Stag Brewery, Mortlake

ES Addendum

For Reselton Properties

July 2020

Client Name: Reselton Properties Ltd
Document Reference: WIE15582-103.R.1.9.2
Project Number: WIE15582-103

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 OHSAS 18001:2018)

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1. Introduction

1.1. In February 2018, Reselton Properties Limited (the 'Applicant') submitted three separate planning applications which were proposed to be linked via a Section 106 Agreement (the '2018 Planning Applications', referred to as Application A, Application B and Application C, refs. 18/0547/FUL, 18/0548/FUL and 18/0549/FUL) to the London Borough of Richmond Upon Thames (LBRuT) to facilitate the redevelopment of land predominantly on the former Stag Brewery, along with predominantly highway land to the west. A summary of each of the Applications is set out 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 – detailed planning application for highways and landscape works at Chalkers Corner.

1.2. The 2018 Planning Applications were accompanied by one Environmental Statement (the '2018 ES') which considered all three separate planning applications together as one comprehensive redevelopment proposal (the '2018 Development'). The 2018 ES reports the key findings of the Environmental Impact Assessment (EIA) process in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations, 2011 (as amended 2015)[1] (the '2011 EIA Regulations'), as described further in **Section 3: Assessment Methodology** of this ES Addendum.

1.3. Following submission of the 2018 Planning Applications, a package of substitutions was submitted to LBRuT for consideration, which sought to address comments raised by consultees during determination. This included minor amendments to the 2018 Development in May 2019 (the 'May 2019 Amendments'), which were accompanied by an ES Addendum (the 'May 2019 ES Addendum'). The May 2019 Amendments comprised internal reconfiguration to building layouts and levels to buildings 2,3, 6, 8 and 9 (resulting in a reduction in four residential units and change in land use areas); landscaping changes; and alterations to the building material and façade treatments.

1.4. On 29 January 2020, the 2018 Planning Applications were heard by LBRuT's Planning Committee, with a recommendation for approval. The Committee resolved to grant Applications A and B, and refuse Application C. The granting of Applications A and B was subject to the following:

- Conditions and informatives as set out in the officer's report, published addendum and agreed verbally at the meeting;
- Amendments to the Heads of Terms and completion of a Section 106 Legal Agreement which was delegated to the Assistant Director to conclude;
- No adverse direction from the Greater London Authority ('GLA'); and
- No call in by the Secretary of State for Housing, Communities and Local Government.

[1] HMSO (2015) Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended 2015).

1.5. The Applications have been referred to the GLA, and the Mayor has given a direction that the GLA will become the determining authority for the determination of the 2018 Planning Applications and act as local planning authority in relation to all three applications.

1.6. The Applicant has engaged with the GLA in respect of the proposed amendments to the Development, referred to throughout this document as the 'July 2020 Amendments'. As a result of these discussions, a number of changes have been made to the scheme proposals which are summarised as follows:

- Increase in residential unit provision from up to 813 units (this includes the up to 150 flexible assisted living and / or residential units) to up to 1,250 units;
- Increase in affordable housing provision from up to 17% to up to 30%[2];
- Increase in height for some buildings, of up to three storeys compared to the Original Scheme;
- Change to the layout of Buildings 18 and 19, conversion of Building 20 from a terrace row of housing to two four storey buildings;
- Reduction in the size of the western basement, resulting in an overall reduction in car parking spaces of 186 spaces, and introduction of an additional basement storey beneath Building 1 (the cinema);
- Other amendments to the Development including amendments to internal layouts, re-location and change to the quantum and mix of uses across the Site, including the removal of the nursing home and assisted living in Development Area 2;
- Landscaping amendments, including canopy removal of four trees on the north west corner of the Site; and
- Further options to the works proposed at Chalkers Corner which could be implemented in lieu of those proposed under Application C. These alternative options do not include works to the land at Chertsey Court or the north side of Lower Richmond Road, and it is anticipated that these works would be undertaken within the presently adopted highways land.

1.7. The submission documents have tested an affordable housing provision of 30%. However, it should be noted that the final affordable housing level is subject to further viability testing and discussions with the GLA.

1.8. Minor amendments have also been made to the road and pedestrian layouts for the school (Application B). No other amendments are proposed to Application B.

1.9. The July 2020 Amendments are described in further detail in **Section 2: Summary of July 2020 Amendments**.

1.10. These changes are being brought forward as substitutions to Applications A and B (refs. 18/0547/FUL and 18/0548/FUL), which are related applications (to be linked via a Section 106 Agreement). The works as proposed under Application C (ref. 18/0549/FUL) (Chalkers Corner) have not been withdrawn, and are supplemented by a number of alternative options which may be carried out entirely within adopted highway land., and would therefore not required separate planning permission. It should be noted that the highway works scheme proposed as an alternative to Application C are proposed under Section 278 are illustrative and final details will be secured with TfL via the Section 278 process in due course. If it is agreed that all necessary highway works

[2] Habitable room %s assume existing buildings on Site can be classified as 'occupied' for the purposes of Community Infrastructure Levy ('CIL').

are to be completed within the adopted highway then Application C may be withdrawn.

1.11. It is acknowledged that the highways works are required to mitigate for adverse traffic impacts predicted with the Development completed and operational, and that this mitigation is to be delivered by the highways works. Four different highways options, in addition to Application C, have been assessed within this ES Addendum to ensure that the likely significant effects of the final design can be considered in the decision making process. Should further design of the highways works come forward that would be outside of the designs assessed in the 2018 ES (as amended), it may be necessary to undertake further environmental assessment of these revised proposals.

1.12. The 2018 ES and May 2019 ES Addendum have been reviewed in light of the July 2020 Amendments, and the findings of this review reported herein this ES Addendum (the 'July 2020 ES Addendum'). This document, prepared by Waterman Infrastructure & Environment (Waterman IE), should be read in conjunction with the 2018 ES and the May 2019 ES Addendum and collectively constitute the ES (hereafter referred to as the '2018 ES (as amended)'. A replacement ES Non-technical Summary (NTS) has been provided that supersedes the documents submitted with the 2018 ES and May 2019 ES Addendum.

1.13. Given the time elapsed since the baseline was prepared for the 2018 ES, these have been reviewed and updated as appropriate, as has policy and guidance relevant to assessment methodologies for each of the topics considered in the 2018 ES.

1.14. In some instances, the changes to the baseline and assessment are such that the original 2018 ES assessment chapter has been updated in its entirety and supersedes that of the 2018 ES and May 2019 ES Addendum. As noted in the May 2019 ES Addendum, since submission of the 2018 ES, a new residential receptor, Boat Race House, has received and implemented planning consent and has been considered within this ES Addendum where relevant.

1.15. Further details of baseline conditions, policy and guidance and the assessment review are presented within **Section 4: Assessment Review**.

1.16. A summary detailing which ES chapters will be substituted or supplemented within this ES Addendum is provided in **Table 1.1:** below.

Table 1.1: Summary of 2018 ES and 2020 ES Addendum Updates

2018 ES	Form of Update Within July 2020 ES Addendum
ES Chapter 1: Introduction	No material changes to the 2018 ES (as amended) to warrant a replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum.
ES Chapter 2: Environmental Impact Assessment Methodology	No material changes to the 2018 ES (as amended) to warrant a replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum.
ES Chapter 3: Existing Site and Land Uses	No material changes to the 2018 ES (as amended) to warrant a replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum.
ES Chapter 4: Alternatives and Design Evolution	No material changes to the 2018 ES (as amended) to warrant a replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum.

2018 ES	Form of Update Within July 2020 ES Addendum
ES Chapter 5: The Proposed Development	No material changes to the 2018 ES (as amended) to warrant a replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum.
ES Chapter 6: Development Programme, Demolition, Alteration, Refurbishment and Construction	No material changes to the 2018 ES (as amended) to warrant a replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum. Replacement 2018 ES Figure 6.1 prepared (refer to **Appendix A**) Replacement 2018 ES Appendix 6.1: Phasing Plans (refer to **Appendix B**)
ES Chapter 7: Socio-Economics	Replacement Chapter and associated appendices to supersede 2018 ES Chapter, and replacement ES Appendices as follows: • Appendix 7.1: Revised List of Early Years provision within the local impact area; • Appendix 7.2: Revised List of Primary Schools within 2 miles of the Site; • Appendix 7.3: Revised List of Secondary Schools within 3 miles of the Site; and • Appendix 7.4: Revised List of GPs within 1 mile of the Site. Refer to **Appendix C** and **Appendix D**.
ES Chapter 8: Transport and Access	2018 ES Chapter 8: Transport and Access remains valid as a worse-case scenario. The appropriate updated information to this Chapter is set out in this ES Addendum, and in a Transport Assessment Addendum (**Appendix E**).
ES Chapter 9: Noise and Vibration	No material changes to the 2018 ES (as amended) to warrant a replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum, Replacement 2018 ES Figure 9.1 prepared (refer to **Appendix A**). Replacement 2018 ES Appendices (**Appendix F**) as follows: • Replacement ES Appendix 9.1: Acoustic Terminology • Replacement ES Appendix 9.2: Baseline Noise Monitoring • Replacement ES Appendix 9.4: Road Traffic Noise Assessment Calculations New ES Appendix 9.5: Highways Options Noise Analysis (**Appendix G**)
ES Chapter 10: Air Quality	Replacement Chapter (**Appendix H**), Figures (**Appendix A**) and associated appendices (**Appendix I**) which supersede those contained within the 2018 ES (as amended). Replacement ES Chapter incorporates the latest baseline monitoring data and focuses on receptors relevant to the additional highways design options.
ES Chapter 11: Ground Conditions and Contamination	No material changes to the 2018 ES (as amended) to warrant a replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum. Replacement ES Appendix 11.1: Preliminary Environmental Risk Assessment (**Appendix J**).
ES Chapter 12: Surface Water Drainage and Flood Risk	No material changes to the 2018 ES (as amended) to warrant a replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum. Replacement ES Appendix 12.1: Flood Risk Assessment (**Appendix K**). Replacement ES Appendix 12.2: Drainage Strategy (**Appendix L**).
ES Chapter 13: Ecology	No material changes to the 2018 ES (as amended) to warrant a

2018 ES	Form of Update Within July 2020 ES Addendum
	replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum. Replacement ES Appendix 13.1: Preliminary Ecological Appraisal (**Appendix N**) Replacement ES Appendix 13.2: Protected Species Report (**Appendix O**) and Replacement ES Figures 13.1 (**Appendix A**).
ES Chapter 14: Archaeology	No material changes to the 2018 ES (as amended) to warrant a replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum. Replacement ES Appendix 14.1: Archaeological Desk Based Assessment (**Appendix P**).
ES Chapter 15: Built Heritage	No material changes to the 2018 ES (as amended) to warrant a replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum.
ES Chapter 16: Townscape and Visual Assessment	No material changes to the 2018 ES (as amended) to warrant a replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum. Replacement ES Figures 16.6-16.18 (**Appendix A**).
ES Chapter 17: Wind Microclimate	No material changes to the 2018 ES (as amended) to warrant a replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum. Replacement ES Appendix 17.1: Pedestrian Level Wind Microclimate Assessment (**Appendix R**)
ES Chapter 18: Daylight, Sunlight, Overshadowing and Light Pollution	Replacement Chapter (**Appendix S**) and associated figures (**Appendix A**), and ES Appendix 18: Daylight, Sunlight, Overshadowing and Light Pollution (**Appendix T**) to supersede 2018 ES Chapter.
ES Chapter 19: Cumulative Effects	No material changes to the 2018 ES (as amended) to warrant a replacement Chapter, the appropriate updated information to this Chapter is set out in this ES Addendum.
ES Chapter 20: Summary of Mitigation Measures and Likely Residual Effects	Replacement Chapter (**Appendix U**) to supersede 2018 ES Chapter.
Non-Technical Summary	Replacement NTS to supersede May 2019 version.

2. Summary of July 2020 Amendments

Overview

2.1. The 2018 Planning Applications comprise three separate planning applications (Application A, Application B and Application C), which are referred to collectively in the 2018 ES (as amended) as the 'Development'. The July 2020 Amendments has resulted in changes to Application A in terms of building massing, layout and land use, and a reduction in car parking. Minor amendments have also been made to the road and pedestrian access layouts for the school (Application B). On 29 January 2020 LBRuT's planning committee resolved to refuse Application C, however, this application has not been withdrawn. In addition to Application C a series of four options for the mitigating highway works have been proposed, all of which could be carried out on adopted highways land and, therefore, will not require separate planning permission. If it is agreed that all necessary highway works can be delivered within the adopted highway, then Application C may be withdrawn. This document sets out the highways works options that are being developed by the Applicant in consultation with TfL. As all three applications were considered collectively in the 2018 ES (as amended), this ES Addendum considers the July 2020 Amendments in the context of the Development as a whole, this includes the additional highways options in addition to Applications A, B and C.

2.2. **Figure 1.2**: Planning Application Boundaries of the 2018 ES (as amended) sets out the 2018 Planning Application boundaries for Applications A and B, showing two Development Areas (Development Area 1 in the detailed eastern part of the Application A Site boundary and Development Area 2 in the outline western part of the Application A boundary). **Figure 1.3** shows the maximum extent of the potential s278 works proposed at Chalkers Corner, which is assessed as within the EIA. **Figure 1.4** sets out the application boundary for Application C. The boundary for the project assessed within the EIA, as reported in the ES (as amended) is set out in **Figure 1.5**.

2.3. The 2018 Planning Applications comprised planning application forms, detailed planning application drawings, parameter plans, relevant floor area schedules and accommodation schedules together with the Design and Access Statements (DAS) and Design Code. Some of these planning application materials were substituted or an addendum prepared as part of the May 2019 Amendments (the May 2019 Amendments with the 2018 Planning Applications are hereafter referred to as the '2018 Applications (as amended)'). Further substitutions and addendums to these planning documents have been prepared to support the July 2020 Amendments, and these are referenced as necessary within this ES Addendum, as follows:

- Planning Statement and associated addendums;
- Revised Landscape Design and Access Statement: Application A;
- Substitution landscape plans;
- Revised Design and Access Statement Volume 3: Design Code;
- Design and Access Statement Addendums;
- Revised Accommodation Schedules;
- Substitution detailed planning application drawings;
- Substitution parameter plans; and

- Transport Assessment Addendum.

2.4. The following sections describe the July 2020 Amendments to the 2018 Applications (as amended) that are relevant in terms of the EIA and ES.

Design Evolution

2.5. The July 2020 Amendments resulted in design alterations and alternatives to building massing, layout and land use, a reduction in car parking and amendments to highway works.

2.6. The Applicant has sought to further increase the provision of affordable housing within the Development in response to the GLA's affordable housing targets and optimising housing density. As a result, a revised scheme with additional building height has been developed which provides a greater quantum of affordable housing in percentage terms (up to 30% by habitable rooms) and increases residential floorspace from 100,507 m^2 GEA (up to 813 units including the up to 150 units of flexible use living accommodation for either assisted living or residential use) to 137,397 m^2 GEA (up to 1,250 units). As set out in the Design and Access Statement Addenda, the Development refines the original design by increasing the height of buildings in the centre of the Site without having a detrimental impact on the existing townscape and views. The increase in height around the Maltings Building (Building 4) has been more limited to lessen the impact on the prominence of this historic building. Revised building heights are presented in **Table 2.4**.

2.7. Minor changes have been made to the building footprints in Development Area 1 in response to aesthetic refinements. Changes to building footprints have been made in Development Area 2 (outline element) in response to providing increased affordable housing provision and daylight and sunlight (see below for further details on changes to Buildings 18 and 20-22). Key routes through the Site remain as originally proposed.

2.8. In addition, the proposed basement west of Ship Lane (in Development Area 2) has reduced in size, resulting in 186 fewer car parking spaces in the western basement (493 car parking spaces are now proposed in total). This change has been made to reduce the impact on the surrounding traffic and reduce construction costs, enabling a larger proportion of affordable housing.

2.9. Other floorspace uses (such as hotel, assisted living, office, gym, cinema and care home uses) have been reduced or removed (refer to **Table 2.1** and **Table 2.2**. This has allowed for additional flexible use space, such as in the Bottling Building (Building 5) which may be used as community use in this location, and increased affordable housing provision. Introducing affordable housing into Development Area 1 enables earlier phasing of affordable housing delivery and a more through mixture of tenures across the Site.

2.10. The July 2020 Amendments have been informed by environmental considerations as a result of the revised scheme and takes account of post-planning feedback from statutory consultees including the GLA, LBRuT, Sports England and the Environment Agency (EA) since the May 2019 Amendments, as summarised below:

- Daylight, sunlight and overshadowing:
  - An 18m gap has been introduced in a south-west orientation to Building 18 (dividing the footprint of this building into two) to allow sunlight to penetrate into the courtyard and reduce the impact of overshadowing.

- The massing of Buildings 18 and 19 have been set-back to reduce impacts for existing residents along Williams Lane.
- The massing of Building 9 has been set back to reduce impacts for existing residents along Boat Race House.

- Wind:
  - 1.2m high hedges are proposed at the interface between the public footpath and residential private area in Building 16.
  - Two additional trees (5-7m high) are proposed to the south of Buildings 7 and 8.
- Flood risk:
  - The access doors on Building 9 (boat storage facility) would be widened to facilitate access/egress.
  - The lowest sill on the northern elevation of the Maltings Building (which forms part of the flood defence) would be raised from +5.89m AOD to +6.73m AOD (matching the level of the rest of the window sills on this façade), in response to the EA's requirement that this should be above the statutory flood defence line (6.7m AOD) (refer to **Appendix K** for the EA briefing note).
- Built Heritage: Incorporation of heritage interpretation boards in the Maltings Plaza.
- Noise:
  - Installation of a 2.5m high clear acoustic fence around the northern and western perimeter of the school sports playing field (AGP), set back from the proposed 4.5m high twin bar super rebound fence (mesh weld fence with EPDM inserts) surrounding the AGP as part of Application B (refer to landscape drawing P10736-00-001-131-09).
  - Installation of a 3m high fence around the Multi-Use Games Area (MUGA) as part of Application B (refer to landscape drawing P10736-00-001-131-09).

2.11. Beyond the changes to the Development as outlined in Section 2 of this document, which have been considered within the July 2020 ES Addendum, no additional main alternatives to the Development have been considered by the Applicant, and therefore Chapter 4: Alternatives and Design Evolution of the 2018 ES (as amended) remains valid.

Chalkers Corner Works

2.12. Following the resolution to refuse Application C by LBRuT in January 2020 (planning ref: 18/0549/FUL), alternative highway design mitigation has been investigated by the project team. Subsequent meetings held with TfL raised their concern for bus journey times along Lower Richmond Road and through Chalkers Corner. This led to a review of options for Chalkers Corner improvements based on previous designs provided by TfL and a review of the potential for a bus lane to be implemented along Lower Richmond Road. As noted above, it is proposed that if Application C works are not required the highways mitigation for the traffic impacts will be undertaken via s278 works (if all works are within the adopted highway), with the final details to be secured in due course. Therefore, the following four highways options have been assessed within this ES Addendum in addition to the assessment of Application C in the original ES to ensure that the likely significant effects of the final design is considered in the decision making process:

- Option 1: No Change ('Do Nothing') (refer to drawing *38262-5514-020*);
- Option 2: Chalkers Corner 'Light' Scheme (new left-hand lane westbound on Lower Richmond Road) (refer to drawing 38262-5514-021);
- Option 3: Option 1 but with a dedicated bus lane westbound on Lower Richmond Road (refer to drawing 38262-5514-022); and
- Option 4: Option 2 but with a dedicated bus lane westbound on Lower Richmond Road (refer to drawing 38262-5514-023).

2.13. Based on the assessments undertaken, the preferred option to take forward is Option 2 (the Chalkers Corner Light Scheme). Full details of the modelling work undertaken and analysis of the results are provided in the Transport Assessment Addendum (**Appendix E**), as well as **Appendix G** for the noise analysis and **Appendix H** for the air quality assessment of these four options.

2.14. Option 2 proposes introducing a new left-hand turn from Lower Richmond Road onto the A316, resulting in three lanes on Lower Richmond Road. This will involve moving the road by 4.2m closer to properties 137-171 to the south of Lower Richmond Road (refer to planning drawing *38262-5514-021)* and the following changes to the road layout:

- Relocation of stop lines on A205 closer to the junction;
- Introduction of advanced stop lanes on Mortlake Road and Clifford Avenue South; and
- Widening of area between junctions by relocating stop line by 2m.

2.15. It will also involve the reconfiguration of the informal parking area used by residents at this location, as such alternative informal and formal parking arrangements designs were reviewed. The proposed layout requires the loss of approximately 6 undesignated parking spaces for residents adjacent to this area on Lower Richmond Road On review, parking bays have been kept informal as if these bays were formalised, the proposed layout would only be able to accommodate 3-4 designated car parking spaces. As such, the revised layout at Chalkers Corner will not move the road any closer to Chertsey Court and the proposed wall and landscaping on the private land of Chertsey Court are no longer proposed. The Chalkers Corner works are expected to be progressed via s278, however, given these works are required to facilitate appropriate mitigation of the overall Development, the works are assessed in this ES Addendum. The extent of the potential s278 Chalkers Corner works is indicated on **Figure 1.3**. The planning application boundaries for Application A and Application B on **Figure 1.2**, together with the potential s278 works on **Figure 1.3** form the extent of works assessed in the EIA and reported in this July 2020 ES Addendum.

Floor Areas and Accommodation Schedules

2.16. As a result of the July 2020 Amendments to Application A, the proposed collective floorspace and unit numbers of Application A, Application B and Application C (the Development, as amended by the May 2019 Amendments) has changed, which is set out in **Table 2.1.** Changes are represented by a ~~strikethrough~~ of the information presented within the 2018 ES (as amended) and the amended (July 2020) information presented in **bold**, <u>underlined</u>, *italic* text.

2.17. Overall the residential unit provision has been increased by 587 units to a total of 1,250 units (+53,136 m^2 GEA floorspace, 576 units in Development Area 1 and up to 674 units in Development Area 2) and the overall non-residential use floor area (office, cinema, gym, flexible and hotel uses)

has increased by 2,505 m^2 GEA as a result of the July 2020 Amendments. The change in residential unit mix is provided in **Table 2.3.**

Table 2.1: Proposed Combined Floorspace of Application A, Application B and Application C*

Land Use	Floorspace Area (m^2)	
	Gross External Area (GEA)	Gross Internal Area (GIA)
Residential	~~Up to 100,507 (Up to 813 units including up to 150 of flexible assisted living or residential use)~~ ***Up to 137,397 (Up to 1,250 units, no flexible assisted living use)***	~~Up to 89,817 (Up to 813 units including up to 150 of flexible assisted living or residential use)~~ ***Up to 123,538 (Up to 1,250 units, no flexible assisted living use)***
Office	~~2,634~~ ***6,068***	~~2,417~~ ***5,532***
Cinema	~~2,565~~ ***1,937***	~~2,120~~ ***1,606***
Gym	~~932~~ ***0***	~~740~~ ***0***
Flexible Uses - Restaurant / bar / retail / community / boathouse / financial & professional services / offices	~~5,360~~ ***5,917***	~~4,686~~ ***5,023***
Hotel	~~1,863~~ ***1,937***	~~1,668~~ ***1,765***
Nursing and Care Home	~~Up to 10,293~~ ***0***	~~Up to 9,472~~ ***0***
School	11,430	9,319
Car parking spaces	Up to ~~679~~ ***493*** spaces (plus 61 motorbike spaces and ~~22~~ ***7*** spaces at surface level for the Townhouses) 20% commitment to electric vehicle charging, to become 100% in the future	Up to ~~679~~ ***493*** spaces (plus 61 motorbike spaces and ~~22~~ ***7*** spaces at surface level for the Townhouses) 20% commitment to electric vehicle charging, to become 100% in the future
Cycle parking spaces	Up to ~~1,924~~ ***2,884*** spaces	Up to ~~1,924~~ ***2,884*** spaces
Private amenity space	~~Up to 6,000~~ ***Up to 9,537***	Not applicable
Public amenity space (including external and internal play space for residents and school play space)	~~Up to 38,900~~ ***Up to 43,700***	Not applicable
Play space (including external and internal play space for residents and school play space)	~~Up to 14,353~~ ***Up to 10,365***	Not applicable

*Changes are represented by a ~~strikethrough~~ of the information presented within the 2018 ES (as amended) and the amended (July 2020) information presented in **bold**, underlined, *italic* text.

With reference to **Table 2.1**, land uses across the proposed buildings (refer to revised building location plan, Revised ES **Figure 5.1** in **Appendix A**) have changed as follows:

- Building 1: Introduction of additional office space;
- Building 5: Office and gym use to be replaced with flexible use on the lower ground and ground levels and additional office space on new level 3;
- Building 10: Private residential to be replaced with affordable residential use;
- Building 13: Flexible residential or assisted living to be replaced with private residential use;
- Building 14: Care home to be replaced with affordable residential use;
- Building 15: Care home to be replaced with private residential use;
- Building 16: Flexible residential or assisted living to be replaced with private residential use;
- Building 17: Flexible residential or assisted living to be replaced with private residential use;
- Building 20 and 21: Building 20, previously private residential use, to be split into two affordable accommodation blocks; and
- Building 22 (previously referred to as Building 21): Remains as three storey townhouses, but providing 7 residential units rather than 8.

2.18. With regard to flexible uses outlined in **Table 2.1**, the 2018 ES stated that the maximum floorspace per land use within the overall flexible use space would not exceed 2,500m^2 GIA for retail. The May 2019 Amendments changed this maximum floorspace for retail within the overall flexible use space to not exceeding 2,000m^2 GIA. Furthermore, the office floorspace within the overall flexible use space changed from a maximum of 2,000m^2 GIA to a minimum of 2,000m^2 GIA.

2.19. As a consequence of the flexible floorspace increasing from 4,685m^2 to 5,023 m^2 GIA as a result of the July 2020 Amendments, the flexible floorspace rules have changed since the 2018 ES (as amended), as shown in **Table 2.2**.

Table 2.2: Flexible Uses

Land Use	Maximum Caps* GIA m^2	Minimum Caps* GIA m^2
Shop Class A1	~~2,000~~ ***2,200***	n/a
Financial and Professional Services Class A2	~~200~~ ***220***	n/a
Café/Restaurant Class A3	~~2,200~~ ***2,400***	n/a
Drinking Establishments Class A4	~~1,600~~ ***1,800***	n/a
Office Class B1	~~0~~ ***2,200***	2,000
Community Class D1	~~1,148~~ ***1,300***	n/a
Boathouse Sui Generis	~~351~~ ***380***	n/a
Total	~~**4,685**~~ ***5,023***	~~**4,685**~~ ***5,023***

*Changes are represented by a ~~strikethrough~~ of the information presented within the 2018 ES (as amended) and the amended (July 2020) information presented in **bold**, underlined, *italic* text.

2.20. **Table 2.3** sets out the indicative mix of dwellings within the Development. The Development includes affordable housing provision of up to 30% by habitable room.

Table 2.3 Residential Unit Mix

	Number of Units*					
	Studio	**1-bed**	**2-bed**	**3-bed**	**4-bed**	**Total**
Market	58	251	397	173	15	894
Affordable	0	75	197	78	6	356
	58	**326**	**594**	**251**	**21**	**1,250**

Building Massing

2.21. The July 2020 Amendments result in changes to proposed building heights, as shown in **Table 2.4**.

Table 2.4: Building Heights

Building	Relevant Application	2018 ES Maximum Height* (m AOD)	2018 ES Maximum Number of Storeys	July 2020 Amendments Max Height (m AOD)	July 2020 Amendments Max Storeys
1 (Cinema)	Application A (detailed component)	22	4	25.78	5 (+1)
2	Application A (detailed component)	35.93	7-8	44.63	8-10 (+2)
3	Application A (detailed component)	28.03	6	30.93	7 (+1)
4 (Maltings)	Application A (detailed component)	As existing (32.85)	8	As existing (32.85)	No change (8)
5 (former Bottling Building)	Application A (detailed component)	18.47	3	20.80	3-4 (+1)
6	Application A (detailed component)	21.68	4	24.98	5 (+1)
7	Application A (detailed component)	35.93	7-8	44.65	9-10 (+2)
8	Application A (detailed component)	35.93	6-8	37.93	9 (+1)
9	Application A (detailed component)	24.98	4-5	No change (24.98)	No change (5)
10	Application A (detailed component)	24.98	4-5	28.28	5-6 (+1)

Building	Relevant Application	2018 ES Maximum Height* (m AOD)	2018 ES Maximum Number of Storeys	July 2020 Amendments Max Height (m AOD)	July 2020 Amendments Max Storeys
11	Application A (detailed component)	31.33	7	37.93	9 (+2)
12	Application A (detailed component)	31.33	6-7	34.63	7-8 (+1)
13	Application A (outline component)	29	4-6	28.6	No change (4-6)
14	Application A (outline component)	25	4-5	28.60	4-6 (+1)
15	Application A (outline component)	29	6	36.60	8 (+2)
16	Application A (outline component)	29	5-6	36.60	6-8 (+2)
17	Application A (outline component)	32	5-7	36.60	6-8 (+1)
18	Application A (outline component)	29	4-6	33.0	3-7 (+1)
19	Application A (outline component)	22	4	22.25	3-4 (change in location)
20	Application A (outline component)	19	3	22.25	4 (+1)
21	Application A (outline component)	19	3	22.25	4 (+1)
22 (previously 21)	Application A (outline component)	19	3	20.5	4 (+1)
School	Application B	16.805 (to parapet of building) 19.67 (to top of play area enclosures).	3	No change	No change (3)

* Height to the top of the roof parapet. Heights are as per the 2018 ES given the May 2019 Amendments did not alter building massing.

2.22. The footprint of the proposed buildings would remain as per the 2018 Planning Applications and May 2019 Amendments, apart from in Development Area 2 (refer to **Figure 5.1**), where:

- the footprint of Building 18 has been divided by an 18m gap resulting in changes to the positioning of Buildings 18 and 19; and

- former Building 20 has been divided into two affordable building blocks (re-named as Buildings 20 and 21, with Building 21 now referred to as Building 22).

2.23. Below ground, the western basement car park under Development Area 2 has reduced in footprint by 6,520 m^2 (12,360 m^2 to 5,840 m^2), with the western flank of the basement removed (refer to drawing *18125_C645_Z2_P_PR_009_D*). This has resulted in the reduction of 186 car parking spaces and re-location of attenuation tanks from the western basement to below soft landscaping. The depth of the western basement remains as per the 2018 ES (as amended) at 2.45 m AOD. In addition, Building 01 (cinema) in Development Area 1 now has an additional basement level providing ancillary space, creating a two-level basement extending down to -1.64m AOD. Overall, the eastern basement has decreased by 279 m^2 owing to Building 10 now containing affordable residential use and no longer requiring access to the basement for residents. The depth of the main car park in the eastern basement remains as per the 2018 ES (as amended) at 1.76 m AOD.

Materials, Façade Treatment and Finishes

2.24. The proposed distribution of building typology (mansion and warehouse) remain unchanged, rather these typologies have been further refined as a result of the July 2020 Amendments, such as the introduction of double mansard roofs to the mansion blocks (Buildings 2, 3, 7, 8, 11 and 12) and refinements to the façades.

2.25. The re-configuration of the cinema (Building 1) to incorporate office use has resulted in further refinement of the façade. The colour of the concrete will be specified to match the colour of the adjacent Jolly Gardeners Pub. An inset corner entrance to the office space has been incorporated to closely relate to the entrance to the Jolly Gardeners Pub which sits on the opposite side of Ship Lane.

2.26. In terms of the Buildings of Townscape Merit (BTMs) within the Development, there are no changes to the Maltings Building (Building 4) since the May 2019 Amendments other than ensuring the windows on the northern façade are above the flood defence line (refer to above Design Evolution). The Former Bottling and Hotel Building (Building 5) would still have façade retention to the south, west and north facades of the existing building elements. The following adjustments have been made as a result of the July 2020 Amendments:

- An adjustment to the design of the former hoist doors on the south façade owing to the revised internal residential layout.
- New brick facades have been designed with arched windows that reference the design of the existing retained facades - the distribution of openings has been adjusted to suit the revised internal residential layout.
- The previously proposed double pitched zinc roof to the Botting Building has been revised to become a flat roof, which is more appropriate to the residential use now proposed within the building.
- The re-instatement of the slate roof and chimneys to the Former Hotel Building remains as previously proposed as part of the May 2019 Amendments and to be in-keeping with the original character of the building.

2.27. In summary, the description of the Development for Application A has been amended as follows:

"Hybrid application to include the demolition of existing buildings to allow for the 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*
  - *i. Alterations and extensions to existing buildings and erection of buildings varying in height from 3 to 10 storeys plus a single storey basement of one and two storeys below ground*
- *b) Residential apartments*
- *c) 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*
- *d) Hotel / public house with accommodation*
- *e) Cinema*
- *f) Offices*
- *g) New pedestrian, vehicle and cycle accesses and internal routes, and associated highway works*
- *h) Provision of on-site cycle, vehicle and service parking at surface and basement level*
- *i) Provision of public open space, amenity and play space and landscaping*
- *j) Flood defence and towpath works*
- *k) Installation of plant and energy centres*

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

- *l) The erection of a single storey basement and buildings varying in height from 3 to 8 storeys*
- *m) Residential development*
- *n) Provision of on-site cycle, vehicle and service parking*
- *o) Provision of public open space, amenity and play space and landscaping*
- *p) New pedestrian, vehicle and cycle accesses and internal routes, and associated highway works"*

2.28. No amendments have been made to the description of the Development for Application B (school).

2.29. The description for Application C has been amended as follows: *"Highways works to Chalkers Corner, including landscaping, and all other associated works."*

3. Assessment of Methodology

3.1. A review was undertaken by Waterman IE and all technical specialists who contributed to the 2018 ES (as amended) to determine whether the proposed July 2020 Amendments would result in any changes to the likely significant residual environmental effects reported in the 2018 ES (as amended), and whether any additional mitigation measures would be required. Furthermore, all technical specialists also considered changes to baseline conditions, policy and guidance, where relevant. The topics considered are:

- Socio-economics;
- Transport and Access;
- Noise and Vibration;
- Air Quality;
- Ground Conditions and Contamination;
- Surface Water Drainage and Flood Risk;
- Ecology;
- Archaeology;
- Built Heritage;
- Townscape and Visual Assessment;
- Wind Microclimate;
- Daylight, Sunlight, Overshadowing and Light Pollution; and
- Cumulative Effects.

3.2. The results of the review of the July 2020 Amendments and supplementary testing (where necessary, refer to **Table 1.1**) are described under the individual 2018 ES Chapter headings and have broadly been sub-divided into the following headings:

- **Introduction:** This describes the key design changes that have the potential to materially alter the environmental effect(s) as stated within the 2018 ES (as amended). Updates where relevant of any baseline data and changes in policy/guidance/assessment methods;
- **Assessment:** This includes any updated baseline information, describes any changes to the predicted environmental effects and the proposed mitigation measures as reported in the 2018 ES (as amended). Where the July 2020 Amendments are not considered to materially affect the results and conclusions of the 2018 ES (as amended), justification is provided; and
- **Conclusion:** This section confirms whether the July 2020 Amendments to the Development design have resulted in a material change to the impact assessment and conclusions of the 2018 ES (as amended).

3.3. Chapter 6: Development Programme, Demolition, Alteration, Refurbishment and Construction of the 2018 ES (as amended) describes the anticipated programme of works and the key activities that would be undertaken to facilitate the Development (i.e. the demolition, alteration, refurbishment and construction works, hereafter referred to as the 'Works'). Given the time that has elapsed since February 2018, the Works start-on-Site dated has moved from June 2019 to June 2021. This has resulted in the peak construction year also moving from 2022 to 2023, which is of particular

relevance to transport, air quality and noise and vibration assessments. Through implementation of a condensed construction programme, the operational year of the Development would remain as 2027 as per the 2018 ES (as amended). An updated construction programme is provided in Revised ES **Figure 6.1** (**Appendix A**) and **Appendix B** indicates the revised proposed phases of the Development (replacing the 2018 ES Figure 6.1 and Appendix 6.1). The revised construction phasing plans (**Appendix B**) show some buildings will be constructed and completed in a different sequence to that previously presented in the 2018 Applications, however this does not affect any of the ES assessments as interim construction assessments were not undertaken and where necessary worst case assumptions were made. Furthermore, the number of peak construction vehicles remain the same as the previous 2018 ES (82 one-way vehicle trips would access the Site per day, of which 57 one-way trips are likely to be undertaken by Heavy Goods Vehicles (HGVs) and 25 one-way trips by Light Goods Vehicles (LGVs).

3.4. It is acknowledged that new EIA Regulations came into force on 16 May 2017 (Town and Country Planning (Environmental Impact Assessment) Regulations 2017)[3] (the '2017 Regulations'). However, as a request for an EIA Scoping Opinion was made to the LBRuT on 30 March 2017 (refer to Appendix 2.1 of the 2018 ES), in accordance with the transitional arrangements set out in the 2017 Regulations which came into force on 16 May 2017, the EIA for the 2018 Development was undertaken in line with the 2011 EIA Regulations. As such, the 2011 EIA Regulations remain applicable for this ES Addendum.

[3] HMSO (2017); Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

4. Assessment Review

Socio-Economics

Introduction

4.1. A replacement ES Chapter 7: Socio-Economics and associated technical appendices been prepared by Hatch Regeneris for the July 2020 Amendments and included in **Appendix C** and **Appendix D** respectively. This ES Addendum section, prepared by Hatch Regeneris, provides a summary of the changes made to socio-economics assessment as a result of the July 2020 Amendments.

4.2. As indicated previously as a result of the July 2020 Amendments, the care home and flexible use assisted living units in Development Area 2 have been removed and it has now been determined that the Development would provide up to 30% affordable housing. This means that the need to assess multiple scenarios as was presented in the 2018 ES is no longer required and the socio-economic assessment now only considers the Development as one scenario (up to 1,250 residential units including up to 30% affordable provision).

4.3. The baseline within the replacement ES Chapter has been updated with the most up to date available data, a summary of which is provided below. The latest GLA Population Yield Calculator (2019)[4] has been used to assess the overall population yield as well as the child yield of the Development, with the 2012 GLA Child Yield Calculator[5] also used for comparison purposes.

Assessment

Baseline Conditions

4.4. Table 7.20 of the replacement ES Chapter 7: Socio-Economics provides a summary of the baseline assessment and receptors, the changes to the baseline from the 2018 ES have included the following:

- Updates to the data on existing employment levels by sector (2018);
- Updates to the data on economic activity rates and occupational structure (2018);
- Updates to education (early years, primary and secondary) and GP capacity (2018); and
- Updates to local crime rates (2018).

4.5. Based on these updates, the sensitivity of the crime receptor has increased from Low to Medium given crime rates have increased since the 2018 ES baseline and the sensitivity of the Early Years receptor has decreased from high to medium. The sensitivity of all other receptors remains as previously reported within Chapter 7: Socio-economics of the 2018 ES (as amended).

The Works

4.6. The Works would generate demand for an additional 256 construction workers per annum over 7 years compared to the 2018 ES (as amended). This increase does not alter the judgement of the magnitude of change and therefore would not change the likely significant effects identified in the 2018 ES (as amended). Therefore, the likely residual effect of **short-medium term**, **beneficial**,

[4] Greater London Authority (2019) Population Yield Calculator. Available at: https://data.london.gov.uk/dataset/population-yield-calculator

[5] GLA (2012) SPG - Shaping Neighbourhoods, Play and Informal Recreation.

district to **regional** and of **minor significance** would remain as reported in the 2018 ES (as amended).

Completed Development

4.7. ES Chapter 7: Socio-Economics (**Appendix C**) has been updated as a result of the July 2020 Amendments which has resulted in changes to the following:

- An increase in overall population yield and working age population;
- An increase in the supply of housing contributing to local plan housing targets;
- A decrease in the Full Time Equivalent (FTE) employment supported by the Development as a result of changes to the proposed commercial and community floorspace;
- An increase in the child yield population for affecting the demand for Early Years, Primary and Secondary school education;
- An increase in the overall population leading to an increase in the demand for GP services; and
- Increases in the requirements for and provision of open space and children's play space.

Conclusion

4.8. In conclusion, with the exception of completed Development effects to population and labour market; housing contribution; demand on early years and primary school places; and demand on primary health care, the assessment of effects previously reported within Chapter 7: Socio-economics of the 2018 ES (as amended) remains valid.

4.9. **Table 4.1** provides a comparison of the likely significant effects together with mitigation measures and the likely residual effects identified in the 2018 ES (as amended) that have been updated in the replacement ES Chapter 7: Socio-Economics (**Appendix C**) as a result of the July 2020 Amendments.

Table 4.1: Summary of Likely Significant Effects, Mitigation Measures and Likely Residual Effects

Description of Effect	Likely Significant Effect (as of 2018 ES)	Revised Likely Significant Effect (as of 2020 ES Addendum)	Mitigation Measures	Likely Residual Effect (as of 2018 ES)	Revised Likely Residual Effect (as of 2020 ES Addendum)
Completed Development					
Population and Labour Market.	**Long-term**, **local to district**, **beneficial** and of **minor significance**.	**Long-term**, **local beneficial** and of **moderate significance**. **Long-term**, **district**, **beneficial** and of **minor significance**.	No mitigation required.	**Long-term**, **local to district**, **beneficial** and of **minor significance**.	**Long-term**, **local beneficial** and of **moderate significance**. **Long-term**, **district**, **beneficial** and of **minor significance**.
Provision of housing contributing to LBRuT targets.	**Long-term**, **local**, **beneficial** and of **moderate significance**. **Long-term**, **district**, **beneficial** and of **minor significance**.	**Long-term**, **local**, **beneficial** and of **major significance**. **Long-term**, **district**, **beneficial** and of **minor significance**.	No mitigation required.	**Long-term**, **local**, **beneficial** and of **moderate significance**. **Long-term**, **district**, **beneficial** and of **minor significance**.	**Long-term**, **local**, **beneficial** and of **major significance**. **Long-term**, **district**, **beneficial** and of **minor significance**.
An additional population of children under the age of 5 and demand for early years places.	**Scenarios 1b, 2b:** **Long-term, adverse** and **moderate** at the **local** level and **minor at the district** level. **Scenarios 1a and 2a:**	**Long-term**, **adverse** and **moderate significance** at the **local** level and **minor** at the **district level**.	No mitigation.	**Insignificant**.	**Long-term**, **adverse** and **moderate significance** at the **local** level and **minor** at the **district level**

Description of Effect	Likely Significant Effect (as of 2018 ES)	Revised Likely Significant Effect (as of 2020 ES Addendum)	Mitigation Measures	Likely Residual Effect (as of 2018 ES)	Revised Likely Residual Effect (as of 2020 ES Addendum)
	Long-term, **adverse** and **major significance** at the **local** level and **minor** at the **district level**.				
An additional population primary school aged children and demand for primary school places.	**Direct, long-term, local** to **district,** and of **minor significance.**	**Long-term**, **local**, **adverse** and of **minor significance**. **Long-term**, **district**, **adverse** and of **minor significance**.	No mitigation.	**Insignificant**.	**Long-term**, **local**, **adverse** and of **minor significance**. **Long-term**, **district**, **adverse** and of **minor significance**.
Additional demand by the new population of the Development for primary health care.	**Direct, long-term, local** to **district adverse** and of **minor significance**.	**Direct, long-term, local** to **district adverse** and of **moderate significance**.	Section 106 / Community Infrastructure Levy receipts to mitigate.	**Insignificant**.	**Insignificant**.

Transport and Access

Introduction

4.10. This assessment review has been prepared by Stantec, who prepared ES Chapter 8: Transportation and Access of the 2018 ES (as amended) and the Transport Assessment (TA).

4.11. The assessment review is based on changes made to the Development since the previous May 2019 ES Addendum.

4.12. The July 2020 Amendments that have the potential to materially alter the transport and access effect(s), as stated within the 2018 ES (as amended), include the following:

- Changes to unit mix including increase in residential units and changes in non-residential floor areas;
- Reduction in 186 car parking spaces within the basement to the west of Ship Lane;
- Changes to the Works programme and change from 2022 to 2023 peak year construction year; and
- Chalkers Corner s278 works.

4.13. These changes, result in changes to the trip generation anticipated from the Development through the reduction in parking spaces leading to a reduction in vehicle trips, despite the increase in residential units.

4.14. The reduction in vehicle parking is also matched by an increase in the number of cycle parking spaces. These cycle parking spaces adhere to the new policies set out in the Draft London Plan Intend to Publish Version December 2019 together with the number of proposed vehicle parking spaces.

Assessment

The Works

4.15. As per the 2018 ES (as amended), assessments have been carried out on the peak construction year and the operational Development, corresponding to 2022. As indicated previously within this ES Addendum, the peak construction would be 2023, however through implementation of a condensed construction programme, the operational year of the Development would remain as 2027 as per the 2018 ES (as amended).

4.16. As indicated during the 2018 ES (as amended), a forecast that 82 one-way vehicle trips would access the Site per day, of which 57 one-way trips are likely to be undertaken by Heavy Goods Vehicles (HGVs) and 25 one-way trips by Light Goods Vehicles (LGVs). Despite the change in the peak construction year from 2022 to 2023, this presents a reasonable worst-case assessment of the likely extent of construction-related activities occurring at any one time has been undertaken and presented in the 2018 ES (as amended) for the purpose of assessing environmental effects.

4.17. Regarding construction workers, the 2018 ES chapters (as amended) indicates a minor increase in the number of construction workers. In the 2018 ES (as amended), it was stated that there are no parking spaces available for construction workers and that they are anticipated to travel

against the usual commuter flow outside the main peaks via public transport. As there is only a minor increase in the number of workers per day, the previous conclusion still stands, that there is anticipated to be an insignificant impact on public transport during The Works period.

4.18. The 2018 ES Chapter 8: Transport and Access assessed a worst-case scenario for the Development and the assessment presented within this ES Addendum is based on the 2018 ES Chapter.

The Completed Development

4.19. In order to identify the likely significant environmental effects relating to transport and access for the Development when operational, a trip generation assessment has been undertaken. This is an update of the previous assessment carried out in the 2018 ES (as amended). The trip generation methodology, including trip rates, have been agreed with LBRuT and TfL as part of the 2018 Applications.

Assessed Land Use Quanta

4.20. The assessed land use quanta are derived from the updated land use area schedule produced for the Development (refer to **Table 2.1**). There is an aspect of flexible use (refer to **Table 2.2**) included within this schedule and

4.21. **Table** 2.3 sets out a use mix that would generate a worst case (greatest number) in respect of trip generation (the same approach was undertaken in the 2018 ES (as amended)).

Table 4.2: Worst Case Flexible Use Assumptions

Use	Floor Area sqm (GIA)	Comment
Retail – Local Shops	750	Based on likely minimum retail units. i.e. not all restaurant use.
Office and Financial / Professional Services	2,000	Rounded Minimum area permitted
Cafés, Restaurants and Bars	2, 273	The remaining floor area from the set 5,023. Maximum Permitted is 4,000.
Total	5,023	-

4.22. Based on the derived trip rates, the mix of flexible uses will provide a worst-case assessment of highway effects, with cafes / restaurants producing the largest number of daily trips. The other unit numbers/floor areas that are fixed are shown below.

Table 4.3 Non-Flexible floor areas/unit numbers

Land Use	Land Use Schedule units/floor areas			Units used for Trip Generation
Residential	1,250 units	Private Flats	887 units	887 units
		Affordable Flats	356 units	356 units

Land Use	Land Use Schedule units/floor areas	Units used for Trip Generation
	Private Houses 7 units	7 units
Education	9,319 m^2	1,200 Pupils
Office	5,532 m^2	5,023 m^2 (inc. flex use)
Cinema	1,606 m^2	370 seats

Trip Generation

4.23. A detailed multi-modal trip generation assessment was undertaken as part of the 2018 Applications and this has since been updated to reflect the July 2020 Amendments. This is included within the Transport Assessment (TA) Addendum, contained within **Appendix E**.

Vehicular Trip Distribution

4.24. The distribution of trips to / from the Stag Brewery component of the Site was previously estimated using the SoLHAM forecast traffic distribution to / from three 'donor' zones in the SoLHAM model. This distribution has been retained as part of this assessment review.

Public Transport Trip Distribution

4.25. The distribution of public transport trips, namely bus and rail trips, have been distributed using the same distribution as set out in the 2018 ES (as amended) using 2011 census data for journeys to work. There is therefore no change to the public transport distribution.

Peak Hour Assessments

4.26. The public transport assessment relating to the operational Development, as well as the driver delay, assessment relating to both the Works and Operational Development, presented in this ES Addendum, still focus on the morning (08:00-09:00) and evening (17:00-18:00) peak hours to present a worst case scenario as per the 2018 ES assessment.

Establishment of Baseline Conditions

4.27. All baseline conditions are anticipated to be the same as the 2018 ES (as amended). As part of the 2018 ES several surveys were undertaken to establish the baseline conditions. These conditions are assumed to still be relevant to this assessment, as they are less than 2 years old.

Extent of Assessment Area

4.28. The extent of the assessed area is the same as the May 2019 ES Addendum.

Assessment Scenarios

4.29. The assessment of environmental effects relating to transport and access have considered the following scenarios, they remain the same scenarios as the 2018 ES (as amended) with the exception of the peak construction year becoming 2023 as opposed to 2022:

- 2017 Do Nothing (Baseline);

- 2023 Do Minimum (peak construction year);
- 2023 Do Something (peak construction year);
- 2027 Do Minimum (operational Development year);
- 2027 Do Something (operational Development year);
- 2031 Do Something with Highway Improvements (operational Development);
- 2042 Do Minimum (15 years' after operational Development); and
- 2042 Do Something (15 years' after operational Development).

Significance Criteria

4.30. As per the 2018 ES (as amended), the significance of the environmental effect of the Development on the listed IEMA criteria has been determined based on the magnitude of the effect, the sensitivity of the receptor, and whether the effect is beneficial or adverse and temporary or permanent.

4.31. For each of the considered assessment criteria, a scale of magnitude has been identified. These have not changed from the 2018 ES (as amended).

Baseline Conditions

Road Network

4.32. The only significant change to the highway network in the surrounding area since preparation of the 2018 ES (as amended) is the temporary closure of Hammersmith Bridge to vehicles. This closure has had a negative impact on the operation of Chalkers Corner at peak times, with TfL stating that Chiswick Bridge is experiencing an increase in vehicular traffic due to the reduction in the number of crossing points for vehicles over the River Thames.

4.33. Following a detailed investigation, TfL and London Borough of Hammersmith and Fulham (LBHF) have agreed the works needed to repair Hammersmith Bridge. The closure is therefore considered as temporary and will be re-open by the time the Development is fully operational.

4.34. The first stage of the work has now begun, and TfL has provided £25million to pay for this. There are no other observed changes to the local highway network since the 2018 Applications and the baseline flows have also been assumed to be the same.

Road Safety

4.35. A detailed analysis of the personal injury collision data for the last three years period from 14th November 2016 – 30th October 2019 was undertaken as part of the Revised Scheme study. There were no fatal or collision hotspots identified as part of the study. Full details of the collision analysis are provided in the Transport Assessment Addendum.

Pedestrian and Cycle Facilities

4.36. The pedestrian and cycle networks remain unchanged from that detailed in the original 2018 TA. The pedestrian network around the Site includes footways along all carriageways surrounding the

sites and pedestrian routes through Mortlake Green and along the Thames Path.

4.37. The Hammersmith Bridge closure has not had any impact on pedestrians or cyclists and still remains open for these two modes of travel. Once the bridge is fully operational it will remain a key route for pedestrians and cyclists crossing over the River Thames.

Existing Public Transport Network

4.38. The bus network also remains unchanged with the exception of a temporary closure of Hammersmith Bridge. The services available immediately outside the Site, including Routes 209 and 419 are affected by this and terminate to the southside of the river. Therefore, where there were previously services available to Hammersmith, these now terminate in Castelnau.

4.39. The rail network is unchanged since submission of the 2018 ES (as amended). New trains are now running on the route, with an increase in capacity, however, the routes and train frequency remain unchanged.

Likely Significant Effects

The Works (Construction)

Construction Trip Generation during Peak Construction Traffic Period

4.40. The vehicle trip generation assessment relating to the Works considers the busiest year of construction activities in terms of vehicle movements. Based on the current construction programme provided in the revised Construction Management Report, prepared by AECOM and included with the revised planning documents for the July 2020 Amendments, it is anticipated that the busiest year of construction vehicle movements will be 2023. This is a year later than assumed in the previous 2018 ES assessment. During this period, it is forecast that 82 one-way vehicle trips would access the Site per day, of which 57 one-way trips are likely to be undertaken by Heavy Goods Vehicles (HGVs) and 25 one-way trips by Light Goods Vehicles (LGVs). This is the same assumption as the previous 2018 ES assessment.

4.41. It is still proposed that no parking would be provided on Site for the construction workforce. It is anticipated that construction staff would access the Site via public transport. Therefore, it is considered that construction staff would generate a negligible amount of vehicle trips within the local highway network, while increasing walking trips and travel by public transport.

Construction Site Access and Assumed Routes

The construction site access and assumed routes are consistent with the previous 2018 ES assessment. Effects Assessment

4.42. As there is no change in the level of construction traffic there are not anticipated to be any changes in the effects of the construction traffic. The conclusions for all indicators: severance, driver delay, pedestrian delay, pedestrian and cycle amenity, fear and intimidation and accidents and road safety all remain as per the previous 2018 ES assessment where construction traffic was deemed to have an **insignificant** effect.

Public Transport

4.43. There will be an increased number of contractors in the local area who will use the public transport network. However, construction workers:

- generally, start early and leave early resulting in the majority of the contractors travelling outside the morning and evening peak hour periods;
- public transport trips would be split between rail and bus services available in proximity of the Site; and
- arrivals in, and departures from, the local area around the Site would be counter-directional to the majority of existing residential public transport trips.

4.44. Therefore, it is considered that the magnitude of effects on the capacity of existing bus and rail services during the peak hours would be negligible. Thus, it is considered that the Works would result in an **insignificant** effect on public transport services available in the local area of the Site during the peak hours as per the previous 2018 ES assessment.

Completed Development (Operational)

Trip Generation from the Completed and Operational Development

4.45. The July 2020 Amendments have led to a difference in the traffic flows anticipated from the Development. As there have been several changes to the land use quantum within the Development, including a significant increase in the number of residential units, the number of person trips has increased. The number of parking spaces within the Development, however, has reduced by 20% overall. Therefore, the number of vehicles expected to be generated from the Site is reduced with increases to other modes including walking, cycling, bus and rail trips.

4.46. The table below sets out the reduction in vehicle trips anticipated to be made on each link from the July 2020 Amendments compared to the 2018 ES for the 2027 Do Something scenario. It should be noted that all four highways options assessed within the Transport Assessment Addendum (**Appendix E**) contain the same traffic flows, therefore only one study is undertaken on the links surrounding the Development within this ES Addendum.

Table 4.4: Flow differences between 2018 TA and 2020 TA Addendum

Link ID	Link Name	Direction	2027 Do Something AADT flows Original 2018 ES	2027 Do Something AADT flows 2020 ES Addendum	Difference
1	A316 Clifford Ave	NB	17957	17952	-5
2		SB	15896	15885	-11
3	A316 Lower Richmond Road	WB	19916	19906	-10
4		EB	21812	21802	-10

Link ID	Link Name	Direction	2027 Do Something AADT flows Original 2018 ES	2027 Do Something AADT flows 2020 ES Addendum	Difference
5	South Circular (north of A316)	NB	8804	8801	-3
6		SB	8077	8072	-5
7	South Circular (south of A316)	NB	12400	12400	0
8		SB	11393	11390	-3
9	A3003 Lower Richmond Road (Watney's Sports Ground)	WB	9722	9700	-22
10		EB	10463	10437	-26
11	A3003 Lower Richmond Road (Mortlake Green)	WB	9761	9737	-24
12		EB	10639	10614	-25
13	Williams Lane	NB	678	665	-13
14		SB	705	694	-11
15	Mortlake High Street	WB	9957	9941	-16
16		EB	11044	11026	-18
17	The Terrace (west of Barnes Bridge Station)	WB	9572	9559	-13
18		EB	10371	10355	-16
19	White Hart Lane (south of Mortlake High Street)	NB	2503	2500	-3
20		SB	2980	2978	-2
21	Sheen Lane (north of Level Crossing)	NB	3665	3657	-8
22		SB	3252	3245	-7
23	Sheen Lane (south of Level Crossing)	NB	3568	3560	-8
24		SB	3105	3097	-8
25	Sheen Lane (south of South Circular)	NB	2723	2718	-5
26		SB	2941	2937	-4
27	South Circular Road (west of Sheen Lane)	WB	10272	10272	0
28		EB	9920	9920	-5

4.47. The reduction in the number of parking spaces within the Development, results in there being predicted reductions to the 18-hour flows, even considering the increase in delivery and servicing vehicles. As there is a reduction in vehicle trips there is not anticipated to be any further adverse impact on any of the elements of the ES. Severance, driver delay, pedestrian delay, pedestrian and cycle amenity, fear and intimidation and accidents and road safety are all anticipated to see

improvements as a result of the July 2020 Amendments.

Public Transport

4.48. As outlined above, a multi-modal trip generation assessment has been undertaken as part of the TA addendum as well as public transport impact assessments. Full details of the trip generation for each mode is included in the Transport Assessment Addendum, included in Appendix E.

4.49. **Table 4.5** shows the difference in expected AM and PM peak hour public transport trips from the operational Development between the original 2018 ES (as amended) and this ES Addendum. As all underground trips are assumed to use rail to reach the underground these two modes have been added together.

Table 4.5: Operational Development – Additional Public Transport Peak Hour Trips

Mode of Transport	AM Peak Hour			PM Peak Hour		
	Arr	Dep	2-Way	Arr	Dep	2-Way
Bus	-34	36	2	14	12	25
Rail/Underground	45	82	128	67	73	141
Total	11	118	130	80	85	166

4.50. The TA Addendum demonstrates that whilst there is an increase in the number of public transport trips, there is still sufficient capacity on the network to cater for these trips.

Mitigation Measures and Likely Residual Effects

The Works

4.51. No mitigation measures would be required during the Works, as per the 2018 ES, as the Works would result in insignificant effects on severance, driver delay, pedestrian delay and amenity, fear and intimidation as well as accidents and road safety. However, the following measures will be implemented for the Works in order to avoid adverse effects arising:

- Framework Construction Management Statement; and
- Construction Environmental Management Plan.

Completed Development

Mitigation Measures

4.52. The mitigation measures, proposed to avoid or minimise adverse effects on cycle amenity and driver delay as a result of the Development, are unchanged from the 2018 ES (as amended). The following summarises the measures:

Delivery and Servicing Plan

4.53. A Delivery and Servicing Plan (DSP) update has been prepared and has been submitted alongside the TA addendum. The DSP will be introduced for the Development's operational stage.

The DSP will set out how all types of freight vehicle movements to and from the Development will be managed.

Electric Vehicle Charging

4.54. 20% of all parking spaces are to be provided with Electric Charging Infrastructure in line with the Intend to Publish Draft London Plan (December 2019). This will help to reduce the number of diesel/petrol fuelled vehicle trips generated by the development.

Travel Plans

4.55. A Framework, School as well as Residential Travel Plans (TPs) have been prepared for the Development. These TPs, which are included as part of the planning application set out how all Site users can access the Development by sustainable forms of transport.

Public Transport Enhancements

4.56. Discussions have taken place with TfL to enhance bus services that would serve the completed Development. TfL are unable to commit to a preferred strategy at this time since they envisage that these would form part of a wider re-planning of bus services in the area following the repair works to Hammersmith Bridge. Based on the current service pattern, an increased frequency for the 419 service would be the preferred solution together with provision of special buses to meet the peak demands associated with the school.

4.57. As per the 2018 ES (as amended), the commitment to mitigate adverse effects on bus service capacity in the area will be secured by planning conditions / S106 obligations.

Highway Improvements

4.58. Traffic calming measures are proposed along Lower Richmond Road and Mortlake High Street to improve conditions for pedestrians and cyclists at the cost of increased driver delay due to the increase in traffic. However, improvements are proposed through Chalkers Corner to reduce the impact on driver delay along the Lower Richmond Road arm.

4.59. An assessment is underway as part of the Transport Assessment Addendum (TAA) (**Appendix E**) of a number of options at Chalkers Corner. This includes the following and full details are provided within the TAA:

- Option 1: No Change (‘Do Nothing’, LBRuT proposal);
- Option 2: Chalkers Corner 'Light’;
- Option 3: Lower Richmond Road Bus Lane; and
- Option 4: Chalkers Corner ‘Light’ & Bus Lane.

4.60. The detailed models are currently underway and will be subject to a full TfL VISSIM Model Auditing Process (VMAP) to determine the proposed option to mitigate the impact of the development at Chalkers Corner and along Lower Richmond Road.

4.61. There is also an option to retain the original Chalkers Corner mitigation, which will be considered by GLA and TfL (Application C), should the other options not provide adequate mitigation for the Development traffic. The combination of the assessments in the 2018 ES and in these materials

addresses the range of likely significant environmental effects.

4.62. Due to the reduction in peak hour and daily traffic flows as illustrated in **Table 4.4**, the previous assessment undertaken as part of the 2018 ES (as amended) can be considered to be robust and a worse case analysis for the highway links surrounding the Development. Therefore, no further analysis of the impact of the Development on driver delay is required as part of the ES Addendum.

4.63. All other highway improvements proposed as part of the 2018 ES (as amended), remain valid.

Conclusion

4.64. As highlighted above the assessment presented within this ES Addendum has been derived from the 2018 ES (as amended). The Development design has resulted in an increase in person trips but a reduction in the number of anticipated vehicle trips. The impact of this material change to the predicted daily traffic generation for the Development is less than previously mitigated for in the 2018 ES (as amended). Therefore, it can be assumed that the conclusions of the 2018 ES Chapter 8: Transport and Access remain valid as a worst case assessment of the significant likely environmental effects.

Noise and Vibration

Introduction

4.65. This assessment review has been prepared by Waterman IE, who prepared the Noise and Vibration Chapter, reported in the 2018 ES (as amended).

4.66. The legislative and policy context upon which the original noise and vibration assessment was based has not changed since the previous ES and therefore will not be re-stated here. Similarly, the guidance used in the original assessments remains the same, with the exception of BS 4142:2014 which was recently amended (to BS 4142:2014+A1:2019[6]). The amendments to BS 4142:2014 clarify certain aspects of the document and methodology described. These changes do not directly affect the methodology previously used in the 2018 ES assessment of noise from fixed mechanical plant, and therefore will not be re-stated in this ES Addendum. Furthermore, the Intend to Publish London Plan (updated in December 2019) does not affect the methodology previously used in the 2018 ES assessment.

4.67. A new baseline noise survey was undertaken, in July 2019, replicating several of the monitoring positions of the 2016 noise survey on which the 2018 ES was based. The results of the updated survey have been compared with the previous survey to determine if the ambient noise climate at the Site has changed significantly since the previous assessments were undertaken.

4.68. Where changes to the ambient noise climate have been noted, assessments have been reviewed and adjusted to reflect the more recent survey results. Additionally, a new sensitive receptor (Boat Race House) has been introduced in the immediate surroundings of the Site since the previous assessments and therefore included within this assessment given it introduces new residential receptors in close proximity to the Development. The potential effects of demolition, construction and operational noise on the new sensitive receptor have been assessed and presented within this ES Addendum.

[6] British Standard Institute (2019), BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound

Assessment

Existing Environmental Conditions

Sensitive Receptors

4.69. As noted in the introductory section above, a new residential receptor, Boat Race House received planning consent (application ref: 16/4794/FUL) in March 2017 for a one storey extension to provide two additional residential units, and which has now been built out. As such, this development has brought a new existing residential receptor close to the Site that was not previously assessed in the 2018 ES Assessment. An updated version of Table 9.7 of the 2018 ES including the new receptor is presented as **Table 4.6**.

Table 4.6 Existing Sensitive Receptors

Sensitive Receptor Number	Type of Receptor	Address / Name	Approximate Distance from Site Boundary
SR A	Existing residential	5-68 Watney Road	20 m west of Stag Brewery Site Boundary.
SR B	Existing residential	4-24 Williams Lane	20 m north-west of Stag Brewery Site Boundary.
SR C	Existing residential	1-69 Lower Richmond Road	25 m south of Stag Brewery Site Boundary.
SR D	Existing Residential	Chertsey Court	20 m from Chalkers Corner.
SR E	Existing Residential Receptors	139 Lower Richmond Road	15 m from Chalkers Corner.
SR F	Future Residential Receptors	Within Proposed Development	Within Site, dependent on phasing
SR G	Existing Residential Receptors	Boat Race House	10m from eastern Stag Brewery Site Boundary.

Updated Baseline Noise Survey

4.70. As indicated previously, additional noise monitoring has been undertaken at the Site. The survey consisted of four long-term unattended monitors set out on Site for a period of five days 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. Additional attended short-term noise measurements were also conducted adjacent to the key noise sources and sensitive receptors.

4.71. The long-term (LT) monitoring locations were positioned at the same locations and heights as the 2018 ES (as amended). The short-term (ST) locations have been re-positioned to specifically monitor road traffic along Lower Richmond Road and Clifford Avenue, in addition to two CRTN monitoring locations within the vicinity of Chertsey Court and Williams Lane.

4.72. The measurement locations and surrounding noise environment are as presented in **Figure 9.1** and described in **Table 4.7**.

Table 4.7 Baseline Noise Survey Surrounding Noise Environment

Monitoring Location (Refer to Figure 9.1)	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 into 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 Former Hotel and Bottling 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.
ST1	Free-field measurement along Lower Richmond Road (A3003) approx. 3m from carriageway edge. Microphone located approx. 1.2m AGL	Noise climate dominated by road traffic along Lower Richmond Road. Traffic flow was intermittent with periods of idling due to the traffic lights at the Lower Richmond Road / Clifford Avenue junction.
ST2	Free-field measurement along Clifford Avenue approx. 5m from carriageway edge. Microphone located approx. 1.2m AGL	Noise climate dominated by road traffic along Clifford Avenue. Traffic flow was intermittent with periods of idling due to the traffic lights at the Lower Richmond Road / Clifford Avenue junction.
CRTN1	Free-field measurement within Chertsey Court car park approx. 40m from Lower Richmond Road / Clifford Avenue Junction. Microphone located approx. 1.2m AGL	Noise climate in the area dominated by noise from both Lower Richmond Road (A3003) and Clifford Avenue. Occasional cars passing through the Chertsey Court car park and aircraft passing overhead also contributed to the noise climate at this location.

Monitoring Location (Refer to Figure 9.1)	Description	Observations and Predominant Noise Sources
CRTN2	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.

Note: The long-term measurement positions described above were replicated from the previous noise survey undertaken by Waterman IE in June 2016 and are therefore directly comparable to the previous survey results.

4.73. All noise measurements were conducted using calibrated precision grade (Class 1) sound level meters to provide a detailed description of the prevailing environmental noise characteristics. The sound level meters were set to record over consecutive 5-minute periods the L_{eq}, L_{90}, L_{10}, and L_{max} noise indices in the A-weighting network over a 125ms fast response time constant interval for the duration of each survey. The indices are described in **Appendix F** of this ES Addendum, but roughly translated they describe in turn the average, background, road traffic, and maximum noise level.

4.74. 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 4.8**, with full results displayed in graphically (long-term) in time history format in **Appendix F**. A summary of attended short-term daytime measurement results are presented in **Table 4.9**.

Table 4.8: Summary of Unattended (Long Term) Baseline Noise Measurements (free-field)

Monitoring Location (Figure 9.1)	Period	Duration	$L_{Aeq,T}$ 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	Day	12hr	65 – 82	71	68 – 77	74	41 – 66	59 (60)	75 – 110	86
	Evening	4hr	66 – 81	71	70 – 79	74	40 – 66	55 (52)	76 – 109	87
	Night	8hr	45 – 79	66	36 – 77	66	31 – 63	41 (37)	43 – 103	84
LT2	Day	12hr	62 – 83	68	66 – 73	69	49 – 66	61 (62)	69 – 103	85
	Evening	4hr	61 – 81	69	65 – 77	69	45 – 64	57 (59)	69 – 101	86
	Night	8hr	37 – 82	63	38 – 73	64	28 – 64	42 (36)	46 – 102	77
LT3	Day	12hr	49 – 72	59	50 – 80	60	45 – 57	51 (50)	54 – 94	75
	Evening	4hr	46 – 62	55	49 – 66	56	41 – 56	49 (50)	53 – 925	72
	Night	8hr	36 – 65	53	41 – 69	50	29 – 54	41 (41)	44 – 87	70
LT4	Day	12hr	45 – 69	56	47 – 67	57	42 – 53	48 (48)	50 – 92	74
	Evening	4hr	44 – 64	55	46 – 69	56	38 - 52	47 (47)	51 – 77	73
	Night	8hr	34 – 65	53	37 – 70	48	28 – 53	38 (35)	41 – 80	72

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 4.9: Summary of Attended (Short Term) Baseline Noise Measurements (free-field)

Monitoring Location (Figure 9.1)	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]
ST1	Day	1-hour	73	74	62	85
ST2	Day	1-hour	70	73	61	78
CRTN1	Day	3-hour	63	65	57	76
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.

Comparison of 2016 and 2019 Survey Results

4.75. Comparing noise levels from the most recent survey (2019) with those which were monitored in 2016 indicates that the most recent monitored levels were generally comparable with the previous survey results (within ±2dB) at all LT measurement positions with a slight decrease in noise levels overall.

4.76. Although mostly comparable, there were several notable changes from the 2016 survey, namely:

- Night-time $L_{A90,8hr}$ at position LT1, where a change of −3dB was noted;
- Night-time $L_{A90,8hr}$ at position LT2, where a change of −3dB was noted;
- Evening $L_{Aeq,4hr}$ at position LT3, where a change of −4dB was noted; and
- Daytime $L_{Aeq,12hr}$ at position LT4, where a change of −4dB was noted.

4.77. There were also some changes of the $L_{AFmax,90th\ percentile}$ and L_{A10} indices, however, these have not been reported here as they were not applied in the 2018 ES impact assessments and are more relevant to the suitability of the Site for residential development, which is being considered separately to this ES Addendum.

4.78. Overall on balance it is considered that the 2019 survey results were comparable with the levels recorded in the 2016 survey. However, as there are some instances where a change in the measured noise level of ±3 – 4 dB occurred, as such construction noise calculations and plant noise limits have been reviewed and updated where considered necessary.

Assessment of Effects of the Proposed Works

Demolition and Construction Noise

4.79. As indicated earlier in this ES Addendum, whilst the peak construction year of the Development has changed from 2022 to 2023, the construction phasing and activities would remain the same as were considered for the 2018 ES (as amended). As such, predicted noise levels at sensitive receptors resulting from construction activities at the Site would remain the same as previously reported. However, as some changes to the ambient daytime noise levels have been recorded in the most recent baseline noise survey and a new sensitive receptor has been introduced nearby the Site, the demolition and construction noise assessment has been reviewed and adjusted where considered necessary.

4.80. As per the 2018 ES (as amended), to assess the likely significant effects of the demolition and

construction works on both existing SRs and future SRs, the 'ABC Method' provided in BS 5228-1:2009+A1:2014[7] was used (the same approach as the 2018 ES). This method defines category threshold values, determined by the time of day and existing prevailing ambient noise levels. For the appropriate threshold period (day, evening, night) the ambient noise level (dB $L_{Aeq,T}$) is rounded to the nearest 5 dB then categorised into either the A, B or C categories as per the below criteria:

- Category A – Threshold values to use when ambient noise levels (rounded to the nearest 5 dB) are less than these values;
- Category B – Threshold values to use when ambient noise levels (rounded to the nearest 5 dB) are the same as the Category A threshold values; and
- Category C – Threshold values to use when ambient noise levels (rounded to the nearest 5 dB) are higher than the Category A threshold values.

4.81. The ABC thresholds provided with Table E.1 of BS 5228-1:2009+A1:2014 have been reproduced as **Table 4.10** below.

Table 4.10: BS 5228-1:2009+A1:2014 ABC Threshold Categories

Assessment category and threshold value period ($L_{Aeq,T}$)	Threshold value, in decibels (dB)		
	Category A	Category B	Category C
Night-time (23.00 - 07.00)	45	50	55
Evenings and weekends	55	60	65
Daytime (07.00 - 19.00) and Saturdays (07.00 - 13.00)	65	70	75

4.82. The predicted level of construction noise is then compared with these thresholds and where construction noise levels are predicted to be above the threshold values, it is considered that an adverse effect may occur. As the significance of effects is not defined in BS 5228-1:2009+A1:2014, the criteria in **Table 4.11** were adopted to provide transparency in the definition of the significance of identified effects.

Table 4.11: Significance Criteria for the Assessment of Construction Noise

Significance	Level Above Threshold Value dB(A)	Definition
Insignificant	≤ 0 to 2.9	The effect is not of concern.
Adverse effect of minor significance	3.0 to 4.9	The effect is undesirable but of limited concern.
Adverse effect of moderate significance	5.0 to 9.9	The effect gives rise to some concern but is likely to be tolerable depending on scale and duration.
Adverse effect of major significance	≥10	The effect gives rise to serious concern and it should be considered unacceptable.

[7] British Standards Institution (2014); 'BS 5228:1: 2009 +A1 2014: Code of practice for noise and vibration control on construction and open sites. Noise', BSI, Great Britain.

4.83. Based on the above methodology, and updated noise survey results, the likely significant effects pre mitigation and residual effects (post mitigation), remain the same for SRs A, B, C, E and F, namely **insignificant** to **temporary, adverse** effects of **moderate** significance. SR D, (Chertsey Court) is no longer assessed during the demolition and construction phase as construction works for the reconfiguration of Chalkers Corner do not form part of the application. SR D (Chertsey Court) is of sufficient distant from the application Site boundary and works, and therefore no longer has the potential to be adversely affected.

4.84. The new receptor, SR G (Boat Race House), has been assessed in accordance with the above methodology. It is considered that the noise levels measured at position LT2 would be representative of the levels experienced at this receptor. Considering this, the likely significant potential effects along with the residual effects (after applying the mitigation measures described in the 2018 ES) are detailed within **Table 4.12**.

Table 4.12: Effects at SR G (Boat Race House)

SR	Demolition / Construction Activity	Threshold Limit (dB(A))	Predicted Site Noise Level (dB(A))	Significance of Effect	Predicted Site Noise Level With Mitigation (dB(A))	Significance of Residual Effect
SR G	Demolition	75	90	Major	80	Moderate
	Enabling		87	Major	77	Insignificant
	Sheet Piling (substructure)		88	Major	78	Insignificant
	Excavation (substructure)		84	Moderate	74	Insignificant
	CFA (substructure)		85	Major	75	Insignificant
	Concreting (substructure)		86	Major	76	Insignificant
	Steel Frame (superstructure)		85	Major	75	Insignificant
	Floor Slab (superstructure)		86	Major	76	Insignificant
	Public Realm & Landscaping		85	Major	75	Insignificant
	Highways Pavement		80	Moderate	70	Insignificant

4.85. As demonstrated by the above, residual effects are expected to be predominantly **insignificant** with some **temporary adverse** effects of **moderate** significance predicted for demolition noise when works are being undertaken along the Site boundary.

4.86. Overall, the predicted impacts from demolition and construction noise remain between insignificant and moderate adverse, as per the 2018 ES (as amended).

Demolition and Construction Vibration

4.87. As the construction phasing and activities would remain the same, no changes to the predicted

effects of demolition and construction vibration are expected for any of the previously assessed SRs.

4.88. An assessment has been undertaken for the new receptor (SR G) based on the minimum distances from vibration producing activities – derived from BS 5228-2:2014[8] presented in **Table 4.13**. As detailed within **Table 4.6**, SR G is located approximately 10m from the Site boundary.

Table 4.13: Distance at Which Vibration May Just be Perceptible

Construction Activity	Distance from Activity when Vibration may Just be Perceptible (metres)[1]
Heavy vehicles	5 – 10
Excavation	10 – 15
CFA Piling	15 – 20
Rotary Bored Piling	20 – 30
Vibratory Piling	40 – 60
Sheet Piling (driven)	40 - 60

Notes: [1]Distances for perceptibility are only indicative and dependent upon a number of factors, such as the radial distance between source and receiver, ground conditions, and underlying geology.

4.89. As per the 2018 ES assessment, the primary source of vibration associated with the Works is likely to be sheet piling and to a lesser extent CFA piling, although some vibration may arise during the demolition, enabling, and construction works. Assuming that the Works are taking place ~10m from SR G, vibration from excavation and piling may be perceptible at this location.

4.90. BS 5228-2 provides typical vibration levels produced by piling at various distances, these have been reproduced as **Table 4.14** below.

Table 4.14: Typical Levels of Vibration Resultant from CFA/Rotary Bored and Sheet Piling (Driven)

Distance (m)	Peak Particle Velocity[1] (PPV) mm/s	
	CFA Rotary Bored Piling	Sheet Piling (Driven)
5	0.54	≤13.5
10	0.38	≤4.0
20	0.30	No equivalent data in BS5228-2
30	0.03	≤3.0

4.91. As the significance of effects is not defined in BS 5228-2:2009+A1:2014, the criteria in **Table 4.15** were adopted to provide transparency in the definition of the significance of identified effects.

Table 4.15: Significance Criteria for the Assessment of Construction Vibration

Significance	Level of Vibration	Definition
Insignificant	< 0.14 mm/s	The effect is not of concern.

[8] British Standards Institution (2009); 'BS 5228:2 2009: Code of practice for noise and vibration control on construction and open sites, Vibration', BSI, Great Britain.

Significance	Level of Vibration	Definition
Adverse effect of minor significance	>0.14 mm/s to <1mm/s	The effect is undesirable but of limited concern.
Adverse effect of moderate significance	1 mm/s to 3mm/s	The effect gives rise to some concern but is likely to be tolerable depending on scale and duration.
Adverse effect of major significance	>3mm/s	The effect gives rise to serious concern and it should be considered unacceptable.

4.92. Considering the above, vibration levels stemming from sheet piling could be up to 4.0 mm/s at SR G, it is considered that this would give rise to **temporary adverse** effects of **major** significance. However, when considered with the mitigation measures presented in the 2018 ES (as amended), this would reduce to **temporary adverse** effects of **minor** significance at worst.

4.93. As such, it is considered that the overall residual effects from demolition and construction vibration would remain the same as per the 2018 ES (as amended).

Construction Traffic Noise

4.94. The potential effects of construction traffic noise has been assessed based on the revised peak construction traffic year, 2023. Road traffic data was provided by the transport consultant (Stantec) in terms of the 18-hour annual average weekday traffic flow on all of the road links assessed as part of the 2018 ES (as amended). The two modelled scenarios relevant here are the *2023 Do Minimum* (DM) and the *2023 Do Something* (DS) scenarios. The change in road traffic noise levels between these was assessed in accordance with CRTN methodology, then compared with the previous assessment results presented in the 2018 ES (as amended).

4.95. A comparison of the two scenarios show that the predicted flow change attributable to construction traffic would be <1%, which equates to a noise level increase of <1dB, which is not large enough to cause any discernible effect.

4.96. Comparing this with the assessment within the 2018 ES (as amended) shows that although the peak construction traffic year has changed from 2022 to 2023, the residual noise effects of the traffic remains the same. As such, the assessment contained within the 2018 ES (as amended) remains valid.

Assessment of Effects of the Operational Development

Building Services Plant Noise

4.97. As part of the 2018 ES (as amended), noise limits for new fixed mechanical plant were set in accordance with the methodology of BS 4142:2014. The limits were set in terms of the BS4142 rating level and were to be 10 dB below the prevailing background level at each of the receptors, as per LBRuT requirements[9]. In addition to this a minimum night-time noise limit of 35dB $L_{Ar,Tr}$ was recommended where prevailing background noise levels are less than 45dB $L_{A90,T}$ with a maximum daytime noise limit of 45dB $L_{Ar,Tr}$ where prevailing background noise levels are greater than 55dB L_{A90}.

4.98. Plant noise limits have been reviewed based on the background levels measured during the

[9] London Boroughs of: Hillingdon, Hounslow, and Richmond Upon Thames Development (2014) Control for Noise Generating and Noise Sensitive Development, July 2014.

updated noise survey and are presented as **Table 4.16**. Changes are represented by a strikethrough of the information presented within the 2018 ES (as amended) and the amended (July 2020) information presented in **bold**, underlined, *italic* text.

Table 4.16: Recommended Plant Noise Limits

Sensitive Receptor	Period	Representative $L_{A90,5min}$ Average Value (modal value)	Plant Noise Emission Limit ($L_{Ar,Tr}$ as defined by BS4142:2014)
SR A & B (noise limit inferred from LT4)	Daytime (07:00 and 23:00)	48 (mode 48)	38
	Night-time (23:00 and 07:00)	39 (mode ~~36~~ ***35***)	35
SR C (noise limit inferred from LT1)	Daytime (07:00 and 23:00)	59 (mode ~~61~~ ***60***)	45
	Night-time (23:00 and 07:00)	~~42~~ ***41*** (mode ~~40~~ ***37***)	35
SR G ***(noise limit inferred from LT2)***	***Daytime (07:00 and 23:00)***	***61 (mode 62)***	***45***
	Night-time (23:00 and 07:00)	***42 (mode 36)***	***35***

4.99. As demonstrated by the above, the recommended plant noise emission limits remain the same as the 2018 ES (as amended), with the inclusion of recommended emission limits at SR G. On the basis of the above limits are achieved through the mitigation recommendations set out in the 2018 ES (as amended), it is considered that the residual effects of plant noise would remain insignificant at all SRs and therefore unchanged from the 2018 ES (as amended).

Retail Commercial Uses and Services

4.100. Owing to lack of specific detail on the operation of the proposed retail / commercial spaces, such as the tenant, and the potential delivery and servicing activities thereof, a qualitative assessment of the potential noise effects was undertaken.

4.101. The 2018 ES (as amended) stated that noise from delivery and servicing activities would, at worst, have the potential for **long-term**, **local**, **intermittent**, **adverse** effects of up to **minor significance** and, therefore, mitigation would be required. It was considered that standard controls, secured through planning conditions relating to hours of delivery, combined with acoustic attenuation measures and implementation of an appropriate delivery and servicing plan (DSP) would reduce noise levels at the SRs and likely residual effects would be **insignificant**.

4.102. Additionally, noise break-out from the units would be considered during the detailed design stages of the Development, the sound insulation performance requirements of the external building fabric would be appropriately specified to control noise break-out, having regard to the nature of future uses. The likely residual noise effects associated with non-residential uses of the Development on existing and future sensitive receptors are, therefore, expected to be **insignificant**.

4.103. The above conclusions are still considered appropriate given the current level of detail available about the commercial and retail operations. The above assessment is also considered applicable to the newly introduced SR (Boat Race House). As such, no amendments on the description of

effects are required to that previously stated in the 2018 ES (as amended).

Road Traffic Noise (Excluding Chalkers Corner Illustrative Reconfiguration)

4.104. Updated road traffic data was provided by the transport consultant in terms of the 18-hour annual average weekday traffic flow on all of the previously assessed road links. The two scenarios relevant here are the *2027 Do Minimum* (DM) and the *2027 Do Something* (DS) scenarios. The change in road traffic noise levels between these was assessed in accordance with CRTN methodology, then compared with the previous assessment results. Full results are available as **Appendix F.**

4.105. Due to the relatively minor change between the previous and updated 2027 DS scenario – with changes to flows of <1% on all links – the changes in, and predicted effects of road traffic noise are, the same as stated in the 2018 ES (as amended). Therefore, no amendments on the description of effects or further assessment is required to that previously stated.

Chalkers Corner Reconfiguration

4.106. There are a number of possible options for the reconfiguration of Chalkers Corner, this could come forward via Application C or via an alternative design located within the highway boundary which will be dealt with under a s278 of the Highways Act 1980. Although reconfiguration under s278 do not form part of the Applications, these options do seek to provide mitigation to the changes in traffic that is forecast to occur as a result of the proposed Development, if Application C is not brought forward. The level of likely significant environmental effects would therefore not be materially different whether the Application C works or the alternative options are progressed.

4.107. The predicted change in road traffic noise levels resultant from all proposed reconfiguration options are less than 1dB when compared with the No Development scenario for the opening year 2027 and therefore insignificant. This therefore remains unchanged to that presented in the 2018 ES (as amended).

4.108. Technical Note WIE15582-101-TN-4.1.3_Noise presented in **Appendix G** presents a preliminary assessment of the illustrative Options for the reconfiguration of Chalkers Corner. Preliminary indication indicates that illustrative changes to Chalkers Corner (and all four of the highways options assessed) would give rise to insignificant effects.

4.109. Consideration has also been given to the potential effect of the original Chalkers Corner reconfiguration scheme (Application C) on residents of Chertsey Court, as detailed within Technical Note TN10667-103-TN-1.1.1 dated 30 August 2018), with the revised traffic data. With inherent mitigation (a 2 metre high wall), the change in road traffic noise at Chertsey Court was reported to range from -3.5dB at ground to -0.3dB. With the revised traffic data the predicted change in road traffic noise on roads surrounding Chertsey Court is unchanged when compared to the 2018 ES. On this basis, the noise effects predicted on Chertsey Court presented within Technical Note TN10667-103-TN-1.1.1 dated 30 August 2018 remain unchanged.

Noise from Proposed AGP and Multi-use Games Areas (MUGA)

4.110. An assessment of noise from the proposed Artificial Grass Pitch (AGP) and MUGA was undertaken as part of the 2018 ES (as amended). This was based on worst-case scenario with no mitigation and undertaken using Waterman's historic noise measurement data. Owing to concerns raised by Sports England the noise assessment has been revised to take account of inherent mitigation and

noise source data contained within Sport England's 'Artificial Grass Pitch (AGP) Acoustics – Planning Implications[10]' document and against their guidance that noise emissions where possible should not exceed 50dB $L_{Aeq,1hour}$ from AGPs.

4.111. Mitigation includes provision of EPDM inserts on the mesh weld fence, which will reduce impact noise from 93dB(A) to 66dB(A) as measured at a distance of 300mm from the fence panel. In addition to this enhanced mitigation is proposed consisting of a 2.5m high acoustic barrier set back from the mesh weld fence adjacent to the AGP on the northern and western boundary. Localised mitigation is also inherent to the MUGA, which consists of a 3m fence and retaining wall. Cadna-A noise modelling software has been used to predict noise emissions from usage of the AGP and MUGA at key existing sensitive receptors on Williams Lane and Watney Road, together with predicted noise levels at the nearest future residential block. The results of the revised predicted noise levels have been used to determine the potential effects of the noise in the context of Sports England's guidance level of 50dB $L_{Aeq,1hour}$ together with results of the updated survey.

4.112. The prior assessment was based on the predicated change to the ambient noise level during times when the AGP and MUGA was in use for existing receptors. Significance of effects were defined as per **Table 4.17**. In addition to this, compliance with Sports England's guidance level of 50dB $L_{Aeq,1hour}$ has now been included.

Table 4.17: Significance Criteria for MUGA Assessment

Significance	Change in Prevailing Noise Level dB(A)	Compliance With Sports England 50dB $L_{Aeq,1hour}$	Definition
Insignificant	< 3.0	Yes	The effect is not of concern.
Insignificant	<3.0	No (but less than 55dB $L_{Aeq,1hour}$)	The effect is not of concern.
Adverse effect of minor significance	3.0 to 4.9	Yes	The effect is undesirable but of limited concern.
Adverse effect of moderate significance	3.0 to 4.9	No	The effect gives rise to some concern but is likely to be tolerable depending on scale and duration.
Adverse effect of major significance	≥ 5.0	No	The effect gives rise to serious concern and it should be considered unacceptable.

4.113. The results of the revised assessment is presented as **Table 4.18** which takes account of the updated baseline survey results. The assessment results are presented as **Table 4.18** and there are no changes to the 2018 ES.

Table 4.18: Assessment of Noise Effects Associated with Sports Pitches

[10] Sport England (2015): 'Artificial Grass Pitch (AGP) Acoustics – Planning Implications. New Guidance for 2015'.

SR (Figure 9.1)	Existing Ambient Noise Level (dB(A)) [1]	Predicted Noise Level from Sports Pitches (AGP & MUGA)	Combined Ambient and Predicted AGP & MUGA Noise Level (dB(A))	Change in Noise Level (dB)	Significance
SR A – Watney Road (31-37 Watney Road (rear)	56 day	49	57	1	Insignificant
	55 evening	49	56	1	Insignificant
SR B – Williams Lane (14-20 Williams Lane)	56 day	50	57	1	Insignificant
	55 evening	50	56	1	Insignificant
Closest Future SR	n/a	51	n/a	n/a	Insignificant

Note: [1] Based on measured noise levels at LT4. Daytime period 07:00-19:00; evening period 19:00-23:00, although this does not necessarily reflect operational (usage) times of AGP and MUGA.

4.114. With the inherent and enhanced mitigation, the noise assessment indicates that predicted residual noise effects from usage of the AGP and MUGA are in insignificant.

Conclusions

4.115. Updated baseline noise surveys were undertaken between Thursday 11th July to Tuesday 16th July 2019 to quantify the existing noise climate at and in the vicinity of the Site. The results of the updated survey have been used within this ES Addendum to re-assess the potential significant effects of the demolition, construction and operational activities of the Development on existing and future sensitive receptors.

4.116. The results of the assessments have found that there have been only minor changes to the overall noise climate in the area and, therefore, the assessments undertaken as part of the 2018 ES (as amended) still remain valid. Where changes have occurred due to the updated noise survey, these have been relatively minor and residual effects are expected to be similar to that stated in the 2018 ES (as amended).

4.117. Additionally, a new receptor has been introduced to the area since the previous assessment was undertaken (Boat Race House – SR G). The likely significant effects have been predicted at this receptor based on the methodology used in the 2018 ES (as amended). Overall, residual effects – after implementing the mitigation measures outlined in the 2018 ES (as amended) – would generally be insignificant with some temporary adverse effects of moderate significance expected for enabling and landscaping activities when undertaken at the Site boundary.

4.118. Assessment of the illustrative Options for Chalkers Corner that will be dealt with under a s278 of the Highways Act 1980 indicate that all would have an insignificant effect on the surrounding receptors. Although the illustrative Options for Chalkers Corner differ from that formerly proposed there is no change to the predicted effects to those presented in the 2018 ES (as amended).

4.119. Revised assessment of noise emissions from AGP and MUGA, taking account of inherent and enhanced mitigation measures (including acoustic fencing) and guidance of Sports England, indicate that residual effects are insignificant.

Air Quality

Introduction

4.120. A replacement ES Chapter 10: Air Quality and associated technical appendices been prepared by Waterman for the July 2020 Amendments and is included as **Appendix H** of this document**.** This ES Addendum section, prepared by Waterman, provides a summary of the changes made to the air quality assessment as a result of the July 2020 Amendments. As indicated previously as a result of the July 2020 Amendments, following the resolution to refuse Application C by LBRuT in January 2020 (planning ref: 18/0549/FUL), alternative highway design mitigation has been investigated by the project team. As noted above, it is proposed that highways mitigation for the traffic impacts will now be undertaken via S278 works, with the final details to be secured with TfL. This assessment review is supported by the following technical appendices which have been updated and supersede the corresponding appendices and figures of the 2018 ES (as amended):

- **Appendix A Replacement ES Figures**;
- **Appendix H Replacement ES Chapter 10**: Air Quality;
- **Appendix I Replacement ES Appendix 10.1:** Air Quality Modelling Study;
- **Appendix I Replacement ES Appendix 10.2:** Air Quality Neutral Assessment;
- **Appendix I Replacement ES Appendix 10.3**: Modelled Results;
- **Appendix I Replacement ES Appendix 10.4:** Junction Assessment; and
- **Appendix I ES Appendix 10.5:** Air Quality Monitoring Study.

4.121. The baseline within the replacement ES Chapter has been updated with the most up to date available data, a summary of which is provided below.

Baseline Conditions - Local Monitoring

4.122. Local monitoring data was reviewed to establish whether there have been any significant changes in baseline conditions at the Site and its surroundings.

4.123. In 2018, LBRuT undertook monitoring of NO_2 and PM_{10} at four automatic monitoring locations within the Borough.

4.124. 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). The most recent (2015 to 2018) NO_2 monitored concentrations at this roadside monitor are presented in **Table 4.19**.

Table 4.19: Annual Mean Monitored Concentrations at the LBRuT Castelnau, Library Road Automatic Monitor (µg/m^3)

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

Notes: Data obtained from London Borough of Richmond upon Thames Air Quality Annual Status Report for 2019

4.125. The monitoring results in **Table 4.19** indicate that the annual mean NO_2 and PM_{10} objectives were met in all years.

4.126. NO_2 was also measured at 64 locations using diffusion tubes in 2018. The results for the 9 NO_2 diffusion tube roadside and kerbside locations within 1km of the centre of the Site are presented in **Table 4.20**.

Table 4.20: Measured Concentrations at the LBRuT Diffusion Tubes Within 1km of the Site

Site ID	Location	Distance to Site	Classification	2015	2016	2017	2018
51	Sheen Lane (railway crossing), Sheen	0.3km	Kerbside	28	32	35	33
21^	Lower Richmond Road, Mortlake (Nr. Kingsway)	0.4km	Roadside	37	39	36	**50**
55	Mortlake Rd (adj. to cemetery gates), Kew	0.6km	Kerbside	**55**	**50**	**45**	**41**
36	Upper Richmond Road West (URRW), Sheen Lane	0.6km	Kerbside	**49**	**50**	**60**	**63**
49	URRW War Memorial, Sheen Lane, Sheen	0.6km	Kerbside	39	**44**	31	Closed
52^	Clifford Avenue, Chalkers Corner	0.7km	Kerbside	**55**	**57**	**50**	**59**
50	URRW (Nr. Clifford Avenue, Sheen)	0.8km	Kerbside	**57**	**55**	**53**	**52**
54	Mortlake Rd (adj. to West Hill Rd) Kew	0.9km	Kerbside	**51**	**51**	**48**	**40**
25	URRW (Nr. Sheen School)	0.9km	Roadside	**45**	**56**	38	38

Notes: Data obtained from London Borough of Richmond upon Thames Air Quality Annual Status Report for 2018
Exceedances of the AQS Objectives shown in **bold** text.
^ Diffusion tubes 21 and 52 were moved closer to the junction in 2018 in response to resident's requests and would explain the increase in concentrations recorded at these two locations

4.127. The monitoring results in **Table 4.20** indicate that between 2015 and 2018 the annual mean NO_2 objective of 40µg/m^3 was exceeded at seven of the nine diffusion tube monitoring locations closest to the Site.

Baseline Conditions - Project Specific Air Quality Monitoring

4.128. 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. The technical details of the monitoring are provided in **Appendix I** and the location of the monitors are shown on **Figure A1** of **Appendix I Replacement ES Appendix 10.5:** Air Quality Monitoring Study.

4.129. The results from this monitoring are presented in **Table 4.21** below.

Table 4.21: Project Specific NO_2 Monitoring Results (µg/m^3)

ID	Site Description	Monitor Classification[(a)]	Relevant AQS Objective[(b)]	Annual Average 2018 Result
DT1	Lower Richmond Road	Kerbside	60µg/m^3	**43.0**

ID	Site Description	Monitor Classification[a]	Relevant AQS Objective[b]	Annual Average 2018 Result
DT2	Chertsey Court metal railings	Roadside	60µg/m^3	36.9
DT3	Chertsey Court Lower Richmond Road	Façade	40µg/m^3	34.2
DT4	Chalkers Corner Junction	Kerbside	60µg/m^3	**42.7**
DT5	Chertsey Court	Carpark	60µg/m^3	**40.4**
DT6	Clifford Avenue	Kerbside	60µg/m^3	**49.1**
DT7	Clifford Avenue metal railings	Roadside	60µg/m^3	**42.1**
DT8	Chertsey Court Clifford Avenue	Façade	40µg/m^3	32.8
School 1	Stag Brewery Sports Club (future school façade)	Roadside	40µg/m^3	30.2
School 2	Stag Brewery Sports Club (future school façade)	Roadside	40µg/m^3	30.1

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)

4.130. As shown in **Table 4.21**, the highest concentrations measured at all the diffusion tubes in the study are located on the kerbside (DT1, DT4 and DT6, monitored concentrations of 43.0µg/m^3, 42.7µg/m^3 and 49.1µg/m^3, respectively). The NO_2 results at these locations relate to these monitors being located directly above vehicle tailpipe emissions at Chalkers Corner.

4.131. The results in Table 4.21 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 34.2µg/m^3 and 32.8µg/m^3, and as such existing conditions at Chertsey Court are considered to be good as the AQS objective is met.

4.132. **Table 4.21** 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 30.2µg/m^3 and 30.1µg/m^3, and as such existing conditions at the school site are considered to be good.

Assessment

4.133. Although the year of peak construction has shifted by a year, as indicated previously, the number of peak construction vehicle trips remain the same as the previous 2018 ES. As such, the likely residual air quality effects and conclusions of the Works detailed in the 2018 ES (as amended) remain valid and have therefore not been considered further.

4.134. Since undertaking the assessment presented in the 2018 ES (as amended) NOx emissions data has now been obtained from the Air Quality Consultants Ltd Calculator Using Realistic Emissions for Diesels (CURED) spreadsheet[11]. This spreadsheet has been designed to provide a reasonable worst-case projection of future vehicle emissions.

Additionally, the model has been updated using the latest available information, including;

[11] Air Quality Consultants Ltd (2017) CURED V3A 23.12.2017

- 2018 baseline traffic flows provided by Stantec (the Applicant's transport consultant formally known as Peter Brett Associates);
- Version 4.1.1 of the ADMS-Roads model[12];
- Version 5.2 of the ADMS 5 Model[13];
- Version 9.0 of the Emission Factor Toolkit (for vehicle emissions of PM_{10} and $PM_{2.5}$)[14];
- CURED Toolkit Version 3A (for vehicle emissions of NOx);
- 2018 metrological data from London Heathrow Airport;
- Defra's 2017 based background maps[15]; and
- Version 7.1 (April 2019) of Defra's NOx to NO_2 Calculator[16].

4.135. The rest of the assessment methodology as set out in the 2018 ES (as amended) remains appropriate for use and was not changed.

4.136. The significance criteria have not changed since the 2018 ES (as amended) and remains appropriate to use.

Model Verification

4.137. Model verification is the process of comparing monitored and modelled pollutant concentrations and, if necessary, adjusting the modelled results to reflect actual measured concentrations, to improve the accuracy of the modelling results.

4.138. The dispersion model has been verified by comparing the predicted annual mean NO_2 concentrations for the baseline 2018 (the latest full year of air quality monitoring data, with the project specific kerbside and roadside diffusion tube monitoring locations (as presented in **Table 4.21**) and the LBRuT monitoring locations within the modelled domain. The methodology used for the model verification is the same as that presented in Appendix 10.2 of Chapter 10: Air Quality of the 2018 ES.

Potentially Sensitive Receptors

4.139. The existing receptors remain the same as presented in the 2018 ES (as amended). The future sensitive receptor locations have changed to account for the additional residential units. The future sensitive receptors still represent the areas of the Development that would likely be exposed to the worst-case air quality conditions, i.e. the lowest residential / school levels of the Development that would be closest to road and the residential locations closest to the Energy Centre emissions. All other onsite receptors locations, for all other floor level considered, are presented in **Appendix I** (Replacement ES Appendix 10.3: Modelled Results**)**.

4.140. To take account of the predicted emissions from the Energy Centres in the local area a 2km by 2km grid has been modelled centred on the Development.

[12] CERC (18/01/2018) ADMS Roads 4.1.1
[13] CERC (November 2016) ADMS Version 5.2 (10/11/2016)
[14] Defra May 2019 EFT (version 9.0) https://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html
[15] https://uk-air.defra.gov.uk/data/laqm-background-home
[16] Defra (April 2019) NOx to NO_2 Calculator Version 7.1 https://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html#NOxNO2calc

4.141. The location of the selected existing and future receptors assessed are presented in **Table 4.22** and Figure 10.1 of the 2018 ES.

Table 4.22: Selected Receptor Locations

ID (Refer to Figure 10.1 of the 2018 ES)	Receptor Location	Receptor Type	OS Grid Reference		Height Above Ground (m)
1	1 Varsity Row	Residential	520212	176221	0
2	6 Watney Cottages	Residential	520078	175845	0
3	1 Watney Cottages	Residential	520122	175846	0
4	1-3 Parliament Mews	Residential	520296	176185	0
5	Ship Lane	Residential	520390	176117	0
6	Lower Richmond Road	Residential	520365	175939	0
7	Lower Richmond Road	Residential	520359	175914	0
8	Lower Richmond Road	Residential	520238	175832	0
9	13 Sheen Lane	Residential	520503	175882	0
10	40 Mortlake High Street	Residential	520582	175939	0
11	Boat Race Court	Residential	520734	175984	0
12	Little Paradise Nursery	Child Care	520300	175870	0
13	Thomas House Primary School	School	520510	175816	0
14	Working Mums Daycare and Pre-School	Child Care	520123	175809	0
15	St Mary Magdalen's Catholic Primary School	School	520831	175901	0
16	Proposed Residential Building 10 – Ground Floor Level*		520629	175977	0
17	Proposed School – Ground Floor Level[(a)]		520272	175896	0
18	Proposed Residential Building 10 – Floor Level 5[(b)]		520575	175965	15
19	Proposed School Building – Floor Level 2[(b)]		520272	175896	6
20	Chalkers Corner Junction - Receptor 20 (139 Lower Richmond Road)[(c)]		519919	175872	0
21	Chalkers Corner Junction -Receptor 176[(d)] (59 Lower Richmond Road)		519863	175844	0

Note: Ground floor assumed to be 0 m to represent worst-case assessment of exposure as it is the closest location of the receptor to the tailpipe vehicle emissions.
[(a)] Maximum impact within the Development at ground floor.
[(b)] Maximum impact within the Development above ground level because of emissions from the Energy Centre.
[(c)] Receptor identified as having the largest adverse impact in NO_2 concentrations as presented in Appendix 10.4 of the 2018 ES.
[(d)] Receptor identified as having the largest beneficial impact in NO_2 concentrations as presented in Appendix 10.4 of the 2018 ES
At the proposed buildings, each façade has been modelled and the maximum predicted concentration reported.

See Appendix I (Replacement ES Appendix 10.3: Modelled Results) with regards to impacts at the Chalkers Corner Junction.

Likely Significant Effects

Changes in Local Air Quality from Traffic and Heating Plant

4.142. Likely impacts on local air quality when the Development is completed and operational in 2027 would result from changes to traffic flows on the local road network and emissions from the Energy Centre associated with the Development. The results of the ADMS-Roads modelling of operational traffic are presented in **Appendix I** (Replacement ES Appendix 10.1: Air Quality Modelling Study). The NO_2 results of the ADMS-Roads modelling of operational traffic were based on CURED emissions, then combined with the ADMS modelling of the emissions from the Energy Centre. Full details are provided within **Appendix I** (Replacement ES Appendix 10.1: Air Quality Modelling Study**)**.

Nitrogen Dioxide (NO_2)

4.143. The results in **Appendix I** (Replacement ES Appendix 10.3: Modelled Results) indicate that for 2018 the annual mean NO_2 objective is met at all existing receptor locations. The highest concentration is predicted at Receptor 20 (39.6µg/m^3).

4.144. As discussed in **Appendix I** (Replacement ES Appendix 10.1: Air Quality Modelling Study), the 1-hour mean AQS 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. The predicted annual mean NO_2 concentrations in 2018 are below 60µg/m^3 at all receptor locations. Accordingly, the 1-hour mean objective is likely to be met at these locations.

4.145. In 2027, both 'without' and 'with' the Development, when considering all five junction options (the four alternative highways options plus Application C), concentrations are predicted to meet the NO_2 annual mean objective value at all receptor locations assessed. Therefore, the 1-hour mean objective is also predicted to be met at all existing receptor locations.

4.146. Using the impact descriptors outlined in Table 10.9 of **Appendix H** (Replacement ES Chapter 10: Air Quality), the Development is predicted to result in an 'negligible' impact at all existing receptors assessed. It is also considered that the Development would have an 'negligible' impact on hourly NO_2 concentrations.

Particulate Matter (PM_{10} and $PM_{2.5}$)

4.147. As shown in in **Appendix I** (Replacement ES Appendix 10.3: Modelled Results), the annual mean concentrations of PM_{10} are predicted to be well below the objective of 40µg/m^3 in 2018 and in 2027 both 'without' and 'with' the Development at all the existing receptor locations considered in all junction options. These 2018 predicted annual mean PM_{10} concentrations are consistent / in line with the existing LBRuT automatic monitor results. The maximum predicted annual mean PM_{10} concentration is 18.5µg/m^3 at Receptor 20 in 2018. Using the impact descriptors outlined in Table 10.9 of **Appendix H** (Replacement ES Chapter 10: Air Quality), the Development is predicted to result in an 'negligible' impact at all existing receptors assessed.

4.148. The results indicate that in 2018 and in 2027 for both 'without' and 'with' the Development, all existing receptor locations are predicted to be below the 24-hour mean PM_{10} objective value of 35 days exceeding 50µg/m^3. The maximum predicted concentration in all scenarios tested is 1 day.

4.149. The results in **Appendix I** (Replacement ES Appendix 10.1: Air Quality Modelling Study) indicate that in 2018 and in 2027 for both 'without' and 'with' the Development in all junction options, all existing receptor locations are predicted to be below the annual mean $PM_{2.5}$ objective value of 25µg/m^3.

4.150. Using the impact descriptors outlined in Table 10.9 of the of **Appendix H** (Replacement ES Chapter 10: Air Quality), the Development is predicted to result in an 'negligible' impact at all existing receptors.

Changes in Local Air Quality at Chalkers Corner

4.151. As discussed in 2018 ES Chapter 5: The Proposed Development, the Chalkers Corner Junction forms part of the Development and as such the proposed highway amendments have been considered within the 'with Development' scenario of this air quality assessment and the results for the two receptors with the greatest change have been reported above.

4.152. **Appendix I** (Replacement ES Appendix 10.4) presents the results of the potential air quality effect of the Development at the 180 residential properties assessed at the Chalkers Corner Junction, including at height above ground level.

4.153. In 2027 with the Development (including the highway works), at Chalkers Corner there are no receptors predicted to be above the annual mean NO_2 AQS objective of 40µg/m^3. Using the impact descriptors outlined in Table 10.9 of **Appendix H** (Replacement Chapter 10: Air Quality), the impact of the Development at the Chalkers Corner Junction is predicted to result in a 'negligible' impact at all receptors assessed.

Overall Predicted Effects of the Development (including the highway works)

4.154. Using professional judgement, based on the severity of the impact discussed above and the concentrations predicted at all the sensitive receptors considered in the air quality assessment (including those selected at Chalkers Corner), it is considered that the effect of the Development on local NO_2, PM_{10} and $PM_{2.5}$ concentrations would be **insignificant**.

Conditions within the Development

4.155. As shown by the results in **Appendix I** (Replacement ES Appendix 10.3: Modelled Results), the predicted NO_2, PM_{10} and $PM_{2.5}$ concentrations for locations within the Development with relevant exposure are below the relevant objectives in 2027 for all floor levels. As such, it is considered that the effect of introducing future residential and school uses to the Site is **insignificant**.

4.156. Figure 10.2 of the 2018 ES (as amended) presents the predicted change in NO_2 emissions from the Energy Centre and road traffic emissions across the 2km by 2km grid centred (note, this figure did not require updating as a result of the July 2020 Amendments). As noted above, the combined results from the Energy Centre and the predicted road emissions are presented in in **Appendix I** (Replacement ES Appendix 10.3: Modelled Results). The maximum contribution from the Energy Centre, as 2.39µg/m^3 of NO_2, is predicted within the Site between Building 17, Building 21 and Building 3.

Mitigation Measures and Likely Residual Effects

Completed Development

4.157. As identified earlier in this Chapter the effect of operational traffic and emissions from the Energy Centre for the Development is predicted to have an **insignificant** potential effect on local air quality at relevant receptors surrounding the Site, and therefore the residual effect would remain **insignificant**.

4.158. **Table 4.23** presents the measures inherent to the Development and additional mitigation measures to be included during the construction and operational phases of the Development which are likely to benefit local air quality. However, there is no standard or recognised methodology to enable the reduction in pollutant concentrations that these measures would result in to be quantified within an air quality assessment. However, these measures are consistent with those identified by LBRuT within their Air Quality Action Plan.

Table 4.23: Summary of Air Quality Mitigation Measures

	Mitigation Measures
1.Demolition and Construction Phase	• Environmental management controls developed and set out in the Framework Construction Management Plan and subsequent Construction Environmental Management Plans this would include dust suppression, hoarding, monitoring etc. • All construction plant would adhere to the emissions standards for NO_2 and PM_{10} set out for Non-Road Mobile Machinery (NRMM) in the London Plan. • Avoidance, or limited use, of traffic routes in proximity to sensitive routes (i.e. residential roads etc.). All construction traffic logistics would be agreed with LBRuT. • Avoidance, or limited use, of roads during peak hours, where practicable. • Provision of a Construction Worker Travel Plan and a Construction Transport Management Plan. • Dust monitoring and dust controls to be agreed with LBRuT.
2. Inherent – Measures included in the design of the Development	• Detailed dispersion modelling completed (using ADMS) and results used to ensure that the Energy Centre flues are designed and located for adequate dispersion of flue gases to avoid adverse impacts at existing receptor locations and receptors within the Development. A carefully worded planning condition would ensure that an air quality assessment is undertaken for the final plant; • Energy centre to use low NOx technology and to meet the London Plan Emission Standards; • School set back from Lower Richmond Road and interim dispersion modelling completed (using ADMS-Roads) and results to ensure this location is acceptable; • Up to 2,884 spaces cycle spaces in accordance with London Plan requirements**.** • Reduction of the ratio indicated by the Planning Brief of 1 car parking space per residential unit to 0.32 of a space per residential unit. • The amount of Electric Vehicle Charging Points on the Stag Brewery component of the Site, both active and passive, is still to be agreed but would as a minimum be provided in accordance with London Plan standards. • Agreement that 20% of the parking provision will be for Electric Vehicles only; • Provision of new pedestrian and cycle paths aimed to promote walking, cycling and the use of public transport. • Extensive public and private realm and landscaping including:

	Mitigation Measures
	– Up to 43,700 m^2 GEA of public amenity space including playscape would be provided throughout the Development; – Up to 9,537[2] GEA of private amenity space is proposed. – Green link between Mortlake Green via the Site to the riverside; – Public park; and – Pedestrianised High Street within the Site. • Preparation and implementation of a Delivery and Servicing Plan that will set out how all types of freight vehicle movements to and from the Development will be managed; • Framework, School and Residential Travel Plan setting out how all Site users can access the Development by sustainable forms of transport. • Provision of new car club spaces, as part of the Residential Travel Plan; • Introduction of stop idling / switch engine off' signs at the Williams Lane and Ship Lane junctions with Lower Richmond Road and introduction of a traffic congestion / air quality information board.
3.Additional future measures that could be included / to be secured through s278 agreement.	• Other highways works, secured by s278 works: • Reconfiguration to the Chalkers Corner junction to alleviate the transport and traffic implications associated with the operation of the Development including introducing a new 19m left-hand turn flare lane from Lower Richmond Road onto the A316, resulting in three lanes on Lower Richmond Road. This will involve moving the road by approximately 4.2m closer to properties 137-171 to the south of Lower Richmond Road. • provision of an extended queuing reservoir between the main junction of Lower Richmond Road (this would accommodate about 9 extra cars south westbound), which would also provide extra storage for north east bound vehicles including those waiting to turn right into Lower Richmond Road; – provision of a wider pedestrian island within the Lower Richmond Road arm to 4 m wide to sufficiently cater for cyclists crossing as well as pedestrians; – an extended, dedicated lane for traffic turning left from Clifford Avenue into Lower Richmond Road; – Removal of 1 tree and planting of two new trees at Lower Richmond Road; – A new cycle lane would be provided. The highway improvements at Chalkers Corner would benefit cyclists and help Transport for London (TfL) to achieve their "Quietway" proposals for the A316 corridor by creating: • advance cycle stop lines at the main junction; • wider islands to make them suitable for cycle use; and • improved cycle links into Lower Richmond Road. • Improvements to Ship Lane, which would continue as a public highway but would be enhanced as a pedestrian route through the provision of a wider footway on the west side and a new footway (3 m) on the east side; • A new pelican crossing at the southern end of the Green Link along Lower Richmond Road directly north of Mortlake Green. The existing signalised crossing point adjacent to Ship Lane would be relocated to align better with the Green Link; and • A new crossing provided just to the west of the new access road to the school to improve access for pupils needing to cross Lower Richmond Road. This is currently shown as a zebra crossing but could potentially be upgraded to a pelican crossing. • Enhancement of existing bus services. Based on the current service pattern, an increased frequency for the 419 service would be the

	Mitigation Measures
	preferred solution together with provision of special buses to meet the peak demands associated with the school. • Safeguarding of land at the corner of Lower Richmond Road/Williams Lane to allow TfL to provide in the future bus stands, driver facilities and a bus turn facility, • Safeguarding of land close to the Green Link to allow the future provision of a cycle hire facility • A New 20mph speed limit enforced between Williams Lane and Bulls Alley including Sheen Lane, between the Mortlake High Street / Lower Richmond Road junction and the Sheen Lane level crossing. A number of physical measures are proposed to help manage speeds including junction entry treatments, carriageway narrowing and provision of a textured tarmac resin to differentiate the area of speed restraint. Potentially, table tops to comply with TfL requirements for buses could be installed at pedestrian crossing points by the school and on the Green Link. • Potential funding for a new controlled parking zone and/or modification to existing parking zones to help manage potential overspill parking associated with the proposed development onto surrounding roads.

Conclusion

4.159. **Table 4.28** provides a full list of air quality likely significant effects, mitigation measures, and likely residual effects identified within this assessment review. Refer to **Table 4.23** above for a full list of air quality mitigation measures.

4.160. Development Area 1 (the detailed component of Application A) is Air Quality Neutral (refer to **Appendix I (**Replacement ES Appendix 10.2: Air Quality Neutral Assessment**)** for further details).

Table 4.24 Summary of Likely Significant Effects, Mitigation Measures and Likely Residual Effects

Description of Effect	Likely Significant Effect	Mitigation Measures	Likely Residual Effect
Completed Development			
Traffic related exhaust emissions on existing sensitive locations surrounding the Site and future residential and school users of the Development.	**Insignificant**.	None required, refer to **Table 4.23** above.	**Insignificant**.
Changes in local air quality from the proposed Energy Centre plant on existing sensitive locations surrounding the Site and future residential and school users of the Development.	**Insignificant**.	None required, refer to **Table 4.23** above.	**Insignificant**.
Introduction of future residential and school uses to the Site.	**Insignificant**.	None required, refer to **Table 4.23** above.	**Insignificant**.

Ground Conditions and Contamination

4.161. This review has been prepared by Waterman IE, who prepared the original ground conditions and contamination Chapter, reported in the 2018 ES (as amended).

4.162. In terms of ground conditions and contamination, the July 2020 Amendments do not involve significant changes to proposed end-uses of buildings, foundation design or building footprint. Below-ground, the basement floorspace west of Ship Lane has been reduced, however the depth remains unchanged (the proposed western basement slab is still set at 2.45m AOD). The basement east of Ship Lane has been expanded slightly with a small sub-basement level now included in the south-western corner of this area (under Building 01) extending down to -1.64m AOD.

4.163. There have been no changes in policy and legislation that would change the methodology of the 2018 ES assessment, which remains valid. As part of this ES Addendum, a replacement Preliminary Environmental Risk Assessment (PERA) has been prepared (refer to **Appendix J**) to provide the most up to date information on baseline conditions. It can be concluded that the PERA does not alter the baseline conditions reported in Chapter 11: Ground Conditions and Contamination of the 2018 ES (as amended).

4.164. Owing to the reduction in basement volume at the western side of the Site (West of Ship Lane), a smaller volume of potentially contaminated shallow soils would be excavated. However, mitigation measures to be undertaken as part of the Works, informed by findings of previous and proposed ground investigation, would prevent any contamination in residual soils impacting any identified receptors (as set out in the replacement PERA, refer to **Appendix J**)). Minor expansion of the proposed basement to the east of Ship Lane with a sub-basement level under Building 01 would excavate some additional natural material, however there would be no additional impact to ground conditions or contamination risks.

4.165. The above-ground changes to the Development would not have any impact on assessed ground contamination risks. As such the July 2020 Amendments do not result in any changes to the ground conditions and contamination effects identified in the 2018 ES (as amended), which therefore remains valid.

Surface Water Drainage and Flood Risk

Introduction

4.166. This review has been prepared by Waterman IE, who prepared the original surface water drainage and flood risk Chapter, reported in the 2018 ES (as amended), and who undertook the original surface water drainage strategy for the 2018 Applications.

4.167. The May 2019 ES Addendum provided a summary of the amendments to Building 9 and raising of ground levels on Ship Lane in response to the EA's comments regarding Ship Lane as a permanent passive flood defence. Since the May 2019 ES Addendum, the EA have provided further comments in July 2019 which Waterman IE responded to via a 'River Wall Liaison Summary Note' dated 7th August 2019 (ref: WIE15582-106-BN-1-2-1-EA, **Appendix M**), which has been agreed by the EA. As noted above in this ES Addendum, these further comments resulted in an amendment to the north-facing windows on the Maltings, ensuring these are above the future statutory flood defence level of 6.7m AOD.

4.168. Changes were also made to the drainage strategy post-submission in response to comments from the GLA that the 3G sports pitch would drain freely into the ground and from LBRuT's arboricultural officer that the drainage strategy drawing should include permeable paving extents and raingardens. A Drainage Strategy Addendum (Appendix F of the May 2019 ES Addendum) was prepared to summarise the changes made to the drainage strategy post-planning and to assess the impact on drainage of the May 2019 Amendments. A replacement drainage strategy (which supersedes the 2018 drainage strategy and May 2019 drainage strategy addendum) has been prepared to assess the impact on drainage as a result of the July 2020 Amendments (**Appendix L**).

4.169. A replacement Flood Risk Assessment (FRA) has also been prepared by Hydro-Logic (which supersedes the one in the 2018 ES (ES Appendix 12.1)) to account for the July 2020 Amendments (refer to **Appendix K**).

Assessment

Planning Policy and Legislation

4.170. Whilst there have been changes to several pieces of planning policy since Chapter 12: Surface Water Drainage and Flood Risk of the 2018 ES (as amended) was prepared, the assessment previously reported within 2018 ES (as amended) remains valid. Those changes in planning policy comprise:

- National Planning Policy Framework – updated in February 2019[17]; and
- The Intend to Publish London Plan – updated in December 2019[18]. Although only holding limited weight as it is not yet adopted, it is important to note that in Policy SI13 the most favourable form of surface water management in the drainage hierarchy has been amended to read 'rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)'. The draft policy further states that development proposals for impermeable surfacing should normally be resisted unless they can be shown to be unavoidable, including on small surfaces such as front gardens and driveways. An assessment against the relevant policies has been included for completeness in **Appendix L**: Revised Drainage Strategy.

The Works

4.171. There would be no change in construction methodology and foundation design. The only change to basement depth is a new sub-basement below Building 01 extending to -1.64m AOD, which would have a two-level basement and large column grid. The large column grid is as per the proposed foundation design for all buildings founded at ground level within the detailed element of the Stag Brewery component of the Site (Development Area 1), which would comprise a 1m deep piled raft. As per the 2018 Applications, the proposed foundation design for buildings with a basement would comprise of a 1m deep ground bearing raft slab.

4.172. The new sub-basement under Building 01 has been considered in the context of groundwater flows and flooding in the replacement Flood Risk Assessment (**Appendix K**) and following the implementation of mitigation measures set out in the 2018 ES (as amended) (the dewatering of excavation activities), the likely residual effects are considered to remain **insignificant**.

[17] Ministry of Housing, Communities & Local Government (2019). National Planning Policy Framework. Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2
[18] London Plan Team, December 2019. The Intend to Publish London Plan.

4.173. The July 2020 Amendments would not change any other effects identified during the Works (surface water flood risk, access to the river wall, tidal flood risk, foul water infrastructure capacity, potable water demand and existing drainage infrastructure). The effects of the Development during the Works addressed in the 2018 ES Chapter 12: Surface Water Drainage and Flood Risk therefore remain valid.

Completed Development

Tidal Flood Risk

4.174. As stated in the replacement FRA (**Appendix K**), the default minimum ground level for the Development is at 6.03m AOD, with the minimum residential Finished Floor Level (FFL) at 7.03m AOD. As noted in 2018 ES Chapter 12: Surface Water Drainage and Flood Risk, there are some occupiable floorspace within the Development that would be below the reference flood level of 6.03m AOD. This includes Building 1 (cinema), Building 6 (Retail), Building 4 (The Maltings), Building 5 (flexible uses) and Building 9 (Boathouse), Building 10 (retail and sub-station) and the basement car park.

4.175. As a result of the July 2020 Amendments, an office reception has been introduced at 5.1m AOD on the south-west corner of Building 1. A breach flood level specific to this location of around 5.52m AOD means that this office reception would be below this breach flood level, however there is internal access to the cinema foyer which is set higher at 5.565m AOD and therefore providing a safe means of escape in the event of a breach affecting this area.

4.176. For Building 5, access from the lobby and restaurant / bar is available via a small number of steps to a raised area at 6.03m AOD which in turn has external access to ground at the same level.

4.177. For Building 6, some flexible use space is set with FFL at 5.22m AOD (previously set at 5.565m AOD) as a result of the July 2020 Amendments. This is lower than the reference flood level for this location of 5.52 mAOD. This has been addressed in the design of the Development providing a safe means of escape via a small number of steps to higher floor levels within each of the ground floor units.

4.178. Following discussions with the EA in 2018 and as part of the May 2019 Amendments, a permanent passive line of defence to 6.70m AOD has been provided along the front (river side) edge of Building 9 (including the Club Room). The rest of the FFL is set at 4.90m AOD in order to provide a facility for boat storage and access to the River.

4.179. There no other changes to FFLs or ground levels that would impact flood risk as a result of the July 2020 Amendments. Whilst there are some changes to FFLs below the reference flood level of 6.03m AOD, the Development has been designed to ensure that all residential and non-residential accommodation would be occupied safely from tidal flooding. As such, the likely residual risk of tidal flooding (and therefore likely residual effect) to future occupants would remain as reported in the 2018 ES (as amended), i.e. **insignificant**.

4.180. With regard to off-site impacts, the Development would improve the defences along the river frontages and elevated ground levels that could provide safe refuse for residents of low-lying neighbouring properties should there be a tidal breach. Following EA requirements, the July 2020 Amendments include raising the window sills of the Maltings building to above the future statutory defence line (6.7m AOD) to provide a continuous line of defence. This would not change the likely residual risk of off-site tidal flooding (and therefore likely residual effect) as reported in the 2018 ES

(as amended) which would remain **long-term**, **local**, **beneficial** effect of **minor** significance.

Surface Water (Pluvial Flood Risk)

4.181. The updated drainage strategy (**Appendix L**) states that the incorporation of Sustainable Drainage Systems (SuDS) including permeable paving, rain gardens, and green roofs, in addition to rainwater harvesting butts and underground attenuation tanks would result in a 70% reduction in surface water flows (249 l/s) compared to the existing rate (841 l/s). This exceeds the London Plan's minimum requirement of 50% reduction and represents a further 1% reduction in surface water flows than calculated as part of the May 2019 Drainage Strategy Addendum (which had a 69% betterment), the approach of which was agreed with the GLA (refer to Appendix C of the May 2019 Drainage Strategy Addendum). This further 1% reduction in surface water flows over the May 2019 Drainage Strategy Addendum is as a result of the reduction of the western basement extent, allowing for more room for attenuation in shallow tanks beneath the landscaping in the north-west corner of the Site (rather than within basement attenuation tanks).

4.182. Given this further reduction in the rate of surface runoff from the Development, and the further inclusion of SuDS in the form of permeable paving, the conclusions of the 2018 ES (as amended) remain valid and the likely residual effect would remain as **long-term**, **local**, **beneficial** and of **minor significance**.

4.183. As reported in the 2018 ES (as amended), mitigation inherent to the design is in place to ensure the flood risk of sewers surcharging is avoided. Furthermore, the re-location of attenuation tanks from the western basement to beneath soft landscaping in the north-west of the Site means there is no longer the need for pumping into the Thames Water sewers. The proposed Development results in a 70% reduction in surface water flows compared to the existing situation, thus relieving the surrounding Thames Water network of flows. As such, flood risk from sewers surcharging would remain **insignificant** and the conclusions of the 2018 ES (as amended) remain valid.

Groundwater flood risk

4.184. The July 2020 Amendments do not change the proposed levels of the basement, other than the inclusion of a sub-basement under Building 1 (cinema) extending to -1.64m AOD.

4.185. As set out in the 2018 ES (as amended), any projection of the proposed basements into the groundwater level would not lead to any increase in groundwater levels off-site and proposed basements would be designed to be suitably waterproofed for the lifetime of the Development. As such, the likely residual effect of groundwater flood risk on the completed Development would remain **insignificant** as reported in the 2018 ES (as amended).

Access to the river wall

4.186. Following the May 2019 Amendments, the EA provided further comments by email (dated 18th July 2019) (refer to Appendix B of **Appendix K**), including on the potential risk of working within a confined space in the boat storage facility at Bulls Alley Boat House when accessing / maintaining the flood defence. As noted in Waterman IE's 'River Wall Liaison Summary Note' dated 7th August 2019 and issued to the EA (ref: WIE15582-106-BN-1-2-1-EA, **Appendix M**), the storage facility was introduced at the request of the Port of London Authority as a means of providing easy and safe access to the water from the boat store, as opposed to carrying the boat down the steps. The possibility of entirely opening both sides of the boat storage area has been assessed, however it is not considered to be structurally feasible to support the terrace. A hatch would be provided in the

terrace surface as a means of escape during a flood event. A ladder and / or handrails would be provided to further facilitate escape, with details to be agreed post planning. In addition, the access doors would be widened and provided on both perpendicular sides to facilitate access/egress.

4.187. Due to the low level of the boat storage facility, landward access to the boat storage facility (beneath the terraced area) would require a penetration through the flood wall (i.e. the external envelope of the boat house). This would comprise an opening beneath the statutory flood level, which would compromise the ability to maintain a continuous flood defence line, which precludes the feasibility of this option. It is considered that there are sufficient means of escape from the boat storage facility to be considered acceptable from a health and safety perspective. As such, the likely residual effect of access to the river is considered to remain as reported in the 2018 ES (as amended), i.e. **insignificant**.

Change in foul water drainage capacity

4.188. The July 2020 Amendments has resulted in slight change in foul water flows as a result of an increase in residential floor areas, from 25.5 l/s reported in the 2018 ES to 28.5 l/s (3.0 l/s increase from the 2018 ES).

4.189. Thames Water have previously confirmed (Appendix B of **Appendix K**) that there is capacity for the proposed surface and foul flows, however owing to the July 2020 Amendments, the Development has changed since then as the proposed flow rates have decreased for surface water and slightly increased for foul water.

4.190. As reported in the 2018 ES (as amended), it is Thames Water's statutory duty to ensure that sufficient capacity exist in the foul water drainage system (including sewage treatment and network infrastructure) to cope with the demands of existing and future population demands. Accordingly, it is considered likely that the Development would have an **insignificant** effect upon the capacity of foul water drainage infrastructure and sewage treatment works (as reported in the 2018 ES (as amended)).

Change in potable water demand

4.191. The July 2020 Amendments has resulted in a marginal change in potable water demand rates as a result of an increase in residential units. As previously measured in the 2018 ES, the water supply rate is based on a tank-fill rate of 4 hours, as follows:

- Buildings 1 to 4 - 2.7l/s (previously 2.5 l/s in the 2018 ES);
- Buildings 5 to 8 and 20 - 2.9l/s (previously 2.8 l/s in the 2018 ES);
- Buildings 9 to 11 – 2.2 l/s (previously 2 l/s in the 2018 ES);
- Buildings 13 to 19 - 6.7 l/s (previously 6.4 l/s in the 2018 ES); and
- Buildings 20 and 21 (townhouses) - each would be provided with their own domestic mains water supply.

4.192. This marginal increase in potable water demand would not significantly change the conclusions reported in the 2018 ES (as amended), as such the likely residual effect would remain **insignificant**.

Conclusion

4.193. The July 2020 Amendments have provided further detail in respect of access to the river wall and

drainage to take into consideration the comments provided by the GLA and the EA.

4.194. The July 2020 Amendments do not give rise to any new likely significant surface water drainage or flood risk effects compared to those identified in the 2018 ES (as amended). Similarly, there is no change to the nature and significance of the effects reported in the 2018 ES (as amended). As such, no additional mitigation measures are required and those identified in the 2018 ES (as amended) remain valid.

Ecology

Introduction

4.195. This review has been prepared by Waterman IE, who prepared the original ecology Chapter, reported in the 2018 ES (as amended).

4.196. This Section presents an assessment of the likely significant effects of the Development on terrestrial ecology and nature conservation features since the 2018 ES (as amended) as a result of the July 2020 Amendments.

4.197. It provides a description of any changes of those methodologies adopted for this assessment as well as any changes to relevant planning policy and legislation. This is followed by a description of the current ecological baseline conditions and an assessment of the likely significant effects of the Development during the Works and once the Development is completed and operational. Assessment is made upon those Important Ecological Features (IEFs) that have been scoped into this assessment.

4.198. Any additional mitigation measures are identified where appropriate to avoid, reduce or offset any significant adverse ecological effects identified and enhancement measures are also presented to maximise, where practicable, beneficial ecological effects. Considering the mitigation and enhancement measures, the nature of the likely residual effects are then described.

4.199. The section is supported by the following appendices:

- **Appendix N**: Replacement Preliminary Ecological Appraisal (PEA); and
- **Appendix O**: Replacement Protect Species Report (PSR).

Assessment Methodology

Methods of Baseline Data Collection

4.200. With the exception of surveys for black redstart *Phoenicurus ochruros*, which have not been undertaken as this species has been assessed as likely to be absent from the Site (following the results of both the new and previous PEA), those tasks previously undertaken to inform Chapter 13: Ecology of the 2018 ES (as amended) have been updated. This comprised:

- Ecological data search;
- 'Extended' Phase 1 Habitat Survey;
- Internal and ground based preliminary bat roost inspections of buildings and trees;
- Bat emergence / re-entry surveys;
- River wall endoscope inspection;
- Bat activity surveys;

- Automated detector bat surveys; and
- Bat data analysis.

4.201. Full methodologies for the above tasks are provided within **Appendices N** and **O**, which were undertaken accordance with best practice guidance at the time of survey and remain the same as those used to inform Chapter 13: Ecology of the 2018 ES (as amended).

Assessment Process Criteria

4.202. This assessment was undertaken with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines for ecological impact assessments (the 'Guidelines')[19]. Whilst these Guidelines have been updated from those used to inform the 2018 Ecology Chapter (based on the 2016 Guidance[20]) to consolidate other guidelines into one document, this has not affected the methodology used in the assessment previously reported within Chapter 13: Ecology of the 2018 ES (as amended).

Important Ecological Features and Zone of Influence

4.203. Those ecological features either scoped in (and would therefore qualify as IEFs) or out of this assessment are detailed in **Table 4.25**. These remain broadly similar as those reported within Chapter 13: Ecology of the 2018 ES (as amended) with the exception of roosting bats, which have now been scoped in as a result of the updated bat emergence / re-entry surveys which were undertaken in August to November 2019, and invasive plant species as they are no longer considered to be an IEF.

Table 4.25: Ecological Features Scoped in / out of the Assessment

Ecological Feature	Scoped In or Out?	Rationale
Designated Sites (River Thames and Tidal Tributaries SINC).	In.	In the absence of mitigation, indirect effects to the River Thames and Tidal Tributaries Site of Importance for Nature Conservation (SINC) could occur as a result of the Development.
On-Site habitats (all).	Out.	All habitat types recorded on-Site are commonly found locally and nationally and not assessed to be of geographical or legal importance. The Development is highly unlikely to give rise to significant effects upon such ecological features.
Roosting bats.	In.	A bat roost assessed to comprise low numbers of animals and be of low conservation significance was recorded during the emergence / re-entry surveys undertaken in 2019. In the absence of mitigation, both direct and indirect effects could occur to this roost and the bats themselves as a result of the Development.
Foraging and commuting bats.	In.	In the absence of mitigation, indirect effects to commuting and foraging bats could occur as a result of the Development.

[19] Chartered Institute of Ecology and Environmental Management (2018): 'Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine Version 1.1'. Technical Guidance Series.

[20] Chartered Institute of Ecology and Environmental Management (2016); 'Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal'. Technical Guidance Series.

Ecological Feature	Scoped In or Out?	Rationale
Black redstart.	Out.	No black redstarts were found during surveys in 2016 and Site conditions have not significantly changed. As such, black redstarts are assessed to be likely absent from the Site and therefore the Development is highly unlikely to give rise to significant effects to this species.
Breeding birds.	Out.	The Development is highly unlikely to give rise to significant effects to breeding birds, however legal requirements are detailed within the PSR (**Appendix O**).
Terrestrial invertebrates.	Out.	The Development is highly unlikely to give rise to significant effects upon terrestrial invertebrates.
Invasive plant species.	Out.	Invasive plant species were identified on Site and species listed under the London Invasive Species Initiative (LISI) were recorded at the Site. Invasive species are not considered to form IEFs, however legal requirements are detailed within the PSR (**Appendix O**).

4.204. The Zone of Influence (ZoI) for those IEFs previously assessed within Chapter 13: Ecology of the 2018 ES (as amended) remain unchanged. These, together with the ZoI for roosting bats is set out in **Table 4.26.**

Table 4.26: Important Ecological Feature Zone of Influence

Important Ecological Feature	ZoI
Designated Sites (River Thames and Tidal Tributaries SINC)	Local
Foraging and Commuting Bats	Local
Roosting Bats	Local

Evaluation to Determine Importance

4.205. This remains unchanged to that reported within the Chapter 13: Ecology of the 2018 ES (as amended).

Significance Criteria

4.206. This remains unchanged to that reported within Chapter 13: Ecology of the 2018 ES (as amended).

Planning Policy and Legislation

Planning Policy

4.207. Whilst there have been changes to several pieces of planning policy since Chapter 13: Ecology of the 2018 ES (as amended), the assessment previously reported within 2018 ES (as amended) remains valid. Those changes in planning policy comprise:

- National Planning Policy Framework 2018 – updated in February 2019[21];

[21] Ministry of Housing, Communities and Local Government, February 2019. National Planning Policy Framework.

- National Planning Practice Guidance 2016 – 'Natural Environment' updated in 2019[22];
- The Mayor's Biodiversity Strategy 2002 – replaced by the London Environment Strategy 2018[23]
- The Intend to Publish London Plan – December 2019[24]. Of particular relevance to this assessment is Policy G6 'Biodiversity and access to nature', where the broad principles are covered in the current London Plan and LBRuT policies and not been updated in the Intend to Publish London Plan. There have been changes to Policy G1 'Green Infrastructure', however, it is not considered that these changes would affect the assessment as reported in the July 2020 ES Addendum.

Legislation

4.208. There have been no changes with regards to the legislation previously reported within Chapter 13: Ecology of the 2018 ES (as amended).

4.209. Full details of planning policy and legislation of relevance to the Site and nature conservation are provided within **Appendix N**.

Biodiversity Action Plans

4.210. Changes to relevant Biodiversity Action Plans (BAPs) which have occurred since Chapter 13: Ecology of the 2018 ES (as amended) are set out below:

- London BAP – superseded by the London Environment Strategy 2018;
- LBRuT BAP – updated in 2019[25].

4.211. Whilst the above changes have occurred, the assessment previously reported within Chapter 13: Ecology of the 2018 ES (as amended) remains valid.

Baseline Conditions

4.212. A full description of the current baseline conditions of the Site are provided within **Appendices N** and **O**. In summary, with the exception of a bat roost of low numbers and low conservation significance now present on Site within building B8 (The Maltings) and the Schedule 9 species (as listed under the Wildlife & Countryside Act 1981 (as amended)) Virginia creeper *Parthenocissus quinquefolia* being recorded, baseline conditions at the Site have not significantly changed with the Site still comprising the same habitats and offering the same opportunities for faunal species.

Habitats

4.213. Those habitats present on and immediately adjacent to the Site comprise:

- Amenity grassland;
- Bare ground;
- Buildings and structures;
- Ephemeral / tall ruderal vegetation and scrub;

[22] Ministry of Housing, Communities and Local Government, 2019. Planning Practice Guidance, Natural Environment'.
[23] Mayor of London, London Environment Strategy, May 2018.
[24] London Plan Team, December 2019. The Intend to Publish London Plan.
[25] London Borough of Richmond upon Thames, Biodiversity Action Plan, 2019.

- Hardstanding;
- Ornamental planting;
- Hedge;
- Scattered trees;
- Climbers;
- Walls;
- River Thames (adjacent);
- Residential and commercial buildings (adjacent); and
- Mortlake Green Public Open Space (adjacent).

Protected and Notable Faunal Species

4.214. During the bat emergence / re-entry survey undertaken on 7th August 2019 a single soprano pipistrelle *Pipistrellus pygmaeus* bat was recorded emerging from building B8 (The Maltings), from behind one of the boarded windows on the northern aspect of the building. No bats were recorded during the further two emergence / re-entry surveys undertaken on this building in 2019 (nor during the previous surveys undertaken for the 2018 ES) and consequently the roost is assessed to be a day roost of low conservation significance.

4.215. The Site is assessed to offer opportunities for the following protected and notable faunal species:

- Foraging, commuting and roosting bats;
- Common species of foraging and nesting birds; and
- Common species of terrestrial invertebrates.

Assessment

4.216. The assessment section below remains consistent with that in Chapter 13: Ecology of the 2018 ES (as amended). However, as a bat roost of low numbers and low conservation significance has been recorded at building B8 (The Maltings) the likely significant effects; mitigation measures; and resulting residual effects are set out below.

4.217. In accordance with CIEEM guidelines, where activities associated with the development could result in the intentional killing or injury of protected species, this is stated, but a level of significance is not given. This is because such killing or injury must be avoided by law. For other activities that could lead to an effect but would not require licencing, the significance of the effect is assessed.

Likely Effects

The Works

Direct Effects Roosting Bats

4.218. The Works have the potential to directly impact upon the bat roost present within the building B8 (The Maltings) which could result in the destruction of the roost and killing or injury of bats, which would therefore result in the contravention of legislation. This would result in a **permanent, long-term, local, adverse effect** of **minor significance**.

Indirect Effects to Roosting Bats

4.219. Bats present within building B8 (The Maltings) also have the potential to be indirectly affected by the Works, through effects such as noise, dust arisings, vibration and lighting. This would therefore result in a **temporary, short** to **medium-term, local**, **adverse effect** of **minor significance** to bats.

Completed Development

Direct and Indirect Effects Roosting Bats

4.220. The bat roost present within building B8 (The Maltings) would have been removed and therefore there would be **no direct** or **indirect effects** during the completed Development.

Mitigation Measures and Likely Residual Effects

The Works

Direct effects to Roosting Bats

4.221. In order to avoid the contravention of legislation a Bat Low Impact Class Licence (BLICL) or similar would be submitted to and approved Natural England prior to any works which could impact on the roost. If the Works on-Site start later than the validity of the August-November 2019 surveys (which have an 18-month expiry date), update emergence / re-entry surveys would also be undertaken. In accordance with BLICL requirements the licence would include a non-detailed Method Statement setting those sensitive working methodologies required and overseen by an Ecological Clerk of Works to allow for roost destruction.

Indirect effects to Roosting Bats

4.222. As set out within Chapter 13: Ecology of the 2018 ES (as amended), measures to avoid light spill and minimise noise along the northern boundary of the Site adjacent to the River Thames would be set out within a Construction Environmental Management Plan (CEMP) to ensure appropriate environmental controls are set in place to protect the roost from any indirect effects associated with the Works. The residual indirect effect to bats would therefore be **insignificant**.

Completed Development

Direct effects to Roosting Bats

4.223. Whilst no compensation measures are required as part of a BLICL, as reported within the Chapter 13: Ecology of the 2018 ES (as amended), suitable roosting opportunities for bats in the form of bat boxes are to be incorporated into the Development. The resulting residual effect during completed development to bats would therefore likely be a **permanent**, **long-term, local**, **beneficial residual effect** of **minor significance** to bats.

Indirect effects to Roosting Bats

4.224. Appropriate mitigation in the form of a Landscape and Environment Management Plan (LEMP), as set out for foraging and commuting bats within Chapter 13: Ecology of the 2018 ES (as amended) would also serve to negate indirect effects to roosting bats. The likely residual indirect effects would

therefore be **insignificant**.

Conclusion

4.225. In conclusion, other than the effects to roosting bats, which have been assessed as part of this ES Addendum, and invasive plant species, which are no longer considered to be an important ecological feature, the assessment of effects previously reported within Chapter 13: Ecology Chapter of the 2018 ES (as amended) remains valid.

4.226. **Table 4.27** summarises the **new** likely significant effects, mitigation measures, and likely residual effects identified within this ES Addendum that were not previously reported as effects in the 2018 ES.

Table 4.27: Summary of New Likely Significant Effects, Mitigation Measures and Likely Residual Effects

Issue	Likely Significant Effect	Mitigation Measures	Likely Residual Effect
The Works			
Direct effects on roosting bats.	Permanent, long-term, local, adverse effect of minor significance.	Submission and approval of BLICL from Natural England	Permanent, long-term, local, adverse effect of minor significance.
Indirect effects on roosting bats.	Temporary, short to medium-term, local, adverse effect of minor significance.	Implementation of a CEMP to include measures to minimise noise, dust arising, vibration and lighting.	Insignificant.
Completed Development			
Direct effects on roosting bats.	No effect.	Provision of bat boxes incorporated within the Development.	Permanent, long-term, local, beneficial effect of minor significance.
Indirect effects on roosting bats from lighting.	No effect.	None required (sensitive lighting scheme is inherent to scheme design).	Insignificant.

Archaeology

4.227. This review has been prepared by CgMs Limited (part of RPS Group), who prepared the original archaeology Chapter, reported in the 2018 ES (as amended).

4.228. Since the 2018 ES (as amended) was produced, the NPPF has been updated, in July 2018 and subsequently in February 2019[26], however, policy relating to archaeology has not significantly changed. A new London Plan[27] has been prepared in draft. Policy in the adopted and proposed London Plan would be adhered to by the agreed archaeological strategy already in place for the Site. Since the May 2019 Amendments, there have been no significant changes to policy relating to archaeology.

[26] Ministry of Housing, Communities & Local Government (2019). National Planning Policy Framework. Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2
[27] Greater London Authority (GLA) (July 2019). Draft New London Plan.

4.229. Archaeological works in support of the 2018 Applications comprised a combination of desk-based analysis and synthesis, together with the results of intrusive archaeological fieldwork. Further archaeological mitigation measures are anticipated following the granting of planning consent and are anticipated to be secured by appropriately worded planning conditions. The mitigation strategy was confirmed as part of the 2018 ES by the Greater London Archaeological Advisory Service who provide archaeological advice to the LBRuT.

4.230. There have been no changes in policy and legislation that would change the methodology of the 2018 ES assessment, which remains valid. As part of this ES Addendum, an updated desk-based assessment (DBA) has been prepared (refer to **Appendix P**) to provide the most up to date information on baseline conditions; this is compliant with current Chartered Institute for Archaeologists' (CIfA) '*Standard and guidance for historic environment desk-based assessment*'[28]. It can be concluded that the DBA does not alter the baseline conditions reported in Chapter 14: Archaeology of the 2018 ES (as amended).

4.231. The July 2020 Amendments have been reviewed regarding below ground archaeology and potential effects. The proposed amendment with an archaeological impact comprises a reduction to the extent of the proposed basement west of Ship Lane. This amendment has the potential to reduce archaeological impact in this part of the Site and therefore the assessment presented in the 2018 ES (as amended) provides a worse case assessment. The July 2020 Amendments also proposes a double basement under Building 1, and therefore a greater depth in the eastern basement at this location. As such, the overall effects reported in the 2018 ES (as amended) would remain direct, permanent, local, adverse effect of major significance for medieval and post-medieval remains in the absence of mitigation.

4.232. No additional below ground impacts are proposed as part of the July 2020 Amendments. Overall therefore the findings on below ground archaeology within the 2018 ES (as amended) remain valid and insignificant following mitigation via implementation of a phased archaeological evaluation programme to be secured by planning condition, as previously reported in the 2018 ES.

Built Heritage

Introduction

4.233. This review has been prepared by Waterman IE, who prepared the original Built Heritage Chapter, reported in the 2018 ES (as amended) and Built Heritage Statement ((2018 ES Appendix 12.1)) and should therefore be read in conjunction with both documents. This section of the ES Addendum supersedes the May 2019 Addendum and accounts for all changes to the Development since the 2018 ES.

4.234. No revisions are proposed to the Built Heritage Statement (2018 ES Appendix 12.1) which forms a baseline technical appendix. However, it must be noted that the 2012 reference to the '*Standard and Guidance: Desk-Based Assessments*' has since been superseded by the Chartered Institute for Archaeologists' (CIfA) '*Standard and guidance for historic environment desk-based assessment*'[29]. Nevertheless, as the Built Heritage Statement is still considered suitable to address the built heritage resource within the Site and surrounding area, and as there have been no changes to the known built heritage resource since 2018, no changes to the statement were

[28] CIfA, (2017). Standard and guidance for historic environment desk-based assessment.
[29] CIfA, (2017). Standard and guidance for historic environment desk-based assessment.

considered to be necessary.

4.235. However, there are three additional historic photographs (provided by the Applicant) which enhance the understanding of the Site's later development with regard to the changes to the river fronting elevations in the 20th century and the varying mass which was historically present at the Site in the building stock. New images include a riverside view of the brewery in the 1930s, a 1960s riverside view and an aerial photograph of the Site taken in the late 20th century, the images are located in **Appendix Q**. The photographs show that in the 1930s factory buildings between *c*. 3-10 storeys were bordering the banks of the River Thames. By the 1960s photograph, recent development mirrors the height of still existing taller factory buildings along the waterfront, thus creating a more level skyline. However, it is not known how far this continues along the river. The late 20th century shows that there are varying buildings heights and levels within the Site, indicating that the majority of buildings, at least within the approximate centre of the Site, are industrial.

4.236. The information presented below outlines any changes to the 2018 assessment resulting from changes between the 2018 Development and the July 2020 Amendments. This is because the May 2019 Amendments related solely to direct effects (including the re-instatement of historic features, the retention and relocation of elements of historic fabric and the reconfiguration of internal spaces which are still to be incorporated as part of the July 2020 Amendments) from the Works to the heritage assets, whereas the July 2020 Amendments relate to changes in likely significant and residual direct and indirect effects (in relation to enhancement of the Buildings of Townscape Merit (BTMs) on the Site and the setting of Listed Buildings and Conservation Areas) of the completed Development.

4.237. As indicated previously in Section 2, the July 2020 Amendments include changes to the known built heritage (above ground) non-designated assets within the Development, including the Maltings Building (Building 4).

4.238. Additionally, the July 2020 Amendments present a reduction in redline boundary between Clifford's Avenue and Lower Richmond Road within the Chalkers Corner part of the Development, but as it was previously concluded that this part of the Development would not impact on any built heritage assets due to the localised junction works, this is also not discussed further in this section.

4.239. The changes within the Stag Brewery part of the Development that could impact built heritage (leading to beneficial or adverse impacts) as per the July 2020 Amendments include:

- The increase in height of Buildings 2 and 3 (2 additional storeys);
- Changes in heights of the two blocks, now referred to as Blocks 20 and 21, and terraces on the building now known as Block 22 from 3 to 4 storeys.

4.240. The increase in heights of Buildings 2, 3, 20, 21 and 22 are not considered to change the findings of the previous May 2019 ES Addendum or of the 2018 ES. This is primarily due to the overall built form of the Site which already includes multiple tall buildings that range in storey height from 4 to 10 storeys.

4.241. Since the production of the 2018 ES a new version of the NPPF[26] (2019) has been published. This has not changed the conclusions of the 2018 ES (as amended). The overall impact on heritage significance in the context of the NPPF is addressed in a separate planning statement for the Development.

4.242. The assessment methodology used for this addendum is the same as that used in the 2018 ES (as

amended), the information below only highlights where there have been changes to the original assessment.

Assessment

Likely Significant Effects

Works

4.243. As indicated previously, given that there are no proposed changes to the activities which would be undertaken as part of the Works, as a result of the July 2020 Amendments, the assessments remain as reported in the 2018 ES remain valid and there are no changes to the conclusions of the assessment in this respect.

Completed Development

Direct Effects

4.244. Amendments to the likely direct effects of the completed Development upon the heritage assets within the Site are summarised in **Table 4.28** and set out within the following paragraphs. There would be no further changes to the other heritage assets on the Site (boundary walls, railway tracks, paving and moorings, memorials and historic gates) and therefore the direct effects on these heritage assets would remain as per the 2018 ES (as amended).

Table 4.28: Likely Direct Residual Effects of the Completed Development and their Significance

Heritage Asset	Level of Heritage Significance	Magnitude of Impact (reported in r 2018 ES)	Revised Magnitude of Impact (as of July 2020 ES Addendum)	Significance of Direct Residual Effect (reported in 2018 ES)	Revised Significance of Direct Residual Effect (as of July 2020 ES Addendum)
Former Hotel Building (BTM).	Low.	Minor adverse.	Minor Beneficial	**Insignificant** to **direct**, **permanent**, **local**, **adverse** effect of **minor significance**.	**Insignificant** to **direct**, **permanent**, **local**, **beneficial** effect of **minor significance**.
Former Bottling Building (BTM).	Low.	Minor adverse.	Minor Beneficial	**Insignificant** to **direct**, **permanent**, **local**, **adverse** effect of **minor significance**.	**Insignificant** to **direct**, **permanent**, **local**, **beneficial** effect of **minor significance**.

Heritage Asset	Level of Heritage Significance	Magnitude of Impact (reported in r 2018 ES)	Revised Magnitude of Impact (as of July 2020 ES Addendum)	Significance of Direct Residual Effect (reported in 2018 ES)	Revised Significance of Direct Residual Effect (as of July 2020 ES Addendum)
Maltings Building (BTM).	Medium.	Minor adverse.	Moderate beneficial	**Direct**, **permanent**, **local**, **adverse** effect of **minor significance**.	**Direct**, **permanent**, **local**, **beneficial** effect of **minor significance**.

The Former Hotel Building (BTM)

4.245. The May 2019 Amendments to the Former Hotel Building (which are still to be incorporated as part of the July 2020 Amendments) include the reinstatement of the two chimneys to the south side of the building and the retention of the chimney to the north side of the building, as well as a revision to the materiality of the roof, which would be finished in slate. These changes would allow the historic appearance of the roofscape, which contributes to the aesthetic value of the heritage asset, to be retained. It is also proposed to retain the brick window arches, which are a characteristic feature of the curved façade of the building and which contribute to the asset's aesthetic value. The appreciation and understanding of the heritage asset will also be enhanced through its inclusion in a scheme of interpretation about the Site. The July 2020 Amendments would not change the proposed hotel and office use of this building, therefore meaning that the hotel function of this non-designated heritage asset will positively contribute to the evidential and historical value of the building.

4.246. The completed Development would have minor beneficial magnitude of impact and insignificant to direct, permanent, local, beneficial effect of minor significance.

The Former Bottling Building (BTM)

4.247. It is proposed that a number of the internal cast iron columns (the removal of which is assessed as harmful under the works) within the former Bottling Building would now be retained and displayed within the wider Development. These surviving characteristic architectural features contribute to the aesthetic and evidential values of the heritage asset and their retention would allow an understanding of the building's former industrial use. On the south façade of the building, the amendments include the insertion of new timber doors to replicate the historic hoist doors, this would allow the asset's former use to be appreciated and understanding of its context enhanced. In addition, the Stag sign is proposed to be relocated and positioned on the former Bottling building. Overall, it is considered that these amendments would enhance the proposals for the former Bottling building. The appreciation and understanding of the heritage asset will also be enhanced through its inclusion in a scheme of interpretation about the Site.

4.248. The completed Development would have minor beneficial magnitude of impact and insignificant to direct, permanent, local, beneficial effect of minor significance.

The Maltings Building (BTM)

4.249. The proposed Development includes conversion of the Maltings building to residential apartments and community space. During the Works stage, the proposals involve the removal of the cast iron columns, horizontal I-beams and the original stairs to the interior of the building. This harm has been identified in the Works stage of Chapter 15: Built Heritage of the 2018 ES (as amended).

4.250. Several existing windows were proposed to be elongated as part of the 2018 Applications. This was considered to diminish the aesthetic quality of the building and as such the number of extended windows has been minimised as part of the May 2019 Amendments and July 2020 Amendments so the arrangement of the fenestration is significantly retained and can still be appreciated. In response to the EA not accepting windows below the statutory flood defence line (refer to **Appendix K**), the window sill on the ground floor of the northern façade of the Maltings was required to be heightened as part of the July 2020 Amendments, which if done sympathetically is considered to be acceptable. Any minor harm to the fabric is considered to be outweighed by bringing this redundant heritage asset back into a sustainable use. The July 2020 Amendments also include the omission of balconies to the building which is considered to be an aesthetic improvement.

4.251. The magnitude of impact to this building has been changed to **moderate beneficial**. The existing building is in a poor state of repair. Without intervention in the near future this building is at increased risk. The Development will result in the sustainable use of this heritage asset which will ensure its viable long-term conservation. Communal interaction, appreciation and understanding with the heritage asset will also be enhanced through a scheme of accompanying interpretation regarding the Site's chronological development and the Maltings building part in this. This has resulted in a **direct**, **permanent**, **local**, **beneficial** effect of **minor significance**.

Indirect Effects

4.252. The indirect effects of the Development relate to the change within the settings of the heritage assets, if any, caused by the completed Development. As set out below (**Table 4.29**), the Maltings Building is the only heritage asset within the Site that would have a revised significance of indirect effect.

Setting of Non-Designated Heritage Assets within the Site

Table 4.29: Likely Indirect Residual Effects of the Completed Development and their Significance

Heritage Asset	Level of Heritage Significance	Magnitude of Impact (as of 2018 ES)	Revised Magnitude of Impact (as of July 2020 ES Addendum)	Significance of Indirect Residual Effect (as of 2018 ES)	Revised Significance of Indirect Residual Effect (as of July 2020 ES Addendum)
Maltings Building (BTM).	Medium.	Minor beneficial.	Minor Adverse	**Indirect**, **long-term**, **local**, **beneficial** effect **of minor significance**.	**Indirect**, **long-term**, **local**, **adverse** effect **of minor significance**.

The Maltings Building (BTM)

4.253. The alterations to the Development has resulted in a change to a **minor adverse** magnitude of impact. This impact is very specific and only relates to the uplift in height of the surrounding proposed buildings as part of the Development which competes with the prominence of the Maltings Building, however this should be considered in the context of the large brewery buildings which were located here in the latter half of the 20th century (refer to the photographs in **Appendix Q**). Nevertheless, the form and extent of the Development is still considered to be beneficial in impact as originally assessed. This has resulted in an **indirect**, **long-term**, **local**, **adverse** effect of **minor significance**.

Setting of Heritage Assets Surrounding the Site

Table 4.30: Likely Indirect Residual Effects of the Completed Development and their Significance

Heritage Asset	Level of Heritage Significance	Magnitude of Impact (reported in the 2018 ES)	Revised Magnitude of Impact (as of July 2020 ES Addendum)	Significance of Residual Effect (reported in the 2018 ES)	Revised Significance of Residual Effect (as of July 2020 ES Addendum)
Group of listed and locally listed buildings and garden wall on Thames Bank.	Low - Medium.	Minor beneficial.	Neutral	**Insignificant** to **indirect**, **long-term**, **local**, **beneficial** effect of **minor significance**.	**Insignificant**
Chiswick Bridge.	Medium.	Minor beneficial.	Neutral	**Indirect**, **long-term**, **local**,	**Insignificant**

Heritage Asset	Level of Heritage Significance	Magnitude of Impact (reported in the 2018 ES)	Revised Magnitude of Impact (as of July 2020 ES Addendum)	Significance of Residual Effect (reported in the 2018 ES)	Revised Significance of Residual Effect (as of July 2020 ES Addendum)
				beneficial effect of **minor significance**.	
Mortlake Conservation Area.	Medium.	Minor beneficial.	Minor Adverse	**Indirect**, **long-term**, **local beneficial**, effect of **minor significance**.	**Indirect**, **long-term**, **local adverse**, effect of **minor significance**.
Mortlake Green Conservation Area.	Medium.	Minor beneficial.	Neutral	**Indirect**, **long-term**, **local**, **beneficial** effect of **minor significance**.	**Insignificant**
The Jolly Gardeners Public House.	Low.	Minor beneficial.	Neutral	**Insignificant** to **indirect**, **long-term**, **local**, **beneficial** effect of **minor significance**.	**Insignificant**

Group of Listed and Locally Listed Buildings and Garden Wall on Thames Bank (Grade II Listed Buildings and BTMs)

4.254. This magnitude of impact was originally assessed to be beneficial. The outline aspect of the Development is located to the south of these buildings and the mass and height will be larger as a result of the July 2020 Amendments. This aspect of the Development will still have the benefit of replacing the existing large poor quality utilitarian brewery building. The change to **Neutral** magnitude of impact is found in the increased height and mass which is considered to be less beneficial in its replacement of the existing modern brewery buildings and structures. However, the outline part of Planning Application A is accompanied by a Design Code which will ensure a high-quality development to have minimal impact upon the setting of these Listed Buildings. Given the outline nature of this part of the Site, a **Neutral** magnitude of change has been assessed based on the outline information available. Future assessment would be undertaken on the detail of the forthcoming reserved matters so that a more detailed assessment can be undertaken. The resultant significance of effect is considered to be **insignificant**.

Chiswick Bridge (Grade II Listed Building)

4.255. The alterations to the Development has resulted in a change to a **Neutral** magnitude of impact. This impact is very specific and only relates to the uplift in height of the proposal which competes with the prominence of the Maltings Building in views from Chiswick Bridge and therefore the

benefit which was previously assessed is lessened. Notwithstanding the uplift in height, the form and extent of the proposed Development is still considered to be beneficial in impact as originally assessed. The resultant significance of effect is considered to be **insignificant**.

Mortlake Conservation Area

4.256. A small portion of the Stag Brewery component of the Site falls within Mortlake Conservation Area boundary. The impact made by the scheme amendments is very specific and relates to the uplift in height which will compete with the adjacent Maltings Building (located in the conservation area) and this is therefore considered to cause less than substantial harm on the Conservation Area and how this aspect of setting contributes to its significance. Further detail on this harm in the context of the NPPF is provided in the Planning Statement. The resultant significance of effect is considered to be **indirect**, **long-term**, **local adverse**, effect of **minor significance**.

Mortlake Green Conservation Area

4.257. The change to a **Neutral** magnitude of impact is found in the increased height and mass which is considered to be less beneficial in its replacement of the existing building stock relative to the 2018 Application. However, the proposed Development is not considered to detract from the setting and significance of the Conservation Area. The resultant significance of effect is considered to be **insignificant**.

The Jolly Gardeners Public House

4.258. The change to a **Neutral** magnitude of impact is found in the increased height and mass which is considered to be less beneficial in its replacement of the existing building stock relative to the original scheme. However, the proposed Development is not considered to detract from the setting and significance of the non-designated heritage asset and its architectural detailing will still be able to be experienced and appreciated from within the streetscape. The proposed cinema building (Building 1) steps back from the pavement at the south west corner, further revealing the east gable of the heritage asset which is considered to be positive in experiencing its aesthetic qualities. The significance of the non-designated heritage asset will not be harmed by the proposed Development. As such, the resultant significance of effect would be **insignificant**.

Conclusion

4.259. The information above has provided revisions of the 2018 Built Heritage Assessment, contained within the 2018 ES (ES Appendix 12.1), arising from the proposed uplifted Development (refer to **Tables 4.41**, **4.42**, and **4.43** on the changes to likely residual effects as a result of the July 2020 Amendments). No additional mitigation is proposed with the exception of a scheme of interpretation which will enhance the understanding and appreciation of this Site and the significance of the heritage assets within the Site and its environs. An updated summary of likely residual effects and mitigation measures is provided in the replacement ES Chapter 20: Likely Residual Effects and Mitigation Measures (**Appendix U**).

4.260. The Built Heritage Section of the Planning Statement will address the impacts outlined above (and the previously identified effects that remain valid in the 2018 ES) in the context of the NPPF.

Townscape and Visual

Introduction

4.261. This review has been prepared by Waterman, who prepared the original Townscape and Visual Effects Chapter, reported in the 2018 ES (as amended).

4.262. The relevant planning policy and baseline conditions of the Site and surrounds which have changed since the 2018 ES are reported.

4.263. Key changes to the Development of relevance to the Townscape and Visual Impact Assessment include an increase in height to accommodate additional housing within the Development, resulting in a change in the exterior of the proposed built form of the completed Development. This has potential to affect the visual appearance of the completed Development and overall effects on the visual impact and townscape character of the Site and surrounding area. The changes are described in detail in Section 2.

Assessment

Baseline Conditions

Planning Policy

4.264. Overall, policy has remained in accordance with the 2018 ES with the exception of the LBRuT Local Plan which was adopted in July 2018. Policies of relevance to the Development are outlined below.

London Borough of Richmond upon Thames Local Plan (July 2018)[30]

4.265. **Policy LP 1** outlines the requirement that *"the high-quality character and heritage of the borough and its villages will need to be maintained and enhanced".*

4.266. **Policy LP 2** focuses on the size and scale of buildings in relation to their wider setting and context. It identifies the requirement for "*buildings to make a positive contribution towards the local character, townscape and skyline"*. Development proposals should reflect the local context of existing built form and enhance the local character with appropriate:

"a. Scale";

"b. height";

"c. mass";

"d. urban pattern";

"g. streetscape"; and

"i. wider townscape and landscape".

4.267. Development proposals which would introduce buildings that are taller than the built form within the existing townscape "*have to be of high architectural design quality and standards".*

[30] London Borough of Richmond upon Thames (July 2018), Local Plan, as adopted by Council 3 July 2018.

4.268. **Policy LP 5** focuses on the protection of views and vistas "*which contribute significantly to the character, distinctiveness and quality of the local and wider area".* It states that new proposals should protect and enhance key views and seek improvement to views and the local skyline.

4.269. **Policy LP 12** summarises the benefits of green infrastructure and the requirement of new development to enhance existing and provide new elements of green features to feed into the multi-functional network. Development proposals will be assessed according to their:

"b. contribution to the wider green infrastructure network by delivering landscape enhancement, restoration or re-creation".

Policy LP16 states that development proposals should enhance and provide vegetation of landscape significance. Proposals should incorporate "*landscape design and materials* […] *of high quality and compatible with the surrounding landscape and character".*

Policy LP18 highlights the river Thames as a key river corridor and states that "Development adjacent to the river corridors will be expected to contribute […] to the river environment".

Townscape Character

4.270. The Townscape Character baseline of the Site and its surroundings have not changed since the original submission of the 2018 ES. The 2018 ES provides the baseline descriptions of the national and local character as well as the analysis of the Townscape Character Areas' sensitivity to change. The local character areas are based on the Mortlake Village Planning Guidance document, which was adopted in January 2016.

Visual Amenity

4.271. Predominantly, the baseline of the Site and its surroundings has remained in accordance with the 2018 ES. Boat Race House, located on the eastern edge of the Site within TCA1: Mortlake character area, has been refurbished since the 2018 ES assessment. Baseline views from viewpoints 4, 5, 6 and 7 afford visibility of this building. However, the architectural changes to Boat Race House are minor and are highly localised within the views. As a result, baseline descriptions of views from these viewpoint locations as described in the 2018 ES (as amended) are considered appropriate.

4.272. All other baseline views are considered to be unchanged since the submission of the 2018 ES (as amended). Images of baseline views are included in **Figure 16.6** to **Figure 16.18** inclusive. Viewpoint locations are illustrated on **Figure 16.4** of the 2018 ES (as amended).

Likely Significant Effects

4.273. As a result of the July 2020 Amendments, the potential effects arising from the Development have been reassessed for both the townscape character and the visual amenity of the Site. Due to the changes in the design, the likely significant effects are assumed to differ from the 2018 ES (as amended).

The Works

4.274. The likely effects on townscape character during the Works are considered to be in accordance with the 2018 ES (as amended). The significance of effect on townscape character would not change as a result of the July 2020 Amendments and remain as reported in the 2018 ES (as

amended) (Temporary, short to medium term, local effects of minor to major adverse significance).

4.275. Overall, the likely effects on views and visual amenity during the Works are considered to be in accordance with the 2018 ES (as amended). The significance of effect would change at viewpoint location 3 due to the July 2020 Amendments. Taller vertical elements such as cranes and partially constructed buildings would protrude above residential properties in the foreground of this view and become noticeable as a result of the increase in height of the Development. Pedestrians and road users at viewpoint location 3 would experience **temporary, local, adverse effects of moderate significance** as the July 2020 Amendments would increase the height of the proposed buildings (which was previously identified as minor adverse in the 2018 ES).

Completed Development

4.276. The likely effects of the completed Development upon townscape character following the July 2020 Amendments are considered to be in accordance with the 2018 ES (as amended). The significance of effect would not change as a result of the July 2020 Amendments.

4.277. The likely effects of the completed Development on views and visual amenity would change as a result of the July 2020 Amendments. Likely effects on viewpoint locations 1, 2, 8, 9 and 12 are considered to be in accordance with those presented in the 2018 ES and therefore the significance of effect will not change and remain as per the 2018 ES (as amended). Receptors at viewpoints 3, 4, 5, 6, 7, 10 and 11 would experience different magnitudes of change to those reported in the 2018 ES (as amended). The likely effects of the completed Development on these viewpoints are detailed within **Table 4.31**. Refer also to **Figures 16.6-16.18: Viewpoint photographs 1-12.**

Table 4.31: Likely Effects of the Completed Development on Views and Visual Amenity.

Viewpoint No. and Visual Receptor	Description of Effect	Magnitude of Impact (reported in the 2018 ES)	Revised Magnitude of Change (as of July 2020 ES Addendum)	Significance of Effect (reported in the 2018 ES)	Revised Significance of Effect (as of July 2020 ES Addendum)
3: Pedestrians and road users on Chiswick Bridge (south). Medium sensitivity.	Views towards the completed Development would show upper parts of buildings within the Site protruding above the existing built form. The tallest buildings and structures on the Stag Brewery component of the Site would be removed from the baseline view. The Stag Brewery component of the Site would remain largely obscured by intervening mature trees and buildings in the vicinity of Thames Bank. Buildings located within the western extent of the Site would become noticeable above existing residential properties in the foreground of the view. Changes as a result of the Development would be perceivable during the summer and winter months from this location.	Negligible.	Minor	Insignificant.	Long-term, local, beneficial effect of minor significance.
4: Pedestrians and road users on Chiswick Bridge (north). Medium sensitivity.	The Development would be conspicuous due to the height and mass of new built form against the skyline. The Development would comprise a substantial proportion of the wide view and would dominate the skyline. Changes in western parts of the Stag Brewery component of the Site would be similar in scale to the built form of the modern brewery buildings visible in the baseline of this view. The Development within eastern parts of the Stag Brewery component of the Site would be more prominent than the 2018 Development, and the materials and façade detailing (including rhythm of	Moderate.	Major.	Long-term, local, beneficial effect of moderate significance.	Long-term, local, beneficial effect of major significance.

Viewpoint No. and Visual Receptor	Description of Effect	Magnitude of Impact (reported in the 2018 ES)	Revised Magnitude of Change (as of July 2020 ES Addendum)	Significance of Effect (reported in the 2018 ES)	Revised Significance of Effect (as of July 2020 ES Addendum)
	fenestration) of new buildings would be complimentary to the retained Maltings building, assisting with the integration of the Development within the view. The removal of the tall stack would be of benefit to visual amenity. Detracting elements of utilitarian aesthetic in the baseline view, chiefly the large industrial structures, would be replaced by new built form of aesthetic value and materials sympathetic to the historical aspects of the Stag Brewery component of the Site, so providing a perception of visual unity within the view by picking up on elements of local distinctiveness. The Maltings building and vegetation alongside the Stag Brewery component of the Site's northern boundary would have limited screening effect.				
5: Recreational users of the National Trail. High sensitivity.	New buildings within north eastern parts of the Stag Brewery component of the Site would be evident, especially in winter, and would constitute a notable change to the view given the prominence on the skyline.	Minor.	Moderate	Long-term, local, beneficial effect of moderate significance.	Long-term, local, beneficial effect of major significance.
5: Road users on Dan Mason Drive. Low sensitivity.	The materials and façade detailing of new buildings would be sympathetic and complimentary to the retained Maltings building and boundary walls, assisting with the integration of the Development within the view. However, the considerably large scale of the Development would be prominent in this view. The river	Minor.	Minor.	Long-term, local, beneficial effect of minor significance.	Long-term, local, beneficial effect of minor significance.

Viewpoint No. and Visual Receptor	Description of Effect	Magnitude of Impact (reported in the 2018 ES)	Revised Magnitude of Change (as of July 2020 ES Addendum)	Significance of Effect (reported in the 2018 ES)	Revised Significance of Effect (as of July 2020 ES Addendum)
	frontage at this point is noted in the Mortlake Village Planning Guidance SPD as being reflective of the area's industrial aesthetic where large contrasts in scale are evident, yet a shared utilitarian conformity exists through the use of brickwork and detailing, and the amended Development would be entirely in keeping with this. The removal of the tall stack would be of further benefit to visual amenity. Existing trees located between the new buildings and properties on Thames Bank would partially screen views of the Development and assist with its integration in the view. For road users on Dan Mason Drive, views towards the completed Development would be in transit and oblique to the direction of travel.				
6: Recreational users of the National Trail. High sensitivity.	Once the Development is completed, industrial buildings and structures on the Stag Brewery component of the Site, including the tall stack, would no longer be present. New buildings along the riverside frontage in the north east of the Stag Brewery component of the Site would appear in the view from this location and would constitute a highly noticeable change. The materials and façade detailing of new buildings would be sympathetic and complimentary to the retained Maltings building and boundary walls,	Minor.	Moderate	Long-term, local, beneficial effect of moderate significance.	Long-term, local, beneficial effect of major significance.
6: Road users on Dan Mason Drive. Low sensitivity.		Minor.	Minor.	Long-term, local, beneficial effect of minor significance.	Long-term, local, beneficial effect of minor significance.

Viewpoint No. and Visual Receptor	Description of Effect	Magnitude of Impact (reported in the 2018 ES)	Revised Magnitude of Change (as of July 2020 ES Addendum)	Significance of Effect (reported in the 2018 ES)	Revised Significance of Effect (as of July 2020 ES Addendum)
	assisting with the integration of the Development within the view. However, the considerably large scale of the Development would be prominent, with proposed built form protruding above the existing skyline and tree line. The river frontage at this point is noted in the Mortlake Village Planning Guidance SPD as being reflective of the area's industrial aesthetic where large contrasts in scale are evident, yet a shared utilitarian conformity exists through the use of brickwork and detailing, and the Development would be entirely in keeping with this. The Development within western parts of the Site would not be visible. For road users on Dan Mason Drive, views towards the completed Development would be in transit and perpendicular to the direction of travel.				
7: Recreational users of the Thames Path National Trail High sensitivity.	Once the Development is completed, industrial buildings and structures on the Stag Brewery component of the Site, including the tall stack, would no longer be present. New buildings along the riverside frontage in the north east of the Stag Brewery component of the Site would be evident in a localised part of the view as a mid-distant focal point at the bend in the river. While the materials and façade detailing of new buildings would be sympathetic and complimentary to the retained Maltings building, the overall size and scale of the new built form would	Minor.	Moderate	Long-term, local, beneficial effect of moderate significance.	Long-term, local, beneficial effect of major significance.
7: Customers of The White Hart Public House. Medium sensitivity.		Minor.	Moderate	Long-term, local, beneficial effect of minor significance.	Long-term, local, beneficial effect of moderate significance.

Viewpoint No. and Visual Receptor	Description of Effect	Magnitude of Impact (reported in the 2018 ES)	Revised Magnitude of Change (as of July 2020 ES Addendum)	Significance of Effect (reported in the 2018 ES)	Revised Significance of Effect (as of July 2020 ES Addendum)
	protrude above the established skyline and tree line. Development within western parts of the Stag Brewery component of the Site would not be visible.				
10: Recreational users of Mortlake Green. High sensitivity.	The completed Development would form the backdrop to views from this location and create a new, higher skyline horizon for parts of the view. Parts of the Development would be visible through a gap in the tree line, which would become a prominent feature in the centre of this view. The retention of the former hotel building would assist in integrating the Development as a whole within the view and would screen eastern parts of the Development. New built form would be of materials and aesthetic sympathetic to the former hotel building further aiding their integration. The retention of intervening mature trees and other vegetation at the periphery of Mortlake Green, including at the location of the new pedestrian crossing over Lower Richmond Road (A3003), would substantially screen views towards the Stag Brewery component of the Site, especially during summer. Removal of the tall stack would be particularly conspicuous given its extreme prominence in the view and, in combination with the removal of other large-scale structures of industrial aesthetic, would be of benefit to visual amenity. On completion, highways improvement works at the	Minor.	Moderate.	Long-term, local, beneficial effect of moderate significance.	Long-term, local, beneficial effect of major significance.

Viewpoint No. and Visual Receptor	Description of Effect	Magnitude of Impact (reported in the 2018 ES)	Revised Magnitude of Change (as of July 2020 ES Addendum)	Significance of Effect (reported in the 2018 ES)	Revised Significance of Effect (as of July 2020 ES Addendum)
	mini roundabout junction of Sheen Lane and Mortlake High Street / Lower Richmond Road (A3003) would be a barely perceptible change.				
11. Road users on road bridge over railway, South Circular Road. Low sensitivity.	Visibility of the completed Development would be limited to the upper parts of new buildings on the Stag Brewery component of the Site. The intervening trees and rooftops would substantially screen views, including during winter. The visual change between the large-scale industrial structures of the baseline view and the completed Development would be discernible in the backdrop of this view. The removal of the tall stack would be evident. New built form would protrude above the established skyline in the background of the view. For road users on South Circular Road, views towards the completed Development within the Stag Brewery component of the Site would be in transit and generally perpendicular to the direction of travelling.	Negligible.	Minor.	Insignificant.	Long-term, local, beneficial effects of minor significance.

Mitigation Measures and Likely Residual Effects

The Works

4.278. There are no material changes to the mitigation measures of the Development. The appraisal of mitigation in relation to the Works is considered to be as per the 2018 ES (as amended).

Completed Development

4.279. Effects of the completed Development on townscape character following the July 2020 Amendments are considered to be in accordance with the 2018 ES (as amended).

4.280. As per the 2018 ES (as amended), the majority of local views would experience either **insignificant** or **long term**, **local** effects, ranging from **minor** to **moderate beneficial** significance depending on angle, range and context of view. In contrast to the 2018 ES (as amended), receptors at viewpoint 4 and users of the National Trail at viewpoints 5, 6 and 7 would experience **permanent changes** of **major beneficial significance**. This is due to the introduction of high quality buildings of considerable scale along the river frontage which results in a major beneficial change within these views.

Conclusion

4.281. This ES Addendum has assessed the likely significant effects of the Development on townscape character and views as a result of the July 2020 Amendments. The key changes to the Development include an increase in height, which has potential to affect both visual appearance of the Development and its effect on the surrounding townscape.

4.282. Overall, the baseline conditions remain in accordance with the 2018 ES (as amended). Relevant policies from the LBRuT Local Plan, which was adopted after the initial submission of the 2018 ES, have been reported. Townscape character baseline conditions are considered to be as per the 2018 ES. While Boat Race House, which is visible from viewpoints 4, 5, 6 and 7, has been refurbished since the 2018 ES submission, its altered architecture has no effect on the integrity of the baseline views.

4.283. As a result of the July 2020 Amendments, there would be changes to the likely effects of the Development. The potential effects on townscape character surrounding the Site during the Works and at completion would remain in accordance with the 2018 ES (as amended). Likely effects on views during the Works and at completion would differ from the 2018 ES at viewpoint location 3. Viewpoint 3 would experience **temporary, local, adverse residual effects of minor significance** during the Works. At completion, likely residual effects on the majority of the viewpoints would coincide with the 2018 ES (as amended). However, in contrast to the 2018 ES (as amended), all receptors at viewpoint 4 users of the National Trail at viewpoints 5, 6 and 7 and all receptors at viewpoint 10 would experience **permanent, local, beneficial residual effects of major significance.**

4.284. While likely significance effects on the surrounding townscape of the Site would remain in accordance with the 2018 ES (as amended), the Development would have more considerable impact on views due to its increase in height from previous proposals. From certain locations it

would dominate the skyline and have permanent beneficial effects on the visual amenity of the Site. However, the overall permanent changes to the surrounding views are considered to be of beneficial significance.

Wind Microclimate

Introduction

4.285. This review has been prepared by RWDI, who prepared the original wind microclimate Chapter, reported in the 2018 ES (as amended).

4.286. In order to assess whether the July 2020 Amendments (in particular the change to height, building reconfigurations and landscaping) would give rise to any different likely significant wind effects or a change in the magnitude of the residual effects reported in the 2018 ES (as amended), a further quantitative assessment of the Development was undertaken (refer to **Appendix R** for the technical wind report). This was undertaken using the same methodology as the 2018 ES (as amended) via wind tunnel testing. It should be noted that the wind tunnel test assessed amendments to the Development in November 2019; further amendments were made in July 2020, however on review these amendments were minor, and based on the professional opinion of RWDI it was not considered necessary to undertake a further wind tunnel test, and that a qualitative review of these amendments would be undertaken instead. There are no changes to the Works as a result of the July 2020 Amendments that would give rise to any changes to the assessment of the Works presented in the 2018 ES Chapter (as amended) and this therefore remains the same. This review considers wind microclimate of the completed and operational Development only.

Assessment

4.287. The conclusions of the 2018 ES (as amended) indicated that the majority of the Development would be suitable for their intended use. Two tentative uses, depending on the ultimate use of the areas in question, gave rise to the requirements for mitigation measures. These were:

- At the west façade of Building 16 (location 40) this should this be used as an entrance; and
- Wind conditions at balconies associated with Buildings 6, 9, and 12 (locations 259, 264, 265 and 268) should any fixed seating be intended for these spaces.

4.288. The 2018 ES (as amended) assessment was conducted on a model devoid of any landscaping, however the assessment indicates that the inclusion of planting and other landscape enhancements would generally be expected to increase shelter within the Development particularly when the trees and plants are established and in full leaf.

4.289. The methodology for the wind tunnel test of the Development remains as stated in the 2018 ES (as amended) and use of the Lawson Criteria has also been used for this assessment. However, since the 2018 ES (as amended) was prepared, there has been a change in the methodology for the assessment of balcony locations, an approach now commonly used as best practice within the industry. Balcony locations are considered suitable for the intended use if wind conditions are suitable for standing use or calmer during the summer season. As these areas are private amenity spaces with no designated seating, the tenant can use the space as they wish and opt to sit in the area if whether permits. Therefore, in comparison to the 2018 ES (as amended), slightly windier

conditions would be considered acceptable at balcony locations.

4.290. The wind tunnel model was reconstructed, and the measurement locations were updated to the revised design of the Development. The surrounding buildings remain as tested in the 2018 ES.

4.291. As there have been no changes to the surrounding buildings and the existing Site, the baseline wind assessment remains as discussed in the 2018 ES (Configuration 1 of the 2018 ES).

4.292. The Development for this assessment was tested devoid of any landscaping (Configuration 1), as also tested in the 2018 ES, as well as with proposed landscaping (Configuration 2).

The Development with Existing Surrounding Buildings and No Landscaping (Configuration 1)

4.293. The wind conditions for the Development with existing surrounding buildings and no landscaping (Configuration 1) are shown in **Appendix R** Figures 1 and 2 for the windiest season and **Appendix R** Figures 3 to 4 for the summer season.

Off-Site Locations

4.294. The wind conditions in the Thames was also assessed and wind conditions would be calm, as stated in the 2018 ES, suitable for sitting use to standing use during the windiest season.

Thoroughfares

4.295. Within the detailed component of Application A (to the east of Ship Lane), wind conditions would range from suitable for sitting use to strolling use during the windiest season. This is the same as the residual effect reported in the 2018 ES (as amended), which range from **insignificant** to **long-term, local, beneficial effect** of **moderate** significance. As such, no mitigation would be required at these locations.

4.296. Within the outline component of the Application A (to the west of Ship Lane), all thoroughfare locations would be suitable for sitting use to strolling use (as the residual effects reported in the 2018 ES), representing an **insignificant** to **long-term, local, beneficial effect** of **moderate** significance.

Entrances

4.297. Entrances within the detailed component of Application A (to the east of Ship Lane) would be suitable for sitting use to standing use during the windiest season. This is as the residual effects reported in the 2018 ES, and these wind conditions would represent an **insignificant** to **long-term, local, beneficial effect** of **minor** significance.

4.298. As was the case for the 2018 ES, in relation to the outline component of Application A, the location of building entrances is not currently known. This is because the outline component does not seek approval for building appearance, layout and so forth. This detail would be sought via future reserved matters applications. However, it is reasonable to assume that building entrances would be located at various ground floor locations around the buildings, where the majority of wind conditions would be suitable for standing use or calmer during the windiest season. The only exception to this would be on the western facing elevation of Building 16, which with outline massing would have strolling use wind conditions (one category windier than required for entrance use). Therefore, it is advised that entrances are avoided along this façade or recessed at the

detailed design stage of Building 16. However, as mentioned above, wind conditions at outline buildings will be re-assessed for the reserved matters applications and mitigation measures developed if required.

Ground Level Amenity

4.299. Ground level outdoor seating areas would generally suitable for sitting use during the summer season. However, the following seating locations would have standing use wind conditions during the summer season (Figure 3):

- The seating to the west of Building 07 (locations 169 and 170); and
- The seating near the north-west corner of Building 06 (location 201).

4.300. It should be noted that seating is not located at location 159 (near the north east corner of Building 02) as part of the embedded mitigation inherent in the Development.

4.301. The wind conditions at these locations would represent a **long-term, local, adverse effect of minor** significance. This is different from the residual effect reported in the 2018 ES (as amended), as seating areas were not identified in this assessment and therefore mitigation would be required (discussed further in respect of Configuration 2).

4.302. All other ground level amenity spaces; such as the general amenity spaces between Building 3 and 2, Buildings 2 and 7, Buildings 7 and 8, and the outdoor seating to the east and south of Building 4, all have wind conditions suitable for the intended use ranging from suitable for sitting use to standing use during the summer season. These wind conditions would represent an **insignificant effect** as reported in the 2018 ES (as amended).

Above Ground Amenity

4.303. All above ground amenity areas within the detailed component of Application A (to the east of Ship Lane) are suitable for the intended use, as wind conditions would range from suitable for sitting use to standing use. These wind conditions would represent an **insignificant effect**, which is different to the 2018 ES where several Buildings 6, 9 and 12 were noted to require mitigation. However, due to the change of the methodology for the assessment of balcony suitability explained earlier in this section these wind conditions are considered tolerable for their intended use.

4.304. It should be noted that the southern roof area of the school (location 356) would have standing use wind conditions during the summer season, which is suitable for general amenity or a play space area should no designated seating be provided.

4.305. Outline building roof locations would have wind conditions suitable for standing use (locations 294, 296, 297, 301, 302, 304 and 306), and sitting use (locations 293, 295, 298 to 300, 303, 305, 307, 336, 337 and 339) during the summer season. These wind conditions would be suitable for general amenity use, representing an **insignificant effect**. However, if seating is intended at the rooftop locations suitable for standing use during the summer, mitigation measures would be required, and these wind conditions would represent a **long-term, local, adverse effect** of **minor** significance. These wind conditions will be reassessed at the detailed design phase as part of subsequent Reserved Matters Applications, and mitigation measures will be developed if required.

Safety

4.306. There are no instances of strong winds exceeding 15m/s for more than 0.025% of the time (approximately 2 hours per year) at any measurement locations within the Development and in the nearby surrounding area. This is consistent with the conclusions reported in the 2018 ES (as amended).

4.307. It should be noted that the balcony/terrace location 282 would have suitable wind conditions only with the solid balustrade as shown in the current design. Without this balustrade, or with a railing balustrade, unsafe wind conditions would occur. Therefore, the balustrade at this location form part of the embedded mitigation inherent in the Development.

The Development with Existing Surrounding Buildings and Proposed Landscaping (Configuration 2)

4.308. The wind conditions for the Development with existing surrounding buildings and proposed landscaping (Configuration 2) are shown in Appendix Figures 5 and 6 for the windiest season and Appendix Figures 7 and 8 for the summer season.

4.309. The wind conditions in the context of the proposed landscaping was not tested in the 2018 ES, and therefore a direct comparison cannot be made.

4.310. With landscaping in situ, wind conditions are generally improved from the 2018 ES assessment, and several locations which would be windier than required in Configuration 1 would be mitigated:

- The seating to the west of Building 07 (locations 169 and 170); and
- The seating near the north-west corner of Building 06 (location 201).

Thoroughfares

4.311. Within the detailed component of Application, A (to the east of Ship Lane), wind conditions would range from suitable for sitting use to strolling use during the windiest season, as for Configuration 1 and the 2018 ES. Effects range from **insignificant** to **long-term, local, beneficial** effect of **moderate** significance. No mitigation would be required at these locations.

4.312. All outline Site thoroughfare locations would be suitable for sitting use to strolling use (as the residual effects reported in the 2018 ES (as amended), representing an **insignificant** to **long-term, local, beneficial effect of moderate** significance.

Entrances

4.313. Entrances at the detailed Site would be suitable for sitting use to standing use during the windiest season. This is as for Configuration 1 and the 2018 ES. Therefore, these wind conditions would represent an **insignificant** to **long-term, local, beneficial effect of minor** significance.

Ground Level Amenity

4.314. Ground level outdoor seating areas would be suitable for sitting use during the summer season, and many of the windier than required locations identified in Configuration 1 would be mitigated. These amenity spaces would have wind conditions representing an **insignificant** effect.

4.315. All other ground level amenity spaces; such as the general amenity spaces between Building 3 and

2, Buildings 2 and 7, Buildings 7 and 8, and the outdoor seating near the north east corner of Building 02 and to the east and south of Building 4, all have wind conditions suitable for the intended use ranging from suitable for sitting use to standing use during the summer season. These wind conditions would represent an **insignificant effect** as the residual effects reported in the 2018 ES (as amended).

Above Ground Amenity

4.316. As for Configuration 1, the above ground amenity areas of the detailed component of Application A (to the east of Ship Lane) are all suitable for the intended use, as wind conditions would range from suitable for sitting use to standing use. These wind conditions would represent an **insignificant** effect.

4.317. Also, as for Configuration 1, the outline component of Application A (to the west of Ship Lane) with outline building roof locations would have wind conditions suitable for standing use or sitting use during the summer season. These wind conditions would be suitable for general amenity use, representing an **insignificant** effect.

4.318. If seating is intended to be provided at the rooftop locations suitable for standing use during the summer season (probe locations 294, 296, 297, 301, 302, 304 and 306) further mitigation measures would be required for general amenity use, and in the absence of these the wind conditions would represent a **long-term, local, minor adverse** effect. It is anticipated that these wind conditions will be reassessed at the detailed design phase as part of a Reserved Matters Application, and mitigation measures will be developed if required.

Safety

4.319. There are no instances of strong winds exceeding 15m/s for more than 0.025% of the time (approximately 2 hours per year) at any measurement locations within the Development and in the nearby surrounding area. This is consistent with the conclusions reported in the 2018 ES (as amended).

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4.320. The reduction in height associated with Building 2 on the northern part nearest to the Maltings building (Building 4), occurs in an area where wind conditions were at worst suitable for strolling use (at the south-eastern corner) during the windiest season (Figure 17.5 of the 2018 ES: Pedestrian Wind Comfort Conditions – Ground Floor, Configuration 2, Windiest Season). The reduction in height is not expected to materially change the wind conditions. As such, these design modifications do not alter the conclusions of the 2018 ES (as amended).

4.321. The increase in height of Building 3 by 1 floor to a total of 7 storeys occurs in an area where wind conditions would be at worst suitable for standing use during the windiest season (Figure 17.5 of the 2018 ES: Pedestrian Wind Comfort Conditions – Ground Floor, Configuration 2, Windiest Season), and the increase in height is likely have no material change of wind conditions. It is therefore expected that conditions would be appropriate for the intended pedestrian uses and as such, these changes do not alter the conclusions of the 2018 ES (as amended).

4.322. Designated seating and additional entrances introduced to Building 4 (the Maltings) will not alter

the conclusions of the 2018 ES (as amended), as wind conditions at the seating area and entrance locations would both be, at worst, suitable for sitting use and as such would be suitable for a seating area and entrance locations.

4.323. The introduction of an entrance to the east of Building 5, occurs in an area where conditions, at worst, would be suitable for standing use in the absence of any landscaping features in the 2018 ES. It is therefore expected that wind conditions would remain suitable for the intended use despite changes to the surrounding landscaping features at this location and would therefore not alter the conclusions of the 2018 ES (as amended).

4.324. The changes in ground floor plan to Building 6 would not have a material impact on the wind conditions that, at worst, would be suitable for standing use during the windiest season. The locations of the entrances and seating area would remain suitable for the intended use and would, therefore, not alter the conclusion of the 2018 ES (as amended).

4.325. The reduction in height by 1 floor to Buildings 18 and 19 with the introduction of a central gap to the northern facing part of Building 18 will occur in area at worst would be suitable for strolling use during the windiest season. The reduction in height of the two buildings is likely to have a no material change of wind conditions. The gap introduced in Building 18 will not influence the microclimate at this location and the conclusions of the 2018 ES (as amended) would remain valid.

4.326. Building 20 which was considered as a row of townhouses in the original assessment of 2018 ES, has been converted to two 4 storeys high building blocks numbered as Buildings 20 and 21 as shown in planning drawing *18125_C645_MP_P_00_001_C*. The wind conditions to the south of the townhouses were at worst suitable for standing use during the windiest season (Figure 17.5 of the 2018 ES: Pedestrian Wind Comfort Conditions – Ground Floor, Configuration 2, Windiest Season). Splitting the building geometry into two blocks is not expected to have a material impact on the wind microclimate at his location and therefore this modification will not alter the conclusion of the 2018 ES and 2019 ES addendum.

Conclusion

4.327. The 2018 ES concluded that notwithstanding two areas of tentative use, the Development was expected to be suitable for the desired uses in place.

4.328. The May 2019 ES Addendum concluded that the design amendments would not alter the findings of the 2018 ES.

4.329. The findings of the wind tunnel assessment and the July 2020 qualitative assessment of the updated design of the Development were generally as for the 2018 ES (as amended). It is shown that with the landscaping in situ wind conditions would be suitable for the intended use throughout the detailed Site, resulting in an **insignificant** likely residual effect.

4.330. It is noted that for the outline components of the Development, wind conditions may now require mitigation during the detailed design stage to consider potential seating areas at roof level. However, this assessment would be provided in support of any forthcoming Reserved Matters Application.

Daylight, Sunlight, Overshadowing and Light Pollution

Introduction

4.331. eb7 prepared the original daylight, sunlight, overshadowing and light pollution Chapter reported in the 2018 ES (as amended). Based on the scale of the July 2020 Amendments eb7 have reassessed the Development and prepared an updated Chapter which supersedes the 2018 ES Chapter and the May 2019 ES Addendum. The update of Chapter 18: Daylight, Sunlight, Overshadowing and Light Pollution and associated appendices are presented in **Appendix S and T** respectively.

4.332. The following presents a summary of the changes to the assessment presented in the 2018 ES (as amended).

Assessment

4.333. The methodology on which the updated assessment has been undertaken and reported in the new ES Chapter has not changed since the 2018 ES was prepared. Reference to the British Standard (BS) 8206 Part 2[31], which related to internal daylight only, has been removed from the chapter as this document has been superseded and is not relevant for the ES chapter. There are no changes to policy which affect the outcomes of the assessments presented.

4.334. The baseline was reviewed, and changes noted in respect of the:

- Baseline Vertical Sky Component (VSC) for Boat Race House, Parliament Mews, 2-6 Williams Lane, Aynescombe Cottage and the Jolly Gardeners Public House;
- Baseline No Sky Line (NSL) for Boat Race House, Parliament Mews, and the Jolly Gardeners Public House; and
- Baseline Annual Probable Sunlight Hours (APSH) for Parliament Mews.

4.335. These changes have been made as minor discrepancies in the original model / summary tables have been corrected. In the case of Boat Race House, 2-6 Williams Lane and Jolly Gardeners Public House, additional information was obtained relating to the internal layouts including information on the use of rooms allowing the assessment to remove non-habitable space.

4.336. There are no changes to the demolition phase of the Works as a result of the July 2020 Amendments that would give rise to any changes to the assessment of the Works presented in the 2018 ES Chapter (as amended) and this therefore remains the same. For construction of the proposed buildings as part of the Works, these would gradually become those of the completed Development. A summary of the changes between the 2018 ES (as amended) and as reported in the updated ES Chapter (as amended) are presented within the following section.

4.337. The completed Development, accounting for the July 2020 Amendments, gives rise to the following changes in the residual effects when compared to the 2018 ES (as amended):

- Daylight to Surrounding Receptors – 3-9 Richmond Road, Parliament Mews, Thames Bank Cottage, Thames Bank House and Old Stable which previously saw insignificant effects now see minor adverse effects. 31 Vineyard Path and Reid Court now see minor to moderate adverse effects. There are no other changes to residual effects stated in the 2018 ES (as amended).
- Sunlight to Surrounding Receptors - Aynescombe Cottage now sees minor adverse effects.

[31] British Standard BS 8206-2:2008. Lighting for buildings. Code of Practice for Daylighting.

There are no other changes to residual effects stated in the 2018 ES (as amended).

- Overshadowing (surrounding amenity spaces) - There are no changes to residual effects stated in the 2018 ES (as amended).
- Light Pollution - There are no changes to residual effects stated in the 2018 ES (as amended).

Conclusion

4.338. There are no material changes in the methodology used to assess the Development for daylight, sunlight, overshadowing and light pollution. Similarly, there are no material changes to the existing baseline conditions, with the exception minor amends due to additional information regarding layouts.

4.339. There are minor changes to the residual effects and the conclusions of the 2018 ES (as amended). These have been limited to moderate adverse for daylight through considered design with the exception of Boat Race House which sees a moderate to major adverse effect. Aynescombe Cottage also now sees minor adverse effects for sunlight. The effects on Boat Race House were included in the May 2019 ES Addendum and residual effects have not increased since that time.

4.340. Overall there are no changes to the residual effects for overshadowing to surrounding amenity areas (remains as insignificant) and light pollution (remains as insignificant).

5. Cumulative Effects

5.1. As indicated previously, there are no proposed changes to the activities which would be undertaken as part of the Works, as a result of the July 2020 Amendments.

5.2. With the exception of the townscape and visual assessment in relation to viewpoint 3 as previously described the assessments remain as reported in the 2018 ES (as amended) and, therefore, so do the in-combination cumulative effects as reported in Chapter 19: Cumulative Effects of the 2018 ES. However, given its temporary nature, the type of receptors it may potentially affect and that it a single viewpoint, the change in magnitude of the residual effect to viewpoint 3 (and therefore) is not considered to change the overall conclusions of the Type 1 cumulative effects assessment set out in the 2018 ES (as amended).

5.3. With respect to the combined effects arising from the Development together with other reasonably foreseeable schemes, as reported in the 2018 ES there are no applications at the time of submission of the 2018 Planning Applications before the LRBuT, or with extant permissions in place, within 1 km of the proposed Development that would give rise to significant environmental effects owing to their proximity, nature, scale and / or location within areas. Therefore, cumulative effects arising from the completed and operational Development (with the July 2020 Amendments) and any such permissions are not considered further within this ES Addendum.

6. Conclusion and Summary of Residual Effects

6.1. A replacement ES Chapter 20: Mitigation Measures and Residual Effects has been prepared by Waterman IE to account for the July 2020 Amendments and is included in **Appendix U**.

APPENDICES

A. ES Addendum Figures

Figure 1.2	Planning Application Boundaries
Figure 1.3	Chalkers Corner s278 Works
Figure 5.1	Location of Proposed Buildings within the Site
Figure 6.1	Key Activities Associated with the Works
Figure 9.1	Noise Monitoring Locations
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Figure 16.18	Viewpoint 12 Existing and Proposed View from Lower Richmond Road Adjacent to Mortlake Green

Selection of Planning Drawings referenced in this ES Addendum

B. Replacement ES Appendix 6.1: Phasing Plans

C. Replacement ES Chapter 7 Socio Economics

D. Replacement ES Chapter 7 Socio Economics Appendices

E. Transport Assessment Addendum

F. Replacement ES Noise & Vibration Appendices

G. Highways Options Note Noise Analysis

H. Replacement ES Chapter 10 Air Quality

I. Replacement ES Air Quality Appendices

J. Replacement ES Appendix 11.1: Preliminary Environmental Risk Assessment

K. Replacement ES Appendix 12.1 Flood Risk Assessment

L. Replacement ES Appendix 12.2 Drainage Strategy

M. River Wall Liaison Summary Note

N. Replacement ES Appendix 13.1 Preliminary Ecological Appraisal

O. Replacement ES Appendix 13.2 Protected Species Report

P. Replacement ES Appendix 14.1 Archaeological Desk Based Assessment

Q. Built Heritage Supplementary Photographs

R. Replacement ES Appendix 17.1 Pedestrian Level Wind Microclimate Assessment

S. Replacement Chapter 18: Daylight, Sunlight, Overshadowing and Light Pollution

T. Replacement ES Chapter 18 Daylight, Sunlight, Overshadowing and Light Pollution Appendices

18.1 Drawings of the Baseline Condition and Development Scenario
18.2 Detailed Results of Daylight (VSC, NSC and ADF) and Sunlight (APSH) Analysis
18.3 Results of the Overshadowing (Sunlight Amenity) Analysis
18.4 Transient Overshadowing Images
18.5 Light Pollution

U. Replacement ES Chapter 20: Summary of Mitigation Measures and Likely Residual Effects

UK and Ireland Office Locations