20. Summary of Mitigation Measures and Likely Residual Effects

20.1. This replacement Chapter (which supersedes the 2018 ES Chapter) presents a summary of the mitigation measures and likely residual effects of the Development. Likely residual effects are defined as those effects that remain following the implementation of mitigation measures. Mitigation measures relate to both the Works and the completed and operational Development, which are discussed in full in the relevant technical chapters of the 2018 ES (as amended).

20.2. This EIA has been undertaken in parallel with the design process. Hence, many measures have already been incorporated into the design to eliminate adverse environmental effects. These include, for example, design evolution of the building form and massing, and inherent detailed mitigation for the Development in relation to flood risk and drainage strategies, ventilation design, and landscaping principles.

20.3. A Site-wide Construction Environmental Management Plan (CEMP) would be prepared and approved by the Greater London Authority (GLA) prior to the commencement of the Works (refer to **Chapter 6: Development Programme, Demolition, Alteration, Refurbishment and Construction** of the 2018 ES (as amended) for further details)). This document would include mitigation measures to address all relevant environmental issues to the Works including (but not limited to) construction traffic, dust, noise and vibration, waste management, protection of heritage assets and ecology, hours of working and neighbour liaison.

20.4. A summary of likely residual effects arising, following the implementation of mitigation measures is provided in **Table 20.1**.

Table 20.1: Summary of Mitigation Measures and Likely Residual Effects

Issue	Mitigation Measures	Likely Residual Effect
Socio-Economics		
The Works		
Loss of 35,402m^2 GIA of employment floorspace.	No mitigation required – employment floorspace and employment generating uses being provided as part of the Development.	**Insignificant**.
Generation of an average of up to 1,367 FTEs per annum over 7 years.	Section106 Agreement to target local employment during Site preparation and construction.	**Short-medium term**, **beneficial**, **district** to **regional** and of **minor significance**.
Completed Development		
Population and Labour Market.	No mitigation required.	**Long-term**, **local beneficial** and of **moderate significance**. **Long-term**, **district**, **beneficial** and of **minor significance**.
Provision of housing contributing to LBRuT targets.	No mitigation required.	**Long-term**, **local**, **beneficial** and of **major significance**. **Long-term**, **district**, **beneficial** and of **minor significance**.
Generation of employment as a result of the Development and expenditure of the new resident population.	No mitigation required.	**Long-term**, **local**, **beneficial** and of **moderate 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.	No mitigation.	**Long-term**, **local**, **adverse** and of **moderate significance**. **Long-term**, **district**, **adverse** and of **minor significance**.

Issue	Mitigation Measures	Likely Residual Effect
An additional population primary school aged children and demand for primary school places.	No mitigation.	**Long-term**, **local**, **adverse** and of **minor significance**. **Long-term**, **district**, **adverse** and of **minor significance**.
The additional demand for secondary school places arising from the Development would be accommodated by proposed Secondary School and existing surpluses.	No mitigation required - Secondary school provided as part of the Development.	**Insignificant**.
Additional demand by the new population of the Development for primary health care.	Section 106 / Community Infrastructure Levy receipts to mitigate.	**Insignificant**.
Provision of 10,365m^2 of children's play space and a total of 4.37 ha of public and private amenity space on Site as part of the Development to accommodate additional demand.	No mitigation required – Provision of children's play space and amenity space provided as part of the Development.	**Direct**, **long-term**, **beneficial** at **local** to **district** and of **minor significance**.
Provision of a school (with shared sports facilities via a Community Use Agreement), cinema, and an area for flexible community uses which could include a community boathouse, together with up to private amenity space, public amenity space and Public Community Park.	No mitigation required – community facilities and inclusion of Community Use Agreement as part of the Development.	**Direct**, **long-term**, **beneficial**, **local** and of **minor significance**. **Insignificant** at the **district** level.
The Development would seek to design out crime features and would animate and activate the Site.	No mitigation required.	**Direct**, **long-term**, **beneficial**, **local** and of **minor significance**. **Insignificant** at the **district** level.
Transport and Access		
The Works		
Severance	Not required	**Insignificant**
Driver Delay	Not required	**Insignificant**
Pedestrian Delay	Not required	**Insignificant**
Pedestrian and Cycle Amenity	Not required	**Insignificant**

Issue	Mitigation Measures	Likely Residual Effect
Fear and Intimidation	Not required	**Insignificant**
Accidents and Road Safety	Not required	**Insignificant**
Completed Development		
Severance	Not required	**Insignificant**
Driver Delay	Traffic calming measures along Lower Richmond Road and Mortlake High Street to improve conditions for pedestrians and cyclists at the cost of driver delay effects. However, signal timings at the Chalkers Corner junction could be adjusted post Development implementation to ease driver delay especially along the Lower Richmond Road arm.	<u>AM Peak Hour:</u> Chalkers Corner -Sheen Lane/South Circular Road junction: **moderate adverse** (EB) Chalkers Corner – White Hart Lane / The Terrace roundabout: **insignificant** to **minor adverse** (EB), **insignificant** to **minor beneficial** (WB) <u>PM Peak Hour:</u> Chalkers Corner – White Hart Lane/The Terrace roundabout: **insignificant** to **minor adverse** (EB)
Pedestrian Delay	Not required	**Insignificant**
Pedestrian Amenity	Not required	**Insignificant**
Cycle Amenity	Re-configuration of Williams Lane, resulting in an improved cycle environment	**Insignificant**
Fear and Intimidation	Not required	**Insignificant**
Accidents and Road Safety	Not required	**Insignificant**
Noise and Vibration		
The Works		
Temporary increase in noise levels from work activities affecting receptors close to the Site.	Implementation of a CEMP.	**Insignificant** to **Temporary, short-term, local residual effect** of **minor** to **moderate adverse**.

Issue	Mitigation Measures	Likely Residual Effect
Vibration generated during sheet piling operations affecting receptors close to the Site.		**Insignificant** to **temporary, short-term, local adverse** effects of **minor significance**.
Vibration effects on building structures and underground utilities (assuming CFA or rotary bored piling techniques).	None required.	**Insignificant**.
Increase in heavy plant movements on strategic roads.	None required, however a Construction Traffic Management Plan would also be implemented.	**Insignificant**.
Completed Development		
Noise from fixed plant and building services.	Inherent mitigation would allow plant and building services noise to meet the required plant noise limit of LBRuT.	**Insignificant**.
Noise from non-residential land-uses.	Control through planning conditions and implementation of Delivery and Servicing Plan.	**Insignificant**.
Noise from changes in road traffic.	None required.	**Insignificant**.
Noise from proposed school and play space.	None proposed.	**Insignificant**
Air Quality		
The Works		
Dust emissions on surrounding existing receptors and early occupiers of the Development.	Implementation of CEMP and Framework Construction Management Plan.	**Insignificant**.
Exhaust emissions from construction traffic on surrounding existing receptors and early occupiers of the Development.	None required, a Construction Traffic Management Plan would also be implemented.	**Insignificant**.
Emissions from construction plant on surrounding existing receptors and early occupiers of the Development.	None required, all construction plant would meet the Emissions Standard set out in the London Plan.	**Insignificant**.
Completed Development		
Traffic related exhaust emissions on existing sensitive locations surrounding the Site and future residential and school users of the Development.	None required, refer to Table 10.16 of Chapter 10: Air Quality for list of inherent air quality mitigation measures.	**Insignificant**.

Issue	Mitigation Measures	Likely Residual Effect
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**.
Introduction of future residential and school uses to the Site.		**Insignificant**.
Ground Conditions and Contamination		
The Works		
Effects to the human health of construction workers from ground contamination and dust.	Implementation of a CEMP to manage the Works to effectively minimise contamination risks.	**Insignificant**.
Effects to the human health of the public surrounding the Site, and early occupants of the Development from dust.		**Insignificant**.
Installation of piles associated with the buildings of the Development, creating a pollutant pathway to the Secondary A Aquifer beneath the Site.		**Insignificant**.
Installation of piles associated with the river wall, creating a pollutant pathway to the River Thames.		**Insignificant**.
Removal of existing areas of hardstanding, thereby increasing the permeable cover of the Site, allowing for increased rainwater / surface water infiltration to the ground, underlying Secondary A Aquifer and River Thames.		**Insignificant**.
Removal of existing areas of hardstanding, thereby increasing the permeable cover of the Site, allowing for increased rainwater / surface water infiltration to the ground, underlying Principal Aquifer.		**Insignificant**.
Introduction of potential contaminants on the Site which could increase the risk of leakages and spillages to the ground (Secondary A Aquifer) and the River Thames.		**Insignificant**.
Effects to ecological receptors on and off the Site from ground contamination and dust.		**Insignificant**.

Issue	Mitigation Measures	Likely Residual Effect
Effects associated with UXO.	Undertaking of a detailed desk-based UXO assessment to identify and classify the actual on-Site risk posed by UXO and appropriate mitigation measures.	**Insignificant**.
Completed Development		
Effects to the human health of occupants, users and visitors of the Development from ground gas within buildings and hard-landscaped areas.	Further ground and geotechnical investigation to inform an appropriate Remediation Strategy for the Site, as required, thereby ensuring the Site is suitable for its intended end use and does not pose any significant contamination risk to human health and the environment. This may include the implementation of ground gas and vapour mitigation measures and the likely use of imported clean and inert soils within areas of proposed soft-landscaping.	**Insignificant**.
Effects to the human health of occupants, users and visitors of the Development from ground contamination within soft-landscaped areas.		**Insignificant**.
Effects to controlled waters (including the River Thames) from ground contamination.		**Long-term**, **local**, **beneficial** and of **minor significance**.
Effects to buildings structures and services from ground contamination.		**Insignificant**.
Effects to ecological receptors on the Site from ground contamination.		**Insignificant**.
Effects to ecological receptors off-Site, including those associated with the River Thames.		**Insignificant** to **long-term**, **local**, **beneficial** and of **minor significance**.
Surface Water Drainage and Flood Risk		
The Works		
Groundwater flood risk from excavation works of eastern basement.	Dewatering of excavation activities.	**Insignificant**.
Surface water (pluvial) flood risk.	Implementation of CEMP to ensure appropriate adequate drainage and to manage surface water run-off.	**Insignificant**.
Access to the river wall.	None required.	**Insignificant.**
Tidal flood risk during remodelling of the river wall.	None required, to be undertaken through an Environmental Permit.	**Insignificant**.

Issue	Mitigation Measures	Likely Residual Effect
Foul water infrastructure capacity.	None required.	**Insignificant**.
Increase in potable water demand.	Implementation of CEMP to include measures to monitor and reduce water consumption.	**Insignificant**.
Existing drainage infrastructure.	Implementation of CEMP to ensure existing drainage is protected and appropriate piling methods are used to minimise vibration.	**Insignificant**.
Completed Development		
Tidal flood risk to future occupants of the Development.	A self-activating flood barrier would be required for the entrance to the eastern basement car park from Mortlake High Street. Flood proof doors and / or demountable barriers would be required for access from the Community Boathouse (Building B09) to the river foreshore.	**Insignificant**.
Tidal flood risk to off-Site receptors.	None required.	**Long-term**, **local**, **beneficial effect** of **minor significance**.
Surface water (pluvial) flood risk.	None required, maintenance programme to be implemented to ensure beneficial effects are maintained.	**Long-term**, **local**, **beneficial** and of **minor significance**.
Flood risk from sewers surcharging	None required.	**Insignificant**.
Groundwater flood risk.	None required.	**Insignificant**.
Access to the river wall.	None required.	**Insignificant**.
Change in tidal flood risk from upgrading the tidal defences (river wall).	A flood proof gate would be required at some point in the future at Ship Lane to account for future flood levels through an appropriately worded planning condition.	**Long-term**, **local**, **beneficial** and of **moderate significance**.
Change in foul water drainage capacity.	None required.	**Insignificant**.
Change in potable water demand.	None required.	**Insignificant**.

Issue	Mitigation Measures	Likely Residual Effect
Ecology		
The Works		
Direct effects on the River Thames and Tidal Tributaries SINC.	None required.	**Insignificant**.
Indirect effects on the River Thames and Tidal Tributaries SINC from dust, noise, vibration, surface water run-off and lighting.	Implementation of a CEMP to include measures to minimise dust, noise, vibration, surface water run-off and lighting.	**Insignificant**.
Direct effects on commuting and foraging bats.	None required.	**Insignificant**.
Indirect effects on commuting and foraging bats from noise and lighting.	Implementation of a CEMP to include measures to minimise noise and lighting.	**Insignificant**.
Direct effects on roosting bats.	Submission and approval of BLICL from Natural England.	**Permanent, long-term, local, adverse effect** of **minor significance**.
Indirect effects on roosting bats.	Implementation of a CEMP to include measures to minimise noise, dust arising, vibration and lighting.	**Insignificant**.
Completed Development		
Direct effects on the River Thames and Tidal Tributaries SINC.	None required.	**Insignificant**.
Indirect effects on the River Thames and Tidal Tributaries SINC from public disturbance.	None required.	**Insignificant**.
Indirect effects on the River Thames and Tidal Tributaries SINC from lighting.	None required.	**Insignificant**.
Indirect effects on the River Thames and Tidal Tributaries SINC from overshadowing.	None required.	**Insignificant**.
Indirect effects on the River Thames and Tidal Tributaries SINC from pollution.	None required.	**Long-term**, **local**, **beneficial effect** of **minor significance**.
Direct effects on commuting and foraging bats.	Implementation of a Landscape and Environment Management Plan (LEMP).	**Long-term**, **local**, **beneficial effect** of **minor significance**.

Issue	Mitigation Measures	Likely Residual Effect
Indirect effects on commuting and foraging bats from lighting.	None required.	**Insignificant**.
Direct effects on roosting bats.	Provision of bat boxes incorporated within the Development.	**Permanent, long-term, local, beneficial effect** of **minor significance**.
Indirect effects on roosting bats from lighting.	None required (sensitive lighting scheme is inherent to scheme design).	**Insignificant**.
Archaeology		
The Works		
Archaeological remains of national importance (medieval and post-medieval remains).	Implementation of a phased archaeological evaluation programme, following demolition and Site clearance, moving across the Site behind the demolition. Implementation of further excavation work dependent upon the results of the evaluation recommended above.	**Insignificant**.
Archaeological remains from the pre-historic, Roman and Anglo-Saxon periods.		**Insignificant**.
Archaeological remains likely to have been previously truncated by existing development i.e. the Stag Brewery.		**Insignificant**.
Built Heritage		
The Works		
Demolition of historic fabric within the Stag Brewery component of the Site.	Undertaking of a programme of archaeological building recording prior to commencement of the Works.	**Insignificant** to **direct**, **permanent**, **local**, **adverse** effects of **minor significance**.
Retention in-situ of the railway tracks, paving and moorings within the Stag Brewery component of the Site.	Not applicable.	**Insignificant**.
Indirect effects upon the setting of heritage assets within and surrounding the Stag Brewery component of the Site arising from the demolition of existing modern brewery buildings and structures within the Stag Brewery component of the Site.	Not applicable.	**Insignificant** to **indirect**, **permanent**, **local**, **beneficial** effects of **minor** to **moderate significance**.
Indirect effects upon the setting of heritage assets within and surrounding the Stag Brewery component of the Site arising from noise, vibration, dust and traffic associated with the Works.	Implementation of CEMP to limit and appropriately manage noise, vibration, dust and construction traffic associated with the Works.	**Insignificant**.

Issue	Mitigation Measures	Likely Residual Effect
	Implementation of appropriate easements around heritage assets to be retained during the demolition and slab removal works required to facilitate the Development.	
Completed Development		
Conversion of the Maltings building and a new building behind the retained façades of the former Hotel building and former Bottling Building.	Inclusion of scheme of interpretation about the Site	**Insignificant** to **direct**, **long-term**, **local**, **beneficial** effect of **minor significance**.
Retention and improvement to the setting of the railway tracks, paving and moorings.	Not applicable.	**Direct**, **long-term**, **local beneficial** effect of **minor significance**.
Retention of part of the boundary wall.	Not applicable.	**Insignificant**.
Retention and relocation of memorials.	Not applicable.	**Insignificant**.
Retention and relocation of historic gates.	Not applicable.	**Insignificant**.
Change of setting of the heritage assets within and surrounding the Stag Brewery component of the Site.	Not applicable.	**Insignificant** to **indirect**, **long-term**, **adverse** effects of **minor significance**.
Townscape and Visual		
The Works		
Townscape Character	Good Site management, maintenance and housekeeping, and careful siting of construction machinery would be implemented, including the use of Site hoardings and maintaining a clean, safe, pedestrian environment.	**Temporary**, **short** to **medium term**, **local** effects of **major adverse** significance would result to TCA7: Stag Brewery (within the Stag Brewery component of the Site). Surrounding TCAs would experience **temporary**, **short** to **medium term**, **local**, **minor to moderate adverse** effects in the vicinity of the Site and within the Chalkers Corner component of the Site.
Visual Amenity		Local views would experience **temporary**, **short** to **medium term**, **local** effects, ranging from **minor** to **major adverse**

Issue	Mitigation Measures	Likely Residual Effect
		significance depending on the angle and distance of view.
Completed Development		
Townscape Character	Mitigation measures are inherent within the Development design, including the Landscape Strategy which provides enhanced riverside landscape with trees and indigenous plants and public squares with variety and colour.	**Long-term**, **local** effects of **moderate**, **beneficial** significance would result to TCA1: Mortlake (within the Stag Brewery component of the Site). **Long-term**, **local** effects of **major**, **beneficial** significance would result to TCA7: Stag Brewery (within the Stag Brewery component of the Site). Effects on surrounding TCAs would be **insignificant** to **long-term**, **local** and **minor beneficial** significance in the vicinity of the Site and within the Chalkers Corner component of the Site.
Visual Amenity		The majority of local views would experience **long term**, **local** effects, ranging from **minor** to **major beneficial** significance depending on angle, range and context of view. Road users on Thames Bank at Viewpoint location 2 would experience effects of **minor adverse** significance, however this would be temporarily in transit. Recreational users of the Thames Path National Trail at Viewpoint location 2 would experience **long-term**, l**ocal effects** of **moderate adverse** significance.

Issue	Mitigation Measures	Likely Residual Effect
Wind Microclimate		
The Works		
Wind conditions experienced by construction Site workers.	None required.	**Insignificant**.
Completed Development		
Thoroughfares.	None required.	**Insignificant** to **long-term**, **local**, **beneficial** and of **moderate significance**.
Entrances to buildings (with the exception of a possible building entrance location at the west facing façade of Building 16 (Location 40).	None required.	**Insignificant** to **long-term**, **local**, **beneficial** and of **minor significance**.
Ground level amenity areas.	None required, with proposed landscaping in place.	**Insignificant**. Without proposed landscaping: **Long-term, local, adverse effect of minor** significance (seating areas at locations 169 and 170 west of Building 7 and location 201 near the north-west corner of Building 6). These effects would become **Insignificant** with the proposed landscaping in place.
Above ground amenity areas .	None required. Wind conditions at the outline building roof locations will be reassessed at the detailed design phase as part of subsequent Reserved Matters Applications, and mitigation measures will be developed if required.	**Insignificant**. **Long-term, local, adverse effect** of **minor** significance if seating is intended at the outline rooftop locations 294, 296, 297, 301, 302, 304 and 306.
Off-Site Receptors (including Mortlake Green, the tow path and within the River Thames).	None required.	**Insignificant**.
Wind conditions at the potential building entrance on the west facing façade of Plot 16 (Location 40).	Reserved matters application to either: • exclude a building entrance at this location; or	**Insignificant** (provided inclusion of the suggested mitigation measures).

Issue	Mitigation Measures	Likely Residual Effect
	• recess the building entrance. Further wind testing would need to be verified through further wind tunnel testing at the reserved matters stage.	
Daylight, Sunlight, Overshadowing and Light Pollution		
The Works		
Demolition of existing buildings on-Site.		
Daylight, sunlight and overshadowing to surrounding receptors.	None required.	**Local**, **short to medium-term** and of **minor** to **moderate beneficial**.
Light Pollution	None required.	**Insignificant**.
Construction of proposed buildings		
Daylight to surrounding receptors	Not applicable.	**Insignificant**. **Local**, **long-term**, **adverse** and of **minor significance** (Butler House, 3-9 Richmond Road, Parliament Mews, Thames Bank Cottage, Aynescombe Cottage, Old Stable and Thames Bank House). **Local**, **long-term**, **adverse** and of **minor** to **moderate significance** (Rann House, 31 Vineyard Path, 2 to 6 Williams Lane, Reid Court, Churchill Court and Jolly Gardeners). **Local**, **long-term**, **adverse** and of **moderate to major significance** (Boat Race House).
Sunlight to surrounding receptors.	None required.	**Insignificant**. **Local**, **long-term**, **adverse** and of **minor significance** (Aynescombe Cottage and Boat Race House).
Overshadowing (Surrounding amenity areas).	None required.	**Insignificant**.

Issue	Mitigation Measures	Likely Residual Effect
Light Pollution.	None required.	**Insignificant**.
Completed Development		
Daylight to surrounding receptors	Not applicable.	**Insignificant**. **Local**, **long-term**, **adverse** and of **minor significance** (Butler House, 3-9 Richmond Road, Parliament Mews, Thames Bank Cottage, Aynescombe Cottage, Old Stable and Thames Bank House). **Local**, **long-term**, **adverse** and of **minor** to **moderate significance** (Rann House, 31 Vineyard Path, 2 to 6 Williams Lane, Reid Court, Churchill Court, and Jolly Gardeners). **Local**, **long-term**, **adverse** and of **moderate to major significance** (Boat Race House).
Sunlight to surrounding receptors	None required.	**Insignificant**. **Local**, **long-term**, **adverse** and of **minor significance** (Aynescombe Cottage and Boat Race House).
Overshadowing (surrounding amenity areas).	None required.	**Insignificant**.
Light Pollution.	None required.	**Insignificant**.