adjustment factors[4], has been used to check the accuracy of the triplicate diffusion tubes with the Putney automatic monitor.

2.12. The spreadsheet provides a Coefficient of Variation (CV) of the diffusion tube results, which represents their precision and is an indicator of the overall performance of the diffusion tubes. Tube precision is separated into two categories, 'good' or 'poor'. Tubes are considered to have 'good' precision where the coefficient of variation of duplicate or triplicate diffusion tubes for eight or more periods during the year is less than 20%, and the average CV of all monitoring periods is less than 10%. Tubes are considered to have 'poor' precision where the CV of four or more periods is greater than 20% and/or the average CV is greater than 10%.

2.13. A summary of the data from the co-location study is presented in **Table 1** and a copy of the precision and accuracy spreadsheet presented in **Appendix A.**

Table 1: Co-location Data at Putney

Site	Diffusion Tubes		Automatic Monitor	Bias Adjustment
	Period Mean	Tube Mean CV (% Precision)	Period Mean	
Putney	33	2	32	0.97

2.14. The average CV for the co-location is less than 10%, and as such shows 'good' precision, and therefore the bias adjustment factor of **0.97** been applied to the monitoring results.

Diffusion Tube Annualisation

2.15. The short-term (6-month) sampling period is sufficient to provide a reasonable assessment of existing air quality in an area, and is a recommended monitoring duration set out in LLAQM.TG(16). However, the 6-month monitoring period is not an exact equivalent of an annual (12-month) mean, which relates to the NO_2 annual mean Air Quality Strategy (AQS) objective for the protection of human health at sensitive locations (including residential properties).

2 http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html

3 Laxen and Marner for Defra, 2006. The relationship between diffusion tube bias and distance from the road.

4 www.airquality.co.uk/archive/laqm/tools.php

2.16. Following guidance in Defra's LLAQM.TG(16) (Box 4.8), a long-term (12-month) correlation can be calculated by using the relationship between the short-term (6-month) period against the long-term (12-month) period for other local monitors. This adjustment process is known as 'annualisation'.

2.17. According to LLAQM.TG(16), to derive an annual mean concentration for the Site; data from two to four nearby long-term monitoring sites, located at urban background locations are required. It is estimated that the distance between sites should not be larger than 50 miles (80km).

2.18. There are a number of urban background automatic monitoring stations in central London, from which the following four urban background monitoring locations were selected:

- North Kensington – Kensington & Chelsea, approximately 7.2km from the Site;
- Bloomsbury - Camden, approximately 11.9km from the Site;
- Norbury Manor – Croydon, approximately 12.2km from the Site; and
- Elephant and Castle - Southwark, approximately 12.4km from the Site.

2.19. The above automatic monitors form part of the London Air Quality Network (LAQN) and monitoring data is available for all monitors for the latest full year to January 2019.

2.20. The ratio of the short-term monitoring period mean for NO_2 (9th July 2018 to 3rd January 2019) and the latest NO_2 annual mean concentration (available for 2018) at the four sites was obtained, as shown in **Table 2**.

Table 2: Adjustment Process to Estimate Annual Mean NO_2 Concentrations at the Site

Site	Annual Mean 2018	Period Mean	Ratio (AM/PM)
North Kensington, Kensington & Chelsea	27.6	26.1	1.056
Bloomsbury, Camden	36.5	32.6	1.117
Norbury Manor, Croydon	48.7	44.0	1.107
Elephant and Castle, Southwark	31.4	30.3	1.035
Average			**1.079**

2.21. The average of the four ratios between the sampling period and annual mean NO_2 concentrations was calculated as 1.079 (**Table 2**), and this was then applied to the short-term NO_2 diffusion tube results set out in **Table 3**. Following guidance in LLAQM.TG(16), given that the calculation is carried out using the ratio of the short-term monitoring period to the 2018 annual mean, the equivalent/estimated annual mean is for 2018.

3. Results

3.1. Box 1.1 of LLAQM.TG(16) set outs where the AQS objectives should apply. The following objectives and concentrations relevant to the monitoring locations are as follows:

- NO_2 annual mean of 40µg/m^3 – relevant for locations where members of the public might be regularly exposed, such as building façades of residential properties, schools, hospitals, care homes etc. For this study the annual mean AQS objective of 40µg/m^3 is relevant for the monitored concentrations at the façade of Chertsey Court and the proposed school sites only; and
- NO_2 hourly mean of 200µg/m^3 not to be exceeded more than 18 times a year. LLAQM.TG(16) states the hourly mean limit value and objective for NO_2 is unlikely to be exceeded at a roadside location where the annual-mean NO_2 concentration is less than 60µg/m^3. Relevant locations include pavements; car parks; bus stations, railway stations and any outdoor locations where members of the public might reasonably expect to spend one hour or longer. For this study the annual mean AQS objective of 60µg/m^3 (to be compared to the hourly objective) is relevant for the monitored concentrations at the kerbside, roadside and carpark sites only.

3.2. The results of the NO_2 diffusion tube monitoring are presented in **Table 3**, which shows the unadjusted collected NO_2 results; the co-location adjusted results; and the annualised results, (which are the results for consideration against the relevant AQS Objectives, as discussed above). The results in **Table 3** show:

- The monitors located on the façade of Chertsey Court (as 34.2µg/m^3 at DT3 and 32.8µg/m^3 at DT8) are below the annual mean NO_2 AQS objective of 40µg/m^3 and as such existing conditions at Chertsey Court are considered to be good;
- The highest concentrations are measured at the diffusion tubes located on the kerbside (as 43.0µg/m^3 at DT1; 42.7µg/m^3 at DT4; and 49.1µg/m^3 at DT6) due to these monitors being located directly above vehicle tailpipe emissions at Chalkers Corner. All kerbside locations are below the hourly equivalent annual mean NO_2 concentration of 60µg/m^3 and therefore the AQS objective is met at these monitoring locations;
- Similar, to the kerbside locations, monitored concentrations at the diffusion tubes located on the roadside at Chalkers Corner (as 36.9µg/m^3 at DT2; 42.1µg/m^3 at DT7; and 49.1µg/m^3 at DT6) and in the carpark of Chertsey Court (as 40.4µg/m^3) are below the hourly equivalent annual mean NO_2 concentration of 60µg/m^3 and as such the AQS objective is met at these monitoring locations;
- From the kerbside to the roadside there is an average decrease (across the three transects: DT1/DT2/DT3, DT4/DT5, DT6/DT7/DT8) in annual mean NO_2 concentrations of 5.1µg/m^3. This shows that with distance away from the road and away from direct tailpipe emissions, NO_2 concentrations rapidly improve at Chalkers Corner;
- In addition, the results show there is an average decrease in annual mean NO_2 concentrations of 12.5µg/m^3 from the kerbside to the façade of Chertsey Court (difference between DT1/DT3 and DT6/DT8) and a decrease of 6µg/m^3 from the metal railings at the roadside locations to the façade of Chertsey Court (difference between DT2/ DT3 and DT7/8). The average decrease from the kerbside and roadside monitors (DT1, DT2, DT6, DT7) to the Chertsey Court façade (DT3/ DT8) is therefore 9.3µg/m^3. The results suggest the existing landscaping is acting as a barrier to traffic emissions at Chertsey Court; and
- The monitors located at the likely façade of the school within the Stag Brewery Development (as 30.2µg/m^3 at School 1 and 30.1µg/m^3 at School 2) are below the annual mean NO_2 AQS

objective of 40µg/m^3 and as such existing conditions are good and are not a constraint for the proposed school use in this location.

Table 3: NO_2 Monitoring Results at the Site

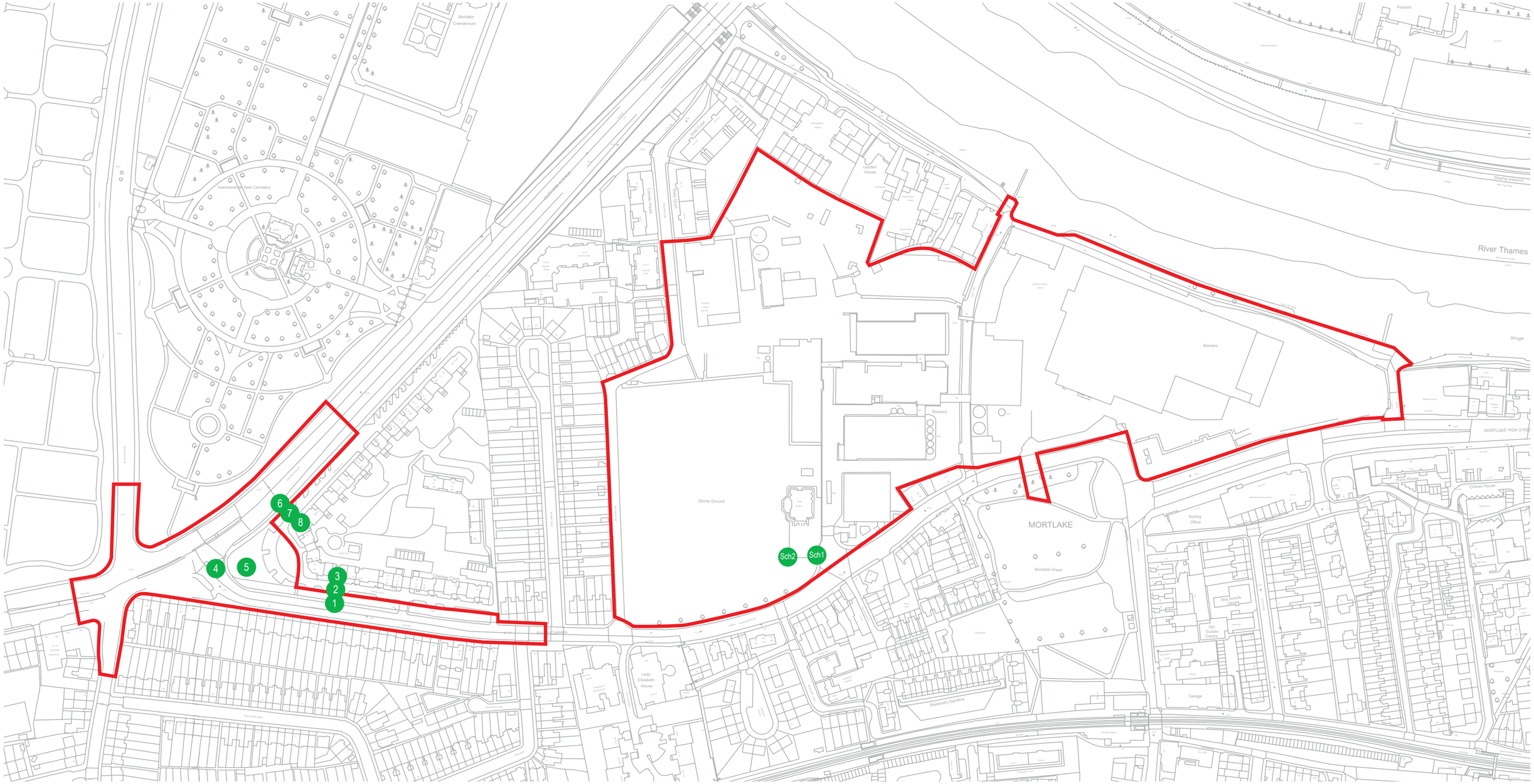
ID	Site Description	Monitor Classification[(a)]	9th July – 10th Aug 2018	10th Aug – 11th Sept 2018	11th Sept – 9th Oct 2018	9th Oct – 9th Nov 2018	9th Nov – 7th Dec 2018	7th Dec 2018 – 3rd Jan 2019	Unadjusted Average	Adjusted/Co-location Annual Mean*	Adjusted Estimated 2018 Annual Mean**
			µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
DT1	Lower Richmond Road	Kerbside	37.4	38.8	45.0	45.4	38.2	45.6	41.1	39.8	43.0
			35.4	39.4	40.3	45.0	37.1	45.4			
DT2	Chertsey Court metal railings	Roadside	34.8	31.6	34.9	38.0	37.9	43.7	35.3	34.2	36.9
			35.9	34.2	31.1	36.2	33.7	44.2			
DT3	Chertsey Court Lower Richmond Road	Façade	29.9	27.6	28.6	33.0	32.8	36.3	32.7	31.7	34.2
			27.9	26.5	31.2	35.9	31.5	38.1			
DT4	Chalkers Corner Junction	Kerbside	46.5	42.9	39.5	41.2	40.9	52.4	40.8	39.6	42.7
			46.8	40.5	44.2	42.0	41.7	49.3			
DT5	Chertsey Court	Carpark	25.1	34.5	37.4	37.7	35.1	40.1	38.6	37.4	40.4
			30.0	33.2	37.1	37.9	34.9	41.6			
DT6	Clifford Avenue	Kerbside	40.6	46.7	50.1	45.8	47.7	49.9	46.9	45.5	49.1
			39.3	43.9	44.3	50.8	49.6	54.3			
DT7	Clifford Avenue metal railings	Roadside	29.1	38.2	46.0	40.2	43.3	48.9	40.3	39.1	42.1
			27.6	35.3	32.9	46.6	48.0	47.1			
DT8	Chertsey Court Clifford Avenue	Façade	24.2	30.3	32.9	32.9	31.9	36.3	31.4	30.4	32.8
			23.7	31.1	31.8	33.9	33.1	34.4			
School 1	Stag Brewery Sports Club	Roadside	21.7	21.6	27.1	32.7	37.3	35.1	28.9	28.0	30.2
			21.9	22.3	25.0	32.3	34.3	35.4			
School 2	Stag Brewery Sports Club	Roadside	No Data	21.1	26.1	32.0	29.9	34.3	28.7	27.9	30.1
			No Data	20.4	27.4	21.8	37.4	36.8			

*Multiply previous column by 0.97 **Multiply previous column by 1.079 Exceedance of the AQS Objective shown in **BOLD**

[(a)] Classification as defined by LLAQM.TG (16) : Kerbside = monitor 1m from kerb of a road; Roadside = monitoring within 1-5m from kerb of a road; Façade = monitor on residential property and at a location of relevant residential exposure; Carpark = monitor located within am open air car park

FIGURES

Figure A1: Diffusion Tube Monitoring Locations



N

Site Boundary

X Diffusion Tube Monitoring Locations

Project Details	WIE10667-104: Stag Brewery, Mortlake
Figure Title	Figure A1: Diffusion Tube Monitoring Locations
Figure Ref	WIE10667-104_GR_AQMR_A1A
Date	January 2019
File Location	\\s-lncs\wiel\projects\wie10667\104\graphics\aqmr\issued figures

www.watermangroup.com

APPENDICES

Appendix A Precision and Accuracy Spreadsheet

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements									
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 µgm^{-3}	Tube 2 µgm^{-3}	Tube 3 µgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean
1	09/07/2018	10/08/2018	25.7	25.7		26	0.0	0	0.3
2	10/08/2018	11/09/2018	25.1	24.7	23.5	24	0.9	3	2.1
3	11/09/2018	09/10/2018	30.0	30.3	30.9	30	0.5	2	1.2
4	09/10/2018	09/11/2018	40.0	36.4	38.4	38	1.8	5	4.4
5	09/11/2018	07/12/2018	40.7	41.3	40.0	41	0.7	2	1.6
6	07/12/2018	03/01/2018	37.5	37.5	39.7	38	1.3	3	3.2
7									
8									
9									
10									
11									
12									
13									

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

Automatic Method	
Period Mean	Data Capture (% DC)
25.76364	100
18.95152	100
28.95517	100
37.10938	100
44	100
38	100

Data Quality Check	
Tubes Precision Check	Automatic Monitor Data
Good	Good
Good	Good
Good	Good
Good	Good
Good	Good
Good	Good

Overall survey --> Good precision | Good Overall DC

(Check average CV & DC from Accuracy calculations)

Site Name/ ID:

Precision 6 out of 6 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval)
without periods with CV larger than 20%

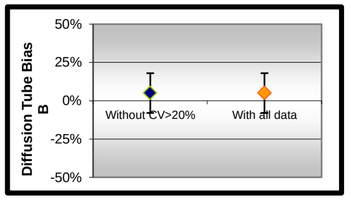
Bias calculated using 6 periods of data

Bias factor A	0.97 (0.87 - 1.12)
Bias B	3% (-10% - 16%)
Diffusion Tubes Mean:	33 µgm^{-3}
Mean CV (Precision):	2
Automatic Mean:	32 µgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	32 (29 - 37) µgm^{-3}

Accuracy (with 95% confidence interval)
WITH ALL DATA

Bias calculated using 6 periods of data

Bias factor A	0.97 (0.87 - 1.12)
Bias B	3% (-10% - 16%)
Diffusion Tubes Mean:	33 µgm^{-3}
Mean CV (Precision):	2
Automatic Mean:	32 µgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	32 (29 - 37) µgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

UK and Ireland Office Locations

E. Preliminary Ecological Appraisal, February 2022 (Ref: WIE18761-103-R-1-2-4-PEA)

Stag Brewery, Mortlake

Preliminary Ecological Appraisal

For Reselton Properties

March 2022

Client Name:	Reselton Properties Limited
Document Reference:	WIE18761-103-1-2-4-PEA
Project Number:	WIE18761

Quality Assurance – Approval Status

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 OHSAS 18001:2007)

Issue	Date	Prepared by	Checked by	Approved by
Final	February 2022	Lee Mantle Ecologist	Sebastian Fitzgerald Principal Ecologist	Steve Brindle Associate Director

Comments

Disclaimer

This report has been prepared by Waterman Infrastructure & Environment Limited, with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporation of our General Terms and Condition of Business and taking account of the resources devoted to us by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at its own risk.

Contents

Figures

Tables

Appendices

1. Introduction

1.1. This Preliminary Ecological Appraisal (PEA) has been prepared by Waterman Infrastructure & Environment Ltd (Waterman) on behalf of Reselton Properties Limited (the "Applicant") in support of two linked planning applications ("the Applications") for the comprehensive redevelopment of the former Stag Brewery Site in Mortlake ("the Site") within the London Borough of Richmond upon Thames (LBRuT).

1.2. The Site (**Figure 1**) is centred on Ordnance Survey Grid Reference 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 east and Bulls Alley (off Mortlake High Street) to the west. The Site is bisected by Ship Lane. The Site currently comprises a mixture of large-scale industrial buildings and structures, large areas of hardstanding and playing fields.

Historical Ecological Survey Work

1.3. Historical ecological surveys were undertaken in 2016 and 2017 to accompany three separate planning applications for the Site, which were submitted to the London Borough of Richmond-Upon-Thames (LBRuT) in 2018 (ref. 18/0547/FUL, 18/0548/FUL and 18/0549/FUL) as detailed below:

- 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.

1.4. The ecological survey work in support of the LBRuT planning applications detailed above comprised an initial PEA (ref. WIE10667-100-R-1-3-1-PEA). Based on the results of this PEA further surveys as detailed in a Protected Species Report (PSR) (ref. WIE10667-100-R-7-3-1-PSR) were also undertaken between 2016 and 2017.

1.5. Following the Applicant submitting revisions to those applications to the Greater London Authority (GLA) in 2020 (ref. 4172 (Application A), 4172a (Application B) 4172b (Application C - withdrawn)) ecological survey works comprising an updated PEA (ref. WIE15582-102_R_1_2_3_PEA) together with further update surveys as detailed in a Protected Species Report (ref. WIE15582-102-R-2-3-1-PSR) were also undertaken in 2019.

1.6. A summary of all the historical ecological survey work undertaken in support of the above planning applications is presented in **Table 1**.

Table 1: Historical Ecological Survey Work

Planning Application Ref	Ecological Survey Work Undertaken	Date of Assessment and Reporting
LBRuT -18/0547/FUL, 18/0548/FUL, and 18/0549/FUL (the 2018 Planning Applications)	PEA (ref. WIE10667-100-R-1-3-1-PEA) - comprising an ecological data search, 'Extended' Phase 1 Habitat Survey, a search for common invasive floral species, and a Preliminary Roost Assessment (PRA) (ground based and external only) of buildings and trees for bats.	PEA components undertaken between January 2016 to April 2017 with reporting finalised in February 2018.
	PSR (ref. WIE10667-100-R-7-3-1-PSR) - comprising a Preliminary Roost Assessment (ground based and external only) of accessible buildings, evening emergence and pre-dawn re-entry bat surveys at buildings and trees, bat activity and automated surveys, and breeding bird surveys (specifically for black redstart *Phoenicurus ochruros*)	PSR components undertaken between May 2016 to September 2017 with reporting finalised in February 2018.
	PRA (ref. WIE10667-103-BN-21-2-LM) – comprising an external and endoscope inspection of the northern boundary wall.	PRA the northern boundary wall undertaken in October 2018 with reporting also finalised in October 2018.
GLA - ref 4172, 4172a, and 4172b (withdrawn) (the 2020 Planning Applications)	PEA (ref. WIE15582-102-R-1-2-3-PEA) - comprising an ecological data search, 'Extended' Phase 1 Habitat Survey, a search for common invasive floral species, and a PRA (ground based and external only) of buildings and trees.	PEA components undertaken in July 2019 with reporting finalised in May 2020.
	PSR (ref. WIE15582-102-R-2-3-1-PSR) - comprising a PRA of the northern boundary wall (external and endoscope inspection of), evening emergence and pre-dawn re-entry bat surveys at buildings and trees, bat activity and automated surveys.	PSR components undertaken between July 2019 to September 2019 with reporting finalised in May 2020.

Proposed Development

1.7. The current proposals for the Site (hereafter referred to as the proposed Development) are for a redevelopment that will provide homes (including affordable homes), complementary commercial uses, community facilities, a new secondary school alongside new open and green spaces throughout. Associated highway improvements are also proposed, which include works at Chalkers Corner junction.

1.8. The Applications seek planning permission for:

Application A:

"*Hybrid application to include the demolition of existing buildings to allow for comprehensive phased redevelopment of the site:*

Planning permission is sought in detail for works to the east side of Ship Lane which comprise:

a) Demolition of existing buildings (except the Maltings and the façade of the Bottling Plant and former Hotel), walls, associated structures, site clearance and groundworks

b) Alterations and extensions to existing buildings and erection of buildings varying in height from 3 to 9 storeys plus a basement of one to two storeys below ground

c) Residential apartments

d) Flexible use floorspace for:

i. Retail, financial and professional services, café/restaurant and drinking establishment uses

ii. Offices

iii. Non-residential institutions and community use

iv. Boathouse

e) Hotel / public house with accommodation

f) Cinema

g) Offices

h) New pedestrian, vehicle and cycle accesses and internal routes, and associated highway works

i) Provision of on-site cycle, vehicle and servicing parking at surface and basement level

j) Provision of public open space, amenity and play space and landscaping

k) Flood defence and towpath works

l) Installation of plant and energy equipment

Planning permission is also sought in outline with all matters reserved for works to the west of Ship Lane which comprise:

m) The erection of a single storey basement and buildings varying in height from 3 to 8 storeys

n) Residential development

o) *Provision of on-site cycle, vehicle and servicing parking*

p) *Provision of public open space, amenity and play space and landscaping*

q) *New pedestrian, vehicle and cycle accesses and internal routes, and associated highways works"*

Application B:

"Detailed planning permission for the erection of a three-storey building to provide a new secondary school with sixth form; sports pitch with floodlighting, external MUGA and play space; and associated external works including landscaping, car and cycle parking, new access routes and other associated works"

Together Applications A and B described above, including the proposed Section 278 Highways works are the 'Development'.

1.9. Full details and scope of the detailed planning application is detailed in the submitted Planning Statement, prepared by Gerald Eve LLP.

Objectives of this PEA

1.10. As detailed within industry guidance[1], a PEA should be used to identify any ecological constraints and opportunities at a proposed development site. The results of the PEA should be used to inform the emerging scheme design process and suggest recommendations for ecological mitigation, compensation and enhancement measures. The purpose of this report is to:

- Identify the potential for Important Ecological Features (IEFs) to be present within the identified Zone of Influence (ZoI) and any resulting constraints or significant ecological effects to the Development;
- Allow any further ecological surveys/assessments needed to inform any subsequent planning application(s) to be identified and appropriately designed with relevant consultees;
- Inform master-planning to allow significant ecological effects to be avoided or minimised wherever possible;
- Allow likely mitigation and enhancement measures (in line with the Mitigation Hierarchy[2]) to be developed; and
- Form a basis for agreeing the scope of the Protected Species Report and Ecology Chapter in support of the EIA with relevant consultees, as/if required.

[1] CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal.* Technical Guidance Series. Chartered Institute of Ecology and Environmental Management, Winchester.

[2] BS 42020:2013 Clause 5.2

2. Methodology

Scope of the Assessment

2.1. This section summarises the methodologies used for undertaking the PEA based on current guidelines. This PEA includes an ecological data search, UK Habitat Classification (UK Hab) field survey, a PRA at buildings, walls and trees (external and ground based), and survey for common invasive plant species.

2.2. This Report provides a preliminary review of the ecological conditions recorded on Site, and in the surrounding area. Recommendations for further surveys are made where required. It should be noted that this report has been updated since the recommendations were made, and the additional survey works are reported in a Protected Species Report, that should be read alongside this Preliminary Ecological Assessment.

Zone of Influence and Important Ecological Features

2.3. The ZoI is the area(s) over which ecological features may be impacted by the biophysical changes caused by the proposed Development. Based on the scale and nature of the Development, it has been assessed that the ZoI arising from these works is unlikely to be greater than those distances used for the ecological data search (see below).

2.1. The field survey area comprised primarily the Site. However, adjacent land was viewed where possible from the Site and aerial photography for the area has also been reviewed[3].

2.2. As referenced in industry guidance[4], potential IEFs that are anticipated to be affected by the Development have been identified and recommended for further assessment. In this report, designated sites, habitats and species that fall into the categories in **Table 2** have been identified as being ecologically important and / or legally protected / controlled and form the scope of data gathering during the data search and Site surveys.

Table 2: Important Ecological Feature Categories

Geographical Level of Importance	Category
International	Statutory designated sites: Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites (including candidate SACs and proposed SACs, SPAs and Ramsar sites). A viable area of a habitat type listed in Annex I of the Habitats Directive, or smaller areas of such habitat essential to maintain the viability of a larger whole. Regularly occurring populations of a species, large enough in number to be of **international importance** where: • The loss or degradation of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; or • The population forms a critical part of a wider population at an international level; or • The species is at a critical phase of its life cycle at this scale.
National	Statutory designated sites: Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR);

[4] CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal.* Technical Guidance Series. Chartered Institute of Ecology and Environmental Management, Winchester

Geographical Level of Importance	Category
	Ancient Woodland; A viable area of a Habitat of Principal Importance as listed on Section 41 of the Natural Environments Rural Communities (NERC) Act 2006 or smaller areas of such habitat essential to maintain the viability of a larger whole. Resident, or regularly occurring, populations of species, significant at an International, European, UK or National level where: • The loss of these populations would adversely affect the conservation status or distribution of the species at a **national** level; or • The population forms a critical part of a wider population at this scale; or The species is at a critical phase of its life cycle at this scale.
Regional/County	Local Nature Reserves (LNR). Non-statutory designated wildlife sites of county value (i.e. Site of Metropolitan Importance (SMI) for London). Areas which meet the published selection criteria for county site designations, but which are not themselves designated as such. Species – as per National level but where the loss of these populations would negatively affect the conservation status or distribution of the species at a **county** level and where populations/species are critical at the **county** scale. This may include locally significant populations of a species listed in a County BAP on account of its regional rarity or localisation (i.e. London Environment Strategy (LES) Priority Habitats and Species).
District/Borough	Non-statutory designated wildlife sites of district/borough value (i.e. Site of Borough Grade 1 and Grade 2 Importance (SBI) for London). Species – as per County level but where the loss of these populations would negatively affect the conservation status or distribution of the species at a **district** level and where populations/species are critical at the **district** scale. This may include locally significant populations of a species listed in a District/Borough BAP on account of its regional rarity or localisation (i.e. Richmond Biodiversity Action Plan (RBAP) habitats and species).
Local	Non statutory designated sites of local value (i.e. Site of Local Importance for Nature Conservation (SLI) for London). Areas of habitat considered to appreciably enrich the habitat resource within the local context (e.g. species-rich hedgerows, ponds). It may also include sites that retain other elements of semi-natural vegetation that due to their size, quality or the wide distribution of such habitats within the local area are not considered for local designations. Populations/assemblages of species that appreciably enrich the biodiversity resource within the local context. Populations of county level important species that are not threatened or rare in the county and are not integral to maintaining those populations.
Site	Habitats and/or species that are of limited ecological importance due to their size, species composition or other factors. Areas of heavily modified or managed vegetation of low species diversity. Low or moderate numbers of common and widespread species.
Legislation	Species included on Schedules II and V of The Conservation of Habitats and Species Regulations 2017 (as amended); Species included on Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended), excluding species that are only protected in relation to their sale (Section 9[5] and 13[2]); and Badgers, which are protected under the Protection of Badgers Act 1992.

Ecological Data Search

2.3. The aim of the ecological data search is to collate existing ecological records for the Site and adjacent areas. Obtaining existing records is an important part of the evaluation process, as it provides additional information that may not be apparent during a site survey.

2.4. The ecological data search comprised;

- A review of records provided by the Greenspace Information for Greater London (GiGL) and a search on the Multi-Agency Geographic Information for the Countryside (MAGIC)[5] website of important statutory and non-statutory sites designated (including ancient woodland) as referred to in **Table 2** for their nature conservation value within 2km of the Site (as extended to 10km for International and European designated sites).
- A review of records provided by GIGL of protected species, species listed on the LES, RBAP, and / or other notable fauna and flora within 1km of the Site.
- A review of data on the MAGIC website of Habitats of Principle Importance (HoPI) and Species of Principle Importance (SoPI) listed under Section 41 (S41) of the NERC Act 2006, as well as Priority Habitats on the RBAP.
- A review of OS mapping and aerial photography along with the previous ecological survey work undertaken at the Site by Waterman for the planning applications as referenced in **Table 1.**

2.5. Given the scale of the proposed Development works, along with the habitats recorded at the Site, it was considered that undertaking a search of records within 2km (as extended to 10km for International and European designated sites) of the Site would provide sufficient data to inform this PEA.

2.6. The ecological data search findings for designated sites, are presented in **Figure 2**.

Field Survey

2.7. A UK Hab[1] field survey of the Site was undertaken on 31st August 2021 by Lee Mantle MCIEEM (CV provided in **Appendix B**). UK Hab supersedes previous systems such as Phase 1[6], allowing for direct interpretation of baseline habitat survey data into Priority Habitat Types and Annex I Habitat[7] types.

2.8. A fine scale Minimum Mapping Unit (MMU) was deemed an appropriate level for mapping habitats i.e. a habitat area was only mapped if the habitat was greater than 25m^2 or 5m in length.

2.9. Each habitat was assigned a Primary Code of the Professional Edition of the UK Hab Field Key[8] at a minimum of the Level 3 hierarchy, using the UK Hab Habitat Definitions[9] for reference. Secondary Codes (SC) were then applied to provide additional context to the habitats, with no more than six Secondary Codes being assigned.

2.10. All habitat types within the Site were mapped (**Figure 3**).

2.11. The field survey methodologies were 'Extended' by undertaking an assessment of the Site to support protected and notable faunal species as detailed in the Guidelines for Baseline Ecological

[5] Magic.defra.gov.uk. (2014). *Magic*. [online] Available at: http://magic.defra.gov.uk/ [Accessed January 2022].
[6] JNCC. (2010). *Handbook for Phase 1 Habitat Survey*. Nature Conservancy Council
[7] Habitats listed in Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora.
[8] UK Habitat Classification Working Group (2018*). UK Habitat Field Key*
[9] UK Habitat Classification Working Group (2018*). UK Habitat Classification Definitions V1.0 at https://ukhab.org/ukhab-documentation/*

Assessment[10] (IEMA, 1995). The field survey of the Site was conducted under conditions deemed appropriate for the survey - dry and sunny.

Habitat Condition Assessment

2.12. As part of the field survey, and to inform the Biodiversity Net Gain assessment for the proposed Development, a condition assessment of those semi-natural habitats has been undertaken in accordance with the Defra 3.0 metric Technical Supplement[11].

Invasive Plant Species Assessment

2.13. The list of invasive plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is extensive and these plants are found in a range of different habitats, including aquatic habitats. The Field Survey checked for the presence of common invasive species including Japanese knotweed *Reynoutria japonica*, giant knotweed *Fallopia sachalinensis*, hybrid knotweed *Fallopia baldschuanica*, giant hogweed *Heracleum mantegazzianum* and Himalayan balsam *Impatiens glandulifera*.

2.14. Invasive species listed on the London Invasive Species Initiative (LISI) were also searched for. The field survey checked for LISI invasive species including cotoneaster *Cotoneaster sp.*, rhododendron *Rhododendron ferrugineum*, buddleia *Buddleija davidii*, and tree of Heaven *Ailanthus altissima.*

Preliminary Bat Roost Inspections

2.15. As part of the PRA, an external ground-based building/wall and tree assessment (where access was provided – see limitations section) for bats was undertaken at the Site during the Field survey. The survey was undertaken by Lee Mantle MCIEEM (CV provided in **Appendix B**) who holds a Natural England Class 2 Licence (2015-14934-CLS-CLS) for all bat species and counties of England. The survey was based on current best practice guidelines[12].

2.16. An assessment of each building / wall and tree was made in terms of its suitability to support roosting bats. The survey consisted of a visual inspection (including the use of binoculars and torches where required) of the exterior of the building / structure and tree for suitable roosting features and evidence of bat use (e.g. droppings, scratch marks, staining and sightings).

2.17. A number of factors were considered when assigning suitability including proximity to foraging habitats or cover; and potential for disturbance, such as high levels of lighting. Notes were made relating to relevant characteristics of features providing potential access points and roosting opportunities for bats.

Table 3: Adapted Building and Tree Assessment Guidelines

Assigned Bat Roosting Potential	Description
Known or confirmed roost	Evidence of roosting bats within the building/wall/tree.
High	A building/wall/tree with one or more Potential Roost Features (PRFs) that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to

[10] IEA (1995). Guidelines of baseline ecological assessment.
[11] Panks et al. (2021): Biodiversity metric 3.0: Auditing and accounting for biodiversity – User Guide. Natural England.
[12] 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

Assigned Bat Roosting Potential	Description
	their size, shelter, protection, conditions and surrounding habitat.
Moderate	A building/wall/tree with one or more PRFs that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only).
Low	A building/wall with one or more PRF that could be used by individual bats opportunistically. However, these PRFs do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Negligible	Negligible habitat features at building/wall/tree likely to be used by roosting bats.

Important Ecological Feature Assessment

2.18. Data gathered as part of this update PEA has been used to identify potential IEFs (i.e. designated sites, habitats and species as listed in **Table 2**) that are anticipated to be affected by the Development within the ZoI (up to 2km from the Site, unless stated).

2.19. It should be noted that not all the IEFs within the ZoI have the potential to be significantly affected by the proposed Development, or the legislation pertaining to them to be contravened. Therefore, where features are unlikely to be affected by the proposed Development, or where any effects that impact IEFs are unlikely to be significant[13], for the reasons listed below, such features have been scoped out of the assessment:

No pathway of effect has been identified, for example the feature is sufficient distance from the Site or there is the presence of a barrier between its location and the Site[14]; or

The feature is of insufficient biodiversity conservation value within the ZoI, due to its quality, extent or population size[15].

2.20. For all remaining features scoped into the assessment, the pathway of effect (for example habitat loss, lighting, noise) and potential impact of this on the feature have been identified.

Constraints and Limitations

2.21. At the time of survey, no internal PRA was possible at the buildings / structures due to the presence of Asbestos Containing Materials (ACMs). However, this is not assessed to be a significant constraint given the historical knowledge of the Site on bats from the extensive survey work undertaken in 2016 / 2017 and 2019.

[13] Positive or negative effects on ecological features that have the potential to influence a planning decision are considered to be significant.

[14] Whilst the ZoI of potential effects arising from the development is up to 2km from the Site, the ecological ZoI (within which the feature could be affected) for each feature may vary and for some features may be much less, e.g. great crested newts generally move up to a maximum of 500m from a breeding pond and movement can be restricted by barriers such as busy roads and fast flowing rivers

[15] E.g. whilst a Priority Species such as skylark *Alauda arvensis* or house sparrow *Passer domesticus* is of National importance (**Table 1 and 2**), the impact of development on individual or a small population of such a species, which are generally commonly found, is unlikely to be assessed as significant

2.22. 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.

3. Results

Desk Study

Statutory Designated Sites

3.1. The Site is not located within or adjacent to any statutory designated sites however several such sites are located within 2km of the Site itself, as detailed in **Table 4** below.

3.2. The nearest statutory designated site is Richmond Park SAC, NNR and SSSI located approximately 1.3km south of the Site. The Site also lies within a SSSI impact risk zone for Richmond Park, however, the proposed Development type does not fall within the categories listed which trigger LPA consultation with Natural England regarding likely risks of impacts to the SSSI from a proposed development[16]. The Site also lies within 3.5km of Wimbledon Common SAC to the south west of the Site.

Non-Statutory Designated Sites

3.3. The Site is not subject to any non-statutory designations, however, twenty-two such sites are present with 2km of the Site. The closest of these., that is, those within 1km of the Site are detailed in **Table 4**. It should be noted that the distances provided in **Table 4** are taken from the Site boundary and therefore are approximate.

Table 4: Summary of Desk Study Records of Statutory and Non-statutory Designated Sites

Site Name	Designation	Approximate Distance from Site (km)	Description / Citation
River Thames and Tidal Tributaries	Non-statutory SMI	Adjacent to the northern boundary of the Site.	The River Thames and the tidal sections of creeks and rivers which flow into it comprise a number of valuable habitats not found elsewhere in London. The mud-flats, shingle beach, inter-tidal vegetation, islands and river channel itself support many species of fish and birds and plants, creating a wildlife corridor running right across the capital.
North Sheen and Mortlake Cemeteries	Non-statutory SLI	0.14km north-west of the Site.	These extensive cemeteries, which are bisected by Mortlake Road, are among the largest in the LBRuT. They are both in active use and managed relatively intensively, with most of the grasslands being mown frequently. They have considerable wildlife interest due to their large size and the diversity of plants and animals that they support.
Old Mortlake Burial Ground	Non-statutory SLI	0.43km south-east of the Site.	This small cemetery is quite intensively managed, but its grasslands contain a reasonable diversity of wildflowers.
Kew Meadow Path	Non-statutory SBI Grade 2	0.5km north-west of the Site.	This public footpath, totally unremarkable in appearance, is one of only a handful of British sites for the two-lipped door snail *Alinda biplicata*.
Dukes Hollow	Statutory LNR and non-statutory SMI	0.65km north-east of the Site.	The Site of a former boathouse burnt down in the 1970's, this site has developed into one of the most important wildlife refuges in urban west London, regularly inundated by the tidal Thames and supporting an unusual range of species. The most

[16] https://magic.defra.gov.uk/MagicMap.aspx

Site Name	Designation	Approximate Distance from Site (km)	Description / Citation
			significant habitats include wet woodland and a rich intertidal zone containing a number of locally scarce waterside plants, birds and molluscs.
Hounslow Loop Railsides	Non-statutory SBI Grade 2	0.71km north-east of the Site	Rail sides with a mix of grassland, scrub and tall herbs, forming an important green corridor.
Beverley Brook in Wandsworth	Non-statutory SBI Grade 1	0.91km south-east of the Site	A wildlife rich brook in the west of Wandsworth borough forming a valuable green corridor.
Pensford Field	Non-statutory SLI	0.92km north-west of the Site	A community nature area with a colourful meadow and a pond.
Bank of England Sports Club Grounds	Non-statutory SBI grade 2	0.98km south-east	Sports pitches with an area of woodland and some scattered trees, the most important part of the site for nature conservation is the secondary woodland on its eastern edge.

Protected, BAP and Other Notable Habitats

3.4. No protected, LES, RBAP or other notable habitats as listed on the under Section 41 (S41) of the NERC Act 2006 are present on Site, however the River Thames (notable habitat under LES, RBAP and S41) is present immediately adjacent to the north of the Site. There is no ancient woodland within 2km of the Site.

Protected, BAP and Other Notable Species

3.5. Records of legally protected or otherwise notable species of flora and fauna within 2km of the Site were provided by GIGL. A summary of the most significant results of relevance to the Site are provided in **Table 5**. Full results can be obtained from the data providers but cannot be presented in this report due to copyright. For some records only a four-figure grid reference has been provided by GIGL and therefore 'within 2km' has been stated in **Table 5**. It should be noted that the distances provided in **Table 5** are taken from the Site boundary and are, therefore, approximate.

Table 5: Summary of Desk Study Records of Flora and Fauna

Species	Category of Importance*	Number of Records	Date of most Recent Record	Location of records relevant to the study area (km)
Amphibians				
Common toad *Bufo bufo*	WCA, S41	16	14/08/2016	0.47 west
Common Frog *Rana temporaria*	WCA	321	08/03/2019	0.29 south east
Reptiles				
Slow-worm *Anguis fragilis*	WCA, S41	1	24/05/2016	1.10 south east
Grass Snake *Natrix helvetica*	WCA, S41	1	06/06/2005	1.60 south
Common Lizard *Zootoca vivipara*	WCA, S41	3	19/05/2017	1.68 south

Species	Category of Importance*	Number of Records	Date of most Recent Record	Location of records relevant to the study area (km)
Bats				
Serotine *Eptesicus serotinus*	Hab Regs, WCA, S41, LES	12	16/08/2017	1.01 north east
Myotis *Myotis*	Hab Regs, WCA, S41, LES	4	May 2011	1.56 north east
Daubenton's *Myotis daubentonii*	Hab Regs, WCA, S41, LES	60	14/08/2020	1.46 south east
Nyctalus species *Nyctalus*	Hab Regs WCA S41, LES	2	01/10/2019	1.69 east
Leisler's *Nyctalus leisleri*	Hab Regs WCA S41, LES	15	25/09/2019	1.64 north
Noctule *Nyctalus noctula*	Hab Regs WCA S41, LES	50	21/09/2020	0.64 north west
Pipistrelle species *Pipistrellus*	Hab Regs WCA S41, LES	49	25/09/2019	0.35 north
Nathusius's Pipistrelle *Pipistrellus nathusii*	Hab Regs WCA S41, LES	10	27/09/2019	0.23 north east
Common Pipistrelle *Pipistrellus pipistrellus*	Hab Regs WCA S41, LES, RBAP	76	21/09/2020	0.57 east
Soprano Pipistrelle *Pipistrellus pygmaeus*	Hab Regs WCA S41, LES	119	21/09/2020	0.22 south east
Brown Long-eared *Plecotus auritus*	Hab Regs WCA S41, LES	6	25/09/2019	1.18 south west
Birds				
Lesser Redpoll *Acanthis cabaret*	WCA, S41, Red, LES	18	22/10/2017	0.65 north east
Common Sandpiper *Actitis hypoleucos*	WCA, LES	8	25/09/2016	1.93 north east
Eurasian Skylark *Alauda arvensis*	WCA, S41, Red, LES, RBAP	45	22/10/2017	0.98 north east
Kingfisher *Icedo atthis*	WCA, LES	24	30/09/2017	1.49 north east
White-fronted	WCA, Red	1	28/12/1986	1.86 east

Species	Category of Importance*	Number of Records	Date of most Recent Record	Location of records relevant to the study area (km)
Goose *Anser albifrons*				
Tree Pipit *Anthus trivialis*	WCA, S41, Red	1	26/08/2016	1.59 east
Swift *Apus apus*	WCA, LES	113	05/07/2020	0.21 south west
Pochard *Aythya ferina*	WCA, Red, LES	52	11/03/2020	1.59 east
Scaup *Aythya marila*	WCA, S41, Red	1	12/02/2012	1.96 north east
Eurasian Bittern *Botaurus stellaris*	WCA S41, LES, RBAP	2	09/03/2017	1.65 east
Common Ringed Plover *Charadrius hiaticula*	WCA, Red, LES	2	05/05/2015	1.95 north east
Western Marsh Harrier *Circus aeruginosus*	WCA	1	02/10/2016	2.0 north east
Hen Harrier *Circus cyaneus*	WCA, S41, Red	1	02/10/2016	2.0 north east
Cuckoo *Cuculus canorus*	WCA, S41, Red, LES	3	18/08/2013	0.98 east
Lesser Spotted Woodpecker *Dryobates minor*	WCA, Red, LES	23	15/03/2017	1.57 south
Whooper Swan *Cygnus cygnus*	WCA	1	22/11/2015	1.95 east
House Martin *Delichon urbicum*	WCA, LES	25	29/09/2017	0.98 north east
Common Reed Bunting *Emberiza schoeniclus*	WCA S41, RBAP	11	15/04/2020	1.85 east
European Herring Gull *Larus argentatus*	WCA Red	23	11/03/2020	0.57 west
Linnet *Linaria cannabina*	WCA Red, LES, RBAP	2	14/10/2017	1.85 east
Red kite *Milvus milvus*	WCA	2	26/02/2017	1.92 north east
Grey wagtail *Motacilla cinerea*	WCA Red	29	02/09/2019	0.98 east

Species	Category of Importance*	Number of Records	Date of most Recent Record	Location of records relevant to the study area (km)
Western Osprey *Pandion haliaetus*	WCA	3	02/10/2016	1.15 west
House Sparrow *Passer domesticus*	WCA, S41 Red, LES	360	08/05/2017	0.98 east
Common Tern *Sterna hirundo*	WCA	32	01/05/2020	1.5 north west
Lapwing *Vanellus vanellus*	WCA S41 Red, LES	8	02/01/2017	0.60 south east
Tawny Owl *Strix aluco*	WCA, LES	40	15/04/2021	0.65 west
Song Thrush *Turdus philomelos*	WCA, Red, LES, RBAP	318	11/03/2020	0.29 south east
Starling *Sturnus vulgaris*	WCA, Red, LES	37	14/11/2017	0.25 west
Ring Ouzel *Turdus torquatus*	WCA S41 Red	2	23/10/2015	1.15 west
Fieldfare Turdus pilaris	WCA Red	28	14/11/2017	0.79 north east
Goshawk *Accipiter gentilis*	WCA	1	02/10/2016	Within 2km (confidential)
Peregrine *Falco peregrinus*	WCA, LES	5	02/10/2013	Within 2km (confidential)
Black Redstart *Phoenicurus ochruros*	WCA	3	18/03/1999	1.8km east
Mammals (not inc. Bats)				
West European Hedgehog *Erinaceus europaeus*	WCA S41 Red, LES	356	22/10/2020	1.74 south
Eurasian Badger *Meles meles*	PBA	18	13/10/2016	Within 2km (confidential)
Invertebrates				
Stag Beetle *Lucanus cervus*	Hab Regs S41, LES	13	03/06/2020	0.16km north
Small Heath *Coenonympha pamphilus*	S41, LES	42	31/12/2019	0.43km north west
Continental Swallowtail *Papilio machaon gorganus*	WCA, S41	1	31/12/2019	Within 2km (confidential)

Species	Category of Importance*	Number of Records	Date of most Recent Record	Location of records relevant to the study area (km)
White-letter Hairstreak *Satyrium w-album*	S41, LES	7	31/12/2019	Within 2km (confidential)
Brown Hairstreak *Thecla betulae*	S41, LES	4	31/12/2019	Within 2km (confidential)

Hab Regs - The Conservation of Habitats and Species Regulations 2017 (as amended)

WCA - The Wildlife and Countryside Act 1981 (as amended)

S41 – Species of Principal Importance under The Natural Environment and Rural Communities Act 2006

LES - London Environment Strategy

RBAP – Richmond Biodiversity Action Plan

Red – Red list criteria (Bird of Conservation Concern)

PBA – Protection of Badgers Act 1992

Field Survey

Habitats

3.6. The following habitat types were identified on Site during the field survey, **Table 6** summarises the Primary Codes and labels used to categorise the habitats recorded.

Table 6: Summary of Habitat Types recorded on and directly adjacent to the Site

Ref.	Level 2 Code / Label	Level 3 Code / Label	Level 4 Code / Label (Priority Habitats marked with 'P')	Level 5 Code / Label	Secondary codes (SC)
1	u - urban	u1 – built up areas and gardens	u1b - developed land; sealed surface	u1b5 - buildings	97 – industrial/retail building
2				u1b6 - Other developed land	111 - road
3			u1c – artificial unvegetated, unsealed surface	N/A	17 – ruderal / ephemeral 80 - unmanaged
4			u1e – built linear features	N/A	68 – mortared wall 80 – unmanaged
5				N/A	69 - fence
6		N/A	N/A	N/A	48 – non-native 80 – unmanaged 1160 – introduced shrub
7		N/A	N/A	N/A	1170 - tree
8	g - grassland	g4 – modified grassland	N/A	N/A	64 – mown 66 – frequently mown

Ref.	Level 2 Code / Label	Level 3 Code / Label	Level 4 Code / Label (Priority Habitats marked with 'P')	Level 5 Code / Label	Secondary codes (SC)
					75 – active management 76 – recent management
9	h – heathland and shrub	h2- hedgerows	h2b- other hedgerows	N/A	17 – ruderals 48 – non-native 1160 – introduced shrub
10	w – woodland and forest	w1 – broadleaved mixed and yew woodland	w1g – other woodland; broadleaved	w1g6 – line of trees	76 – recent management

3.7. A summary description of the habitats is detailed below. The habitat descriptions should be read in conjunction with **Figure 3** and photographs (**Plates**) are presented in **Appendix C**.

Urban - u

1. Buildings - u1b5 (SC97)

3.8. Fifteen buildings are present within or directly adjacent to the Site (**Appendix D**). These buildings comprise industrial warehouses and storage buildings associated with redundant brewing processes, offices, security offices and a club house. These buildings were being used for filming purposes at the time of survey. An office building and a pub located immediately adjacent to the Site boundary (B14 and B15) were also included in the survey.

3.9. This habitat type is of very low distinctiveness and does not require a condition assessment.

2. Hardstanding - u1b6 (SC111)

3.10. A large area of the Site comprises hardstanding around the buildings. This habitat type is of very low distinctiveness and does not require a condition assessment.

3.11. Small areas of ephemeral / tall ruderal vegetation have colonised cracked and disturbed areas of hardstanding (**Appendix C**, Plate 2). The species recorded within these areas include bristly ox-tongue *Helminthotheca echioides*, smooth sow-thistle *Sonchus oleraceus*, cleavers, wall barley, broad-leaved willow herb *Epilobium montanum*, Michaelmas daisy *Aster amellus*, spear thistle *Cirsium vulgare*, prickly lettuce *Lactuca serriola*, cocksfoot *Dactylis glomerata*, mugwort *Artemisia vulgaris*, knotgrass *Polygonum sp*, greater plantain *Plantago major*, wood avens *Geum urbanum*, red fescue *Festuca rubra*, common ragwort *Jacobaea vulgaris*, broad leaved dock *Rumex obtusifolius*, common dandelion *Taraxcum officinale*, common hogweed *Heracleum sphondylium*, common nettle *Urtica diocia*, perennial rye-grass *Lolium perenne*, herb Robert *Geranium robertianum* and Canadian fleabane *Erigeron canadensis*.

3.12. This habitat is too small in area to be assigned a condition assessment.

3. Artificial unvegetated, unsealed surface - u1c (SC17, 80)

3.13. Bare ground, predominantly gravel, is present along the footpath (towpath) at the northern boundary of the Site adjacent to the River Thames. This habitat type is of very low distinctiveness and does not require a condition assessment.

4. Wall - u1e (SC68, 80)

3.14. Several free-standing walls are present within, and forming boundaries, of the Site (**Appendix C**, Plate 5 and 6). All walls are constructed from brick. This habitat type does not require a condition assessment.

3.15. Several climbing species were also recorded on Site, largely associated with the northern Site boundary. Species recorded include honeysuckle *Lonicera periclymenum*, ivy *Hedera helix*, and Virginia creeper *Parthenocissus quinquefolia*. The climbing plants are beginning to spread across features such as fencing due to lack of management. This habitat type does not require a condition assessment.

5. Fence - u1e (SC69)

3.16. A metal fence is present around Watney's Sports Ground playing fields. This habitat type does not require a condition assessment.

6. Ornamental Planting (SC 48, 80, 1160)

3.17. Several areas of ornamental planting are present across the Site within both raised and ground level planting beds. Formally managed ornamental planting is present at the base of B1 and adjacent to B7, with less formal areas which appear unmanaged present towards the north of the Site (**Appendix C**, Plate 3). Ornamental planting is also present at the boundary of Mortlake Green and within the area of the Site where highways works are proposed subject to S278. Species recorded include *Pyracantha sp*., spindle *Euonymus japonicas*, barberry *Berberis darwinii*, senecio sunshine *Brachyglottis sp*., holly *Ilex aquifolium*, Euonymus fortune, Mexican orange blossom *Choisya x dewitteana* 'Aztec Pearl', Cordyline *Cordyline sp*., spotted laurel *Aucus japonica*, red robin *Photinia x fraseri*, broom *Cytisus scioparius*., cotoneaster tree *Cotoneaster cornubia*, lilac *Syringa sp*., clematis *Clematis sp*., false castor oil *Fatsia japonica*, sweet bay *Laurus nobilis*, daffodil *Narcissus sp*. and laurel *Laurus sp*.

3.18. This habitat type is assessed to be of poor condition.

7. Urban Trees (SC 1170)

3.19. Urban trees are present across the Site (growing out of hardstanding and as separate from the line of trees habitats below), within the brewery component of the Site (**Appendix C**, Plate 4). These trees vary in age and comprise false acacia *Robinia pseudoacacia*, sycamore *Acer pseudoplatanus* London plane *Platanus x hispanica,* hornbeam, small-leaved lime *Tilia cordata,* wild cherry *Prunus avium,* whitebeam *Sorbus aria,* Himalayan birch *Betula utilis,* ash *Fraxinus excelsior*, elder *Sambucus nigra*, holly, Swedish whitebeam *Sorbus intermedia* and tree-of-heaven *Ailanthus altissima.* Some recent management in the form of pruning works is present at the trees.

3.20. This habitat type is assessed to be of moderate condition.

Grassland - g

8. Modified grassland - g4 (SC64, 66, 75, 76)

3.21. Amenity grassland is present at the Site within Watney's Sports Ground playing fields (**Appendix C**, Plate 1), Mortlake Green and the footpath / roadside verges at Chalkers Corner and along the boundary with the River Thames. The short length of sward (approximately 5cm) and limited species diversity recorded indicate that the amenity grassland is subject to an intensive mowing regime. The dominant species recorded was perennial rye grass *Lolium perenne* with species including common bent *Agrostis capillaris*, common daisy *Bellis perennis*, ribwort plantain *Plantago lanceolata*, red fescue *Festuca rubra*, white clover *Trifolium repens*, common catsear *Hypochaeris radicata*, yarrow *Achillea millefolium*, dove's-foot cranesbill *Geranium molle* and *Taraxacum sp* also present.

3.22. Where the edges of the amenity grassland have avoided the mowing regime, this has a longer sward and is more species rich with wall barley *Hordeum murinum* (dominant in areas), yarrow *Achillea millefolium*, red clover *Trifolium pratense*, meadow cranesbill *Geranium pratense*, common dandelion *Taraxacum officinale,* cleavers *Galium aparine*, false oat-grass *Arrhenatherum elatius*, Yorkshire fog *Holcus lanatus*, herb Robert *Geranium robertianum*, common mallow *Malva sylvestris*, wood avens *Geum urbanum*, broad-leaved dock *Rumex obtusifolius*, greater plantain *Plantago major* and common nettle *Urtica dioica* present.

3.23. This habitat type is assessed to be of poor condition.

Heathland and shrub - h

9. Hedgerows (h2b 17 48 1160)

3.24. A length (of approximately 90m) of privet *Ligustrum sp* hedge is present along the southern edge of Watney's Sports Ground playing fields. This hedge is approximately 1.5 m in height and 0.75 m wide and appears to be subject to a regular management regime.

3.25. This habitat type is assessed to be of good condition.

Woodland and forest - w

10. Line of Trees (w1g6 76)

3.26. Lines of trees are present within the Watney's Sports Ground playing fields, Chalkers Corner and lining the River Thames (**Appendix C**, Plate 8). These trees vary in age. Along the River Thames the tree species include ash *Fraxinus excelsior,* sycamore *Acer pseudoplatanus,* elder *Sambucus nigra,* goat willow *Salix caprea,* cherry *Prunus sp.,* elm *Ulmus sp. and* hawthorn *Crataegus monogyna.* Within Watney's sports Ground playing fields the tree species include wingnut *Pterocarya sp,* London Plane *Platanus x hispanica,* Indian Bean Tree *Catalpa bignonioides,* Manna Ash *Fraxinus ornus,* red horse chestnut *Aesculus x carnea,* pink hawthorn *Crataegus laevigatus 'Rosea Flore Pleno',* cockspur hawthorn *Crataegus crus-galli* and Ornamental Hawthorn *Crataegus sp.* At Chalkers Corner the tree species include red norway Maple *Acer platanoides 'Crimson King',* cherry *Prunus sp,* cider gum *Eucalyptus gunnii,* horse chestnut *Aesculus hippocastanum* and false acacia *Robina pseudoacacia.* Some recent management in the form of pruning works is present at the trees.

3.27. This habitat type is assessed to be of moderate condition.

Invasive Plant Species

3.28. Several species listed under Schedule 9 of the WCA (as amended) were returned within the data search with Virginia creeper, Himalayan balsam and false-acacia (for locations see Arboricultural Impact Assessment ref. WIE18671-102_R_6_1_2_AIA) recorded on Site at the time of during the field survey (**Appendix C**, Plate 6 and 7 and **Figure 3**). Virginia creeper appears to be spreading from adjacent properties rather than originating from the Site itself.

3.29. Furthermore, several floral species listed under the London Invasive Species Initiative, comprising butterfly bush, tree of heaven and false acacia were also recorded at the time of survey.

Adjacent Habitats

River Thames

3.30. The River Thames (a notable habitat under LES, RBAP and S41) is located adjacent to the north of the Site. The section of river that flows adjacent to the Site is tidal and the banks adjacent to the footpath are heavily modified being reinforced by stone and concrete, with parts of the footpath and Thames Bank becoming flooded at high tide. A draw dock also fronts on to the River Thames at the top of Ship Lane adjacent to the northern Site boundary.

Buildings

3.31. The Jolly Gardener's Pub (B14) and an office building (B15) are located immediately adjacent to the Site as shown on **Figure 3**.

Mortlake Green

3.32. Mortlake Green, an area of public open space, lies south of the Site (**Figure 3** and **Appendix C**, Plate 10). This green comprises amenity grassland, scattered trees, ornamental planting and hardstanding pathways. These habitats are well managed and regularly utilised by the local community.

Protected and Notable Fauna

3.33. As a result of the Field Survey and on review of the ecological data search, an assessment is made below on the potential of the Site to support:

- Bats;
- Birds; and
- Terrestrial Invertebrates.

3.34. The fauna descriptions provided below should be read in conjunction with **Figure 3** and plates presented in **Appendix C**.

Bats

3.35. Numerous bat species records were returned from the ecological data search from within 2km of the Site (**Table 5**) with the most recent records of Daubenton's, noctule, common and soprano pipistrelle in 2020.

Buildings

3.36. As part of the PRA sixteen buildings (B1-B13) are present within the Site and a further two buildings (B14 and B15) are located directly adjacent to the Site (it should be noted that building B6 is referred to on **Figure 3** multiple times so no reference exists to B16, B17 and B18). A

description of each building and its potential to support roosting bats is detailed in **Appendix D**. Each building has a reference code (B1-B15) with its location shown on **Figure 3**. However, to summarise;

Building B2, B4, B5, B6, B7, B11, B13, B14 (off Site) and B15 (off-Site) are assessed to offer negligible suitability to roosting bats;

Building B1, B9 and B12 are assessed to offer low suitability to support roosting bats; and

Building B3, B8 (previously recorded as a confirmed roost site in 2019) and B10 are assessed to offer moderate suitability to support roosting bats.

Southern Boundary wall

3.37. A description of the southern boundary wall that runs directly adjacent to Mortlake High Street (hereafter referred to as the 'southern boundary wall') (**Figure 3**) and its potential to support roosting bats as a result of the PRA is detailed in **Appendix E**. However, to summarise this section of the southern boundary wall is assessed to have moderate suitability to support roosting bats.

Northern boundary wall

3.38. A description of the wall that runs directly adjacent to the River Thames (hereafter referred to as the 'Northern boundary wall') (**Figure 3**) and its potential to support roosting bats as a result of the PRA is detailed in **Appendix F**. However, to summarise this section of the River Path all is assessed to have moderate suitability to support roosting bats.

Trees

3.39. As a result of the PRA, a total of 15 trees on and directly adjacent to the Site boundary, as identified on **Figure 3,** were assessed to have the potential to support roosting bats. A description of each tree and its potential to support roosting bats is detailed in **Appendix F**. Each tree has a reference code that is linked with the Arboricultural Impact Assessment issued by WIE in January 2022 (ref. WIE18671-102-R-6-1-2-AIA). However, to summarise;

- Tree T3, T10, T37, T73, T74, T84, T94 and T121 are assessed to offer low suitability to roosting bats; and
- Tree T43, T44, T67, T68, T71, T75, T78, T83, T157 and T321 are assessed to offer moderate suitability to support roosting bats.

3.40. No other trees during the PRA were noted to contain any PRFs suitable for supporting roosting bats.

Bat activity

3.41. The Site itself is considered to offer limited foraging and commuting opportunities for bats 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, and as such the Site is assessed to be of low suitability for foraging and commuting bats. 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 for the local bat population.

Birds

3.42. Numerous bird species records were returned from the ecological data search from within 2km of

the Site (refer to **Table 5**) with the most recent records of reed bunting, herring gul, common tern, swift, pochard and song thrust in 2020 and tawny owl in 2021.

3.43. Feral pigeons *Columba livia domestica* were observed upon buildings throughout the Site. In addition, ring-necked parakeet *Psittacula krameria* were also observed in several locations. This non-native invasive species is listed under Schedule 9 of the WCA and under the LISI.

3.44. Bird prevention spikes and netting were observed at numerous locations at buildings across the Site making them unsuitable for nesting birds. However, the areas of the buildings where bird prevention measures are absent and access to the interior of buildings is available still offer opportunities for nesting birds, most likely common species such as feral pigeon *Columba livia.* The building roofs also offer nesting opportunities for species of gull. A number of other exterior structures associated with the former brewing activities within the Site are present, including tanks, vessels, storage containers, forecourt structures and loading bays. These structures are also considered to offer limited nesting potential for these species. Furthermore, the trees and ornamental planting also offer potential foraging and nesting opportunities for common urban/garden species.

3.45. The data search returned three non-confidential records of black redstart within 2km of the Site, with the closest and most recent record located 1.8km (1999) east of the Site.

3.46. Black redstart is a species fully protected under Schedule 1 of the WCA and is the subject of a SAP in the LES (**Appendix A**). It is considered that the majority of the existing buildings at the Site offer limited suitable nesting habitat for black redstarts owing to their structure. In addition, bird prevention spikes and netting were observed at numerous locations at buildings across the Site making them unsuitable for nesting birds. Areas of wasteland vegetation, usually typical of brownfield sites, are the optimal foraging habitat for black redstarts. The sparse patches of ephemeral vegetation / gravel present at the Site are not considered extensive enough to provide suitable foraging habitat for black redstart. However, 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. Given this, five black redstart survey visits were undertaken at the Site and adjacent areas in 2016. No black redstarts were recorded during these surveys. Given that the habitats at the Site and adjacent have not significantly changed since 2016, and the sub-optimal habitats present on Site, it is considered highly unlikely that black redstarts would currently be present on Site.

3.47. The data search returned five confidential records of peregrine falcon *Falco peregrinus* within 2 km of the Site. Given the confidential nature of the records the London Peregrine Partnership was contacted on 28th September 2021 to determine if they are aware of any records of breeding peregrines (or other records) in the local area (2km). The LPP responded on the same day and detailed that there are no records of breeding pairs in the local area either recent or historical. In addition, the LPP also stated that there are records of a pair roosting on Saint Matthias Church (2.5km to the south west of the Site) during the past few years, and sightings this year of at least one bird on Holy Trinity Church (2km to the south west of the Site). In addition, a nesting tray has now been installed at St Matthias, but it has not yet been made use of.

3.48. Peregrine falcon is a species fully protected under Schedule 1 of the WCA and is the subject of a Species Action Plan (SAP) in the RBAP and is listed on the LES. Peregrines breed on tall buildings (typically 20m-200 m above ground level[17]) which have suitable ledges for nesting. Although tall buildings exist on-Site, the majority of these buildings are of simple warehouse style construction and as such lack any suitable ledges for nesting peregrines. However, B8 (the Maltings) is

[17] Dixon, D & Shawyer, C. Peregrine Falcons: Provision of artificial nest sites on built structures. Advice note for conservation organisations, local authorities and developers.

approximately 18-20 m in height and a tower associated B13 is approximately 30-35m in height that provide suitable opportunities for peregrines.

3.49. Nevertheless, given the data search findings and that no peregrines were observed during the bird surveys detailed above in 2016 and during other ecological surveys on Site in the interim period (to date of this PEA field survey), it is likely that this species is absent from the Site.

Terrestrial Invertebrates

3.50. Numerous invertebrate species records were returned from the ecological data search from within 2km of the Site (**Table 5**).

3.51. The ornamental planting and trees are likely to offer opportunities for common species of invertebrates. However, owing to the extent of these habitats and species diversity recorded, it is considered unlikely that they would support any large populations or notable species assemblages.

4. Assessment

4.1. The potential IEFs that are anticipated to be affected by the proposed Development are listed in **Table 7** below. This table details the rationale for the inclusion of each potential IEF and also details the potential effect pathways and any requirement for further ecological assessments.

Table 7: Potential Important Ecological Features Anticipated to be Affected by the Development

Potential Important Ecological Feature	Category of Importance	Rationale	Potential Effect Pathway	Requirement for Further Ecological Assessment
Designated Sites (River Thames and Tidal Tributaries SMI)	Non-statutory designated site.	Non-statutory designated site.	Indirect effects could occur as a result of the Development	No Recommendations are made within **Section 5** with regard to suitable protection measures.
Bats	Hab Regs, WCA, S41, LBAP.	Presence of suitable foraging and commuting habitat. Buildings, the southern boundary Wall, the Northern boundary wall and trees assessed to have potential to support roosting bats.	Loss of foraging and commuting habitat. Destruction of any bat roosts. Killing or injury of any bats present.	Yes Further assessment in the form activity survey including use of automated detectors, evening emergence / re-entry surveys and inspections.

4.2. All other ecological features identified through the PEA have been scoped out of further assessment because:

The population or area likely to be affected by the proposed Development is of insufficient size or diversity to be of ecological importance;

There is no potential effect pathway between the proposed Development and these features has been identified; and/or

Contravention of the legislation relating to the feature is unlikely to occur.

4.3. The rationale for scoping out features present within the Site is provided in **Table 8** below.

Table 8: Ecological Features Scoped out of the Assessment

Ecological Feature	Rational
Designated Sites (excluding River Thames and Tidal Tributaries SINC)	No pathway of direct effect given distance from Site and formal EIA consultation response (see section 5.0). Indirect effects also unlikely to occur based on scale of proposed works and intervening habitats present. No significant effects anticipated from the proposed Development.
On-Site habitats (excluding adjacent River Thames as covered under Designated sites in **Table 7** above)	Habitat types are both nationally and locally common. No significant effects anticipated from the proposed Development.
Breeding birds (including peregrine falcon and	The proposed Development is highly unlikely to give rise to significant effects

Ecological Feature	Rational
black redstart)	to breeding birds, however legal implications are required. No black redstarts were found during surveys in 2016 and the Site remains sub-optimal for this species. No peregrine falcons have been recorded utilising the Site. As such, the proposed Development is highly unlikely to give rise to significant effects to black redstart and peregrine falcon.
Terrestrial Invertebrates	Any population(s) likely to be of insufficient size or diversity to be of significant ecological value. No significant effects anticipated from the proposed Development.

5. Recommendations

5.1. The PEA has identified potential IEFs anticipated to be affected by the proposed Development that could result in significant ecological effects. The requirement for further ecological assessments to fully define any IEFs present on-Site has been highlighted within **Table 7** and a detailed scope is provided below.

5.2. To minimise or avoid any significant ecological effects and to inform the emerging scheme design, recommendations for ecological mitigation, compensation and enhancement measures for those potential IEFs detailed within **Table 7**, as well as those ecological features which have been scoped out of assessment (**Table 8**) have been provided.

Designated Sites

5.3. No impacts from the proposed Development are anticipated to both Richmond Park SAC, NNR and SSSI nor Wimbledon Common SAC.

5.4. The assessment on no impacts is consistent with the formal EIA scoping response received on the 30th June 2017 as part of the 2018 Planning Applications. As part of this response, both LBRuT and NE stated that the proposed Development is unlikely to affect statutory designated sites as based on the proposed Development information provided or the proposed Development Site being outside of the geographical 'buffer' area within which developments are likely to affect designated sites.

5.5. It is noted that NE go on to state that due to the specific nature of a development proposal impacts can arise at a greater distance than is encompassed by NE's buffers, however given that the proposed Development as part of this planning application is similar in nature and scale to the previous proposals no additional assessment of effects is required.

5.6. Due to the presence on the River Thames adjacent to the northern Site boundary, and consequently the potential for it to be affected as a result of proposed Development the River Thames SMI has been assessed as an IEF. The water quality of the River Thames could be adversely affected by the Development as a result of pollution run-off or silt entering the river during the demolition, alteration, refurbishment and construction phase of the Development. This in turn could affect the wildlife associated with the river such as invertebrates and fish. Other potential indirect effects associated with the Works could include increased levels of noise, dust, vibration and light pollution. Ecological mitigation will be detailed within the Ecological Chapter of the Environmental Statement required for the planning applications. A Construction Environmental Management Plan (CEMP) would also be produced to ensure appropriate environmental controls are provided during demolition and construction phase of the proposed Development.

5.7. It is considered unlikely that there would be any direct or indirect effects on any other designated sites as a result of the Development owing to the distance and separation of those designed sites returned from the ecological data search by surrounding urban development and infrastructure.

5.8. During the operational phase of the proposed Development, the River Thames SMI could potentially be adversely impacted by increased public disturbance as a result in a change in land use (brought about by the proposed Development). However, the River Thames and the adjacent towpath to the north of the Site is already well used for recreational purposes and as such the impact is considered to be insignificant. Furthermore, the provision of green space (as recommended later in this PEA) as part of the proposed Development design would provide amenity space for the future residents, alleviating pressure on this adjacent non-statutory site.

Habitats

5.9. No habitats present within the Site are assessed to be IEFs. Nevertheless, mitigation in the form of appropriate protection measures is recommended and could be set out within a CEMP for those habitats to be retained. This should include protection measures at trees which are to be retained as part of the proposed Development in accordance with BS 5837:2012 - "Trees in relation to design, demolition and construction – Recommendations".

5.10. To conserve and enhance the ecological value of habitats at the Site, the following compensation and enhancements measures should look to be provided as part of the proposed Development in line with planning policy (**Appendix A**):

it is recommended the trees on-Site are retained, where possible, and placed under a suitable management regime, as part of the proposed Development;

the Development proposals should include green infrastructure corridors within landscape proposals to create and connect habitats of value to wildlife, including the creation of a north-south corridor between Mortlake Green and the River Thames;

the use of native species, or species of benefit to wildlife (seed and berry producing), within the Development's landscape scheme should be used to provide foraging opportunities for birds, bats, invertebrates and other fauna is recommended to enhance the Site for wildlife;

where new landscaping is to be undertaken as part of the Development proposals, horticultural practice should include the use of peat-free composts, mulches and soil conditioners. The use of pesticides (herbicides, insecticides, fungicides and slug pellets) should be discouraged to prevent fatal effects on the food chain particularly invertebrates, birds and / or mammals. Any pesticides used should be non-residual; and

subject to feasibility, additional habitat could be created above ground level within the Development utilising roof top space. Green roofs could be provided by creating grassland on roofs by sowing wildflower species in low-nutrient soils.

Invasive Plant Species

5.11. Butterfly bush and tree of heaven are listed as LISI Category 3, the explanation for this category is as follows:

"*Species of high impact or concern which are widespread in London and require concerted, coordinated and extensive action to control / eradicate*".

5.12. As a matter of best practice, it is recommended that butterfly bush and tree of heaven are removed from the Site via a suitable eradication programme prior to the commencement of the Works associated with the Development, where feasible, and not included within the planting schedule of any future landscape proposals.

5.13. False acacia is present on-Site and ring-necked parakeets were also observed on-Site. These species are listed as LISI Category 4 which states:

"*Species which are widespread for which eradication is not feasible but where avoiding spread to other sites may be required.*"

5.14. False acacia, Himalayan balsam and Virginia creeper are also listed under Schedule 9 of the WCA. Under the Act it is an offence to plant or otherwise cause the species to grow in the wild. It is therefore recommended that the false acacia is appropriately removed from Site as part of the proposed Development. This should also be undertaken for Virginia creeper, together with appropriate control of this species through regular management when it is spreading from off-Site

areas.

Protected and Notable Fauna

5.15. Protected and notable fauna on Site and within the ZoI that could be significantly affected by the proposed Development include bats, pending on the results of the recommended further assessments. No other protected and notable fauna are assessed to be IEFs at this stage of the assessment.

5.16. Mitigation in the form of protection measures should be adhered to during the construction phase of the proposed Development for any confirmed IEFs and other protected and notable fauna. These measures will ensure legal compliance and that good practice is adopted. The measures should be documented within a CEMP and include timing constraints associated with Site clearance works including the removal of habitats with the potential to support nesting birds.

Bats

5.17. The Site is assessed to be of low suitability for foraging and commuting bats. Consequently, and in line with current best practice guidelines, further survey in the form of bat activity surveys should be undertaken, to determine the utilisation of the Site by bats, and if present, by what species. In line with current best practice[18] the surveys should take the form of walked activity transects, with one survey visit being conducted per season (spring, summer and autumn). These surveys should also be supplemented by static bat detectors set out at one location per transect with data collected on five consecutive nights per season.

5.18. In accordance with current best practice guidelines[19] those buildings highlighted as being suitable for supporting roosting bats, together with the southern boundary Wall, the Northern boundary wall, and those trees of higher than low bat roosting suitability should be subject to further surveys if they will be impacted upon as a result of the proposed Development. It is recommended that the following further survey work is undertaken as follows:

Low suitability buildings (i.e.B12): a single evening emergence or dawn re-entry survey.

In accordance with best practice guidelines no additional surveys are required at low suitability trees (i.e. T3, T10, T37, T73, T74, T84, T94 and T121). However, if any of these trees require removal as part of the proposed Development, then it is recommended they are removed using soft felling techniques;

Moderate potential buildings (i.e. B1, B3, B8 (previously recorded a roost site in 2019), B9, B10 and B14 (off Site), the southern wall, and trees (i.e. T43, T44, T67, T68, T71, T75, T78, T83, T157 and T321: a single evening emergence and single pre-dawn re-entry survey (B8 should however be subject to three separate surveys as it has supported a roost site historically) status separated by a period of at least two weeks; and

The Northern boundary wall adjacent to the River Thames (given the number of PRFs and as all can be suitably accessed via a ladder) should be subject to endoscope inspections.

5.19. All of the evening emergence, pre-dawn re-entry, and endoscope inspection surveys should be carried out when bats are most active (May to August / September), to determine the presence or likely absence of roosting bats.

[18] 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
[19] 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

5.20. If any buildings, walls or trees are confirmed to support roosting bats the survey effort detailed above may need to be increased to conform to current best practice guidelines. The additional surveys would assist in adequately assessing the number of bats present and the roost classification to advise the requirement for mitigation.

5.21. If any of the buildings or trees that would be directly impacted on by the proposed Development are confirmed as supporting a significant bat roost, it is recommended that a detailed mitigation strategy to support a Natural England European Protected Species (EPS) development licence is prepared, in order to avoid infringement of relevant legislation. Should a non-significant roost of low conservation status be recorded a Bat Low Impact Class Licence, which requires a non-detailed Method Statement only, could be applied for. The licence application would detail the proposed mitigation including provisions of alternative bat roosting opportunities on the Site, timing of the proposed works and the provision of ecological supervision during the building demolition / tree removal phase. Post-development monitoring of the mitigation provided may also be required as part of the licence and the survey data would need to be within 18 months of age to support the licence application. It should be noted that Natural England require a minimum of 60 working days to process a licence application (based on known current timescale).

5.22. If there is a significant period of time between authorising this PEA and the Works, these buildings and trees may deteriorate in condition and, therefore, should be subject to an update survey to determine if their potential to support roosting bats has changed.

5.23. The adjacent River Thames is likely to provide foraging and commuting habitat for bats. However, this riparian feature will not be directly impacted by the proposed Development. A sensitive lighting strategy should be designed for the proposed Development to reduce light spill onto the River Thames. Furthermore, the corridor adjacent to the River Thames should look to be enhanced for foraging and commuting bats by the provision of soft landscaping as part of the proposed Development.

5.24. The provision of the habitat enhancements as detailed above would also benefit both foraging and commuting bats in the local area.

5.25. Bat roosting opportunities at the Site could be enhanced through the provision of bat boxes / tubes and / or bricks incorporated into any proposed buildings / structures and / or mounted onto existing / newly planted trees. It is recommended that bat boxes / tubes and / or bricks are targeted at SoPI species. Appropriate bat box / tube and / or brick models include Schwegler N27 bat box brick, Schwegler 1FD bat box and Schwegler 1FR bat tube. Bat bricks (e.g. Schwegler N27), or similar, can be incorporated into the fabric of the buildings and are available in a variety of external fascia materials; providing bat roosting opportunities which are aesthetically unobtrusive. The location of the bat boxes / tubes and / or bricks would be specified by an ecologist but face vegetated habitats and be away from publicly accessible roof spaces (if included). The boxes / tubes and / or bricks should be orientated facing between south-east and south-west, and at least 4 m above ground level (to prevent vandalism) with a clear aspect.

Birds

Black redstart

5.26. A total of three records for black redstart were returned from the ecological data search. The nearest and most recent record for this species is located approximately 1.9km east of the Site in 1999.

5.27. No black redstarts were observed at the Site or adjacent during the five survey visits conducted in 2016. Given this, and that the habitats on Site remain sub-optimal for this species, it is considered highly unlikely that black redstarts would currently be present on Site. As such an update black redstart survey is not considered necessary to support the proposed Development's new planning application(s). However, as a precautionary measure, it is recommended that should Site clearance works commence within the breeding bird season a pre-demolition/clearance check is undertaken by a suitably qualified ecologist to ensure that no black redstarts have colonised the Site in the interim. If nesting black redstarts are recorded during the pre-demolition/clearance check, an appropriate method statement would be agreed in consultation with the LBRuT. This would include measures to prevent the disturbance to breeding black redstart during the breeding season, including cessation of demolition, Site clearance or construction works in areas close to breeding sites until the birds have completed breeding, and monitoring the species during the active construction period.

5.28. It should also be noted that if the Site is left undisturbed for a significant amount of time during the development works this could result in the creation of suitable foraging habitat (such as rubble piles and open ground), nest sites and song posts (e.g. lighting rigs, cranes) and could result in the species moving onto the Site. Black redstarts should therefore be identified to the workforce during the Site induction via a toolbox talk so that this species is recognised if present and subsequent disturbance avoided.

5.29. It is recommended that the Development includes enhancement measures for this species in line with planning policy, as well as LES and RBAP targets. Suitable enhancement measures for this species are outlined below:

The provision of five bird boxes suitable for black redstarts. The Schwegler 2H Nest Boxes are a suitable example. The Schwegler 2H Nest Boxes are an open fronted box suitable for a number of bird species including black redstart. These boxes should be installed on buildings not trees (unless in dense climbing plant cover i.e. ivy) and should be hung sideways with the entrance at a 90° angle to the wall, preferably placed below 2m in height in areas with restricted public access (i.e. upon rooftops), or if this is not feasible, 3m above ground level to prevent vandalism and face east to north ; and

The provision of brown roofs upon buildings to create suitable habitat for this species.

Peregrine falcon

5.30. The ledge on the southern aspect of the Maltings building (B8) has potential to provide perching and nesting opportunities for peregrine falcon, with the tower associated with B13 also providing perching opportunities. However, this species has not been observed during any of the ecological surveys undertaken at the Site to date (form when the Field Survey was undertaken as part of this PEA) and there were no records for this species returned within the ecological data search.

5.31. No other habitats at the Site are considered to be of value to peregrine falcons and therefore no further surveys are recommended. It is however recommended as a precautionary measure that a pre-demolition survey is undertaken of the Maltings building (B8) ensure that no peregrines are nesting building in advance of the Works should the Works be undertaken during the bird nesting period.

Other bird species

5.32. The habitats at the Site including buildings and trees are considered to provide nesting opportunities for low numbers of common species of breeding bird. As such, the following mitigation and enhancement measures are recommended:

Should any habitats (including buildings) of value to nesting birds require removal to facilitate the any future development this will be undertaken outside of the breeding bird season (March to August inclusive). However, if works cannot be undertaken outside the breeding bird season an ecologist will inspect any vegetation / building to be removed. An experienced ecologist will be deployed to carry out an inspection at least within 24-hours prior to the clearance. If an occupied nest is detected, a buffer zone (area dependant on species) will be created around the nest, and clearance of this area delayed until the young have fledged;

Given the Site's urban location it is recommended that a contractor is appointed to develop a strategy to ensure the buildings are free and stay free of nesting birds such as feral pigeon and gulls. The use anti-nesting devices including netting, bird scarers and just ensuring that doors and windows are kept shut could be used to discourage birds from nesting on the buildings. The breeding season for most common bird species is documented to be between March to August inclusive, however feral pigeons are known to breed all year round when provided with suitable conditions and receive legal protection (**Appendix A**) when at an active nest site.

It is recommended that the habitats of value to nesting birds are retained on the Site where possible, to retain the interest for nesting birds. Should these habitats require removal to facilitate any future development, they should be replaced by habitats of value to nesting birds; and

The use of native seed and berry producing plants species as recommended above would provide additional foraging habitat for local bird species.

5.33. In addition, opportunities to enhance the Site for birds could be incorporated into the proposed Development. Simple measures could include provision of artificial nest sites within new habitats and upon buildings. It is recommended that artificial nest sites are targeted at bird species listed on the S41, LES and RBAP (**Appendix A**). The following bird boxes, or similar, are recommended:

'Schwegler Starling Next Box 3S' – This nest box has been designed with a large, deep cavity and 45 mm entrance hole to attract starlings and can be installed on mature trees or buildings. As well as starlings, this nest box is suitable for woodpecker species. These bird boxes should be placed at least 3 m above ground level to prevent vandalism and face east to north;

'Schwegler Swift Brick No.25' – Swift bricks should be installed under the roof, in shaded areas out of direct sunlight and away from windows, ideally facing north. They should be installed at least 5 m above ground level. Swift bricks, if competently installed, do not require any maintenance; and

'Schwegler Sparrow Terrace 1SP' – Suitable for house sparrows and tree sparrows. The nest box contains three separate nesting cavities. They can be installed on buildings either affixed to the exterior wall or incorporated into the wall. These bird boxes should be placed at least 3 m above ground level to prevent vandalism and face east to north.

5.34. As detailed previously, the provision of green space would provide foraging and nesting opportunities at the Site for local bird species.

Terrestrial Invertebrates

5.35. Only common invertebrate species are considered to utilise the Site's habitats. As such, any loss of these habitats is not considered to impact any protected or notable invertebrate species.

Opportunities at the Site for invertebrates could be enhanced through new landscape planting. The incorporation of deadwood features within landscape areas (including the living roofs, artificial boxes installed on the living roofs, plus the use of native plants species, as recommended above, would provide increased opportunities for a range of invertebrates.

6. Conclusions

6.1. As a result of the PEA ecological features within the ZoI including designated sites (with the exception of the River Thames SMI); habitats; breeding birds; and terrestrial invertebrates have been scoped out of the assessment due to insufficient biodiversity conservation value or a lack of an identified pathway for potential effects to occur. However, potential IEFs within the ZoI that are anticipated to be affected by the proposed Development include the River Thames SMI and bats.

6.2. The Site is not subject to any statutory or non-statutory designations. The nearest designated site is the River Thames SMI, which lies adjacent to the northern Site boundary. The adjacent River Thames is assessed to be of value to fish, birds and aquatic invertebrates. It is recommended that a CEMP is implemented to minimise any potential effects to this SMI.

6.3. It is determined that further ecological assessments would be required and presented within a Protected Species Report, to inform the scheme design and, when finalised, support the production of an Ecology Chapter for the EIA.

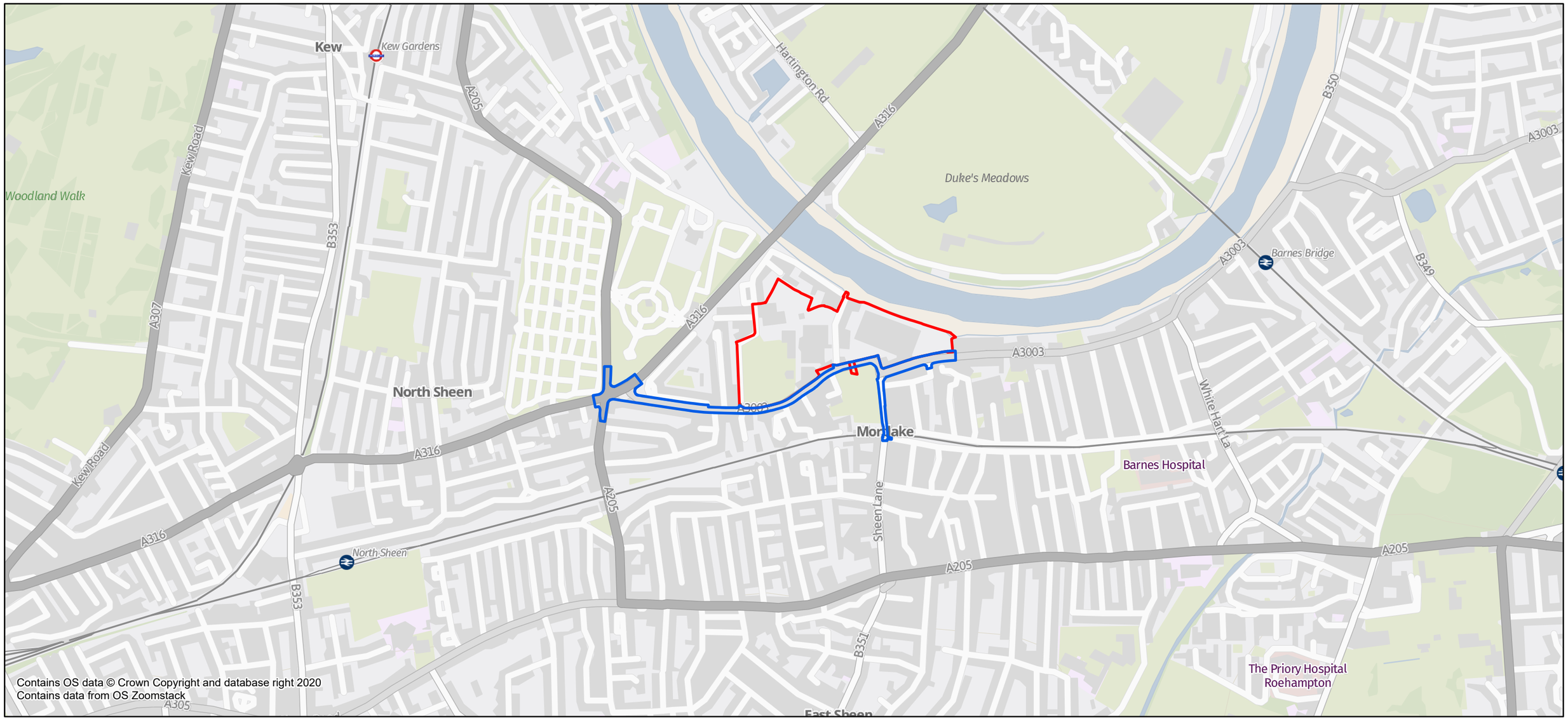
6.4. Mitigation measures that should look to be implemented during the construction phase of the proposed Development to ensure legal compliance and good practice measures are adopted have been outlined within this report.

6.5. Furthermore, ecological mitigation, compensation and enhancement measures likely to be incorporated with in the Development have also been outlined, which will be confirmed following the undertaking of the above further surveys and detailed within the respective reporting and/or the Ecology Chapter as appropriate.

6.6. It should be noted that this PEA is relevant to the legislation detailed in Section 2 and **Appendix A** at the time of writing. If there are any changes to legislation prior to the Development being completed, the advice within this PEA may require amending / updating in line with any legislative updates.

6.7. If there is a significant period of time between this PEA and the Development commencing, the ecological value of the Site may change, and the Site should therefore be subject to an update survey.

Figures



S278 Works Boundary

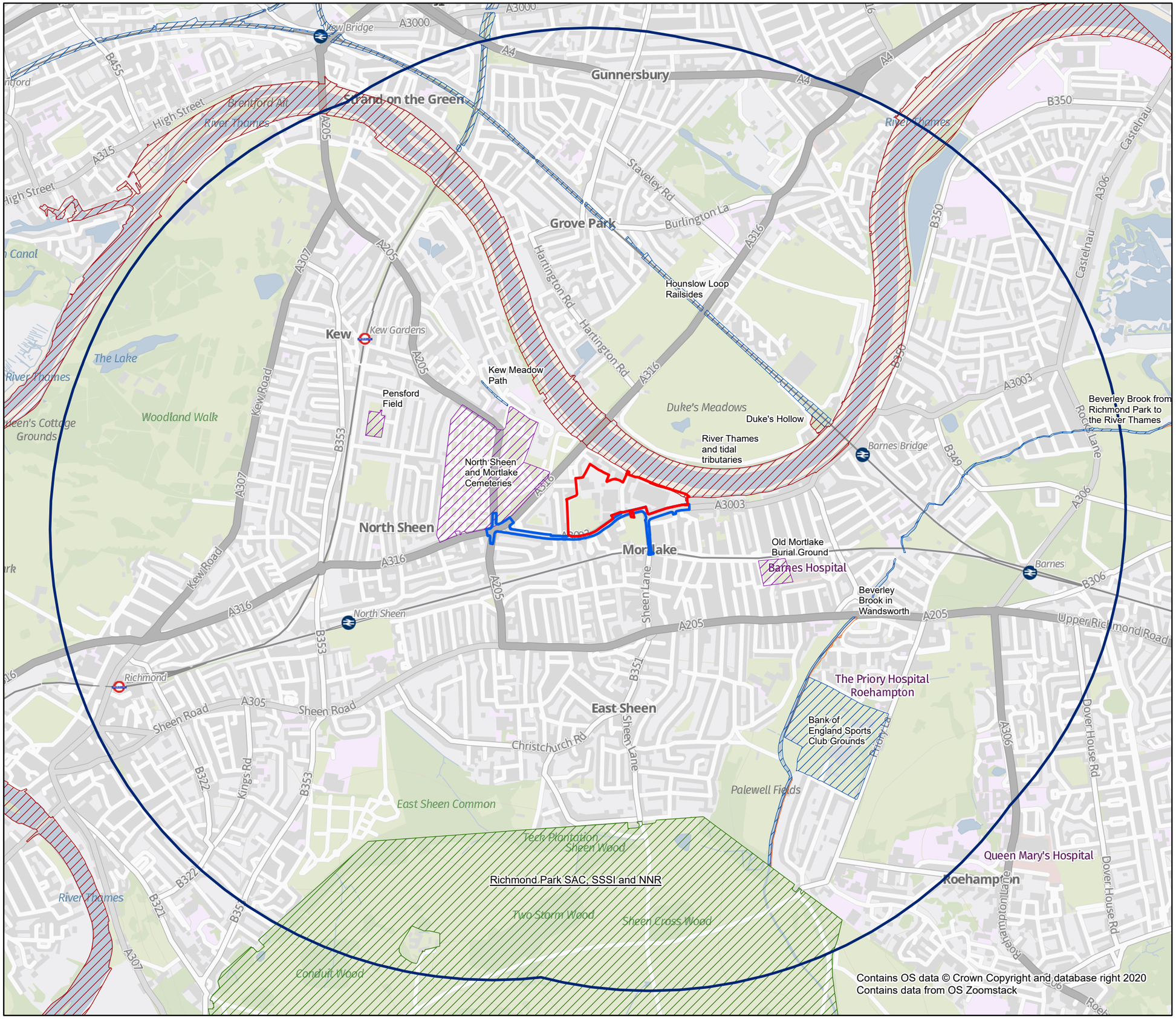
Planning Application Boundary

N

0 125 250 500 Meters

Project Details	WIE18671-103: Stag Brewery
Figure Title	Figure 1: Site Location Plan
Figure Ref	WIE18671-103-GIS-EC-1A
Date	January 2022
File Location	\\s-lncs\wiel\projects\wie18671\100\gis\ec

www.watermangroup.com



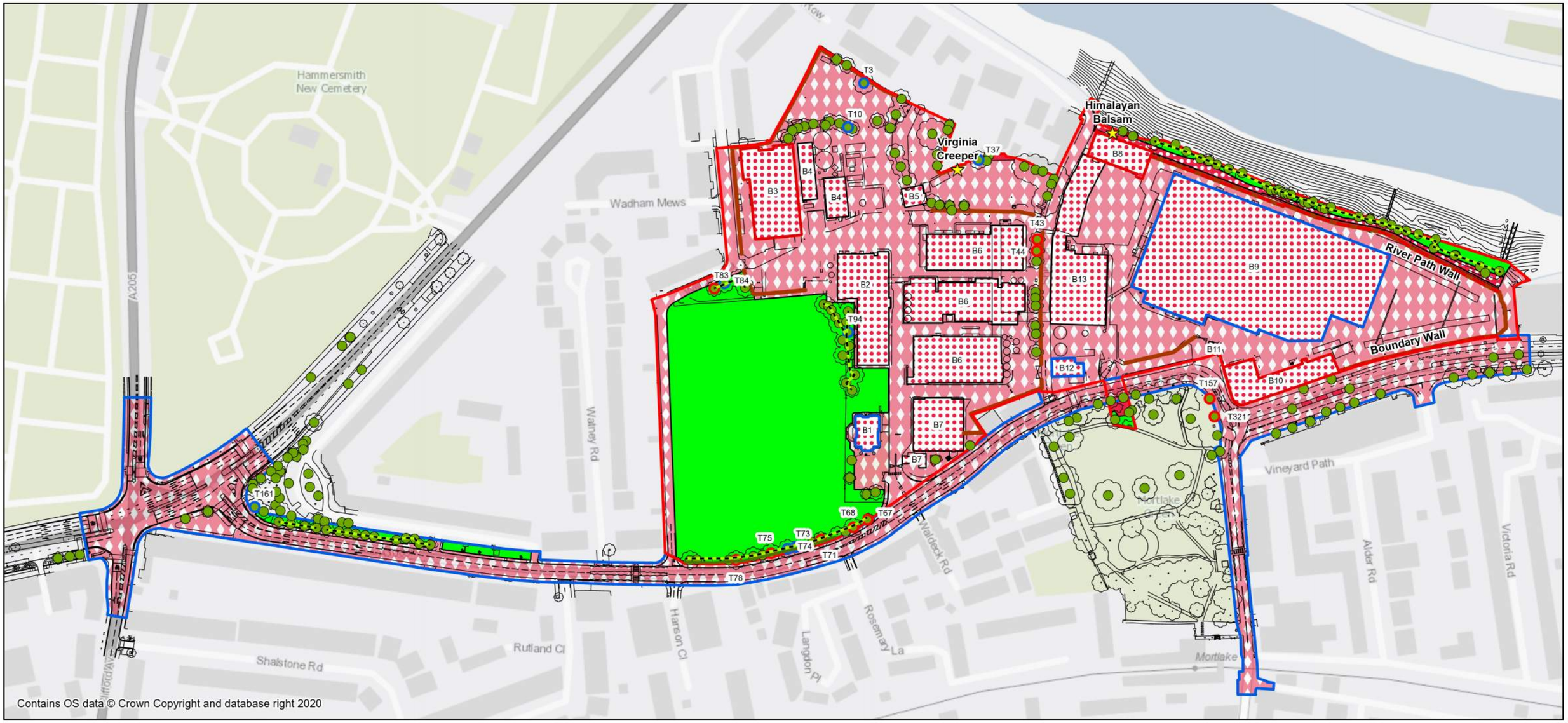
- Planning Application Boundary
- S278 Works Boundary
- 2km Buffer
- Sites of Borough Importance (Grade I)
- Sites of Borough Importance (Grade II)
- Sites of Local Importance
- Sites of Metropolitan Importance
- Statutory Designated Site of European/ National Importance

N

0 125 250 500 750 Meters

Project Details	WIE18671-103: Stag Brewery
Figure Title	Figure 2: Ecological Data Search Results
Figure Ref	WIE18671-103-GIS-EC-2A
Date	January 2022
File Location	\\s-lncs\wiel\projects\wie18671\100\gis\ec

www.watermangroup.com



- Planning Application Boundary
- S278 Works Boundary
- Modified Grassland - g4 - 64, 66, 75, 76
- Ornamental Planting - u - 48, 80, 1160
- Artificial Unvegatated Unsealed Surface - u1c - 17, 80
- Buildings - u1b5 - 97
- Hardstanding - u1b6 - 111
- Wall - u1e - 68, 80
- Hedgerow - h2b - 17, 48, 1160
- Line of Trees - w1g6, 76
- Urban Tree - u - 1170
- Trees with Low Bat Roost Potential
- Trees with Moderate Bat Roost Potential
- Buildings with Low Bat Potential
- Buildings with Moderate Bat Potential
- Features with Moderate Bat Potential
- Invasive Species

N

0 25 50 100 Meters

Project Details	WIE18671-103: Stag Brewery
Figure Title	Figure 3: Habitat Features (UK Habs)
Figure Ref	WIE18671-103-GIS-EC-3A
Date	January 2022
File Location	\\s-lncs\wiel\projects\wie18671\100\gis\ec

www.watermangroup.com

Planning Application Boundary

Potential Roosting Feature

1 2 3 8 4 9 10a 10b 11 12 13 5 6 14 7

N

Project Details	WIE18671-103: Stag Brewery
Figure Title	Figure 4: Northern Boundary Wall – Potential Roosting Features Locations
Figure Ref	WIE18671-103_GR_EC_4A
Date	January 2022
File Location	\\s-lncs\wiel\projects\wie18671\103\graphics\ec\issued figures

APPENDICES

A. Planning Policy and Summarised Flora and Fauna Legislation

National Planning Policy

National Planning Policy Framework, 2021

The National Planning Policy Framework (NPPF) was published in 2012 and last updated on 20th July 2021[20]. Section 15 (outlined below) of the NPPF, 'Conserving and Enhancing the Natural Environment', replaces Section 11 of the previous NPPF 2012 revision and NPPF 2018[21]. No significant changes to Section 15 are noted between the 2019[22] and 2021 update. The Government Circular 06/2005[23] - Biodiversity and Geological Conservation: Statutory Obligations and Their Impact within the Planning System, remains valid and is still referenced within the NPPF.

Of particular significance with respect to biodiversity in the NPPF revision, is the amendment to para 175(d) of the NPPF 2019 (now para 180(d) of the NPPF 2021), which now requires opportunities to incorporate biodiversity improvements in and around development, rather than simply making it optional. This demonstrates further steps taken by the government towards achieving the 25 Year Environment Plan (2018). Otherwise there have been no further changes to the wording of "Conserving and enhancing the natural environment" Chapter of 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:

[20] Ministry of Housing, Communities and Local Government. (2021). *National Planning Policy Framework*.
[21] Ministry of Housing, Communities and Local Government. (2018). *National Planning Policy Framework*.
[22] Ministry of Housing, Communities and Local Government. (2019). *National Planning Policy Framework*
[23] Department of Communities and Local Government. (2005). *Circular 06/05: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*.

- *"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 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, 2021

The Government's National Planning Practice Guidance 2016[24], updated in 2019[25] (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

The London Plan: The Spatial Development Strategy for Greater London, 2021

The London Plan 2021 sets out the overall strategic plan, setting out a framework for development over the next 20 to 25 years and includes several policies relating to ecology. Key to the London Plan is Policy G6 'Biodiversity and Access to Nature' which sets out the Mayor's policy in relation to biodiversity and access to nature. This states:

- *"Sites of Importance for Nature Conservation (SINCs) should be protected.*
- *Boroughs, in Developing Plans, should::*

  a) *use up-to-date information about the natural environment and the relevant procedures to identify SINCs and ecological corridors to identify coherent ecological networks;*

  b) *identify areas of deficiency in access to nature (i.e. areas that are more than 1km walking distance from an accessible Metropolitan or Borough SINC) and seek opportunities to address them;*

  c) *support the protection and conservation of priority species and habitats that sit outside the SINC network, and promote opportunities for enhancing them using Biodiversity Action Plans;*

  d) *seek opportunities to create other habitats, or features such as artificial nest sites, that are of particular relevance and benefit in an urban context; and*

[24] Department for Communities and Local Government. (2016). *National Planning Practice Guidance*. DCLG, London.
[25] Department for Communities and Local Government. (2019). *National Planning Practice Guidance*. DCLG, London.

e) *ensure designated sites of European or national nature conservation importance are clearly identified and impacts assessed in accordance with legislative requirements.*

- *Where harm to a SINC is unavoidable, and where the benefits of the development proposal clearly outweigh the impacts on biodiversity, the following mitigation hierarchy should be applied to minimise development impacts:*
- *avoid damaging the significant ecological features of the site;*

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

g) *deliver off-site compensation of better biodiversity value.*

- *Development proposals should manage impacts on biodiversity and aim to secure net biodiversity gain. This should be informed by the best available ecological information and addressed from the start of the development process.*
- *Proposals which reduce deficiencies in access to nature should be considered positively.*

Mayor of London: Environment Strategy, 2018

The London Environment Strategy, 2018[26] 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. Priority species (SAPs) and habitats (HAPs) related to the Site are listed below:

- *Birds, house sparrow, and bats (SAPs)*
- *Rivers and Streams (HAPs).*

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: Adopted Local Plan 2020

The following strategic visions, objectives and policies within 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;

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;

[26] Mayor of London (2018) *London Environment Strategy*

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;*
- *incorporating green infrastructure features, which make a positive contribution to the wider green infrastructure network*

*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 13 'Green Belt, Metropolitan Open Land and Local Green Space' states

Local Green Space

D. Local Green Space, which has been demonstrated to be special to a local community and which holds a particular local significance, will be protected from inappropriate development that could cause harm to its qualities.

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'[27] 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)[28].

[27] London Borough of Richmond upon Thames (no-date); 'Design Guidelines for Nature Conservation & Development'.
[28] London Borough of Richmond upon Thames (2005); 'Unitary Development Plan. Chapter 12 – Local Strategies and Plan Proposals'.

The LBRuT adopted a planning brief for the Site in July 2011 with SPD[29] 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."

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'[30]. 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'[31] covers the period from 2011 to 2020. This now supersedes the UK Biodiversity Action Plan (UK BAP)[32]. 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.

Based on the results of the PEA the following HoPIs and SoPIs listed under S41 are considered to be of potential value on and/or immediately adjacent to the Site:

Rivers and Streams;

Noctule bat (SoPI);

[29] London Borough of Richmond upon Thames (2011); 'Stag Brewery, Mortlake, SW14 Planning Brief. Supplementary Planning Guidance'.

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

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

[32] HMSO. (1994) *Biodiversity The UK Action Plan*.

Soprano pipistrelle bat *Pipistrellus pygmaeus* (SoPI);

Starling *Sturnus vulgaris* (SoPI);

House sparrow *Passer domesticus* (SoPI).

Richmond Biodiversity Action Plan

The Biodiversity Action Plan for the London Borough of Richmond upon Thames (LBRuT)[33] 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:

- Tidal Thames;
- House sparrow;
- Song thrush;
- Swift;
- Stag beetle.

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*'[34]. 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[35], 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.

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

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

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

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

Specific habitats and species receive legal protection in England under various pieces of legislation, including:

- The Conservation of Habitats and Species Regulations 2017 (as amended)[36];
- The Wildlife and Countryside Act (WCA) 1981 (as amended)[37];
- The Countryside and Rights of Way (CRoW) Act 2000[38];
- Environment Act 2021
- The Natural Environment and Rural Communities Act 2006[39];
- The Hedgerow Regulations 1997[40];
- The Protection of Badgers Act 1992[41]; and
- Wild Mammals (Protection) Act 1996[42]

Further details of legislation in respect of legally protected and notable flora and fauna of relevance to the Site are provided below.

Bats

In summary, all UK bat species are protected by the Conservation of Habitats and Species Regulations 2017 (as amended) and by the WCA. 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

[36] HMSO (2017) The Conservation of Habitats and Species Regulations 2017 (as amended).

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

[38] HMSO (2000) 'The Countryside and Rights of Way (CRoW) Act'

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

[40] ODPM (1997) 'The Hedgerow Regulations'

[41] ODPM (1992) 'The Protection of Badgers Act'

[42] HMSO. (1996). *Wild Mammals (Protection) Act*.

Obstruct access to any place used by bats for shelter or protection and disturbing bats while occupying such as place.

Birds

The level of protection afforded to birds under the law varies from species to species. A few game and pest species may lawfully be hunted and killed, usually under licence, whilst the rarest species are listed on Schedule 1 of the WCA 1981 and are protected by special penalties for offences.

All of the native bird species of Britain are additionally covered by the European Union (EU) Directive on the Conservation of Wild Birds 2009[43] ('The Birds Directive'). The Birds Directive applies to all wild birds, their eggs, nests and habitats, and provides for the protection, management and control of all species of birds naturally occurring within each member state of the European Union. It requires the UK to take measures to ensure the preservation of sufficient diversity of habitats to maintain populations of all wild birds at ecologically and scientifically sustainable levels. The requirements of the Birds Directive are implemented in the UK primarily through the WCA 1981 (as amended) and Conservation of Habitats and Species Regulations 2017 (as amended).

Statutory protection is given to all nesting birds in the UK under the WCA 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird, take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition to this, for species listed on Schedule 1 of the WCA 1981 (as amended), it is an offence to intentionally or recklessly disturb birds while they are nest building, or at or near a nest with eggs or young, or to disturb the dependent young of such a bird.

In addition to statutory protection, the bird species of Britain are also subject to various conservation designations intended to indicate their rarity, population status and conservation priority. These do not have statutory force but may be instrumental in determining local, regional and national planning and development policy. The main categories of designation comprise the British Trust for Ornithology (BTO) 'Species Alert' lists, the Royal Society for the Protection of Birds (RSPB) 'Birds of Conservation Concern' lists and species listed under Section 41 of the NERC Act 2006 and local Biodiversity Action Plans (BAPs).

The BTO Conservation Alert System lists of 'Birds of Conservation Concern' include a 'Red List' for birds of high conservation concern and an 'Amber List' for birds of medium conservation concern. Red List species are those that are globally threatened and Amber List species are those with an unfavourable conservation status in Europe, according to the International Union for Conservation of Nature (IUCN) criteria[44].

[43] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds

[44] IUCN (2000): 'The revised Categories and Criteria (IUCN Red List Categories and Criteria version 3.1)'.

B. Ecologist CV

Lee Mantle

Job Title: **Ecologist**

Profile:

Lee is an ecologist with a wide range of experience on sites of varying sizes and involving a wide range of issues. Lee has over 15 years continuous consultancy experience in the field of ecology and specialises in protected species issues that often require complex mitigation solutions.

Lee is experienced in 'Extended' Phase 1 habitat surveys and protected/notable species surveys. He has experience in the production of baseline survey reports including Preliminary Ecological Appraisals (PEAs), Ecological Impact Assessments (EcIAs) and Ecology Chapters in support of Environmental Impact Assessments (EIA) for a range of development related works including residential, highways, commercial and mixed-use development.

Qualifications and Affiliations: BSc (Hons) Environnemental Science, MCIEEM

Key Skills:

- Flora and fauna surveys
- Ecological Due Diligence Reports
- PEA reports
- EcIA
- Ecology Chapters in support of EIAs
- Habitat Regulations Assessments (HRA)
- Mitigation strategies and method statements for flora and fauna
- Ecological BREEAM assessments
- Ecological CEEQUAL assessments
- Production of Landscape and Ecological Management Plans (LEMP)
- Natural England (NE) license holder for bats (Class 2) and great crested newt (Class 2)
- Production of NE development licenses (named ecologist for bats and great crested newts)
- Ecological Health and Safety

Project Experience:

Project / Location	Description
Highways Agency	Detailed site assessment of the Area 2 soft estate (including the M5 and A303) and report production identifying any potential ecological issues arising from highways works
Leybourne Grange	Ecological management and coordination of housing development (over 300 houses) in Kent. Including the soft strip of 32 buildings containing roosting bats and erection of Rope Bridge as common dormouse mitigation. Both under the appropriately approved Natural England development licences
Westbury Bypass	Project on behalf on Wiltshire Council. Ecological input including management of baseline surveys, pre-construction monitoring and detailed mitigation design for bats prior to public inquiry. This scheme was noted to be the first project of its kind to include all four British Annex II bat species.

Project Experience:

Project / Location	Description
Sites in London	Ecological input into proposed development sites (including Cringle Dock part of the Battersea Power Station development, Elephant and Castle, Winstanley Estate, High Road West, Tesco Barking, Crossharbour, Lesnes Estate, Walthamstow and Camden), in London for various clients (including DP9, Land Securities, Eco World Quayside Limited, Lendlease, Taylor Wimpey, Peabody, Trium Environmental, CBRE, RER London Ltd, Stanley Sidings Ltd). Production and undertaking of Preliminary Ecological Appraisals, flora and fauna surveys, EcIA, ecological chapters in support of EIA, Habitat Regulations Assessments (HRA) Ecological BREEAM Assessments and Landscape and Ecological Management Plans (LEMP).
Holmer, Hereford	Ecological design input into residential scheme (approximately 400 houses) design and associated protected species surveys to support various planning applications. Post planning permission preparation of a Barn Owl mitigation strategy and Natural England GCN license application.
Rudloe Manor	Management and co-ordination of ecological survey for the restoration and redevelopment of the former Rudloe Manor, North Wiltshire. Emphasis was on the assessment of potential impacts on reptiles, GCN, Badgers and bats (including Greater and Lesser Horseshoe bats on the nearby Bath and Bradford on Avon Bats SAC). Baseline reports to support a planning application and detailed mitigation strategies were produced.
Showell Farm	Ecological assessment to inform a strategic study associated with a proposed development at Chippenham to inform the Local Development Framework for over 1000 houses. Lead ecologist, managed and undertook various ecological surveys for Bats, GCN, Otter and Water Voles, breeding birds, Common Dormice etc for input into possible development masterplan as part of a potential future planning application.
Various-Barn Conversions	Detailed bat survey work and mitigation design for private barn conversions/rebuilds and building demolition
Sebastopol, Pontypool	Undertaking of data review of over 10 years of ecological survey information to produce an Ecological Impact Assessment chapter for a strategic urban development expansion.
Sahara Landfill Site	Great Crested Newt Natural England development licence application with associated translocation and monitoring work.
Hew Hythe	Ecological input including protected species surveys for reptiles, bats and Water Voles all leading to mitigation work and selected translocations.
Ifield Mill	Project on behalf of Crawley Borough Council. Lead ecologist on a project to inform the possible decommissioning or repair of reservoir dams, as well as ecological enhancements of this site of nature conservation interest. Project Management and ecological input through Phase 1 survey, protected/notable flora and fauna survey (bats, reptiles, bird, GCN, otter, badger, white-clawed crayfish, invertebrates, woodland NVC) and study option scoping appraisals.

C. Photographs

Plate 1 - Watney's Sports Ground playing fields located to the south-west of the Site.

Plate 2 – Example of ephemeral and tall ruderal vegetation within the Site.

Plate 3 – Area of unmanaged ornamental planting located within the north of the Site.

Plate 4 – Example of urban trees within the north-west of the Site.

Plate 5 – Part of Boundary all adjacent to Mortlake High Street (roadside)

Plate 6 – Example of Virginia creeper overgrowing wall from neighbouring property within the north of the Site.

Plate 7 – Himalayan balsam growing on Site adjacent to the River Thames.

Plate 8 – The River Thames SMI lies adjacent to the northern boundary of the Site.

Plate 9 – South bank of the River Thames adjacent to the Site

Plate 10 – Mortlake Green lies adjacent to the southern boundary of the Site.

D. Potential Roost Assessment – Buildings

Building Description	Building Photographs	Bat Roost Potential
<u>B1 – Club House at the Sports Club</u> The Club House comprises a two-storey concrete framed building with redbrick walls and a flat roof. Overall, the building is in good condition. Rows of weep holes approximately 5cm in height and 1-1.5cm wide are present in the brick work at approximately 1m and 3m above ground level and provide opportunities for individual and opportunistic roosting bats.	 	Low.

Building Description	Building Photographs	Bat Roost Potential
<u>B2, B4, B5, B6 and B7 – Industrial Units</u> There are several industrial units across the Site including the Process Building (B2), Defunct Production Buildings including effluent treatment (B4), Powder Store (B5), <u>B6</u> - Finishing Cellar / Chip Cellar / Brew House and Offices (P.O.B) / and the west gatehouse (B7). These buildings are all of similar construction, with most buildings comprising brick walls at the ground level and corrugated metal cladding above with flat roofs. Other structures include units with shallow pitched corrugated asbestos roofs, tanks and portacabins. All of these buildings are simple in their construction and offer no opportunities for roosting bats. At B6 a shutter area formerly exposed has now been tightly boarded up.	 B2  B4  B5  B6  B7	Negligible.

Building Description	Building Photographs		Bat Roost Potential
B3 - Stables Court is a three-storey building of redbrick construction with a flat roof. Windows on the ground have been boarded, a number of which have become warped providing potential access points for bats. In addition, rows of weep holes approximately 5cm long and 1-1.5cm wide are present in the brick work at approximately 2m, 4m and 6m above ground level and provide opportunities for individual roosting bats.			Moderate.

Building Description	Building Photographs	Bat Roost Potential
<u>B8 – Maltings</u> The majority of this building comprises eight storeys, whilst the eastern section comprises nine storeys. It has brick walls and a pitched roof covered in slate tiles with lead flashing along the ridge line. All of the windows have been boarded up on the exterior and some gaps (not visible from ground level) are likely to be present around the edges. Several other smaller crevices were observed within the brickwork in various locations at the building. The pitched roof is in good condition with no obvious features for roosting bats observed during the external inspection. Personal communication with the Site manager (back in 2016-2017) confirmed that this building has no floors inside and is therefore open to the pitch internally.	  	Moderate (previously recorded a roost site in 2019).

Building Description	Building Photographs	Bat Roost Potential
<u>B9 – Packaging Building</u> The majority of the Packaging Building comprises a warehouse style building which has brick walls to 1 m high then corrugated plastic cladding above. The roof consists of hipped and pitched sections constructed from corrugated plastic sheeting with skylights present in some areas. A section on the southern aspect of the building comprises two storeys and is constructed from brick walls with a flat roof. Overall, the building is in good condition. In addition, rows of weep holes approximately 5cm long and 1-1.5cm wide are present in the brick work at approximately 1m, 3m, 4m, 6m and 7m above ground level and provide opportunities for individual and opportunistic roosting bats.	 	Low.

Building Description	Building Photographs	Bat Roost Potential
<u>B10 – L Block</u> L Block comprises the Former Bottling Building in the eastern section and a Former Hotel in the western section. The Former Bottling Building is three storeys and has a mixture of brick and concrete walls. The roof is mostly pitched with dormer windows protruding. On the eastern elevation of the Former Bottling Building a vent is present with gaps present between the slats, providing access into the roof void. In addition, and on the same elevation decorative horizontal crevices 1-1.5cm wide and 15cm long are present in the brickwork beneath the vent. On the northern aspect of the building soffit boarding is present on an area of sloping roof. The soffit board is approximately 1.5m long and has a gap underneath 5cm wide. Bricks are also missing in the northern aspect wall. On the southern aspect of the building adjacent to Lower Richmond Road/Mortlake High Street slipped and missing ridge tiles on the roof are present.	   	Moderate.

Building Description	Building Photographs	Bat Roost Potential
<u>B11 – East Gatehouse</u> A single storey brick-built building. The roof comprises a mixture of flat and shallow pitched sections covered in roofing felt. There is a plastic soffit box around the top of the external perimeter wall. Overall, the building is in good condition and no features of potential value to roosting bats were observed.		Negligible.
<u>B12 and B13 – Power House and Production (CO2 Block)</u> The CO2 Block (B12) and Power House building (B13) are similar in construction with brick walls at the base and corrugated metal cladding above with flat roofs. On the eastern aspect of B12 only (B13 shutter area now tightly boarded up) it appears that a former shutter has been removed resulting in the exposure of the cavity wall around the perimeter of where the removal works have been undertaken. The exposed cavity wall could lead to a potential roosting space for bats.	 B12  B13	B12 – Low. B13 – Negligible.

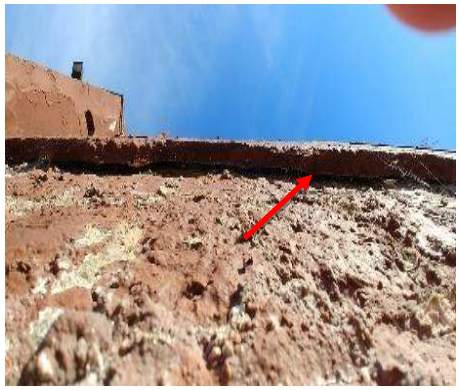
Building Description	Building Photographs	Bat Roost Potential
<u>B14 – The Jolly Gardener's Pub</u> This building is located outside the Site boundary but lies adjacent to the Site's southern boundary. The main section (eastern aspect) of this pub comprises three storeys, whilst the western aspect comprises one storey. It is constructed from brick with a hipped clay tiled roof at the eastern aspect and a flat roof at the western aspect. Dormer windows and chimney stacks protrude from the hipped roof. Numerous missing and slipped tiles were noted on the hipped roof which could provide potential opportunities for roosting bats.		Moderate.
<u>B15</u> This building is located outside the Site boundary but lies adjacent to the Site's southern boundary. It is a building of modern construction. The walls are constructed from metal and it has a metal flat roof. No features of potential value to roosting bats were observed.		Negligible.

E. Potential Roost Assessment – Southern boundary Wall

Description	Photographs	Bat Roost Potential
Wall (**Figure 1**) A section of wall runs adjacent to Mortlake High Street. On the Roadside the wall is in good condition and lacks voids and crevices. On the Site side of the wall gaps are present between the vertical and horizontal pillars and wall 3-6cm wide and along its length (up to a 2m section). Missing bricks are present at the wall 6cm wide and 8cm long and at height it is not possible to determine how far they intrude into the wall. Steel supporting girders are present with gaps present at the top of the wall 3-6cm wide and along its length (up to a 1.5m section). 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.	   	Moderate.

F. Potential Roost Assessment – Northern boundary wall

Description (for location of PRF refer to Figure 4)	Photographs	Bat Roosting Suitability
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.		Moderate.
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.		

Description (for location of PRF refer to Figure 4)	Photographs	Bat Roosting Suitability
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.		
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.	 	
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.		

Description (for location of PRF refer to Figure 4)	Photographs	Bat Roosting Suitability
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.		
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.		

Description (for location of PRF refer to Figure 4)	Photographs	Bat Roosting Suitability
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 2m above ground level. The crack is assessed to be superficial and is 2cm at its widest.		
PRF 9 (River Side) Large opening made by vandalism. Gap is considered too large and exposed to support roosting bats.		

Description (for location of PRF refer to Figure 4)	Photographs	Bat Roosting Suitability
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. Old spider webs are present within the cavities and during the inspection no signs of roosting bats were recorded.	 	

Description (for location of PRF refer to Figure 4)	Photographs	Bat Roosting Suitability
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.		
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 to exposed to be of value to roosting bats.		

Description (for location of PRF refer to Figure 4)	Photographs	Bat Roosting Suitability
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.		
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.		

G. Potential Roost Assessment – Trees

Description	Tree Photographs	Bat Roosting Suitability
T3 London plane growing out of hardstanding habitat to the north of the Site. Areas of peeled bark on southern aspect at 5m above ground level.		Low.
T10 London plane growing out of hardstanding habitat to the north of the Site. Snag end is present approximately 3m above ground level on the western aspect 3cm wide and 3 cm long.		Low.

Description	Tree Photographs	Bat Roosting Suitability
T37 Sycamore growing out of area of unmanaged ornamental planting with hardstanding underneath. Multi-stem tree with snag end approximately 4m above ground level on the southern aspect 3cm wide and 3 cm long.		Low.
T43 and T44 Both stands are Tree of heaven and are growing out of tall ruderal vegetation with hardstanding underneath. A woodpecker hole is present approximately 5cm wide and 5cm long on the northern aspect, 9m above ground level. Snag end/rot hole is also present on the northern aspect 9cm wide and 9cm long, 6m above ground level.		Moderate.

Description	Tree Photographs	Bat Roosting Suitability
T67 Red horse chestnut *Aesculus x carnea* growing in area of managed amenity grassland as part of Watney's Sports Ground playing field. Fissures or stress fractures 2-3cm wide and 20cm long are present on a limb, west facing aspect approximately 5m above ground level.	 	Moderate.
T68 Red horse chestnut growing in area of managed amenity grassland as part of Watney's Sports Ground playing field. Snag ends/rot holes are present on the south facing aspect approximately 5m above ground level 6cm wide and 8cm long.		Moderate.

Description	Tree Photographs	Bat Roosting Suitability
T71 Red horse chestnut growing in area of managed amenity grassland as part of Watney's Sports Ground playing field. Snag ends/rot holes on north facing aspect approximately 3-5m above ground level and on average 3-4cm wide and 6-8cm long.		Moderate.
T73 and T74 Pink hawthorn *Crataegus laevigatus* growing in area of managed amenity grassland as part of Watney's Sports Ground playing field. Both trees have light ivy covering.		Low.

Description	Tree Photographs	Bat Roosting Suitability
T75 Red horse chestnut growing in area of managed amenity grassland as part of Watney's Sports Ground playing field. Fissures or stress fractures 2-3cm wide and 20cm+ long are present on limbs, west facing aspect approximately 5-8m above ground level.	 	Moderate.
T78 Red horse chestnut growing in area of managed amenity grassland as part of Watney's Sports Ground playing field. Snag ends/rot holes present on northern aspect at 5-7m above ground level, on average 3cm wide and 3 cm long.	 	Moderate.

Description	Tree Photographs	Bat Roosting Suitability
T83 Wingnut *Pterocarya sp* growing in area of managed amenity grassland as part of Watney's Sports Ground playing field. Old woodpecker hole approximately 5cm wide and 5cm long in present on the northern aspect of the tree, 2.5m above ground level. In addition, a split limb on the northern aspect, growing on the western side of the tree is present. The split is approximately 5-7cm wide and 30cm long.	 	Moderate.
T84 London plane growing in area of managed amenity grassland as part of Watney's Sports Ground playing field. Snag ends are present approximately 5cm wide and 5cm long on north facing aspect 2m above ground level.		Low.

Description	Tree Photographs	Bat Roosting Suitability
T94 London plane growing in area of managed amenity grassland as part of Watney's Sports Ground playing field. Fissure is present approximately 5cm wide and 30cm long on north facing aspect 304m above ground level.		Low.
T121 Cherry *Prunus sp* that has been subject to recent limb removal works. Fissures are present on south facing aspect approximately 2-3cm wide and 10cm long. No access was possible inside the Chalkers Corner component of the Site.		Low.

Description	Tree Photographs	Bat Roosting Suitability
Tree 157 and T321 Two London plane trees Located within area of mown grass on edge of Mortlake Green to the south of the Site. Snag ends/rot holes are present approximately 6cm wide and 6cm long on the western aspect 4m above ground level and flaked bark 8m above ground level on the eastern aspect.	 	Moderate.

UK and Ireland Office Locations

F. Protected Species Report, February 2022 (Ref: WIE18671-103-R-4-2-3-PSR)

Stag Brewery, Mortlake

Protected Species Report

For Reselton Properties

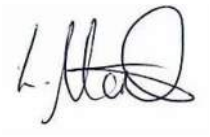
February 2022

Client Name:	Reselton Properties Ltd
Document Reference:	WIE18671-103-R-4-2-3-PSR
Project Number:	WIE18671-103

Quality Assurance – Approval Status

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)

Issue	Date	Prepared by	Checked by	Approved by
First	February 2022	Lee Mantle Ecologist	Steve Brindle Associate Director	Steve Brindle Associate Director



Comments

Comments

Disclaimer

This report has been prepared by Waterman Infrastructure & Environment Ltd, with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporation of our General Terms and Condition of Business and taking account of the resources devoted to us by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at its own risk.

Contents

Tables

Figures

Appendices

1. Introduction

1.1. This Protected Species Report (PSR) has been prepared by Waterman Infrastructure & Environment Limited (Waterman) on behalf of Reselton Properties Limited ("the Applicant") in support of two linked planning applications ("the Applications") for the comprehensive redevelopment of the former Stag Brewery Site in Mortlake ("the Site") within the London Borough of Richmond upon Thames (LBRuT).

1.2. The former Stag Brewery Site is centred on Ordnance Survey Grid Reference 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 east and Bulls Alley (off Mortlake High Street) to the west. The Site is bisected by Ship Lane. The Site currently comprises a mixture of large-scale industrial brewing structures, large areas of hardstanding and playing fields.

Historical Ecological Survey Work

1.3. Historical ecological surveys were undertaken in 2016 and 2017 to accompany three separate planning applications for the Site, which were submitted to the London Borough of Richmond-Upon-Thames (LBRuT) in 2018 (ref. 18/0547/FUL, 18/0548/FUL and 18/0549/FUL) as detailed below:

- Application A – hybrid planning application for comprehensive mixed-use redevelopment of the former Stag Brewery site consisting of:
  - Land to the east of Ship Lane applied for in detail (referred to as 'Development Area 1' throughout); and
  - 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.

1.4. The ecological survey work in support of the LBRuT planning applications detailed above comprised an initial PEA (ref. WIE10667-100-R-1-3-1-PEA). Based on the results of this PEA further surveys as detailed in a Protected Species Report (PSR) (ref. WIE10667-100-R-7-3-1-PSR) were also undertaken between 2016 and 2017.

1.5. Following the Applicant submitting revisions to the Greater London Authority (GLA) in 2020 (ref. 4172 (Application A), 4172a (Application B) 4172b (Application C - withdrawn)) ecological survey works comprising an updated PEA (ref. WIE15582-102_R_1_2_3_PEA) together with further update surveys as detailed in a Protected Species Report (ref. WIE15582-102-R-2-3-1-PSR) were also undertaken in 2019.

1.6. A summary of all the historical ecological survey work undertaken in support of the above planning applications is presented in **Table 1** below.

Table 1: Historical Ecological Survey Work

Planning Application Ref	Ecological Survey Work Undertaken	Date of Assessment and Reporting
LBRuT -18/0547/FUL, 18/0548/FUL, and 18/0549/FUL (the 2018 Planning Applications)	PEA (ref. WIE10667-100-R-1-3-1-PEA) -comprising an ecological data search, 'Extended' Phase 1 Habitat Survey, a search for common invasive floral species, and a Preliminary Roost Assessment (PRA) (ground based and external only) of buildings and trees for bats.	PEA components undertaken between January 2016 to April 2017 with reporting finalised in February 2018.
	PSR (ref. WIE10667-100-R-7-3-1-PSR) - comprising a Preliminary Roost Assessment (ground based and external only) of accessible buildings, evening emergence and pre-dawn re-entry bat surveys at buildings and trees, bat activity and automated surveys, and breeding bird surveys (specifically for black redstart *Phoenicurus ochruros*)	PSR components undertaken between May 2016 to September 2017 with reporting finalised in February 2018.
	PRA (ref. WIE10667-103-BN-21-2-LM) – comprising an external and endoscope inspection of the northern boundary wall.	PRA of the northern boundary wall undertaken in October 2018 with reporting also finalised in October 2018.
GLA - ref 4172, 4172a, and 4172b (withdrawn) (the 2020 Planning Applications)	PEA (ref. WIE15582-102-R-1-2-3-PEA) - comprising an ecological data search, 'Extended' Phase 1 Habitat Survey, a search for common invasive floral species, and a PRA (ground based and external only) of buildings and trees.	PEA components undertaken in July 2019 with reporting finalised in May 2020.
	PSR (ref. WIE15582-102-R-2-3-1-PSR) - comprising a PRA of the northern boundary wall (external and endoscope inspection of), evening emergence and pre-dawn re-entry bat surveys at buildings and trees, bat activity and automated surveys.	PSR components undertaken between July 2019 to September 2019 with reporting finalised in May 2020.

Proposed Development

1.7. The current proposals for the Site (hereafter referred to as the proposed 'Development') are for a redevelopment that will provide homes (including affordable homes), complementary commercial uses, community facilities, a new secondary school alongside new open and green spaces throughout. Associated highway improvements are also proposed, which include works at Chalkers Corner junction.

1.8. The Applications seek planning permission for:

Application A:

"*Hybrid application to include the demolition of existing buildings to allow for comprehensive phased redevelopment of the site:*

Planning permission is sought in detail for works to the east side of Ship Lane which comprise:

a) Demolition of existing buildings (except the Maltings and the façade of the Bottling Plant and former Hotel), walls, associated structures, site clearance and groundworks

b) Alterations and extensions to existing buildings and erection of buildings varying in height from 3 to 9 storeys plus a basement of one to two storeys below ground

c) Residential apartments

d) Flexible use floorspace for:

i. Retail, financial and professional services, café/restaurant and drinking establishment uses

ii. Offices

iii. Non-residential institutions and community use

iv. Boathouse

e) Hotel / public house with accommodation

f) Cinema

g) Offices

h) New pedestrian, vehicle and cycle accesses and internal routes, and associated highway works

i) Provision of on-site cycle, vehicle and servicing parking at surface and basement level

j) Provision of public open space, amenity and play space and landscaping

k) Flood defence and towpath works

l) Installation of plant and energy equipment

Planning permission is also sought in outline with all matters reserved for works to the west of Ship Lane which comprise:

m) The erection of a single storey basement and buildings varying in height from 3 to 8 storeys

n) Residential development

o) Provision of on-site cycle, vehicle and servicing parking

p) Provision of public open space, amenity and play space and landscaping

q) New pedestrian, vehicle and cycle accesses and internal routes, and associated highways works"

Application B:

"Detailed planning permission for the erection of a three-storey building to provide a new secondary school with sixth form; sports pitch with floodlighting, external MUGA and play space; and associated external works including landscaping, car and cycle parking, new access routes and other associated works"

1.9. Together Applications A and B described above, including the proposed Section 278 Highways works are the 'Development'.

1.10. Full details and scope of the detailed planning application is detailed in the submitted Planning Statement, prepared by Gerald Eve LLP.

Aims and Objectives of this Assessment

1.11. The aim and objectives of this PSR are based on the findings of a Preliminary Ecological Appraisal (PEA) undertaken at the Site in August 2021. The PEA[1] comprised an ecological data search, UK Habitat Classification (UK Hab) field survey, a preliminary roost assessment (PRA) at buildings, walls and trees (external and ground based), and a survey for common invasive plant species.

1.12. As a result of the PEA, the Site was assessed to still have the potential to support roosting bats, and to be of value to foraging and commuting bats.

1.13. A preliminary roost assessment (PRA), as part of the PEA, was undertaken which noted that the following buildings, walls and trees as located on **Figure 1** to have the potential to support roosting bats as detailed in **Table 2** below.

Table 2: PRA Results

Building / Wall / Tree Ref	Recorded Bat Roost Potential
Building B3, B8* and B10	Moderate
Building B1, B9 and B12	Low
Southern boundary wall	Moderate
Northern boundary wall	Moderate
Tree T43, T44, T67, T68, T71, T75, T78, T83, T157 and T321	Moderate
Tree T3, T10, T37, T73, T74, T84, T94 and T121	Low

**Building previously recorded as a confirmed roost site in 2019*

1.14. All other buildings, walls and trees on Site were recorded to have negligible potential to support roosting bats.

1.15. The PEA assessed that the Site itself offered limited foraging and commuting opportunities for bats, as most of the Site was made up of developed land comprising buildings and hardstanding. However, the trees located around the periphery and within the north-western corner of the Site

[1] WIE18671-103-R-1-2-4-PEA

offer some foraging and commuting opportunities for bats. The River Thames, located adjacent to the Site, also offers good commuting and foraging opportunities. For this reason, the Site overall was assessed to have **low** suitability for foraging and commuting bats.

1.16. Given results of the PEA, the time elapsed since the previous bat surveys were undertaken by Waterman in 2019 (in support of the previous planning applications), update surveys for bats have been undertaken at the Site, to inform the Environmental Impact Assessment (EIA). The findings of which are assessed and presented with the Ecology Chapter of the Environmental Statement for the proposed Development.

1.17. The purpose of this report is to:

- Present the findings of the update bat surveys undertaken at the Site and outline any resulting constraints to the proposed Development, and the demolition and construction works (hereafter the Works);
- Allow any mitigation, compensation and enhancement measures (beyond those identified within the PEA and in line with the Mitigation Hierarchy[2]) to be developed; and
- Form a basis for agreeing the scope of the EIA with relevant consultees, as/if required.

[2] BS 42020:2013 Clause 5.2

2. Methodology

Bat Surveys

Northern boundary wall Inspection

2.1. An inspection of the northern boundary wall[3] (**Figure 2**) was undertaken on 4th October 2021 given the results of the PRA (**Table 2**).

2.2. The inspection was undertaken at each PRF feature recorded during the PRA as part of the PEA. The inspection was undertaken with the use of a digital video endoscope (Ridgid Seesnake inspection camera), inspection mirrors, binoculars, high-powered torch and a ladder when required to inspect PRFs at height. The inspection searched for evidence of bat use (such as droppings, scratch marks, staining and sightings) as well as bats themselves, and were led by a Natural England Class Level 2 Bat Licence holder (2015-11736-CLS-CLS).

Evening Emergence and Pre-Dawn Re-entry Surveys

2.3. Evening emergence surveys of the buildings, northern boundary wall (where a full inspection of PRFs could not be undertaken), Southern boundary wall and trees was undertaken given the results of the PRA (**Table 2**).

2.4. An evening emergence survey was undertaken at:

- Buildings determined as having low (building B1, B9 and B12) bat roost potential;
- Buildings determined as having moderate (building B3, B8 (previously recorded as a confirmed roost site in 2019, see **Plate 1**) and B10) bat roost potential;
- The boundary wall determined as having moderate bat roost potential;
- The northern boundary wall (at PRF 10a, 10b and 13) determined as having moderate bat roost potential; and
- Trees T43, T44, T67, T68, T71, T75, T78, T83, T157 and T312 determined as having moderate bat roost potential.

2.5. The evening emergence surveys were undertaken based on current best practice guidelines (Collins. J, 2016)[4]. In addition, a sufficient number of surveyors were used during each survey to ensure all of the PRFs were covered. The surveys were led by a Natural England Class Level 2 Bat Licence holder (2015-11736-CLS-CLS). The positions of the surveyors during each evening emergence survey are presented on **Figure 3**.

2.6. The surveys were undertaken using full spectrum Elekon Batlogger M and EchoMeter Touch 2 Pro bat detectors with integrated digital recording and GPS. This survey equipment is considered

[3]

[4] 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

suitable for detecting all resident species of UK bats. During the survey at building B8, and due to its height and conformation as a roost site in 2019, Nightfox Infrared monocular's and infrared torches were additionally utilised, along with the bat detectors detailed above as part of the survey technique.

2.7. 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 approximately 15 minutes prior to sunset and continued for at least an hour and a half thereafter.

2.8. **Table 3** below provides a summary of the bat survey parameters.

Table 3: Summary of Evening Emergence Bat Surveys

Survey	Date	Sunset / Sunrise Time	Time Start / End (GMT+1)	Wind (Beaufort)	Cloud Cover (Oktas)	Temp Start / End (ºC)
Evening emergence (B8, T75, T43, T44)	04/10/2021	18:33	18:18 / 20:03	0	7/8	13 / 13
Evening emergence (B9, B10, B3, B1)	05/10/2021	18:31	18:16 / 20.01	3	8/8	13 / 12
Evening emergence (T71, T68, T67, B14)	07/10/2021	18:24	18:09 / 19:54	1	8/8	20 / 18
Evening emergence (B12, T78, T83, T157)	11/10/2021	18:15	18:00 / 19:45	1	2/8	15 / 10
Evening emergence (southern boundary wall)	14/10/2021	18:10	17:55 / 19:40	1	5/8	15 / 13
Evening emergence (northern boundary wall at PRA 10a, 10b, 13 and T321)	19/10/2021	18:00	17:45 / 19:30	1	8/8	19 / 18

Bat Activity Survey

2.9. A bat activity survey was undertaken at the Site but specifically along the northern boundary of the Site adjacent to the River Thames as well as Watney's Sports Ground. The survey commenced from sunset to until two hours thereafter. A pair of surveyors undertook the survey using a full spectrum Elekon Batlogger M detector with integrated digital recording and GPS and followed a pre-determined transect route (**Figure 4**). This survey equipment is considered suitable for detecting all resident species of UK bats.

2.10. The survey was undertaken in appropriate weather conditions and within the recognised optimal bat active season for activity surveys at a Site of this nature. **Table 4** 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 4: Summary of Bat Activity Surveys

Survey	Date	Sunset / Sunrise Time	Time Start / End (GMT+1)	Wind (Beaufort)	Cloud Cover (Oktas)	Temp Start / End (ºC)
Activity Survey	04/10/2021	18:32	18:51/ 21:19	0	5/8	14/ 11

Automated Detector Surveys

2.11. To supplement the activity survey, three static automated bat detectors (AnaBat Express detector) were deployed at the Site based on current best practice guidelines. The positioning of the static detectors was as follows, and illustrated in **Figure 4**:

- on top of the northern boundary wall adjacent to the River Thames under the Budweiser sign at grid reference TQ 2044276093;
- on top of the northern boundary wall adjacent to the River Thames but to the east of the Site at grid reference TQ2063376025 and to the west of the Site; and
- on a tree at grid reference TQ2030076112.

2.12. The static detector recorded for five consecutive nights in October 2021. **Table 5** below provides a summary of the bat survey parameters for each deployment session.

Table 5: Summary of Automated Detector Bat Surveys

Survey Month	Date	Sunset Time	Max Wind speed (mph)	Rain (inches)	Average Day Temp ºC
October 2021	04/10/2021	18:33	13	0	14
	05/10/2021	18:31	23	1.3	13
	06/10/2021	18:28	8	0	14
	07/10/2021	18:24	4	0	15
	08/10/2021	18:21	9	0	16

Data Analysis

2.13. The sound recordings for the evening emergence and bat activity survey were analysed using BatExplorer and Kaleidoscope software respectively. Identification of bat calls was undertaken using the parameters set out by Russ (2012)[5].

2.14. The sound recordings for the automated survey were analysed using AnaLook software and bat call parameters from Russ (2012). For the purposes of analysis, a bat pass correlates to a single 15 second recording.

Constraints and Limitations

2.15. Due to the programme of the proposed planning application (following the refusal decision at the Greater London Authority (GLA) hearing in July 2021) only a reduced level of further ecological surveys for bats (based on the results of the PEA) could be undertaken at the Site in the remaining survey period in 2021, as part of the Protected Species Report (**Appendix 13.2)**. However, given the historical ecological survey work undertaken at the Site, as detailed in **Table 1** over a 6 year period, dating back to 2016, it is assessed that a robust ecological baseline has been established and therefore the reduced number of bat surveys carried out on Site is not a significant constraint to this planning submission. In addition, it is proposed that if a period of greater than 18 months from the time of the bat surveys in 2021, as detailed in this report, were undertaken and the commencement of Site preparation and construction / refurbishment works, further update surveys will be undertaken as agreed with LBRuT and / or the determining authority, as conditions at the Site and, therefore, its utilisation by bats may have changed. The results of any further update bat surveys may also be required to determine if any amendments are necessary to the mitigation measures currently proposed. In addition, further update bat surveys at confirmed roost sites (building B8) will be required to inform Natural England licencing requirements (approved licencing required to legally destroy bat roosts as a result of the proposed Development).

2.16. The northern boundary wall inspections were undertaken as an alternative method to evening emergence/pre-dawn re-entry surveys. This was due to the associated number of surveyors that would be required to ensure full survey coverage due to the number of PRFs recorded. However, where a full endoscope inspection of a PRF could not be undertaken an evening emergence / pre-dawn re-entry survey was undertaken to ensure a robust survey approach was undertaken.

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, 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 not be significant.

2.18. In addition, it should be noted that 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

[5] Russ, J., 2012. British bat calls: a guide to species identification. Pelagic publishing

Myotis calls from frequency modulated *Pipistrellus* calls, for the purposes of this assessment, identification has only been made down to the group *Myotis* level. Both Frequency Modulation (FM) -qCF (quasi Constant-frequency calls) and qCF parameters are provided within Russ, 2012 for identifying *Nyctalus* species, however there is 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. In addition, any recordings of long-eared bats have been noted as being of Brown Long-eared given the location of the Site.

2.19. 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 can assist with the development and co-ordination of this design to support effective risk management on this project upon request.

3. Results

Northern boundary wall Inspection

3.1. The results of the northern boundary wall inspection are detailed in **Table 6** below. Potential Roosting Features (PRFs) were recorded both on the interior and exterior of the wall (Site and river side) during the PRA as part of the PEA. As a result of the inspection no roosting bats were recorded.

Table 6: Results of Northern boundary wall Inspection

Potential Roosting Feature	Photographs	Northern boundary wall Inspection Results
PRF 1 (River Side)		No evidence of bats recorded, no change from previous survey. 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.
PRF 2 (Site Side)		No evidence of bats recorded, no change from previous survey. 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.
PRF 3 (Site Side)		No evidence of bats recorded, no change from previous survey. 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.

Potential Roosting Feature	Photographs	Northern boundary wall Inspection Results
PRF 4 (Site Side)	 	No evidence of bats recorded, no change from previous survey. Feature present on the Site side of the wall with four of these features present in close succession. The features are fully bricked up on the river side, with various heights ofbricking up on the Site side, creating cavities between approximately 40-80cm high.
PRF 5 (Site Side)		No evidence of bats recorded, no change from previous survey. 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.
PRF 6 (Site Side)		No evidence of bats recorded, no change from previous survey. 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.
PRF 7 (Site Side)		No evidence of bats recorded, no change from previous survey. Feature present on the Site side of the wall. An open gap is present around the window frame with three of these features present in close succession. The gap is 3 to 4cm wide and 5cm deep. Spider webs are present.

Potential Roosting Feature	Photographs	Northern boundary wall Inspection Results
PRF 8 (River Side)		No evidence of bats recorded, no change from previous survey. 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.
PRF 9 (River Side)		No evidence of bats recorded, no change from previous survey. Previously located on the river side of the wall and is one of the river side features of PRF 4. This feature has now been vandalised and is considered too large exposed to support roosting bats.
PRF 10a and 10b (River Side)	 	No evidence of bats recorded, although cavities could not be adequately inspected by an endoscope. 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 workswere 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. Old spider webs are present within the cavities.

Potential Roosting Feature	Photographs	Northern boundary wall Inspection Results
PRF 11 (River Side) .		No evidence of bats recorded, no change from previous survey. 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.
PRF 12 (River Side)		No evidence of bats recorded, no change from previous survey. Feature present on the riverside of the wall. A large crack is present at the stone lintel at the top of the wall. The crack has split the stonework in two and has expanded in width to 5-6cm at its widest. Crevice could not be adequately inspected by an endoscope but was very open and exposed. The cavity is therefore open to the elements 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.
PRF 13 (River Side)		No evidence of bats recorded, no change from previous survey. Cavity could not be adequately inspected by an endoscope. 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.

Potential Roosting Feature	Photographs	Northern boundary wall Inspection Results
PRF 14 (River Side)		No evidence of bats recorded, no change from previous survey. 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.

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 3**. In summary, no bats were observed emerging from or entering buildings B1, B3, B8, B9, B10 and B12, the southern boundary wall, the northern boundary wall (at PRF 10a, 10b and 13) or trees T3, T10, T43, T67, T71, T83, T157 and T321. However, foraging and commuting activity by common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula, Nyctalus sp, Myotis sp and* brown long eared bats *Plecotus auratus* were recorded during the surveys, as detailed within **Table 7** below.

Table 7: Results of Evening Emergence Surveys

Building/Tree Number	Survey Type / Date	Survey Results	Summary
B1	Evening emergence: 05/10/2021	Foraging and commuting activity (c.7 passes) from common pipistrelle and soprano pipistrelle bats. The majority of activity during the survey was by soprano pipistrelle bats. Three passes were recordd close to B1 flying north, the rest were heard not seen.	No bat roosts recorded
B3	Evening emergence: 05/10/2021	One pass by a soprano pipistrelle bat flying north.	No bat roosts recorded
B8	Evening emergence: 04/10/2021	Foraging and commuting activity (c.28 passes) from common pipistrelle, soprano pipistrelle, brown long eared, noctule and Myotis bats. The majority of calls were from soprano and common pippistrelle bats and were heard not seen. One pass was made by a noctule bat heard not seen and three passes were made by a brown long eared bat heard not seen.	No bat roosts recorded

Building/Tree Number	Survey Type / Date	Survey Results	Summary
B9	Evening emergence: 05/10/2021	Foraging and commuting activity (c.4 passes) from soprano pipistrelle and one common pipistrelle bat all heard not seen.	No bat roosts recorded
B10	Evening emergence: 05/10/2021:	Foraging and commuting activity (c.6 passes) from soprano pipistrelle all heard not seen.	No bat roosts recorded
B12	Evening emergence: 11/10/2021	Foraging and commuting activity (c.8 passes) from Nathusius, soprano and common pippistrelle bats and several social calls from common pipistrelle. The majoruty were heard not seen, one common pippistrelle passed Northeast of B12	No bat roosts recorded
B14	Evening emergence: 07/10/2021	Foraging and commuting activity (c.6 passes) from and common pippistrelle bats and one possible brown long eared bat. All common pippistrelle bats were heard not seen and th brown long eared bat was seen flying north between B12 and B6	No bat roosts recorded
Southern boundary wall	Evening emergence: 14/10/2021	Foraging and commuting activity (c.9 passes) from soprano pipistrelle and common pipistrelle bat all heard not seen apart from social calls heard by soprano pippistrelle.	No bat roosts recorded
Northern boundary wall	Evening emergence: 19/10/2021 (at PRF 10a, 10b and 13 that could not be fully inspected by the northern boundary wall inspection on 4th October 2021)	Foraging and commuting activity (c.10 passes) from myotis, soprano and common pippistrelle bats. The majorty of of bats were common and soprano pipistrelles foraging, one myotis was heard not seen.	No bat roosts recorded
T43	Evening emergence: 04/10/2021	Foraging and commuting activity (c.12 passes) from Nathusius' soprano and common pippistrelle bats. All were heard not seen and social calls were heard from common and soprano pipistrelle bats.	No bat roosts recorded
T83	Evening emergence: 11/10/2021	No bats recorded	No bat roosts recorded
T67	Evening emergence: 07/10/2021	No bats recorded	No bat roosts recorded
T71	Evening emergence: 07/10/2021	Foraging and commuting activity (c.7 passes) from soprano and common pipistrelle bats. Common pipistrelles were seen flying along treeline and the rest were heard not seen.	No bat roosts recorded

Building/Tree Number	Survey Type / Date	Survey Results	Summary
T10	Evening emergence: 04/10/2021	Foraging and commuting activity (c.8 passes) from soprano pipistrelle bats all heard not seen.	No bat roosts recorded
T3	Evening emergence: 11/10/2021	Foraging and commuting activity (c.8 passes) from soprano and common pipistrelle bats all heard not seen.	No bat roosts recorded
T157	Evening emergence: 11/10/2021	Foraging and commuting activity (c.3 passes) from soprano and common pipistrelle bats all heard not seen.	No bat roosts recorded
Tree Group G321	Evening emergence: 19/10/2021	Foraging and commuting activity (c.4 passes) from common pipistrelle bats seen foraging to the west of the trees.	No bat roosts recorded

3.3. On the 4th October 2021 a single peregrine falcon was heard calling from the direction of building B2 during the day and then during an evening emergence bat survey on the same day at building B8, where a single peregrine falcon was observed entering the south west corner (Appendix B; **Plate 2**) (8 storeys high). The bird was recorded entering building B8 through a gap in the wooden boarding 20 minutes post sunset (just as light levels were fading). The bird was not observed to have re-emerged from the building for the remainder of the bat survey, by any of the four surveyors that surrounded the building. It is assessed that that the peregrine recorded entering building B8 has only recently started to roost at the Site, and it is unlikely that a breeding pair have taken residence. This assessment has been based on: the results of the data search as extended through consultation with London Peregrine Partnership (LPP), and given this is the only evidence / sighting of peregrine falcon at the Site during a six-year period (when ecologists have been on Site undertaking various surveys in support of the previous planning applications). In consultation with the LLP on the 28th September 2021 regarding the presence of peregrine falcons at the vicinity of the Site, LPP stated that no known records of breeding pairs are in the local area either recent or historical. In addition, the LPP also stated that there are records of a pair roosting on Saint Matthias Church (2.5km to the south west of the Site) during the past few years, and sightings this year of at least one bird on Holy Trinity Church (2km to the south west of the Site). In addition, a nesting tray has now been installed at St Matthias, but it has not yet been made use of.

Bat Activity Survey

3.4. Descriptions of bat the activity recorded during the activity survey is provided below and illustrated on **Figure 5.**

3.5. A total of 61 bat passes were recorded along the transect survey route (**Figure 5**). Of these, 54 passes were by soprano pipistrelle bats, 1 by brown long-eared bat and 6 by common pipistrelles bats. The first bat call recorded was of a soprano pipistrelle at 19:01 (28 minutes after sunset) which was heard but not seen.

Automated Detector Surveys

3.6. A total of five confirmed bat species were recorded by the automated detectors deployed across the Site, the majority of the recordings were made by common and soprano pipistrelle bats. Brown long eared, noctule, nathusius' pipistrelle and myotis bats were also recorded. As detailed within

the limitation section of this report, identification down to species level could not be made for myotis and *nyactulus* species recorded due to the crossover of parameters.

3.7. **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 Automated Detector Surveys

Recording Period and Location	Common Pipistrelle	Soprano Pipistrelle	Nathusius' Pipistrelle	Noctule	Brown Long Eared	Nyactulus Species	Myotis Species	Total no. of Bat Passes
04/10/2021 – 08/10/2021 Detector located on top of the northern boundary wall adjacent to the River Thames under the Budweiser sign at grid reference TQ 2044276093	511	576	-	3	1	1	2	**1095**
04/10/2021 – 08/10/2021 Detector located on top of the northern boundary wall adjacent to the River Thames to the east of the Site at grid reference TQ2063376025	139	99	1	5	-	1	1	**246**
04/10/2021 – 08/10/2021 Detector located to the west of the Site and on a tree at grid reference TQ2030076112	56	42	-	1	1	1	-	**101**
Total	**706**	**717**	**1**	**9**	**2**	**3**	**3**	**1441**

3.8. **Table 9** below provides a summary of the earliest recording times for each of the automated detectors. For the location of the automated detector refer to **Figure 4**.

Table 9: Automated Detector Earliest Recording Times

Bat Species	Earliest approximate Time (mins after sunset)
Detector located on top of the northern boundary wall adjacent to the River Thames under the Budweiser sign at grid reference TQ 2044276093	
Common Pipistrelle	+26
Soprano Pipistrelle	+18
Myotis sp	+340
Noctule	+62
Brown Long eared	+79
Nyctalus sp	+464
Detector located on top of the northern boundary wall adjacent to the River Thames to the east of the Site at grid reference TQ2063376025	
Common Pipistrelle	+42
Soprano Pipistrelle	+42
Noctule	+69
Nathusius Pipistrelle	+385
Myotis sp	+335
Nyctalus sp	+477
Detector located to the west of the Site and on a tree at grid reference TQ2030076112	
Common Pipistrelle	+48
Soprano Pipistrelle	+46
Brown Long Eared	+67
Noctule	+175
Nyctalus sp	+63

4. Discussion and Recommendations

Bats – Roosting and Foraging and Commuting

4.1. As a result of the updated northern boundary wall inspections and evening emergence surveys at buildings B1, B9, B12, B3, B8 (previously recorded as a confirmed roost site in 2019) and B10, at the southern boundary wall, at the river wall (at PRF 10a, 10b and 13) and trees T43, T44, T67, T68, T71, T75, T78, T83, T157 and &321 roosting bat are assessed to be likely absent on Site. However, and as a precautionary approach building B8 (the Maltings) is still assessed to be a day roost for low number of soprano pipistrelle bats (**Plate 1**).

4.2. As a result of the activity and automated surveys a total of five different bat species were recorded. The survey results indicate that the habitats at the Site and adjacent to the River Thames (to the northern boundary of the Site) are used by urban bat species typically associated to be non-light sensitive. It is noted that species including long-eared, noctule and myotis species were also recorded however these were in very low numbers (under 10 passes as a result of the automated detector results). The results of the bat activity and automated survey indicates that bat activity is low at the Site and adjacent to River Thames. Nonetheless, bat species were recorded in good diversity.

4.3. The automated detector surveys recorded a number of early bat passes after sunset for both common and soprano pipistrelle and brown long-eared bats. Common pipistrelles are noted as having a mean emergence time of 24.8 minutes after sunset[6], soprano pipistrelles 33.5 minutes after sunset[7] and long-eared species typically, around 60 minutes after sunset[30]. It is therefore likely that these bat species could roost in the local area. No other species were assessed to have early bat passes considering recognised emergence times detailed in **Table 5** below.

Table 10**:** Bat Species Roost Emergence Times

Species	Research on Emergence Times
Nathusius pipistrelle	Assessed to be an 'early emerging species'[8] or typically 20-30 minutes after sunset[9]
Noctule	Typically, 0-40 minutes after sunset[10] and occasionally before sunset.
Myotis	Typically 56 minutes after sunset[30]

Natural England Licencing Requirements

4.4. As part of the proposed Development, building B8 (the Maltings) will be refurbished and converted into residential apartments and community space.

4.5. As such, these works have potential to impact upon the soprano pipistrelle day roost recorded in 2019 and, therefore, without mitigation, 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. In support of the licence application updated surveys (between May and August) will be undertaken at

[6] 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.
[7] 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.
[8] 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
[9] Russ, J. 2012. British Bat Calls. A Guide to Species Identification.
[10] Racey, P. A. 1991: *The Handbook of British Mammals* (Ed. by G. B. Corbet & S. Harris), pp. 117-121. Oxford: Blackwell.

building B8 to inform the licence application, as only a single survey could be undertaken in October 2021. As part of the licence a method statement would set out the sensitive working methodologies required that will be overseen by an Ecological Clerk of Works (licence holder or accredited agent) to allow for roost destruction.

Mitigation

4.6. Whilst roosting bats are assessed as to be likely absent from the buildings and walls (river and Boundary), excluding building B8 as detailed above, there remains a chance that opportunist bats within in the vicinity of the Site could potentially start roosting at these features. Therefore, a toolbox talk will be provided to contractors during the demolition/refurbishment phase of the proposed Development. In addition, work to moderate potential buildings will be undertaken in a sensitive manner with an Ecological Clerk of Works present.

4.7. Further to the above, the felling of those trees with moderate and low bat roosting potential will be undertaken using soft felling techniques and in accordance with the Arboricultural Association Guidance Note 1[11], with the felling of those trees with moderate bat roosting potential also carried out under an Ecological Clerk of Works.

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

4.9. 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 roosting foraging and commuting bats:

- During the demolition and construction phase of the Development all construction lighting would be aimed towards the centre of the Site to minimise light spill towards the adjacent River Thames and Tidal Tributaries SMI
- Soft landscaping as well as artificial habitats would be provided in the Development which would provide enhanced opportunities at the Site for bats. The Site would include:
  - up to 404 new trees (including 62 ornamental trees) and up to 99 individual and 3 tree groups retained;
  - 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 planting in areas close to the river edge responding to existing riverside vegetation and grove 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.

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

- a minimum of ten bat boxes are incorporated in the proposed Development.

- A sensitive lighting strategy would be implemented as part of the Development which will avoid light spill upon habitats currently utilised by bats (particularly the River Thames).

Peregrine Falcon

4.10. In order to avoid the contravention of legislation, building B8 (The Maltings) will be monitored (by an Ecological Clerk of Works who holds a Schedule 1 licence that includes peregrine falcons). A series of monitoring visits (including surveys at both ground level and at height subject to safe access being possible) will be undertaken until it can be confirmed that the roosting peregrine is absent from the building. Works will then be undertaken at the building to block access points previously utilised. Monitoring will continue prior to the demolition and construction works commencing at building B8 to ensure the bird does not return to the roost site.

4.11. As a precautionary approach, and to avoid any potential disturbance events (given only a single peregrine falcon was recorded) the Works at the Site would be timed to commence outside of the main peregrine falcon breeding season (assessed to be between February/March when courtship intensifies to June when young normally fledge).

4.12. In line with the NPPF, London Planning Policy and Local Planning Policy LP 15 'Biodiversity' the Development will include the following mitigation/enhancement measure for peregrine falcon;

- A peregrine falcon nest box will be incorporated into the proposed Development on the roof of the building B8 (the Maltings) after the refurbishment works have been completed. This would be subject to a suitably worded planning condition.

5. Conclusions

5.1. As a result of the updated bat surveys, and with due regard to the historical surveys, undertaken at the Site in support of previous planning applications, no roosting bats are determined to be currently present on Site. However, as a precautionary approach building B8 (the Maltings) is still assessed to be a day roost for low number of soprano pipistrelle bats. In addition, the habitats at the Site and the River Thames, directly adjacent to the northern boundary of the Site, are used by a low level of urban bat species typically considered not to be light sensitive. Nonetheless, a diverse group of bat species were recorded.

5.2. During the evening emergence survey on the 4th October 2021 a single roosting peregrine falcon was recorded at building B8 (The Maltings)

5.3. In order to avoid the contravention of legislation, mitigation measures have been detailed in this report, including the need for update and monitoring surveys, timing of works and the requirement to be in receipt of an approved Natural England EPS licence prior to the start of works. In addition, the requirement of an Ecological Clerk of Works has been highlighted during the proposed Development works.

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

5.5. Should there be a period of greater than 18 months since the time of the surveys detailed within this report were undertaken, and the commencement of the Works, further update surveys should be undertaken.

FIGURES