Heathrow

EASTERLY ALTERNATION INFRASTRUCTURE PROJECT

Environmental Impact Assessment
Environmental Statement, Volume III
Appendix 7.5: Air Noise

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October 2024

Heathrow

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1. Introduction

1.1 Overview

1.1.1 This appendix supports the aircraft 'air' noise assessment presented in **Chapter 7: Noise and Vibration, Volume II** of the Environmental Statement.

1.1.2 The Proposed Development is described in detail in **Chapter 3: Description of the Proposed Development, Volume II** of the Environmental Statement and in summary comprises ground-based infrastructure (such as new taxiways) required to allow regular and scheduled departures on the northern runway in an easterly direction.

1.1.3 This appendix provides:

- Information regarding the aircraft air noise modelling methodology any corresponding assumptions and limitations (**Section 2**);
- Further consideration of changes in the redistribution of aircraft noise events and the provision of aircraft noise respite due to the Proposed Development (**Section 3** to **Section 4**);
- The findings of sensitivities testing considering alternation exposure response functions and modal splits (**Section 7**);
- The evidence based relied on for the assessment noise aircraft noise on amenity for parks and open spaces (**Section 8**); and
- Aircraft noise results tables provided in **Section 9** of this Appendix as a series of tables for a range of aircraft noise metrics and their corresponding figures as available in **Volume IV** of the Environmental Statement.

2. Air Noise Modelling Methodology

2.1 Noise Modelling Software

2.1.1 All air noise exposure data presented in this Environmental Statement has been generated by the UK Civil Aviation Authority (CAA) Environmental Research and Consultancy Department (ERCD) using the latest version of the UK civil aircraft noise model ANCON (version 2.4) software.

2.1.2 ANCON is developed and maintained by ERCD on behalf of the Department for Transport (DfT)[1].

2.1.3 ANCON is fully compliant with European guidance on noise modelling[2] which represents internationally agreed best practice as implemented in model aircraft noise models.

2.1.4 All noise models considering scenarios with and without the Proposed Development have been prepared collaboratively with Noise Consultants Limited who are part of the Logika Group.

2.1.5 **Section 2.2** describes the inputs to the ANCON noise model. These inputs and the standard of the noise modelling conforms with Category A standards as described in CAA publication CAP2091[3]. Modelling of aircraft noise at Heathrow Airport to the Category A standard is a requirement under CAP2091 due to the airport's designation for noise purposes by the Secretary of State under Section 78 of the Civil Aviation Act 1982.

2.2 Modelled Noise Metrics

2.2.1 The ANCON model has been used to generate noise metrics. These are summarised in **Table A7.5.1**.

Table A7.5.1 Modelled Noise Metrics

Metric	Description
$L_{Aeq,16hr}$	The L_{Aeq} for daytime noise measured between 7am-11pm measured over a 92-day summer period from 16 June to 15 September inclusive.
$L_{Aeq,8hr}$	The L_{Aeq} for nighttime noise measured between 11pm-7am measured over a 92-day summer period from 16 June to 15 September inclusive.
N65	The number of aircraft events above 65 dB L_{ASmax} measured between 07:00 and 23:00hrs, measured over the 92-day summer period from 16 June to 15 September inclusive. For assessment purposes this metric has been prepared using a 'standard' modal split of 79% West / 21% East.

[1] A full technical description of the ANCON model can be found in *The UK Civil Aircraft Noise Contour Model ANCON*: Improvements in Version 2, R&D Report 9842, June 1999.
[2] European Civil Aviation Conference, Report on Standard Method of Computing Noise Contours around Civil Airports, ECAC.CEAC Doc 29, Fourth edition, December 2016
[3] Civil Aviation Authority (CAA), CAP2091, CAA Policy on Minimum Standards for Noise Modelling (2021).

Metric	Description
N60	The number of aircraft events above 60 dB L_{ASmax} measured between 23:00 and 07:00hrs, measured over the 92-day summer period from 16 June to 15 September inclusive. For assessment purposes this metric has been prepared using a 'standard' modal split of 76% West / 24% East.
$L_{Aeq,16hr}$ (busy day)	This metric has been used to describe daytime noise levels during a busy easterly or westerly 16-hour day (07:00-23:00). In the case of a busy easterly day, this metric has been used to help describe how noise levels would change during periods of easterly winds due to the Proposed Development.
N65 (busy day)	This metric has been used to describe the number of aircraft events above 65 dB L_{ASmax} during a busy easterly or westerly day (07:00-23:00). In the case of a busy easterly day, this metric has been used to help describe how aircraft noise events would be redistributed during periods of easterly winds due to the Proposed Development.
$L_{Aeq,8hr}$ (alternation period)	The L_{Aeq} for the alternation period under consideration. This metric therefore reports continuous equivalent noise levels for either morning (07:00-15:00hrs) or evening (15:00-23:00hrs) alternation periods respectively. This metric has been used to help describe noise during each mode of operation and to support the assessment of respite provision having regard to relevant publications, namely CAP2250.
N65, 8hr (alternation period)	The number of aircraft events above 65 dB L_{ASmax} during the alternation period under consideration. This metric therefore reports the number of aircraft noise events above 65 dB L_{ASmax} for either morning (07:00-15:00hrs) or evening (15:00-23:00hrs) alternation periods respectively.
Average L_{ASmax}	The logarithmic average L_{ASmax} has been produced for daytime and night-time periods to help determine whether the effect of the Proposed Development has on maximum aircraft noise event levels at locations around the Airport.
L_{den}	The day-evening-night level (L_{den}) is a noise indicator for overall annoyance based upon annual average A-weighted long-term sound over 24 hours based on noise during a 12-hour day, L_{day} (07:00-19:00hrs), with a 5 dB(A) penalty for evening noise, $L_{evening}$ (19:00-23:00hrs) and a 10 dB(A) penalty for night-time noise, L_{night} (23:00-07:00hrs). This metric is calculated or forecast over an annual period in line with the Environmental Noise (England) Regulations 2006 (as amended). For the purposes of presenting this metric, the following modal splits have been applied: L_{day} – 73% West / 27% East $L_{evening}$ – 73% West / 27% East L_{night} – 72% West / 28% East
L_{night}	The night level (L_{night}) is a night-time noise indicator based upon annual average A-weighted long-term sound over the night period (23:00-07:00hrs). This metric is calculated or forecast over an annual period in line with the Environmental Noise (England) Regulations 2006 (as amended). For the purposes of presenting this metric, the following modal splits have been applied: L_{night} – 72% West / 28% East

2.3 Model Inputs

Forecast Air Traffic Movements

2.3.1 The main assessment scenario considered within the Environmental Statement is based on a 2028 'busy day' forecast schedule. The 2028 forecast schedule has been provided by Heathrow's forecasting team and contains passenger and freight traffic forecasts.

2.3.2 The 'busy day' schedule has been provided with stand times assuming punctuality. The stand times provided within the 'busy day' schedule have been adjusted to runway times using the outputs of ground simulation modelling prepared using the CAST ground movements simulation software.

2.3.3 Recognising the trends of delayed departures at the Airport during the late evening, eleven aircraft which were scheduled to depart before 23:00 in the 2028 schedule have been adjusted to depart after 23:00 i.e. during the night. These aircraft were selected due to trends observed in past seasons.

2.3.4 All aircraft have been assigned an ANCON modelling type. The ANCON modelling type represents the noise and flight performance expected for each aircraft type based on local noise and track keeping data recorded at the Airport.

2.3.5 The fleet mix by ANCON type for the 2028 'busy day' schedule and by the relevant period of the day is presented in **Table A7.5.2**. These movements include specific freight operations.

2.3.6 The Proposed Development does not affect the fleet mix presented in **Table A7.5.2**.

Table A7.5.2 2028 Fleet Mix by ANCON Modelling Type and Period

ANCON Type	ANCON Type Profile Description	12-hour daytime (07:00-19:00hrs)	4-hour evening (19:00-23:00hrs)	16-hour daytime (07:00-23:00hrs)	8-hour night (23:00-07:00hrs)
AB748	7478 Arrival	1.0	0.0	1.0	0.0
AEA320NEO	A320neo Arrival	8.0	2.0	10.2	0.0
AB744R	747400 Arrival	0.0	1.0	1.0	0.0
AEA319V	A319-131 Arrival	16.0	6.0	22.2	1.0
AEA3510	A350-1000 Arrival	24.0	1.0	25.0	7.0
AEA321V	A321-232 Arrival	8.0	6.0	15.2	0.0
AEA33NEO	A330neo-900 Arrival	10.0	1.0	11.2	2.0
AB773G	B777200ER Arrival	32.0	4.5	36.8	11.0
AB738MAX	7378MAX Arrival	5.0	3.0	8.3	0.0
AEA320V	A320-232 Arrival	257.0	96.0	350.4	3.0
AEA359	A350-941 Arrival	12.0	1.0	13.2	4.0
AEA38GP	A380 Arrival	10.0	1.0	11.2	7.0

ANCON Type	ANCON Type Profile Description	12-hour daytime (07:00-19:00hrs)	4-hour evening (19:00-23:00hrs)	16-hour daytime (07:00-23:00hrs)	8-hour night (23:00-07:00hrs)
AB736	737700 Arrival	7.0	4.0	11.2	0.0
AB772G	777200 Arrival	7.0	0.0	7.2	6.0
AB779X	777X-900 Arrival	7.0	1.0	8.2	4.0
AB7810	78710 Arrival	9.0	2.0	11.2	2.0
AEA30	A300B2-B4-C4 Arrival	0.0	2.0	2.0	0.0
AB789	7879 Arrival	23.0	2.5	25.0	6.0
AB788	7878R Arrival	50.0	5.0	54.7	7.0
AEA33	A330-200 Arrival	4.0	4.0	8.2	0.0
ALTT	ATR42 Arrival	1.0	0.0	1.3	0.0
AB738	737800 Arrival	1.0	0.0	1.3	0.0
B748	7478 Departure	0.0	1.0	1.0	0.0
EA320NEO	A320neo Departure	5.0	4.0	9.0	1.0
B744R	747400 Departure	0.0	1.0	1.0	0.0
EA319V	A319-131 Departure	11.0	4.0	14.0	0.0
EA3510	A350-1000 Departure	25.0	8.0	33.0	0.0
EA321V	A321-232 Departure	12.0	0.0	12.0	1.0
EA33NEO	A330neo-900 Departure	11.0	1.0	12.0	0.0
B773G	B777200ER Departure	35.0	11.0	46.0	1.0
B738MAX	7378MAX Departure	6.0	1.0	7.0	1.0
EA320V	A320-232 Departure	278.0	75.5	355.0	13.0
EA359	A350-941 Departure	11.0	5.0	16.0	1.0
EA38GP	A380 Departure	12.0	6.0	18.0	0.0
B736	737700 Departure	7.0	3.0	10.0	1.0
B772G	777200 Departure	9.0	3.0	12.0	1.0
B738	737800 Departure	1.0	0.0	1.0	0.0
B779X	777X-900 Departure	9.0	3.0	12.0	0.0
B7810	78710 Departure	10.0	3.0	14.0	0.0
EA30	A300B2-B4-C4 Departure	0.0	1.0	1.0	1.0
B789	7879 Departure	21.0	8.0	29.0	1.0
B788	7878R Departure	52.0	9.0	61.0	2.0
EA33	A330-200 Departure	3.0	5.0	8.0	0.0
LTT	ATR42 Departure	1.0	0.0	1.0	0.0

2.3.7 As the Airport does not operate a peak day schedule throughout the year, and as Heathrow is capped at 480,000 movements, scaling factors have been applied to the busy day schedule to better reflect movements over the 'average summer day' and an annual average day. For the 'average summer day' the busy day has been scaled to reflect summer average day. For annual average metrics, the busy day schedule has been scaled to reflect 480,000 movements over a calendar year.

Flight Profiles and Noise Data

2.3.8 The ANCON model incorporates flight profiles for each of its modelled aircraft types, based on noise and track keeping data. These profiles describe aircraft altitudes, speeds and thrust settings at distances from each runway averaged across all Heathrow's routes and are described separately for arrivals and departures for each ANCON type.

2.3.9 The flight profiles assume that all aircraft utilise reverse thrust following touchdown. This is considered a conservative assumption as reverse thrust is usually only used during wet conditions.

2.3.10 Noise emission data for each ANCON aircraft type is reviewed and updated each year according to the latest noise and track keeping data.

2.3.11 Using Heathrow's Noise and Track Keeping (NTK) system, ERCD match noise event data for individual aircraft operations against operational data provided by Heathrow. This data is then filtered by ERCD accounting for factors including:

- weather conditions;
- the level of the aircraft noise event against the threshold for the noise monitoring terminal; and
- and the elevation angle of the aircraft with respect to the noise monitoring location.

2.3.12 The ANCON model calculates aircraft noise using a noise database expressing SEL and L_{ASmax} as a function of engine power and slant distance from the aircraft to the receiver on the ground. This function is known as the 'Noise-Power-Distance' (NPD) relationship.

2.3.13 Using localised data from Heathrow's NTK, each aircraft type within the ANCON model, as indicated in **Table A7.5.2**, has its own arrival and departure profile and associated NPD.

Runway Modal Split

2.3.14 As aircraft take off and land into the wind, runway usage can vary from year to year due to the prevailing wind direction. The degree to which an airport's runways are used over a period is referred to as the runway 'modal split'.

2.3.15 The CAA recommend that noise contours and associated noise exposure data are produced based on long-term average runway use. When determining the runway modal split for preparing aircraft noise contours, CAP1616i recommends[4]:

[4] CAP1616i, Paragraph 5.8

"Where sufficient data is available this should be based on the last 20 years' runway usage. If less than 20 years' data is available, it should be based on the best available data".

2.3.16 This is commonly referred to as the 'standard' modal split; for Heathrow at least 20 years data is available in respect of the daytime period but only 10 years for the night-time period. Historical modal splits and their relevance to the primary and secondary metrics are presented in **Table A7.5.3**. For the summer average daytime period (0700-2300hrs), and the corresponding primary $L_{Aeq,16hr}$ metric, the 20-year 'standard' modal split has been calculated as 79%W/21%E. For the summer average night-time period (2300-0700hrs), and the corresponding $L_{Aeq,8hr}$ metric, the 10-year 'standard' modal split has been calculated as 76%W/24%E.

2.3.17 To consider potential variations in modal split, an 'extreme easterly' and 'extreme westerly' modal split have been considered as a sensitivity test in addition to scenarios which consider busy easterly and westerly days. The 'extreme easterly' and 'extreme westerly' modal splits are also presented in **Table A7.5.3**. **Table A7.5.3** shows that there is no obvious trend in year-to-year modal split, as an annual or summer average.

2.3.18 For informative appraisals utilising the annual average L_{den} and L_{night} metrics, annual average modal splits have been used and are presented in **Table A7.5.4**. For this sensitivity testing, annual average 'standard' modal splits of 73%W/27%E, 73%W/27%E, and 72%W/28%E for a 12-hour daytime (0700-1900hrs), 4-hour evening (1900-2300hrs), and 8-hour night (2300-0700hrs) have been adopted.

Table A7.5.3 92-day Summer Average Daytime and Night-time Modal Splits

Year	Daytime (07:00 – 23:00hrs) (Applicable to $L_{Aeq,\ 16hr}$ and N65)		Night-time (23:00 – 07:00hrs) (Applicable to $L_{Aeq,8hr}$ and N60)	
	West (%)	East (%)	West (%)	East (%)
2023	83	17	81	19
2022	68	32	68	32
2021	55	45	56	44
2020	83	17	83	17
2019	80	20	80	20
2018	78	22	80	20
2017	84	16	81	19
2016	86	14	85	15
2015	78	22	77	23
2014	68	32	66	34
2013	74	26		
2012	89	11		
2011	83	17		
2010	83	17		

Year	Daytime (07:00 – 23:00hrs) (Applicable to $L_{Aeq, 16hr}$ and N65)		Night-time (23:00 – 07:00hrs) (Applicable to $L_{Aeq,8hr}$ and N60)	
	West (%)	East (%)	West (%)	East (%)
2009	83	17		
2008	86	14		
2007	87	14		
2006	70	30		
2005	71	29		
2004	81	19		
Standard Modal Split	**79**	**21**	**76**	**24**
Extreme Easterly	**55**	**45**	**56**	**44**
Extreme Westerly	**89**	**11**	**85**	**15**

Table A7.5.4 Annual Average Modal Splits for Day, Evening and Night-time Periods for the purposes of Preparing Lden and Lnight metrics

Year	Daytime (07:00 – 19:00hrs)		Evening (19:00 – 23:00hrs)		Night (23:00 – 07:00hrs)	
	L_{day}		$L_{evening}$		L_{night}	
	West (%)	East (%)	West (%)	East (%)	West (%)	East (%)
2023	72	28	71	29	71	29
2022	72	28	71	29	73	27
2021	71	29	71	29	71	29
2020	81	19	83	17	79	21
2019	74	26	73	27	74	26
2018	65	35	65	35	64	36
2017	81	19	81	19	80	20
2016	70	30	72	28	70	30
2015	72	28	72	28	72	28
2014	69	31	70	30	69	31
Standard Modal Split	**73**	**27**	**73**	**27**	**72**	**28**

Topography

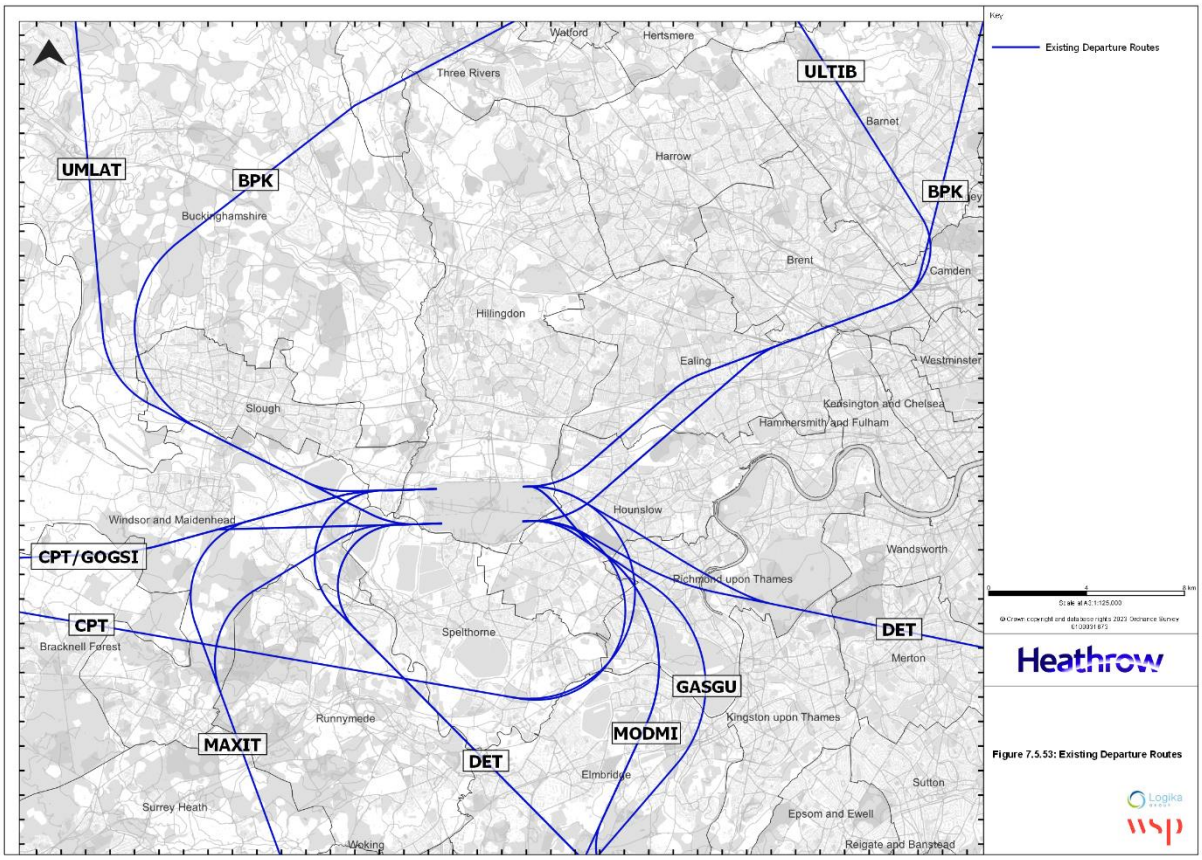
2.3.19 The topography around Heathrow has been included within the ANCON model. This has been taken from Ordnance Survey digital terrain information.

Departure Routes

2.3.20 There are six 'standard instrument departure' routes (SIDs) in use from each of Heathrow's two runway directions. The SIDs from Runways 09L and 09R ('the easterly runways') follow very similar routes, and likewise those from Runways 27L and 27R ('the westerly runways').

2.3.21 The main differences in the corresponding SIDs operating from the northern or southern runways occur within the first few miles from the runway ends before the routes converge. **Graphic A7.5.1** presents Heathrow's SIDs for its easterly and westerly departure routes respectively.

Graphic A7.5.1 Heathrow Airport Departure SIDs



2.3.22 The choice of which of the six departure routes aircraft take is a decision for airlines but can also be influenced by air traffic control (ATC) and wider situations in the enroute network. It is dictated primarily by the destination of the flight but there are several other factors that influence this choice, including international situations, weather conditions and the availability of the route.

2.3.23 The primary purpose of a SID is to ensure aircraft departing the runway remain clear of obstacles (e.g. tall buildings, radio masts, terrain) until they safely reach the enroute network.

2.3.24 SIDs can also be used to ensure aircraft are kept within the confines of Controlled Airspace, and they ensure safe separation from aircraft arriving at Heathrow and aircraft following other routes to/from adjacent aerodromes. The latter is particularly important in the London airspace.

2.3.25 For the purposes of this assessment, the use of each departure route has been based on the SIDs serving each destination in the 2028 forecast schedule in 2019. **Table A7.5.5** and **Table A7.5.6** present the corresponding SID utilisations for the main assessment periods for westerly and easterly operations respectively.

Table A7.5.5 SID Allocation – Westerly Operations

SID	BPK	DET	CPT	UMLAT	MODMI	GASGU
16-hour Daytime (07:00-23:00hrs)	137	166	83	130	115	41
8-hour night-time (23:00-07:00hrs)	5	6	0	1	6	6
12-hour daytime (07:00-19:00hrs)	94	118	73	111	91	32
4-hour evening (19:00-23:00hrs)	43	47	10	18	25	10

Table A7.5.6 SID Allocation – Easterly Operations

SID	BPK	DET	CPT	ULTIB	MAXIT	GOGSI
16-hour Daytime (07:00-23:00hrs)	137	166	83	130	115	42
8-hour night-time (23:00-07:00hrs)	5	6	0	1	6	6
12-hour daytime (07:00-19:00hrs)	94	117	73	111	92	31
4-hour evening (19:00-23:00hrs)	43	48	10	18	24	10

Modelled Departure Routes

2.3.26 All modelled departure routes in ANCON are based on mean departure tracks. The mean departure tracks used for this assessment are based on radar data for Heathrow Airport.

2.3.27 The mean departure tracks are the mathematical representation of a SID, or more specifically the swathe either side of it, usually confined within an associated noise preferential route (NPR). Further information regarding Heathrow's NPRs can be found in **Section 3.2** of **Appendix 7.8: Noise Management and Mitigation at Heathrow Airport, Volume III** of the Environmental Statement .The mean tracks consist of a central track which describes the average aircraft position along the route swathe, and lateral dispersion across the route swathe which are represented by multiple sub-tracks around the mean track. This technique describes the probability of the natural variation around each of Heathrow's SIDs.

The modelled mean departure tracks used for this assessment are presented in **Graphic A7.5.2.**

Graphic A7.5.2 Modelled Mean Departure Tracks

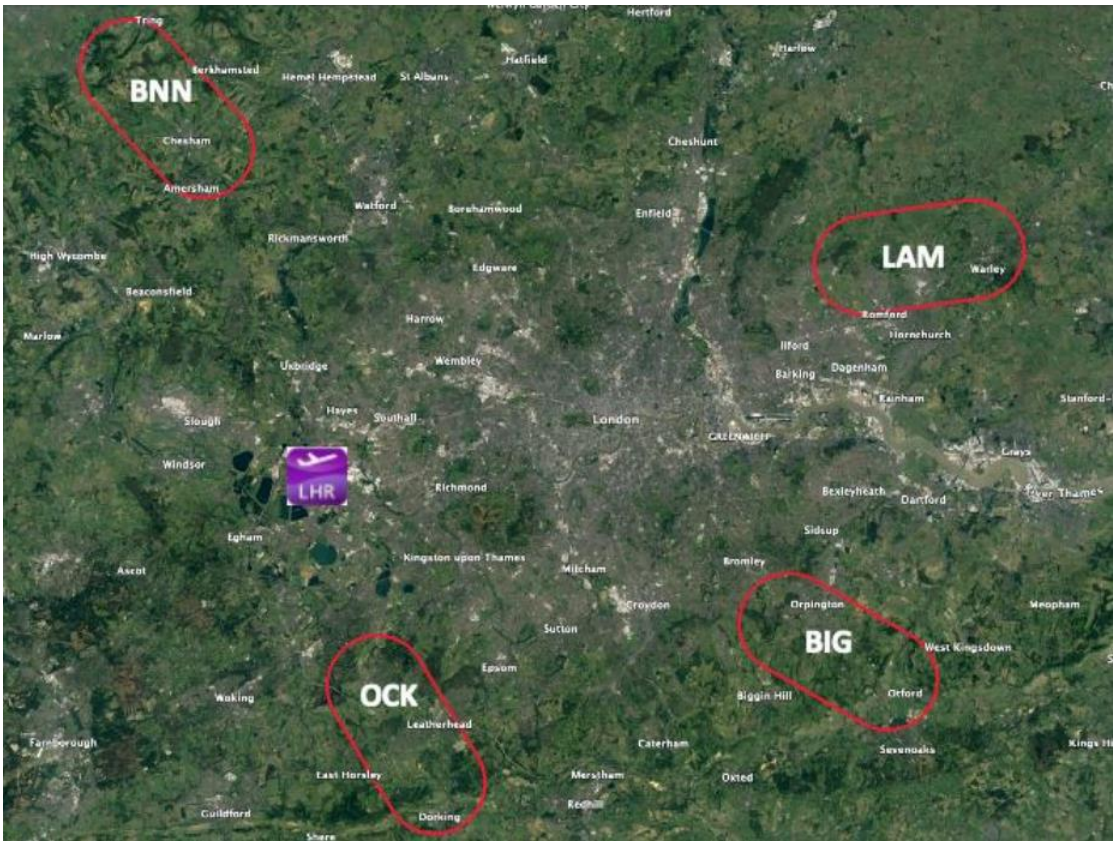
Arrivals

Holding Stacks and Arrival Vectoring Patterns

2.3.28 Due to the volume of air traffic at Heathrow Airport, arriving aircraft are frequently held in holding stacks. Aircraft usually come into a holding stack where they fly in an oval pattern to wait for a landing slot. The stacks enable air traffic control (ATC) to maintain an optimum landing sequence, thus minimising delays to arriving aircraft and their passengers during the busiest times of the day.

2.3.29 There are four holding stacks at Heathrow, known as Bovingdon (BNN), Lambourne (LAM), Ockham (OCK) and Biggin (BIG). The stacks take their names from the ground-based VOR radio navigation aids that were established in those geographic locations, which define a reference point for aircraft to follow over the ground in the stack's holding pattern. The locations of the stacks have been the same since the 1960s, see **Graphic A7.5.3** below. The holding stacks for Heathrow are not used equally with their use dependent on where aircraft originate from.

Graphic A7.5.3 Heathrow's Four Holding Stacks



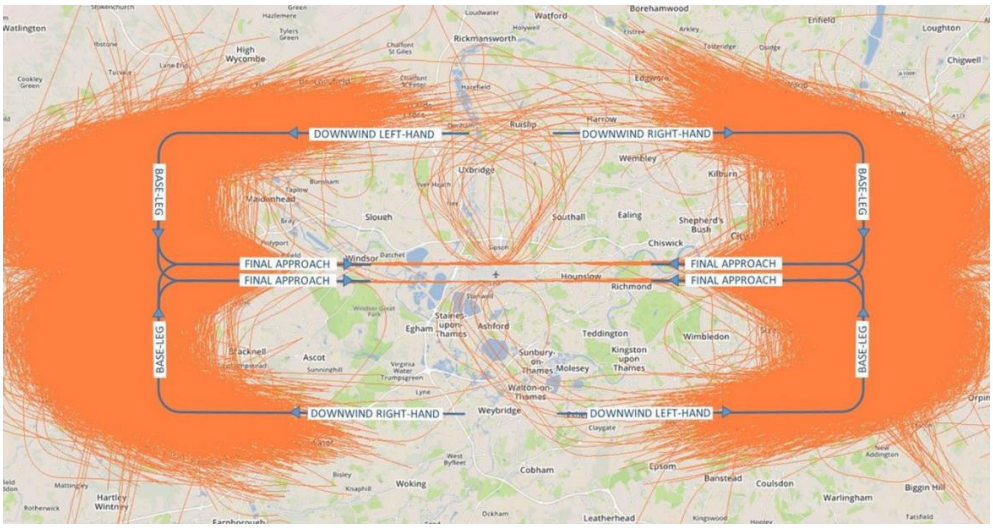
2.3.30 Aircraft circle at different levels within the stacks until there is an available gap in the arrival sequence for them to land at Heathrow. The levels are separated by 1,000 feet, and the lowest level (i.e. the bottom of the stack) is around 7,000 feet with upper levels reaching up to approximately 18,000 feet. Once they are instructed to leave holding stack, aircraft then follow a set of instructions issued by ATC. These instructions direct the aircraft onto the final approach path and safely onto one of Heathrow's four runway ends. This manual intervention by ATC is known as 'vectoring'.

2.3.31 Generally, aircraft are vectored in a direction parallel to the runway in the opposite direction for landing, then turned onto a 'base leg' and finally, are given a closing heading onto the final approach path. These arrivals do not follow prescribed routes, but instead follow a vectoring pattern determined by air traffic controllers with aircraft movements subject to 'tactical sequencing', which creates the broad swathes (6,000 feet and below) shown in **Graphic A7.5.4**.

2.3.32 Aircraft can join the final approach further out than the distances mentioned above. However, this will vary depending on how aircraft are 'tactically sequenced' or 'vectoring' by ATC to achieve optimum landing runway throughput. Tactical sequencing defines the approach taken by ATC to ensure that aircraft which join the final approach from either side of the airport are safely separated and in a manner which allows for expeditious, continuous flow of aircraft landing at the airport. This typically occurs around between 11 and 15 nm from the landing as the aircraft turn onto the final approach, extends from the runway centreline.

2.3.33 The locations of where aircraft fly as they are vectored is therefore subject to variation, therefore over time aircraft are dispersed. This is reflected in the modelled arrival tracks presented in **Graphic A7.5.6**.

Graphic A7.5.4 Arrival vectoring patterns and their naming conventions

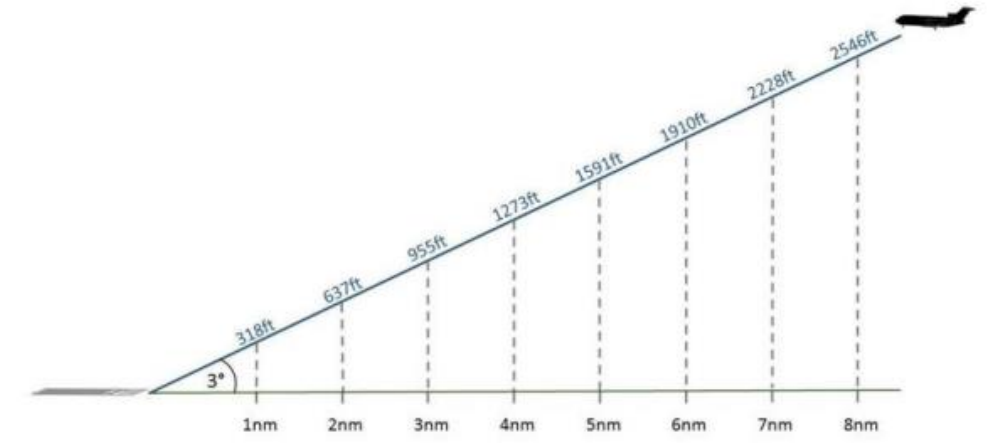


2.3.34 When aircraft leave the holding stacks, they are normally at or above 7,000 feet above ground level. During the arrival sequencing they are instructed to descend to between 3,000 and 4,000 feet until they become established on the final approach path, before completing the final segment of the descent onto the runway to land.

2.3.35 The final approach path is a straight line extended from the runway centreline. Once an aircraft is given a vector to intercept this path, the aircraft's navigation systems guide the flight crew to become established on the runway's Instrument Landing System (ILS) localiser, which ensures the aircraft is aligned correctly with the centreline of the runway.

2.3.36 The aircraft's systems then guide a descent that follows the glide path, which dictates the vertical descent profile. In combination, the localiser and glide path form the ILS which guides aircraft to land safely. The angle of the glide path for the final approach is set at 3.0° and as a result, aircraft maintain a set height according to distance from the runway, as illustrated in **Graphic A7.5.5**.

Graphic A7.5.5 Aircraft Height on a 3.0 degree approach



2.3.37 Heathrow's AIP (Aeronautical Information Publication) states that the minimum height at which aircraft can join the ILS during the day (between 06:00 and 23:00hrs) is 2,500 feet, which corresponds to approximately 7.5 nautical miles from the runway threshold. At night (between 23:00 and 06:00hrs) an aircraft must be no lower than 3,000 feet, which will be approximately 10 nautical miles from the runway.

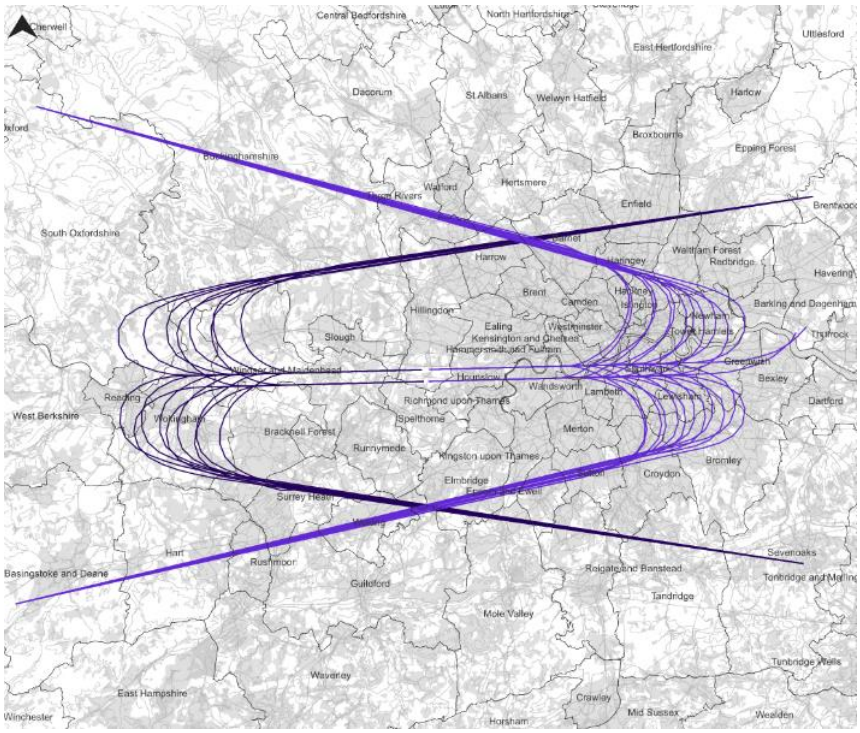
2.3.38 The ANCON model includes arrival flight profiles for each aircraft type that consider the typical altitude of aircraft on their approach to Heathrow, and on final approach.

Modelled Arrival Tracks

2.3.39 As described, the location of aircraft arriving at Heathrow is dependent on the holding stack that aircraft originate from and the way in which they are 'vectored' to the final approach by ATC. During very quiet periods aircraft can arrival directly, subject to ATC.

2.3.40 As with the departure tracks, modelled arrival tracks are based on a mathematical representation based on radar data. This considers the dispersion of the aircraft and the percentage change likelihood of aircraft originating from each stack. The modelled arrival tracks are illustrated in **Graphic A7.5.6**.

Graphic A7.5.6 Illustration of Modelled ANCON Arrival Tracks



2.4 Runway Operations

2.4.1 The air noise assessment focuses on two main scenarios, the with and without the Proposed Development in 2028. These scenarios reflect the different ways in which Heathrow would operate its runways during easterly operations with and without the Proposed Development in place:

- **Without Easterly Alternation (WoD)** i.e. without the Proposed Development in 2028 (the 'future baseline'); and
- **With Easterly Alternation (WD)** i.e. with the Proposed Development in 2028

2.4.2 The 'without Easterly Alternation' scenario describes the future baseline for runway operations at Heathrow. This mode of operation is set out below and has been in place for many years.

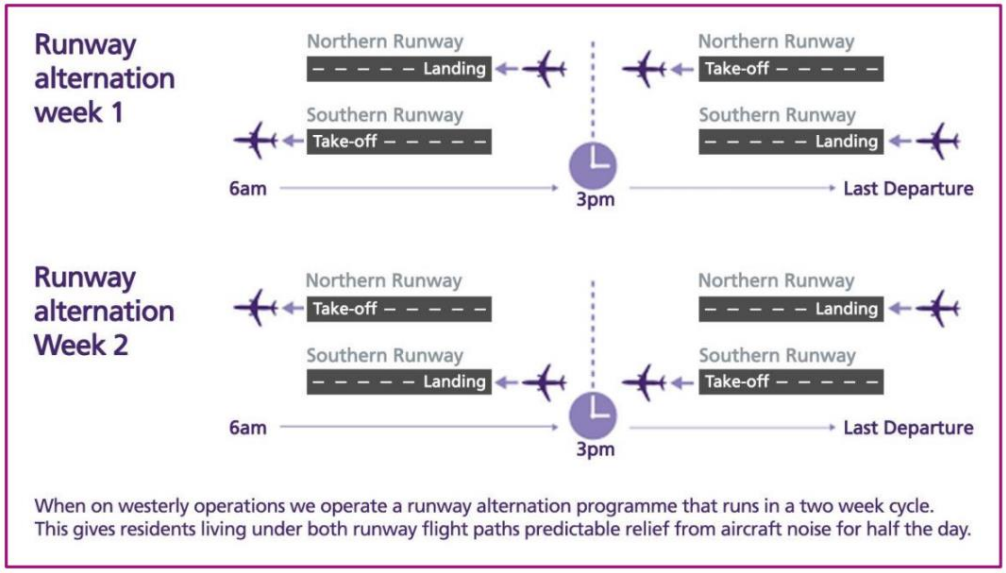
Runway Alternation

2.4.3 Heathrow's runways are typically operated in 'segregated mode' where arrivals and departures use different runways (e.g. the southern runway for departures and the northern runway for arrivals, or vice versa).

2.4.4 During the day when aircraft are landing and taking off to the west (westerly operations), Heathrow alternates the use of the two runways to provide local communities with noise respite. The alternation pattern means that for the first part of the day one runway is used for landings and the other for take-offs, then at 15:00hrs they switch over.

2.4.5 At the end of each week this arrangement is reversed, so the configuration used in the evening during the previous week is now used in the morning, and vice versa. This is so that communities experience respite from aircraft in the mornings in one week and in the evening the following week.

Graphic A7.5.7 Westerly Runway Alternation



2.4.6 In the 'without Proposed Development' scenario runway alternation during westerly operations has been modelled in line with the runway alternation pattern presented in **Graphic A7.5.7.** This scenario assumes that during easterly operations, between 06:00hrs and the last departing aircraft, that aircraft arrive onto Runway 09L (the northern runway) and take-off from Runway 09R (the southern runway).

2.4.7 In the 'with Proposed Development' scenario, runway alternation has been modelled for both westerly and easterly operations. In the case of easterly runway alternation, it has been assumed that the westerly runway alternation pattern as shown in **Graphic A7.5.7** would be replicated during easterly operations.

Tactically Enhanced Arrival Mode (TEAM) - Out of Alternation Departures and Arrivals

2.4.8 Whilst Heathrow makes every effort to adhere to the published landing runway alternation schedule there are some occasions where there may be a build-up of flights being held in the holding stacks. When this happens, the Government has set rules permitting Air Traffic Control (ATC) to land aircraft out of alternation, i.e. on the departure runway.

2.4.9 In these circumstances, both runways can be used for arrivals for a temporary period. This is called Tactically Enhanced Arrivals Mode (TEAM) and is allowed after 07:00hrs when severe inbound congestion occurs, or is anticipated to occur, involving predicted delays to arriving flights of 20 minutes or more.

2.4.10 Under these circumstances Heathrow can land up to six aircraft an hour on the runway designated for departures. These rules have been in place since the alternation system was introduced in the 1970s.

2.4.11 On easterly operations, a local ATC agreement exists which enables additional landings on the departure runway (09R). This improves airfield efficiency and reduces overall taxi times with associated fuel and CO_2 benefits.

2.4.12 For the purposes of this assessment, information relating to Heathrow's runway usage has been reviewed and an assumed level of out of alternation arrivals and departures modelled.

2.4.13 A total of 6 aircraft have been assumed as out of alternation arrivals for each 8-hour alternation period (07:00-15:00hrs and 15:00-23:00hrs), therefore 12 in total for the 16 hours day-time period. This assumption has been applied for both with and without Proposed Development scenarios.

2.4.14 A total of 3.5 aircraft have been assumed as out of alternation departures for each 8 hour period (07:00-15:00hrs and 15:00-23:00hrs), therefore 7 in total for the 16 hours day-time period.

Night-time Runway Alternation

2.4.15 Since very few aircraft take off or land at night before 06:00hrs, there is more scope for runway alternation whether Heathrow is on easterly or westerly operations. The airport can switch landings between the northern and southern runways and, if the weather allows it, bring in aircraft from the east or the west. This occurs typically between the hours of 04:30 and 06:30. That flexibility provides the ability to operate night-time runway alternation on a four-weekly cycle:

- Week 1: Aircraft fly in from the west to land on the northern runway;
- Week 2: Aircraft fly in from the east to land on the northern runway;
- Week 3: Aircraft fly in from the west to land on the southern runway, and
- Week 4: Aircraft fly in from the east to land on the southern runway.

2.4.16 Since the wind direction and strength can disrupt this pattern, Heathrow always specifies a primary and a secondary (alternative) runway in the schedule. The secondary runway is not actually a different runway but is instead the primary runway approached from the opposite direction[5].

2.4.17 The process of night-time runway alternation has been modelled as part of the night-time noise assessments. This has been informed by runway arrival statistics.

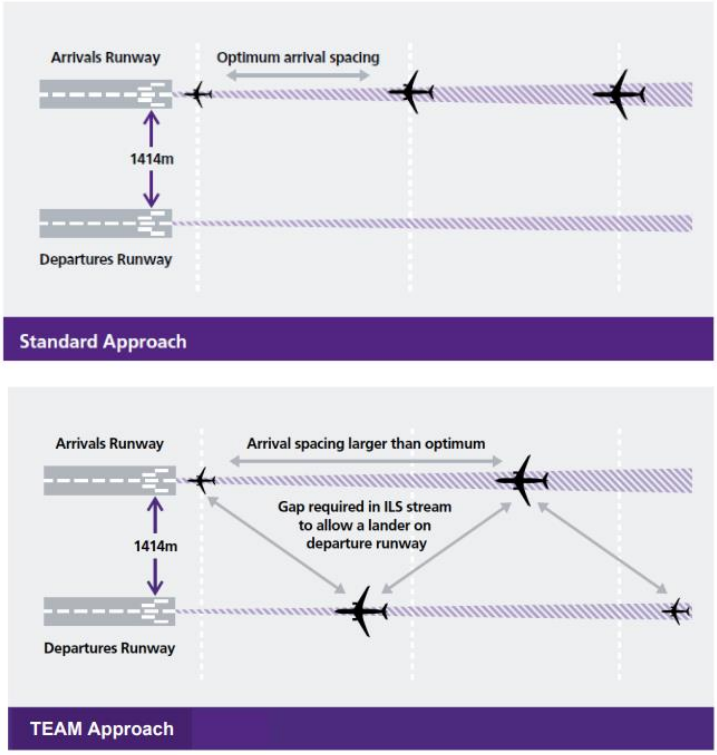
Early Morning TEAM

2.4.18 Heathrow is also able to use both runways for arrivals between 06:00 and 07:00hrs without being limited to a set number because this hour is the busiest time of day for arrivals into the airport. Landing traffic is permitted on the departure runway provided delay is, or is anticipated to be, greater than 10 minutes (06:00–06:30hrs) or 5 minutes (06:30–07:00hrs). This is often referred to as 'Early Morning TEAM'.

[5] Heathrow's published runway alternation schedule is available here: https://www.heathrow.com/company/local-community/noise/operations/runway-alternation

2.4.19 During use of Early Morning TEAM, aircraft are predominantly delivered to the runways in an alternating left/right sequence. A minimum of 2nm diagonal spacing is required between aircraft on adjacent final approach paths, however the consistent delivery of 2nm separation is highly workload-intensive for ATC and sometimes difficult to achieve. Therefore, a greater separation of 2.5–3nm is generally achieved resulting in approximately 6nm in spacing between arrivals to the same runway. This is illustrated in **Graphic A7.5.8**.

Graphic A7.5.8 Illustration of Early Morning TEAM



2.4.20 There are other occasions when unforeseen circumstances mean that arriving aircraft need to land on the departure runway. For example, this might occur if an aircraft landing on the designated arrival runway develops a problem which prevents it vacating the runway in time for the next aircraft to land. Subsequent aircraft will then need to use the other runway until the aircraft on the designated arrivals runway is able to vacate safely.

2.4.21 Based on advice by ERCD, considering historic trends in early morning arrivals and night-time runway rotation, it has been assumed that on average around 70% of all arrivals during the period 06:00 to 07:00hrs will land on the nominated arrival runway, with the remaining 30% of arrivals landing on the nominated departure runway.

3. Respite Evidence and Annoyance

3.1 Introduction

3.1.1 A key component to the Government's decision to end the Cranford Agreement was to *"extend the benefits of runway alternation to communities under the flight paths during periods of easterly winds"*[6]. The benefit of introducing runway alternation during easterly operations is to provide noise respite to communities.

3.1.2 This section provides an overview of the evidence base in relation to noise respite and describes the degree to which noise respite will be provided by the Proposed Development.

3.2 Respite Evidence-base

Heathrow Respite Working Group (RWG)

3.2.1 In October 2014, Heathrow set up a Respite Working Group (RWG) to investigate and advise on concepts for providing noise respite. The RWG has been involved in two phases of research which have been used to inform Heathrow's expansion proposals and its airspace modernisation projects.

3.2.2 In July 2023 the findings and summary of the research were communicated to Heathrow's Noise and Airspace Community Forum (NACF)[7].

3.2.3 Phase 1 of the RWG's research involved active listening tests whereby participants were asked to compare successive aircraft flyover events under laboratory conditions. From these tests the RWG established the sound level differences required for respondents to identify 'discriminable' differences between aircraft flyover events and where these differences were considered to be of 'value'. Phase 1 also took into consideration the temporal aspects of respite provision.

3.2.4 Phase 2 of the RWG's research involved a field study where interviews were conducted with respondents residing in locations exposed to at least 57 dB $L_{Aeq,\ 16hr}$ and experiencing different sound level difference between modes of operation under westerly arrivals. This field study involved a total of 461 interviews with respondents selected randomly from the study's sampling areas.

3.2.5 The main acoustic outcome from the Phase 2 research was that, between runway modes during westerly operations and in areas where average noise exposure was above 57 dB $L_{Aeq,16hr}$, respondents expressed a perceived benefit of respite. This benefit was considered 'valued' where the noise level difference between the westerly modes of operation was found to be at least 9 dB $L_{Aeq,8hr}$, and 'noticed' where between 4 and 9 dB $L_{Aeq,8hr}$. This finding

[6] https://www.gov.uk/government/speeches/heathrow-operations
[7] Anderson Acoustics, Respite from Aircraft Noise: Summary of Research Journey. Available here: https://www.heathrow.com/content/dam/heathrow/web/common/documents/company/local-community/noise/nacf/meeting-notes/2023/AA_Respite_Research_Journey_NACF_20230727.pdf (Accessed February 2024)

was considered generalisable to areas already overflown by arrivals or departures, but unlikely to be applicable to areas which would be subject to new overflights.

3.2.6 The RWG has developed definitions to help describe the concepts that sit behind respite provision. These are described in **Table A7.5.7**.

Table A7.5.7 Respite Definitions (Heathrow RWG)

Definition	Description
Respite	A break from or a reduction in noise from aircraft overhead
Predictable Respite	Scheduled respite from aircraft for a period of time
Respite Noise Change	The difference in noise level between different operational modes, most commonly measured as $L_{Aeq,T}$, for each mode of operation
Types	Changes can be classified into three bands: • $L_{Aeq,T}$ changes of greater than 9 dB being *"valued"* • $L_{Aeq,T}$ changes of 4 – 9 dB being *"noticeable"*; and • $L_{Aeq,T}$ of less than 4 dB being considered *"worth having"*
Unpredictable Respite	Unscheduled respite from aircraft noise

3.2.7 A summary of all findings from Heathrow's respite research was reported in 2023[8]. As well as presenting the research that underpins the definitions set out in **Table A7.5.7**, findings relating to the subjective perception of noise respite are also discussed. The research concludes that:

- Predictable respite is generally viewed as being of benefit and considered helpful as a mitigation measure to reduce the impacts of noise;
- Where respite is predictable and managed, as is the case through runway alternation, it is perceived as being beneficial and valued;
- Where people are informed that they experience respite, they do not want it removed; and
- People value respite in blocks of time as opposed to reducing aircraft noise exposure by dispersion of aircraft over multiple flight paths.

3.2.8 The research does recognise that newly overflown communities are likely to regard respite differently, although (in time) it may become recognised as a benefit if it is well communicated:

"If entirely new communities are to be overflown, then providing periods of respite could be viewed positively (eventually) but addressing the non-acoustic factors (understanding

[8] Anderson Acoustics (2023). *Respite from Aircraft Noise –Summary of Research Journey.* [online] Available at: https://www.heathrow.com/content/dam/heathrow/web/common/documents/company/local-community/noise/making-heathrow-quiter/respite-research/Respite_from_Aircraft_Noise_Summary_of_Research_Journey.pdf (Accessed 17 July 2024)

of scheme, communication, perception of fairness and sharing) will be absolutely critical to success."

CAP2250 – Respite Findings and Exposure Response Functions

3.2.9 CAA publication CAP2250 reports the findings of further analysis of its Survey of Noise Attitudes 2014[9] (SONA14) study. The SONA14 study was used to inform changes to Government aviation noise policy in 2017.

3.2.10 CAP2250 was prepared following a request from the Department for Transport to explore what further analysis might be carried out to extract more information from the datasets underpinning SONA14[10].

3.2.11 Chapter 4 of CAP2250 presents analysis relating to whether SONA14 participants received respite from aircraft noise events and the influence of this on aircraft noise annoyance. The further analysis focussed on respite arising from different airport operating modes and runway alternation at Heathrow Airport.

3.2.12 The CAA's analysis of respite due to runway alternation at Heathrow Airport focusses on westerly operations and changes in average L_{ASmax} and $L_{Aeq,8hr}$[11] during morning and evening alternation periods between different operating mode on Runways 27R and 27L.

3.2.13 Informed by the findings of Heathrow's RWG, the CAA produced a 'noise respite category' where the respite noise change was at least 9 dB$L_{Aeq,8h}$ between modes of operation. A sensitivity test was also carried out where respite noise changes were of 7 and 8 dB $L_{Aeq,8h}$ respectively.

3.2.14 The CAA carried out statistical analysis to identify whether aircraft noise annoyance amongst the SONA14 participants falling into the various respite categories resulted in a statistically significant change in terms of those considered to be highly annoyed.

3.2.15 Table 15 of CAP2250 summarises the results of the statistical analysis which is reproduced in **Table A7.5.8**.

Table A7.5.8 Minimum Respite Levels that were found to result in statistically significant odds of being highly annoyed as a function of $L_{Aeq,8hr}$ and L_{ASmax} respite noise exposure from SoNA14 (reproduced from Table 15, CAP2250)

$L_{Aeq,8hr}$ respite (dB)	L_{ASmax} (respite)	SoNA 2014 findings
9.0	11.3	Has a significant effect on being highly annoyed
8.0	10.2	Has a significant effect on being highly annoyed
7.0	9.0	Does not have a significant effect on being highly annoyed
6.1	8.0	Does not have a significant effect on being highly annoyed

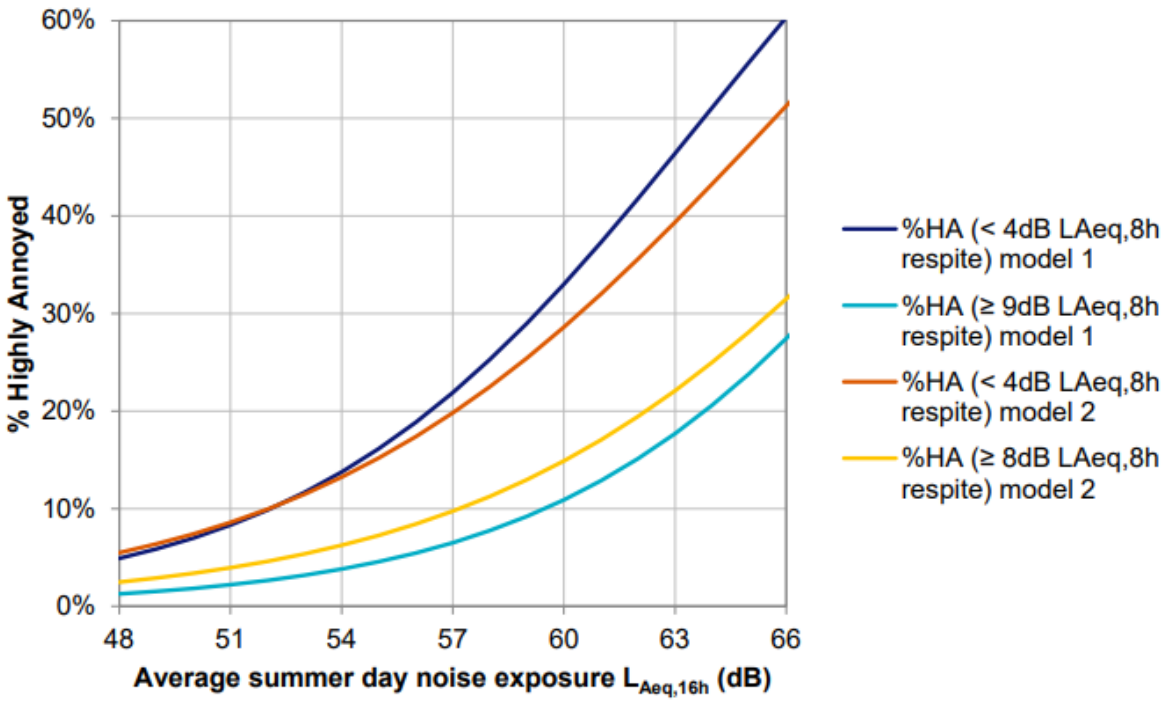
[9] CAA, CAP1506 'Survey of Noise Attitudes 2014'
[10] CAA, CAP2250 Paragraph 2.7
[11] $L_{Aeq,8h}$ in CAP2250 refers to the average summer day noise exposure for the morning period 07:00-15:00hrs or the evening period 15:00-23:00hrs and should not be confused with the average summer night period $L_{Aeq,8h}$.

3.2.16 Based on the regression models developed by the CAA, the exposure response functions expressed as the percentage of people highly annoyed as a function of average summer daytime noise exposure ($L_{Aeq,16hr}$) were found to be significantly different with and without a ≥8 dB and ≥9 dB difference in $L_{Aeq,8hr}$ between runway alternation modes.

3.2.17 Figure 10 of CAP2250, as reproduced in **Graphic A7.5.9**, presents the resultant noise exposure response functions based on the respite categories examined.

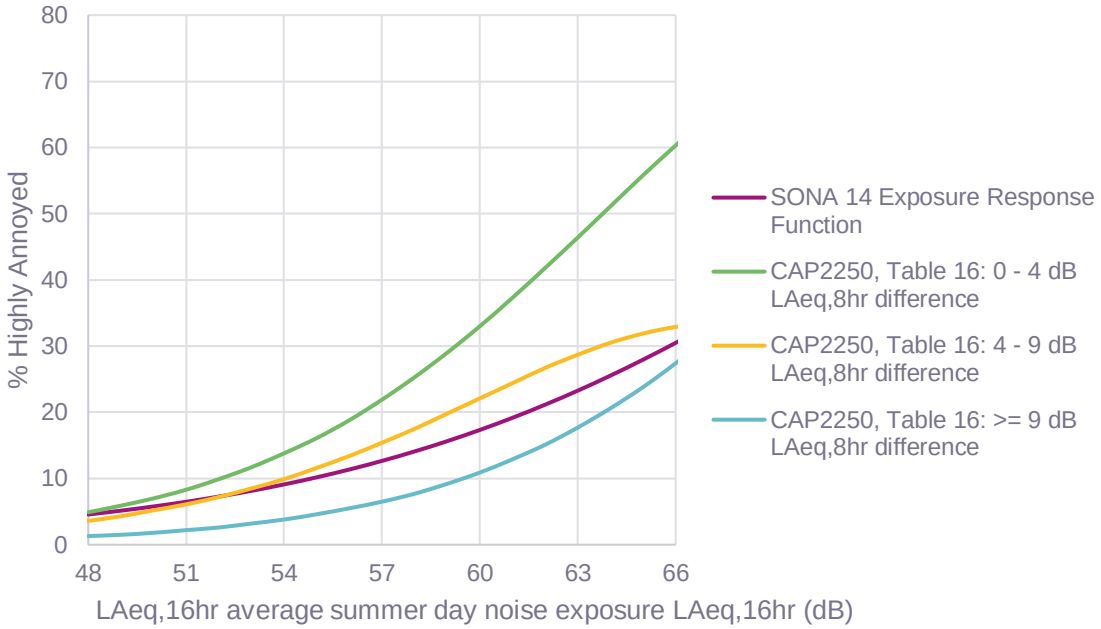
3.2.18 **Graphic A7.5.9** shows that the percentage of people highly annoyed is lower at all levels of exposure where there is at least an 8 or 9 dB change in $L_{Aeq,8hr}$ between runway modes. This evidence is applicable to communities and SONA14 participants that reside under westerly arrivals flight paths to Heathrow. For these communities, runway alternation has been a feature of their noise situation since the 1970s. This provides some evidence that over the long-term, managed noise respite has the potential to reduce annoyance compared to a situation where there are no managed respite noise changes below 8 or 9 dB$L_{Aeq,8hr}$.

Graphic A7.5.9 Dose response relationships between aircraft noise exposure and % HA for respite thresholds of ≥8 dB and ≥9 dB $L_{Aeq,8h}$ when controlling for non-acoustic factors noise sensitivity and socio-economic status (westerly arrivals) (reproduced from Figure 10, CAP2250)

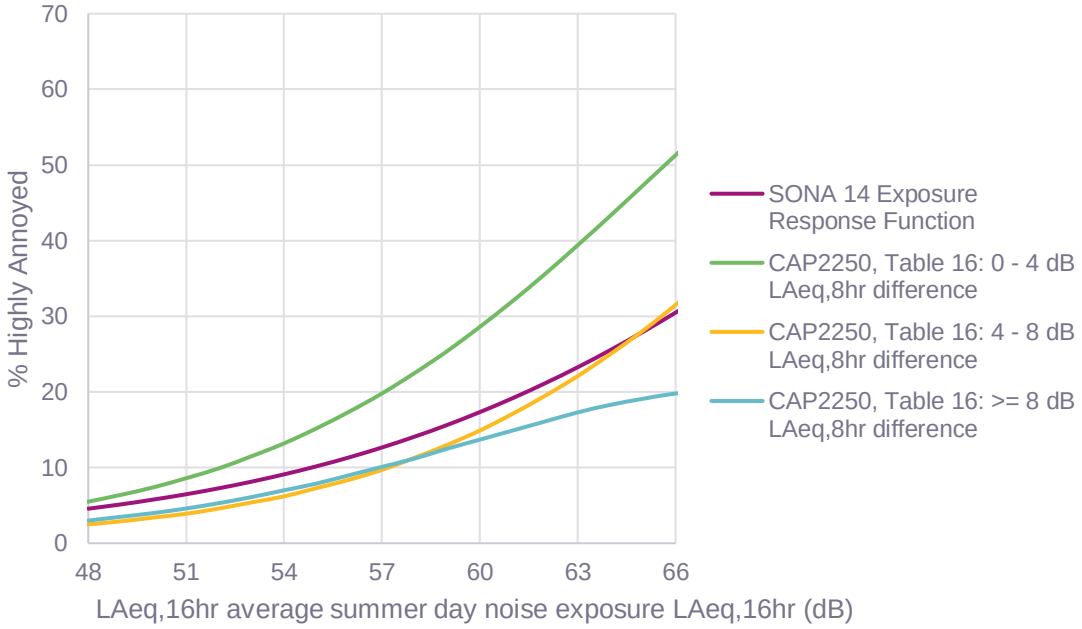


3.2.19 **Graphic A7.5.10** and **Graphic A7.5.11** presents a comparison of the SONA14 exposure response function, and the corresponding exposure response functions from CAP2250 where $L_{Aeq,8hr}$ differences for the functions prepared using the 8 dB and 9 dB $L_{Aeq,8hr}$ respite categories respectively.

Graphic A7.5.10 Comparison of SONA14 Exposure Response Function with ERFs presented in CAP2250 classified by 0 – 4 dB, 4 – 9 dB and greater than 9 dB respite noise changes



Graphic A7.5.11 Comparison of SONA14 Exposure Response Function with ERFs presented in CAP2250 classified by 0 – 4 dB, 4 – 8 dB and greater than 8 dB respite noise changes.



3.2.20 In both cases, these graphics show that where respite noise changes in $L_{Aeq,8hr}$ are more than 8 dB and 9 dB respectively, the number of people highly annoyed is less than that expressed by the SONA14 relationship. Conversely, where noise exposure differences are less than 4 dB, the number of people highly annoyed is significantly higher than the SONA14 relationship.

3.2.21 It should be noted that the SONA14 ERF includes all participants across all respite categories and all UK airports considered by SONA14. In the case of the respite category analysis presented in **Graphic A7.5.10** and **Graphic A7.5.11** this is limited to SONA14 participants for Heathrow Airport.

3.2.22 Due to the significant statistical differences in the ERFs depending on respite category, CAP2250 concludes that[12]:

"A major finding is that Heathrow's runway alternation system, that provides noise respite – predictable periods of noise relief, is found to be associated with a reduced likelihood of being highly annoyed in relation to those primarily affected by westerly arrivals. Dose response functions estimating the likelihood of being highly annoyed are presented for residents experiencing no respite and respite of at least 8 dB $L_{Aeq,8h}$."

3.3 Spatial Assessment of Respite Types due to Easterly Alternation

3.3.1 Based on the findings of CAP2250 and the evidence gathered by Heathrow's RWG, a spatial assessment of the locations which may experience the noise level changes associated with different types of respite has been carried out.

3.3.2 To facilitate this, $L_{Aeq,8hr}$ noise models for morning (07:00-15:00hrs) and evening (15:00-23:00hrs) have been prepared for all westerly and easterly runway alternation modes.

3.3.3 Without the Proposed Development, daytime noise respite from runway alternation at Heathrow occurs during westerly operations only. Using the respite noise change categories outlined in **Table A7.5.9,** **Figure 7.5.30** (**Volume IV** of the Environmental Statement) presents the location and type of noise respite forecast to occur in 2028 without the Proposed Development. For context this is presented alongside the LOAEL and SOAEL contours.

Table A7.5.9 Respite Noise Change Categories

$L_{Aeq,8hr}$ respite (dB) Category	Type of Respite (from RWG) and CAP2250 Outcome
< 4.0 dB	"Worth Having"
4.0 – 8.9 dB	"Noticeable"
>= 9.0 dB	"Valued" and associated with a significant effect on the annoyance response function

3.3.4 As the respite that is provided through runway alternation is scheduled and planned, and is communicated to local communities through Heathrow's runway alternation scheduled, all respite considered identified from this analysis is considered 'predicable'.

3.3.5 **Figure 7.5.30** (**Volume IV** of the Environmental Statement) shows that without the Proposed Development, locations under westerly arrivals flights paths within Cranford, Brentford and Hounslow are considered to receive predicable 'valued' respite. Locations such as Richmond on Thames, East Sheen, Roehampton, Putney, Gove Park, Kew, West

[12] CAA, CAP2250, Paragraph 7.26

Brompton, Walham Green, Clapham and Wandsworth are also considered to receive predicable 'noticeable' respite.

3.3.6 Under westerly departures, communities such as Longford, Poyle, Stanwell and Stanwell Moor are considered to experience predicable 'valued' respite with communities including Colnbrook and West Bedfont experiencing 'noticeable' respite.

3.3.7 **Figure 7.5.31** (**Volume IV** of the Environmental Statement) presents the location and type of noise respite forecast to occur in 2028 with the Proposed Development during easterly operations.

3.3.8 **Figure 7.5.31** (**Volume IV** of the Environmental Statement) shows that under easterly arrivals locations such as Poyle, Longford, Colnbrook, parts of Windsor, Old Windsor and Stanwell Moor would experience predicable 'valued' respite. In the case of Stanwell Moor and Old Windsor this partly mitigates for increased aircraft noise levels and exposure due to the Proposed Development. **Figure 7.5.31 (Volume IV** of the Environmental Statement**)** also shows that locations such as Dedworth and communities to the west of Windsor would observe predicable 'noticeable' respite due to the Proposed Development.

3.3.9 **Figure 7.5.31** (**Volume IV** of the Environmental Statement) shows that under easterly departures, locations such as North Feltham and Cranford, and part of Harlington would experience predicable 'valued' respite. Many of the locations under departure routes from Runway 09L are shown to experience at least predicable 'noticeable' respite. Many of these locations have been forecast to experience adverse likely significant effects in Area LSE-D01 due to the Proposed Development.

3.3.10 When taking into consideration the population in Area LSE-D01, analysis indicates that all locations within this area would experience at least predicable 'noticeable' respite with around 34% forecast to experience predicable 'valued' respite.

3.3.11 **Figure 7.5.32** (**Volume IV** of the Environmental Statement) presents a consolidated respite category map for the 2028 with Proposed Development scenario. This figure presents the areas that will receive predicable 'valued' and 'noticeable' respite across all modes of operation for both easterly and westerly operations. **Figure 7.5.32** (**Volume IV** of the Environmental Statement) shows that with the Proposed Development, respite is available under each of Heathrow's final approaches and under the majority of departure routes.

3.4 Annoyance

3.4.1 As outlined, CAP2250 presents ERFs depending on respite noise category. Using the ERFs presented in **Graphic A7.5.10** and **Graphic A7.5.11**, the population highly annoyed above the LOAEL has been calculated for 2028 for the with and without Proposed Development scenarios. This is presented in **Table A7.5.10** and **Table A7.5.11.**

*Table A7.5.10 Population Highly Annoyed considering Respite Noise Category (**Graphic A7.5.10**)*

Scenario	Total Population Highly Annoyed	Total Highly Annoyed with Respite Change of 0 – 4 dB	Total Highly Annoyed with Respite Change of 4 – 8 dB	Total Highly Annoyed with Respite Change of > 8 dB
2028 without Proposed Development	95,445	55,892	19,977	19,577
2028 with Proposed Development	88,938	44,170.9	21,331	23,435
Change due to the Proposed Development	-6,507			

*Table A7.5.11 Population Highly Annoyed considering Respite Noise Category (**Graphic A7.5.11**)*

Scenario	Total Population Highly Annoyed	Total Highly Annoyed with Respite Change of 0 – 4 dB	Total Highly Annoyed with Respite Change of 4 – 9 dB	Total Highly Annoyed with Respite Change of > 9 dB
2028 without Proposed Development	109,419	57,741	37,584	14,094
2028 with Proposed Development	103,041	45,366	41,251	16,424
Change due to the Proposed Development	-6,379			

3.4.2 **Table A7.5.10** and **Table A7.5.11** show that if the CAP2250 ERFs are applied then the effect of the Proposed Development would reduce the total number of people highly annoyed by at least 6,000.

3.4.3 Whilst this is a positive indicator of the effects of the Proposed Development, it is noted that these ERFs were developed based on the attitudes of people who currently experience respite noise changes during westerly runway alternation. As such, these ERFs are based on long-term exposure of a stable noise situation and but can be used to indicate potential benefits of providing respite through easterly alternation over the long term.

4. Changes in Objective Awakenings

4.1 Introduction

4.1.1 In the Scoping Report, the night-time SOAEL included consideration of *"number of N60 events and a risk assessment of objective sleep disturbance"*. This section presents an assessment considering changes in the risk of objective sleep disturbance due to the Proposed Development in 2028.

4.2 Objective Sleep Disturbance

4.2.1 'Objective sleep disturbance' due to aircraft noise occurs when a person experiences a shift in their sleep stage to 'Stage 1' or 'Awake'[13] due aircraft noise events. This is often referred to as an 'aircraft noise awakening'.

4.2.2 Based on the work of Basner et al[14] the risk of awakenings can be determined by the maximum sound level for an aircraft noise event ($L_{Asmax,indoors}$), as opposed to outdoor time-averaged metrics for the night-time period (i.e. $L_{Aeq,8hr}$ or L_{night}). To estimate awakenings for populations around airports two sets of information are needed. The first is evidence quantifying the probability of an additional awakening given an individual aircraft noise event with a particular maximum sound level ($L_{Asmax,indoors}$). This is an exposure-effect relationship plotting the probability of an awakening against the maximum sound pressure level for an individual aircraft noise event. The second is information about the number of aircraft noise events, as this influences the probability for one additional awakening. The number of aircraft noise events needed to induce an additional awakening increases as the sound pressure level decreases (e.g., can be induced by a few loud events or lots more quieter events).

4.2.3 This involves estimating the maximum sound level for each aircraft event and their occurrence on average during the night. By using the distribution of aircraft noise events and number of events at a given location, a single value for the number of additional aircraft noise-induced awakenings can be determined.

4.2.4 Basner et al. recommended to protect for human health for aircraft noise that:

- on average there should be less than one additional awakening induced by aircraft noise;
- that awakenings recalled in the morning should be avoided as much as possible; and

[13] In noise and health, biological awakenings as a reaction to a noise event are referred to as 'additional' awakenings: this reflects that all humans experience a number of spontaneous biological awakenings per night and studies assess how noise events relate to 'additional' awakenings beyond that expected for the individual.

[14] Basner, M., Samel, A., & Isermann, U. (2006). *Aircraft noise effect on sleep: application of the results of a large polysomnographic field study*. The Journal of the Acoustical Society of America, 119(5), 2772-2784

- aircraft noise should interfere as little as possible with the process of falling asleep again (Basner et al., 2006).

4.2.5 Awakening contours can be derived from information about the maximum level of an aircraft noise event, as well as the duration and number of events, based on the airport's traffic data/description, or forecast, which specifies the number and types of aircraft operating at the airport during a specified time period. The exposure-response function is combined with the immission data for the airport, to estimate the average number of aircraft noise induced awakenings at locations around the airport from the distribution of $L_{Asmax,indoors}$ at the locations. These can be resented as contour maps showing the thresholds of 1, 2 or 3 or more awakenings.

4.3 The Significance of Objective Awakenings

4.3.1 There is no discussion by Basner et al. to allow policy makers to determine the significance of one additional awakening or whether this can be applied as a LOAEL or a SOAEL in the context of the Noise Policy Statement for England (NPSE).

4.3.2 Reviewing subsequent evidence relating to aircraft noise and additional awakenings, interpreting additional awakenings having regard to the aims and objectives of the NPSE lens is challenging (Basner & McGuire, 2018[15]; Civil Aviation Authority, 2022[16]; Elmenhorst, Griefahn, Rolny, & Basner, 2019[17]; McGuire, Muller, Elmenhorst, & Basner, 2016[18]). There is little evidence to support a classification for where awakening effects 'begin' (a LOAEL) and/or where they become 'significant' (a SOAEL).

4.3.3 Recent analyses of SoNA2014 which estimated additional awakenings, found that when comparing self-reported noise annoyance at night, that one additional aircraft noise awakening was associated with approximately 10% being 'highly annoyed', and two or three additional awakenings with just over 20% of respondents being 'highly annoyed'[16]. Further, the study found that $L_{Aeq,8h}$ and L_{night} both correlated with additional awakenings, suggesting that *"averaging the night-time noise exposure does not properly reflect the impact of individual aircraft noise events may be unfounded."*

4.3.4 More broadly, the WHO ENG18 indicated that the long-term health effects of short-term noise-induced awakenings are still not well understood and that the *"relationship between different types of single-event noise indicators and long-term health outcomes at the population level remains tentative"*.

[15] Basner, M., & McGuire, S. (2018). *WHO Environmental Noise Guidelines for the European Region: A Systematic Review on Environmental Noise and Effects on Sleep*. International Journal of Environmental Research and Public Health, 15(3), 519

[16] Civil Aviation Authority. (2022). *CAP2251: Survey of Noise Attitudes 2014: Aircraft noise and sleep disturbance, further analysis.* [online] Available at: https://www.caa.co.uk/our-work/publications/documents/content/cap2251/ (Accessed 15 August 2024)

[17] Elmenhorst, E. M., Griefahn, B., Rolny, V., & Basner, M. (2019). *Comparing the effects of road, railway, and aircraft noise on sleep: exposure-response relationships from pooled data of three laboratory studies.* International Journal of Environmental Research and Public Health, 16(6). doi:10.3390/ijerph16061073

[18] McGuire, S., Muller, U., Elmenhorst, E. M., & Basner, M. (2016). *Inter-individual Differences in the Effects of Aircraft Noise on Sleep Fragmentation.* Sleep, 39(5), 1107-1110. doi:10.5665/sleep.5764

4.4 Assessing Changes in Objective Awakenings

4.4.1 Potential changes in additional awakenings associated with the Proposed Development have been considered. This assessment has been carried out to provide additional context to the night-time noise assessment presented in Section 7.8 of the ES Chapter.

4.4.2 This has been carried out using the following methodology:

- All locations forecast to experience at least 5 events of 60 dB L_{ASmax} (5 N60) on average[19] with and without the Proposed Development have been identified (see **Figure 7.5.7-WoD** and **Figure 7.5.7-WD** (**Volume IV** of the Environmental Statement));
- The logarithmic average L_{ASmax} of night-time aircraft noise events has been adopted for all aircraft noise events as measured using the N60 metric. Whilst a detailed awakenings assessment requires the individual L_{ASmax} of each aircraft event to be ascertained as per the research by Basner et al[14], this approach is considered a conservative assumption but sufficient for determining potential changes in objective awakenings;
- For each population represented at each postcode, the logarithmic L_{ASmax} and number of N60 events has been assigned. This L_{ASmax} value is an external value, therefore an outdoor to indoor transmission loss of 21 dB[20] has been assumed to estimate an $L_{ASmax\ (indoors)}$ level at each postcode; and
- The Exposure Response Function (ERF) produced by Basner et al has been applied to the population at each postcode using the estimate logarithmic average indoor L_{ASmax} and number of N60 aircraft noise events.

4.5 Findings

4.5.1 **Figure 7.37** (**Volume IV** of the Environmental Statement) presents the location and pattern of potential changes in aircraft noise related objective awakenings due to the Proposed Development. This shows that the Proposed Development would not lead to any increase or decrease of more than 1 objective awakening at any residential receptor.

4.5.2 **Figure 7.37** (**Volume IV** of the Environmental Statement) shows that to the west of the airport, additional awakenings are forecast to slightly reduce in locations such as Poyle, Colnbrook, Datchet, Windsor and Fifield but slightly increase in locations such as Stanwell Moor, Wraysbury, Old Windsor, and Hawthorn Hill.

4.5.3 To the north and east of the airport, **Figure 7.37** (**Volume IV** of the Environmental Statement) shows that slight increases in additional awakenings are forecast to occur in Longford, Cranford, Hounslow and Heston with slight reductions forecast in North Feltham, Hatton and West Bedont.

[19] Using the night-time summer average modal split.
[20] An assumed attenuation of 21 dB to convert outdoor L_{Asmax} to indoor L_{Asmax} reflects the assumption made by the World Health Organization in the Night Noise Guidelines for Europe 2009.

4.5.4 These findings illustrate a similar pattern of impact as presented in the ES for the average summer daytime $L_{Aeq,8hr}$ metric.

5. World Health Organisation Environmental Noise Guidelines 2018 Sensitivity Test

5.1.1 In recent years there has been much debate regarding the evidence base used by Government to set the LOAEL values, and the approach to aircraft noise assessment as set out in the Air Navigation Guidance 2017 (ANG17). The LOAEL values contained within the ANG17 are based on research presented in the Survey of Noise Attitudes 2014 (SONA14)[21]. Concerns regarding SONA14 are summarised in a review carried out by the Independent Commission for Civil Aviation Noise (ICCAN)[22] (now disbanded). This review sets out several technical reasons which have been tabled by critics to dispute the levels of noise exposure set by Government for the daytime and night-time LOAELs in the ANG17 using the SONA14 evidence base.

5.1.2 One of the points addressed in ICCAN's review raised by critics is the relevance of the World Health Organization (WHO) Environmental Noise Guidelines for the European Region 2018 (ENG18). These guidelines were published in 2018 and provide recommendations along with Exposure Response Functions (ERFs) for various sources including aircraft.

5.1.3 The WHO ENG18 presents recommendations on levels of aircraft noise exposure that policy makers should look to implement measures to reduce impacts down to or below. A 'strong recommendation' is made by the ENG18 that aircraft noise should be reduced below 45 dB L_{den} and 40 dB L_{night} (for night-time exposure) with the L_{den} metric used to describe annoyance, and the L_{night} metric used to describe sleep disturbance. The recommendation recognises that people will be exposed to levels above these, and associates exposure above these levels with adverse health effects. These levels are much lower than those set by Government for the LOAELs.

5.1.4 The ENG18 has been the subject of scrutiny amongst academics. One of the main criticisms of the ENG18 is that its recommendations were not considered alongside other factors such as economic and social considerations, and as such the recommendations cannot be considered to represent a sustainable position.

5.1.5 Academics have also commented that the methodologies used in developing WHO guidelines and the ERFs are different to those used as part of SONA14, with SONA14 taking into account local context with the WHO guidelines based on international studies and research.

5.1.6 At a European level, the European Commission has adopted the WHO ENG18 ERFs as part of Commission Directive 2020/367 without any reference to the WHO recommendations. This Directive amends Annex III of Directive 2002/49/EC under which

[21] For more information about the Survey of Noise Attitudes 2014 (SoNA) see Civil Aviation Authority (2017) CAP 1506: Survey of noise attitudes 2014: Aircraft. https://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=7744 Ipsos MORI (2015) CAP 1506a: The 2014 Survey of Noise Attitudes (SoNA) Technical Report. http://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=7745

[22] Independent Commission for Civil Aviation Noise (ICCAN), Review of the Survey of Noise Attitudes 2014 (2019)

strategic noise maps and noise action plans must be produced. Directive 2020/367 states that:

"Beyond the dose-effect relations developed in the context of the WHO, other studies might show different health effect sizes and other health effects, in particular concerning effects of road, railway and aircraft noise in local situations in specific countries. The alternative dose-effect relations established therein could be used provided that they are based on high quality and statistically significant studies."

5.1.7 As such, at a European level, Member States can use their own ERFs provided that they reflect the local situations and are based on high quality and statistically significant studies.

5.1.8 In the Government's Aviation Strategy consultation[23] Paragraph 3.106 states that:

"The government is considering the recent new environmental noise guidelines for the European region published by the World Health Organization (WHO). It agrees with the ambition to reduce noise and to minimise adverse health effects, but it wants policy to be underpinned by the most robust evidence on these effects, including the total cost of action and recent UK specific evidence which the WHO report did not assess.'

5.1.9 Importantly, the Government has not adopted the WHO ENG18 recommendations or their associated ERFs. Nor has Directive 2020/367 been transposed into English law.

5.1.10 However, given criticism of SONA14 and the adopted LOAEL values in the ANG17, a sensitivity test considering the impact of the Proposed Development taking into account noise exposure from the WHO guidelines has been carried out.

5.1.11 Noise contours and exposure datasets have been produced from the 45 dB L_{den} and 40 dB L_{night} for the 2028 with and without the Proposed Development scenarios.

5.1.12 **Table A7.5.12** and **Table A7.5.13** present noise exposure statistics for the L_{den} and L_{night} metrics in 2028 with and without the Proposed Development. These tables also present the total population 'highly annoyed' (HA) and 'highly sleep disturbed' (HSD) using the WHO ENG18 ERFs.

[23] HM Government, Aviation 2050 – The Future of UK Aviation – A Consultation (2018)

Table A7.5.12 Noise Exposure in 2028 with and without the Proposed Development, L_{den}

L_{den} band, dB	Without Proposed Development 2028 (thousands)		With Proposed Development 2028 (thousands)	
	Dwellings	Population	Dwellings	Population
45 – 50 dB	1,557.0	3,819.4	1,526.6	3,734.2
50 – 55 dB	438.5	1,021.8	442.1	1,039.0
55 – 60 dB	173.8	408.0	168.4	394.3
60 – 65 dB	47.7	126.7	47.8	127.3
65 – 70 dB	10.7	31.5	11.3	33.2
70 – 75 dB	0.6	1.8	0.6	2.0
> 75 dB	0.0	0.0	0.0	0.0
Total Population Highly Annoyed		873.2		865.0

Table A7.5.13 Noise Exposure in 2028 with and without the Proposed Development, L_{night}

L_{night} band, dB	Without Proposed Development 2028 (thousands)		With Proposed Development 2028 (thousands)	
	Dwellings	Population	Dwellings	Population
40 - 45 dB	351.9	815.9	349.5	812.0
45 - 50	206.9	477.5	206.7	475.1
50 - 55	64.2	160.3	61.9	155.7
55 - 60	15.5	45.5	15.7	46.0
60 - 65	1.0	3.3	1.0	3.4
65 - 70	0.0	0.0	0.0	0.0
>70	0.0	0.0	0.0	0.0
Total Population Highly Sleep Disturbed		235.3		233.7

5.1.13 **Table A7.5.12** shows that when measured using WHO ERF, the effect of the Proposed Development in 2028 would be to reduce the total number of people highly annoyed above the WHO guideline value of 45 dB L_{den}.

5.1.14 **Table A7.5.13** shows that for night-time periods, when measured using the WHO ERF, the effect of the Proposed Development in 2028 would be reduce the total number of people highly sleep disturbed above the WHO guideline value of 40 dB L_{night}.

5.1.15 **Figure 7.5.33** (**Volume IV** of the Environmental Statement) and **Figure 7.5.34** (**Volume IV** of the Environmental Statement) present the noise exposure contours for the L_{den} and L_{night} metrics respectively both with and without the Proposed Development. These figures also present the corresponding noise change magnitudes.

5.1.16 The pattern and location of the noise exposure changes presented in **Figure 7.5.33** (**Volume IV** of the Environmental Statement) and **Figure 7.5.34** (**Volume IV** of the Environmental Statement) reflect the findings of the assessment using the primary metrics (i.e. $L_{Aeq,16hr}$ and $L_{Aeq,8hr}$). For the L_{den} metric, moderate adverse changes in aircraft noise are shown under the 09L ULTIB/BPK SIDs. This change extends from the departure end of Runway 09L through to Southall. Conversely slight beneficial changes are observed under 09R SIDs. Under final approaches to Runway 09L and Runway 09R, changes in L_{den} are considered 'slight'.

6. TAG Appraisal and Sensitivity Testing using alternative ERFs

6.1 Introduction to TAG

6.1.1 TAG (Transport Analysis Guidance) (formally WebTAG) is the Department for Transport's (DfT) appraisal guidance and toolkit applicable for highways, railway, and aviation projects to facilitate the appraisal and development of transport interventions. It was developed based on HM Treasury's Green Book[24], that sets out the framework for appraisal and evaluation for all policies, programmes and projects. It is particularly intended for use by DfT when considering 'government interventions'[25] on policy options, such as the different options relevant to airspace chance proposals' and is not required in the case of this application for planning permission[26].

6.1.2 TAG Unit A5.2 provides a risk-based approach to assessing the impact of aviation noise. The ANG17 states that the Government's TAG methodology includes a module for:

"valuing the impacts of noise, including those from changes in aircraft noise, on health and quality of life."

6.1.3 The monetary valuation provided by TAG is intended to complement a quantified noise assessment and should be used to aid decision-makers when appraising different transport options and raise awareness of the environmental impacts of transport schemes.

6.1.4 In the context of aviation projects, TAG is used in support of assessment and decision making by presenting the monetisation of the impacts (costs and benefits) produced by airspace change options[27]. Although not a "comprehensive assessment"[28], in this context, the TAG methodology provides a consistent approach for the CAA and the Department for Transport to consider the total adverse effects associated with changes in exposure to aviation noise.

6.1.5 For aviation, TAG assesses the impact of changes in aircraft noise exposure. For each 1 decibel change in the $L_{Aeq,16hr}$ and $L_{Aeq,8hr}$ metrics, TAG assigns a monetary value to the change with respect to the following health impacts:

- Amenity (annoyance)
- Acute Myocardial Infarction;
- Dementia;

[24] Government Finance Function (2022). *The Green Book*. [online] Available at: https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government/the-green-book-2020 (Accessed 15 August 2024).
[25] TAG Unit A5.2 para 1.1.1
[26] TAG Unit A5.2 para 1.1.4 makes clear that *"Decisions on planning applications for airport development will be considered in the normal way, including to take account of relevant material considerations which may include evidence relating to the strategic, commercial, financial and management case of a development proposal."*
[27] ANG17, Paragraph 3.6
[28] ANG17, Paragraph 3.6

- Stroke; and
- Sleep Disturbance.

6.1.6 TAG achieves this by calculating the percentage of population affected by noise for each 1 dB noise band by applying an Exposure Response Function (ERF). The per person per decibel change and associated effects are then subtracted between each 1 dB consecutive noise band to provide the marginal effects per person, considering the range of applicability of the relative ERF.

6.1.7 In line with CAA guidance regarding the application of TAG, applicability begins at the day and night-time LOAELs of 51 dB $L_{Aeq,16hr}$ and 45 dB $L_{Aeq,8hr}$ respectively.

6.1.8 The marginal costs per person (i.e. the costs for each 1 dB change) are obtained by multiplying the marginal effect for each 1 dB change by the ERF and its associated disability weight (DW) and a standard Value of Life Year (VOLY). In the UK this value is equivalent to £60,000, as advised by the government's Inter-Departmental Group for the Valuation of Life and Health (IGVLH). The Marginal cost per UK household by default is obtained by multiplying Marginal cost per person by the default household size of 2.3 unless actual population data is available. In the case of this assessment, the actual population data has been used.

6.1.9 In the process of monetising for the relationship between noise and Acute Myocardial Infarction (AMI), an additional step to the calculation of the change in the absolute risk of incidences as a function of noise exposure is required. Valuing the expected changes using the associated cost of each incidence of AMI is required in order to calculate the additional risk of AMI incidence from ischaemic heart disease (IHD) mortality, and additional risk of stroke incidence from stroke mortality.

6.1.10 In the case of hypertension, it is not possible to directly value the increased risk of stroke and dementia, as impacts occur through increased risk of other health outcomes. The tool uses a two stage approach to valuing hypertension. Firstly, it quantifies the link between noise exposure and hypertension and then the link between hypertension and the probability of dementia and strokes.

6.1.11 Importantly, for all the health pathways, regardless the approach taken in the quantification of the risks or the metrics used in the dose-response relationships, for aircraft noise the Defra tool assumes the following equivalence:

$$L_{den} = L_{day} = L_{Aeq,16h} = L_{Aeq,18h}$$

6.2 Indicative TAG Appraisal

6.2.1 Based on noise exposure forecast with and without the Proposed Development for the assessment year of 2028, an indicative TAG appraisal has been carried out.

6.2.2 This appraisal is based on a single year net-present-value (NPV) before the application of any gross domestic product (GDP) correction. It has been carried out for the assessment year only, i.e. 2028, rather than over a ten or sixty year valuation period inclusive of the opening and a forecast year as calculated in the TAG noise workbook. This approach has been taken to provides an understanding of the impact of the Proposed Development with

respect to monetised outcomes in isolation of any future trends, such as changes in aircraft fleet mix.

6.2.3 The single year NPV has been calculated as the difference between the absolute in year monetisation of the 'with Proposed Development' and 'without Proposed Development' scenarios in the 2028 assessment year.

6.2.4 The monetary values included in the November 2023 TAG workbook version[29] (corresponding to the Data Book v1.22 data[30]) have been used to obtain the total costs for noise exposure in 1 dB increment.

6.2.5 The costs for each 1 dB band have been used to calculate the absolute in year costs for both the 'with' and 'without' Easterly Alternation scenarios. The absolute in year costs are then subtracted between each other to provide the value of change in noise. The results of this calculation are shown in **Table A7.5.14** below.

Table A7.5.14 Monetisation of Total Adverse Effects due to the Proposed Development in 2028

Total Adverse Effects – TAG – Standard Mode 2028 – In Year Monetisation	
Health Outcome	**Value of change in noise from LOAEL, in £ (positive value reflects a net benefit (i.e. a reduction in noise)**
Sleep Disturbance	£247,821
Amenity	£536,694
AMI	-£44,407
Stroke	£83,265
Dementia	£125,920
Total	**£949,292**

6.2.6 **Table A7.5.14** indicates that the Proposed Development would result in an overall net improvement in adverse effects. Only one effect is forecast to deteriorate due to the Proposed Development which is AMI. This is explainable by the increase in the population exposed at higher noise exposure bands due to the Proposed Development. The TAG methodology only begins to value the effects of changes in noise exposure on AMI from 58 dB $L_{Aeq,16hr}$ and above and at these levels the Proposed Development results in an increase in the number of people exposed.

[29] Department for Transport (2023). *Noise Workbook – Aviation, Version November 2023* [online] Available at: https://www.gov.uk/government/publications/tag-environmental-impacts-worksheets (Accessed 7 February 2024).
[30] Department for Transport (2023). *TAG data book, version 1.22, November 2023.* [online] Available at: https://www.gov.uk/government/publications/tag-data-book (Accessed 15 August 2024).

6.3 TAG Appraisal Sensitivity Test using Alternative Exposure Response Functions

6.3.1 The following sensitivity tests consider different outcomes from the TAG appraisal when using alternative applicability ranges and ERFs. All other aspects of the TAG appraisal in terms of the application of the TAG noise workbook.

6.3.2 TAG uses exposure-response relationships derived from empirical research studies to estimate the health impacts of noise from transportation schemes (aviation, road traffic, railways). The majority of the evidence used in TAG is based on research primarily published up to 2010.

6.3.3 Over recent years, there has been a rapid increase in the quality, number and size of epidemiological studies assessing noise effects on health and disability weightings (DW) for not-fatal outcomes. A greater number of studies means that the evidence base has become stronger, however it also means that there are alternative approaches to estimating the harmful effects of aviation noise beyond the evidence base adopted by TAG. In particular, WHO ENG18 provides its own exposure response functions for harmful effects.

6.3.4 **Table A7.5.15** sets out the evidence base which has been used to support sensitivity testing. Apart from the alternative ERFs and disability weights, the key difference to the standard TAG workbook is the inclusion of the mental health pathway.

Table A7.5.15 Supplementary and Alternative ERFs and DWs and Associated References

Health outcome	ERF source	Disability Weight source	Adopted by Directive 367/2020
Sleep disturbance / HSD	Basner & McGuire (WHO) 2018	WHO,2019	ü
Annoyance / HA	Guski et al 2017 (WHO)	WHO Regional Office for Europe & JRC, 2011	ü
	SoNA 2014	WHO Regional Office for Europe & JRC, 2011	
AMI	Vienneau at al, 2015	WHO, 2018	
Stroke	Van Kempen et al, 2017	Salomon et al. 2015	
Mental Health	Hegewald et al, 2020	WHO, 2013	

Alternative Exposure Response Functions

6.3.5 Updated marginal values have been calculated based on the alternative ERFs and DWs presented in **Table A7.5.15**. The applicability thresholds for this informative assessment have been maintained at the day and night-time LOAELs adopted in standard TAG (i.e. 51 $dBL_{Aeq,16hr}$ and 45 $dBL_{Aeq,8hr}$). **Table A7.5.16** presents a summary of this informative sensitivity test.

Table A7.5.16: Summary of the TAG assessment using alternative ERFs

Health outcome	ERF source	Value of change in noise from LOAEL, in £ (positive value reflects a net benefit (i.e. a reduction in noise)
Sleep disturbance / HSD	Basner & McGuire (WHO) 2018	£1,499,987
Annoyance / HA	Guski et al 2017 (WHO)	£1,292,420
	SoNA 2014	£295,520.
AMI	Vienneau at al, 2015	£5,376,304
Stroke	Van Kempen et al, 2017	£10,009,526
Mental Health	Hegewald et al, 2020	£18,583,826

6.3.6 **Table A7.5.16** shows that for all health outcomes when applying this sensitivity test, the overall effect of the Proposed Development is beneficial. The sensitivity test indicates that the biggest improvement with respect to monetised outcomes is in mental health and stroke.

Alternative Exposure Response Functions, Alternative Metrics and Applicability Thresholds

6.3.7 Updated marginal values have also been calculated as above but with applicability thresholds changed to reflect the ERF specific thresholds. **Table A7.5.17** presents a summary of this informative sensitivity test.

Table A7.5.17 Summary of the TAG assessment using alternative ERFs

Health outcome	ERF source	Metric	Applicability Threshold for Monetisation	Value of change in noise from LOAEL, in £ (positive value reflects a net benefit (i.e. a reduction in noise)
Sleep disturbance / HSD	Basner & McGuire (WHO) 2018	L_{night}	40 dB	£1,862,681
Annoyance / HA	Guski et al 2017 (WHO)	L_{den}	45 dB	£7,496,707
	SoNA 2014	$L_{Aeq,16hr}$	48 dB	£181,164
AMI	Vienneau at al, 2015	L_{den}	50 dB	£4,500,785
Stroke	Van Kempen et al, 2017	L_{den}	40 dB	£59,198,367
Mental Health	Hegewald et al, 2020	L_{den}	40 dB	£106,423,908

6.3.8 When extending the assessment to the lower applicability thresholds, a similar trend is observed to that seen in **Table A7.5.16** is observed albeit as higher monetised levels. This

finding is supportive of main assessment finding presented in **Chapter 7: Noise and Vibration** which demonstrates an overall beneficial effect on health and quality of life due to the Proposed Development.

6.4 Overview of Findings

6.4.1 The indicative TAG appraisal as presented in **Section 6.2** shows a positive monetary value, demonstrating that the Proposed Development has the potential to result in a net improvement in health across the population when taking into account all changes (beneficial or adverse) that are forecast to occur.

6.4.2 The supplementary sensitivity tests presented in **Section 6.3** based on an alternative evidence base also support this outcome.

7. Modal Split Sensitivity Testing

7.1.1 The main assessment has been based on a standard modal split as described in **Section 2.2**. Sensitivity tests have been carried out for an 'extreme' easterly and westerly modal split so to provide some understanding of the effect of the Proposed Development for alternative worst case easterly and westerly modal splits. This analysis presented from **Table A7.5.20** to **Table A7.5.49**.

7.1.2 This analysis indicates that the extreme westerly modal split results in a more favourable effect of the Proposed Development with respect to changes in population above LOAEL and SOAEL and the total monetised effects on health according to TAG when compared to the standard modal split. Notably, the extreme westerly modal split is 10% and 9% higher than the standard modal split for daytime and night-time periods respectively, as presented in **Table A7.5.3**.

7.1.3 The analysis also shows that for the extreme easterly modal split the effect of the Proposed Development would be largely adverse with respect to population exposure above LOAEL and SOAEL, and monetised effects on health when compared to the standard modal split.

7.1.4 Notably, the extreme easterly modal split is 24% and 20% higher than the standard modal split for daytime and night-time periods respectively as presented in **Table A7.5.3**.

7.1.5 As the effects on health and quality of life relate to long-term noise exposure, the modal split sensitivity testing can only provide an indication of how the impact of the Proposed Development could differ between any year rather than over a period of time that relates to the assessment of effects.

8. Parks and Open Spaces – Evidence Base for Assessment

8.1 Introduction

8.1.1 Parks and Open Spaces are places where people can go to escape urban and suburban environments. A Heritage Fund review has identified that physical health, mental well-being and life satisfaction are all enhanced through access to and use of parks and green spaces as well as providing benefits in wellbeing by providing a connection to nature[31]. These findings are also consistent with those found by Public Health England (UK Health Security Agency and Office for Health Improvement and Disparities) who concluded that access to good quality greenspace can result in positive health and social outcomes[32]. Similar findings and conclusions have been reached by Kaplan[33] and Akbar[34]. However, noise can be factored in whether people are more or less likely to enjoy or use such spaces.

8.1.2 The Proposed Development has the potential to both positively and adversely affect such places due to exposure to and change in levels of aircraft noise.

8.2 Assessment Approach and Criteria

8.2.1 There is no specific guidance regarding the impacts of noise on parks and open spaces, however several themes emerge across various standards and publications which indicate the levels of noise, and potential changes in noise which may impact a person's perception and enjoyment of that space.

8.2.2 Some of this literature relates to perceived tranquillity rather than specific impacts on recreational amenity. However similar principles apply in that an increase or decrease in noise may adversely or beneficially impact a person's perception and enjoyment of a space, particularly for those people seeking respite from a noisy environment, whether at home or at work.

Literature Review

8.2.3 British Standard BS8233:2014[41] provides design criteria to manage noise for the residents of proposed new build or refurbished developments. The standard advises on what is considered a 'desirable' level of noise in areas that are intended to be used for external amenity space, such as gardens, balconies and roof gardens, and areas which are intended

[31] Heritage Fund, Space to Thrive – A rapid evidence review of the benefits of parks and gardens for people and communities, 2009 (Available at: https://www.heritagefund.org.uk/sites/default/files/media/attachments/Space%20to%20thrive_2019-A%20rapid%20evidence%20review%2014102019-a11y.pdf)
[32] UK Health and Security Agency, 'Green space, mental wellbeing and sustainable communities' (2016), (Available here: https://ukhsa.blog.gov.uk/2016/11/09/green-space-mental-wellbeing-and-sustainable-communities/)
[33] Kaplan, S. (1995) The restorative benefits of nature: toward and integrative framework. Journal of environmental psychology. (15) 169-182
[34] Abkar, M. et al (2010) The role of urban green spaces in mood change. Australian journal of basic and applied sciences. 4 (10).

to be used for relaxation. For such spaces, BS8233:2014[41] states that it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$ up to a level of 55 dB $L_{Aeq,T}$ for noisier environments. These values were derived from the WHO Community Noise Guidelines 1999.

8.2.4 Research by Watts et al[35] suggests that any perceived tranquillity in urban parks and open spaces become absent where noise levels are above 65 dB $L_{Aeq,T}$ i.e. tranquillity is lost irrespective of any other natural and contextual features. Conversely, this research indicates that noise is unlikely to be a factor in perceived tranquillity where noise levels are below 30 dB $L_{Aeq,T}$. As part of this research, Watts proposes a tranquillity rating from 0 – 10 modifiable by the level of environmental noise at the location taking into account contextual features.

8.2.5 Bentley has applied a methodology for quantifying perceived tranquillity referred to as 'the Natural Tranquillity Method' (NTM) to Hatfield Forest[36] accounting for aircraft landing and taking off from Stansted Airport. This also considers a hypothetical scenario where Stansted Airport does not exist and how the perceived tranquillity of Hatfield Forest would be if this were the case.

8.2.6 When using the NTM method, Bentley notes that a reduction in aircraft noise from 51-56 dB $L_{Aeq,12\ hour}$ by 10-14 dB results in a change from the majority of Hatfield Forest being classified as 'Not Quite Tranquil' or 'Just Tranquil' to either 'Fairly Tranquil' or 'Good Tranquillity'.

8.2.7 It should be noted that the NTM incorporates 8 descriptors for tranquillity which are modifiable due to noise. However, Bentley notes that *"people who visit the site more regularly expect and accept the that the sound of aircraft will be a feature of the visit and thus are more inclined to ignore it"*.

8.2.8 The Report 'Tranquillity and Place Sound Environment' published by Natural Resources Wales[37] (NRW) describes methods for mapping tranquillity under six separate themes. Theme 4 relates to sound where for road and railway sources, the contribution to an overall tranquillity is score is presented in 5 dB bands ranging from 30 dB to 75 dB on a scale of 0 – 10.

8.2.9 A 2005 study by Miller[38] provides a review of US national parks and the management of park soundscapes. As part of this review, a 1992 study surveying park visitors at thirty nine parks indicated that between 8 and 82% reported hearing aircraft, with those who had heard aircraft responding to questions regarding annoyance and whether this had interfered with their appreciation of the park. The responses and results to the question allowed a dose-response relationship to be developed whereby increasing aircraft noise correlated to an increasing percentage of people being annoyed. The 2005 review deals with similar studies

[35] Watts, G.R & Miah, Abdul & Pheasant, Rob. (2013). Tranquillity and Soundscapes in Urban Green Spaces—Predicted and Actual Assessments from a Questionnaire Survey. Environment and Planning B: Planning and Design. 40. 170-181. 10.1068/b38061.
[36] Bentley, Tranquil Spaces: Measuring the tranquillity of public spaces (2019) ISBN1999959817
[37] Natural Resources Wales, Report Number 569, Tranquillity and Place (2022)
[38] Miller, N.P. (2008) US National Parks and management of park soundscapes: A review. Applied acoustics. 69 (77-92)

of this nature and despite the limitations identified by Miller to these studies, several observations are made which were summarised by the CAA in ERCD Report 1207[39]:

- Visitor sensitivity to aircraft noise varies considerably between sites;
- Visitors who take a short hike to access a more remote park location appear to be more sensitive to aircraft noise than visitors who remain at look-out points close to car parks;
- Visitors distinguish between annoyance and interference; annoyance is an emotional feeling that persists, interference is an objective term that describes something that temporarily prevents them undertaking their current activity;
- Aircraft noise that interferes with appreciation of natural quiet does not always result in annoyance;
- Visitors understand the concept of 'natural quiet and the sounds of nature';
- The louder the aircraft noise with respect to background levels, the greater the percentage of visitors who feel annoyed and who feel the noise interfered with their appreciation of the sounds of nature;
- The longer aircraft noise is audible, the greater the percentage of visitors annoyed and who feel the noise interfered with their appreciation of the sounds of nature;
- Visitors who are aware of the possibility of hearing human produced sounds (of aircraft overflights) are less annoyed by those sounds than are visitors who have no knowledge beforehand.

8.2.10 Miller does place an emphasis on 'expectation management' and how it can be used to reduce visitor annoyance. Miller also concludes that strategies to reduce both the level and duration of sounds produced by people are also appropriate actions in improving visitor experience.

8.2.11 The publications referred to make clear that a person's perception is not just limited to noise, a wide range of other factors should be taken into account when considering perceived tranquillity. This is best summarised by work carried out by Campaign to Protect Rural England (CPRE) and NRW. Using a range of mapping datasets and a survey, CPRE developed a relative tranquillity score which was then used to map relative tranquillity showing how likely each location was to make a person feel like they were in a 'tranquil' environment. The top ten survey responses for what tranquillity is were found to be:

1) Seeing a natural landscape;
2) Hearing birdsong;
3) Hearing peace and quiet;
4) Seeing natural looking woodland;
5) Seeing the stars at night;

[39] Civil Aviation Authority, ERCD Report 1207 – Tranquillity: An overview (2012)

6) Seeing streams;
7) Seeing the sea;
8) Hearing natural sounds;
9) Hearing wildlife; and
10) Hearing running water.

8.2.12 Conversely, the top ten survey responses citing factors for why a person may not be consider a place to be tranquil were:

1) Hearing constant noise from cars, lorries and/or motorbikes;
2) Seeing lots of people;
3) Seeing urban development;
4) Seeing overhead light pollution;
5) Hearing lots of people;
6) Seeing low flying aircraft;
7) Hearing low flying aircraft;
8) Seeing power lines;
9) Seeing towns and cities; and
10) Seeing roads.

Data Sources Used

8.2.13 To support the assessment of these parks and open spaces, the following datasets have been used to identify the location of such receptors. These are:

- Ordnance Survey Open Greenspace – which provides the location of public parks and playing fields; and
- The Historic England 'Register of Parks and Gardens of Special Historic Interest in England'

8.2.14 For the purposes of this assessment only the “Public Park or Garden” layer from the OS Green Space database has been considered alongside the Historic Parks to avoid overlaps and duplication.

Assessment Methodology

8.2.15 Taking the literature review into account, it is considered that a 5 dB change in $L_{Aeq,T}$ is likely to alter a person’s perception of a park or open space. This is particularly the case where noise levels are above 50 dB $L_{Aeq,T}$ as in such situations the literature indicates that noise may already be detrimentally affecting a person perception of an open space, particularly where background noise levels may already be low and where other natural and contextual features would otherwise indicate a positive experience.

8.2.16 Bentley and NRW introduce the consideration that the area of the parks and opens spaces that are impacted by noise is also a consideration. As such, when considering how noise impacts such spaces, the degree and scale to which these impacts occur is also a key consideration, particularly where noise is being redistributed across that space.

8.2.17 A further consideration, as identified by Bentley, is that where aircraft noise occurs in the vicinity of airports, noise exposure will be dependent on the direction and mode of operation for the airport and that some people may come to accept and expect aircraft noise during certain operating conditions.

8.2.18 The Proposed Development does not affect aircraft noise from Heathrow Airport during westerly operations, only easterly operations. As such, the effects of the Proposed Development need to be considered not just in overall terms but during periods of easterly operation.

8.2.19 Through engagement with community stakeholders as part of Heathrow's airspace change proposals, several stakeholders have indicated that metrics such as N65, L_{ASmax} and noise difference contours may provide a better measure of assessing impacts on parks and open spaces. This feedback has therefore informed the methodology set out below.

Table A7.5.18 Stepped Assessment Methodology for Parks and Open Spaces

Step	Approach	Purpose
Screening	All parks and open spaces which may be routinely affected by aircraft noise from all modes of operation are identified using summer average 'with' and 'without' Proposed Development 5 N65 and 50 $dBL_{Aeq,16hr}$ contours.	Allows the assessment screen in parks and open spaces where aircraft noise may already impact such spaces.
Impact of Proposed Development	This step identifies how the Proposed Development may impact the park and open space. This step considers the following: • Does the Proposed Development lead to an increase in average L_{ASmax} noise levels? • Does the Proposed Development result in an increase (adverse) or decrease (beneficial) change in N65 events? • What are the changes in noise exposure ($L_{Aeq,16hr}$) on average due to the Proposed Development? • What changes in noise exposure occur due to the Proposed Development during an easterly day i.e. 100% easterly $L_{Aeq,16hr}$ noise levels? These impacts are considered using aircraft noise grids for each 0.005km^2 area of the park and open space. Where impacts are found to occur, the scale of the impact over the resource has been determined. Taking into account approaches used on other amenity	This demonstrates the impact of the Proposed Development in terms of where aircraft noise event levels would be higher due to the Proposed Development, and whether the Proposed Development leads to an increase in noise.

Step	Approach	Purpose
	assessments[40], the geographic scale of the impact has been determined as follows: • Limited – small part of the receptor area (less than 10%) • Localised – part of the receptor areas (more than 10% but up to 25%) • Intermediate – approximately half of the receptor area • Wide – more than half of the receptor area	
Assessment	Taking into account the impacts set out above, the degree to which the impacts are either adverse, beneficial or mixed are considered over the space. Where overall summer average noise exposure is found to change by 3 - 5 dB this is considered a potentially significant effect with a greater than 5 dB likely to result in significant adverse effects. Additional factors are then applied. These include existing ambient noise sources that may impact the park and garden, and the level of aircraft noise forecast to occur due to the Proposed Development. Where levels are above 60 dB $L_{Aeq,16hr}$ this has been considered indicative of a level of noise which is likely to result in dominant aircraft noise events where such spaces are located away from other ambient noise sources.	Identify changes in noise due to the Proposed Development which could be considered significant

8.2.20 The methodology set out in **Table A7.5.18** has been applied and presented for each park and open space screened into the assessment. Details for all parks and open spaces can be found in **Table A7.5.67** to **Table A7.5.70**. An example is presented in **Graphic A7.5.12** below.

[40] The Sizewell C Project, Volume 4 Southern Park and Ride, Chapter 8 Amenity and Recreation (2020) https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010012/EN010012-002014-SZC_Bk6_ES_V4_Ch8_Amenity_and_Recreation.pdf

Graphic A7.5.12 Example of Impact Assessment for Avenue Park, Hounslow

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Effect	% of Area effected
Avenue Park located in Hounslow Borough, northeast of the LHR Airport	(52-60 dB)	3 to 4	(56-65 dB)	6 to 9	Yes, adverse	Potentially Significant Wide	0.2	Adverse	100%

9. Assessment of Hotels and Office Uses

9.1 Introduction and Methodology

9.1.1 This section presents an assessment of air noise impacts for hotel and office receptors.

9.1.2 In line with the assessment methodology described in Section 7.5 of **Chapter 7: Noise and Vibration**, the assessment has adopted 'lower' and 'upper' assessment thresholds. For hotels a 'lower' assessment threshold of 50 dB $L_{Aeq,16hr}$ and/or 45 dB $L_{Aeq,8hr}$ has been adopted. For offices a 'lower' assessment threshold of 55 dB $L_{Aeq,16hr}$ has been used. These thresholds have been selected having regard for acoustic design standards as described in BS8233:2014[41] and BCO[42]. Changes in noise exposure above these thresholds may be significant.

9.1.3 Section 7.5 of **Chapter 7: Noise and Vibration** set an 'upper' assessment threshold of 63 dB $L_{Aeq,16hr}$. For commercial uses, namely hotels and offices, this assessment threshold is conservative as it applies primarily to Government policy regarding the insulation of community buildings and in the case of hotels and offices, impacts will be mostly dependent on each receptor's acoustic design and use.

9.1.4 A likely significant effect (adverse or beneficial) is identified where a non-residential receptor is exposed to levels resulting exposure above the 'upper' threshold or is already exposed to levels above the threshold and is forecast to experience at least a 1 dB ('slight') change.

9.1.5 Where noise exposure is between the 'lower' and 'upper' assessment thresholds, a likely significant effect (adverse or beneficial) is identified where a non-residential receptor is forecast to experience at least a 3 dB ('moderate') change in noise exposure.

9.1.6 The assessment has however adopted the same approach as for all other non-residential noise sensitive receptors as described in Chapter 7. However further emphasis has been placed on contextual factors, namely acoustic design and use.

9.2 Hotel Receptors

9.2.1 Above the 'lower' assessment threshold of 50 dB $L_{Aeq,16h}$, 53 receptors which are classified as hotel uses are forecast to experience at least a 'slight' change in summer average daytime noise exposure due to the Proposed Development in 2028. These are presented in **Table A7.5.58** and **Table A7.5.59**.

Adverse Impacts

9.2.2 Twelve hotels are forecast to experience at least a 'slight' change of 1 dB resulting in aircraft noise exposure above the 'upper' threshold due to the Proposed Development in 2028:

[41] British Standards Institution, (2014). *Guidance on sound insulation and noise reduction for buildings*. BSI, UK.
[42] British Council for Offices (2019) *Guide to specification - Best practice for offices*. London: British Council for Offices.

- Berkeley Park x2 (Marlborough Crescent, UB3 5FG);
- DoubleTree by Hilton (Bath Road, TW5 9QE);
- Hotel Ibis (Bath Road, UB3 5AL);
- Moxy London (Bath Road, TW5 9UH);
- Ibis Styles (Bath Road, UB3 5AY);
- Premier Inn (Bath Road, TW6 2AB);
- Courtyard by Marriot (Nobel Drive, UB3 5EY);
- Radisson Edwardian (Bath Road, UB3 5AW);
- Sheraton Skyline (Bath Road, UB3 5BP) ;
- Holiday Inn Ariel (Bath Road, UB3 5AJ); and
- VII Hotel and Indian Restaurant (Bath Road, TW5 9TY)[43].

9.2.3 Ten of these hotels are forecast to experience a 'slight' adverse increase of 1 – 1.9 dB in summer average daytime noise exposure due with the Proposed Development. The exceptions are the Premier Inn (Bath Road, TW6 2AB) and Hotel Ibis (Bath Road, UB3 5AL) which are forecast to experience a 'minor' increase of 2.9 and 2.3 dB respectively.

9.2.4 Significant adverse effects are therefore initially identified at these receptors based on the magnitude of noise change in the context of elevated levels of exposure. However, in respect of the above hotels, the Proposed Development is forecast to result in additional aircraft events at similar noise levels to existing conditions which are expected to have been captured in the intrinsic acoustic and ventilation design of these hotels.

9.2.5 Receptors such as these came into use some years ago when aircraft noise exposure would have been much higher than forecast to occur as a result of the Proposed Development in 2028. It considered reasonable to assume that the acoustic and ventilation design would have been based on the noise constraints at the time, therefore whilst the Proposed Development will give rise to increases in aircraft noise externally, internal conditions within these hotels are unlikely to be adversely affected in absolute terms having regard to the original design criteria. In this context, no adverse likely significant effects are identified at these receptors.

9.2.6 Ten hotels are forecast to be exposed to levels between the 'lower' and 'upper' thresholds due to the Proposed Development in 2028.

9.2.7 The Travelodge M4 Westbound (Phoenix Way, TW5 9NB) is forecast to experience a 'moderate' adverse increase of 3.5 dB in noise summer average noise exposure due to the Proposed Development in 2028 leaving it exposed to a level of 55.4 dB $L_{Aeq,16hr.}$ Therefore, adverse likely significant effects are initially identified for this receptor based on the adopted significance criteria.

[43] This receptor currently appears to be permanently closed.

9.2.8 However, this receptor is located within the Heston motorway service station complex adjacent the M4 motorway, which operates on a 24-hours basis. Consequently, the noise exposure at this receptor will be dominated by motorway road traffic in addition to other activity within the complex. Therefore, it is considered that forecast change in aviation noise exposure would be significantly diluted. For example, conservatively assuming daytime road traffic noise exposure of 50 dB $L_{Aeq,16h}$ would result in a change of less than 3 dB in terms of absolute noise exposure (all sources). Therefore, no likely significant effects are identified for this receptor.

9.2.9 The Travelodge M4 eastbound (North Hyde Lane, TW5 9NA) is forecast to experience a 'minor' adverse increase of 2.4 dB in summer average daytime noise exposure due to the Proposed Development in 2028. Therefore, adverse likely significant effects are not concluded for this receptor based on the adopted significance criteria.

9.2.10 The remaining eight hotels are forecast to experience a 'slight' adverse increase in summer average daytime noise exposure due to the Proposed Development in 2028. Adverse likely significant effects are not concluded for these eight receptors based on the adopted significance criteria.

Beneficial Impacts

9.2.11 Thirty-one receptors are forecast to experience a 'slight' beneficial change in summer average noise exposure. The forecast noise exposure at all these receptors with the Proposed Development in 2028 is less than 63 dB, with typical noise exposure around 51 to 56 dB $L_{Aeq,16hr}$. Although beneficial, no likely significant effects are concluded at these receptors based on the adopted significance criteria.

9.2.12 At three hotel receptors noise exposure is between 60 and 63 dB $L_{Aeq,16hr}$ and it is anticipated that the existing conditions have been captured in the intrinsic acoustic and ventilation design of these hotels. No beneficial likely significant effects are concluded at these receptors.

9.3 Offices

9.3.1 Above the 'lower' assessment threshold of 50 dB $L_{Aeq,16h}$, 114 receptors which are classified as office uses are forecast to experience changes of at least 1 dB in summer average daytime noise exposure due to the Proposed Development in 2028. These are presented in **Table A7.5.65** and **Table A7.5.66** of **Appendix 7.5: Air Noise**.

Adverse Impacts

9.3.2 Eighteen office uses are forecast to be exposed to levels above the 'upper' threshold (63 dB $L_{Aeq,16hr}$) due to the Proposed Development in 2028 and experience at least a 1 dB increase in aircraft noise. Of these, the following six office uses are below the 'upper' threshold without the Proposed Development in 2028:

- Airport Bowl (Nobel Drive, UB3 5EY);
- Epsom Square Business Park (TW6 2BJ);

- Avis Rent a Car (Northrop Road, TW6 2QA);
- Epsom Square Business Park (x3) (TW6 2EE / TW6 2RX);
- Heathrow House (Bath Road, TW5 9QQ);
- Strata House (Bath Road, UB3 5JJ);
- Capital Place (Bath Road, UB3 5AN);
- Collaboration House (Mondial Way, UB3 5AR);
- World Business Centre 1 (Newall Road, TW6 2AH);
- World Business Centre 2 (Newall Road TW6 2SF);
- Amadeus Building, World Business Centre 4 (Newall Road, TW6 2FL);
- Mondial House (Mondial Way, UB3 5AR);
- Unite House (New Road, UB3 5BQ);
- Capital Place (19 Bath Road, UB3 5AN);
- 750 – 754 Bath Road (TW5 9TY)[44]; and
- Heathrow Estates (756 Bath Rd, TW5 9TY).

9.3.3 Six of these offices are forecast to experience a 'minor' adverse increase of 2 – 2.9 dB in summer average daytime noise exposure due with the Proposed Development. These are:

- Airport Bowl;
- Epsom Square Business Park;
- Avis Rent a Car; and
- Epsom Square Business Park (x3).

9.3.4 The remaining twelve office uses are forecast to experience a 'adverse increase of 1 – 1.9 dB in summer average daytime noise exposure due with the Proposed Development.

9.3.5 Significant adverse effects are therefore initially identified at these receptors based on the magnitude of noise change in the context of elevated levels of exposure. However, in respect of the above office uses, the Proposed Development is forecast to result in additional aircraft events at similar noise levels to existing conditions which are expected to have been captured in the intrinsic acoustic and ventilation design of these office uses.

9.3.6 Receptors such as these came into use some years ago when aircraft noise exposure would have been much higher than forecast to occur as a result of the Proposed Development in 2028. It considered reasonable to assume that the acoustic and ventilation design would have been based on the noise constraints at the time, therefore whilst the Proposed Development will give rise to increases in aircraft noise externally, internal conditions within these office uses are unlikely to be adversely affected in absolute terms having regard to

[44] Currently appears to be hot food/takeaway premises with residential above.

the expected internal conditions which led to their design. In this context, no adverse likely significant effects are concluded at these receptors.

9.3.7 Thirty-seven office uses are forecast to be exposed to levels between the 'lower' and ''upper' assessment thresholds due to the Proposed Development in 2028.

9.3.8 Eight premises are forecast to experience a 'moderate' increase in noise summer average noise exposure due to the Proposed Development in 2028. Seven are located in and around the Parkway Trading Estate (TW5 9NB) with a further location Stansfield House (42 High Street, TW5 9RU) also identified. Adverse likely significant effects are initially concluded for these receptors based on the adopted significance criteria.

9.3.9 However, in respect of the properties in and around the Parkway Trading Estate the noise exposure will be dominated by the estate itself in addition to contributions from the adjacent M4 motorway. Likewise, the noise exposure of Stansfield House will be dominated by road traffic noise from the adjacent Hight Street and nearby A312 (Parkway). Therefore, it is considered that the forecast change and levels of aircraft noise are unlikely to distract people working at these receptors. For example, conservatively assuming daytime road traffic noise exposure of 50 dB $L_{Aeq,16h}$ would result in a change of less than 3 dB in terms of absolute noise exposure (all sources). No adverse likely significant effects are therefore concluded for this receptor.

9.3.10 Of the remaining twenty-nine office uses below the 'upper' threshold, seven are forecast to experience a 'minor' adverse increase of 2 – 2.9 dB in summer average noise exposure due to the Proposed Development in 2028. These properties are located in Cranford near to the airfield and around the Parkway Trading Estate. The remaining twenty two office uses are forecast to experience a 'slight' adverse increase of 1 – 1.9 dB in summer average daytime noise exposure due to the Proposed Development in 2028. These properties are concentrated in in Cranford near to the airfield, around the Parkway Trading Estate and includes some receptors in Old Windsor. Adverse likely significant effects are not concluded for these twenty nine receptors based on the adopted significance criteria.

Beneficial Impacts

9.3.11 Fifty-nine office receptors are forecast to experience at least a 'slight' beneficial change in summer average noise exposure. Although beneficial, no likely significant effects are concluded at these receptors based on the adopted significance criteria.

10. Aircraft Air Noise Tables

10.1.1 The noise modelling outputs have been produced as noise maps, noise difference maps, provided in **Volume IV** of the Environmental Statement in support of the air noise assessment, provided in **Appendix 7.5: Air Noise, Volume III** of the Environmental Statement.

10.1.2 The Tables and accompanying Figures are summarised in **Table A7.5.19** below.

10.1.3 Throughout this document, 'without development' and 'with development' scenarios are described as 'WoD' and 'WD' respectively.

Table A7.5.19 Aircraft Air Noise Tables and Figures

Content	Table Number	Figure Number (Volume IV of the Environmental Statement)
Noise Study Area	**-**	**Figure 7.5.1**
Without Alternation Daytime ($dBL_{Aeq,16h}$) – 79% Westerly / 21% Easterly	**Table A7.5.20**	**Figure 7.5.2-WoD**
With Alternation Daytime ($dBL_{Aeq,16h}$) – 79% Westerly / 21% Easterly		**Figure 7.5.2-WD**
Without Alternation Night-time ($dBL_{Aeq,8h}$) – 76% Westerly / 24% Easterly	**Table A7.5.21**	**Figure 7.5.3-WoD**
With Alternation Night-time ($dBL_{Aeq,8h}$) – 76% Westerly / 24% Easterly		**Figure 7.5.3-WD**
Difference Noise Change Daytime ($dBL_{Aeq,16h}$) – 79% Westerly / 21% Easterly	**Table A7.5.22**	**Figure 7.5.4**
Difference Noise Change Night-time ($dBL_{Aeq,8h}$) – 76% Westerly / 24% Easterly	**Table A7.5.23**	**Figure 7.5.5**
Without Alternation Daytime (N65) – 79% Westerly / 21% Easterly	**Table A7.5.24**	**Figure 7.5.6-WoD**
With Alternation Daytime (N65) – 79% Westerly / 21% Easterly		**Figure 7.5.6-WD**
Without Alternation Night-time (N60) – 76% Westerly / 24% Easterly	**Table A7.5.25**	**Figure 7.5.7-WoD**
With Alternation Night-time (N60) – 76% Westerly / 24% Easterly		**Figure 7.5.7-WD**
WebTAG – Standard Modal Split	**Table A7.5.26**	**-**
Difference Noise Change Daytime (N65) – 79% Westerly / 21% Easterly	**-**	**Figure 7.5.8-1**

Content	Table Number	Figure Number (Volume IV of the Environmental Statement)
Difference Noise Change Night-time (N60) – 76% Westerly / 24% Easterly	-	Figure 7.5.8-2
Without Alternation Daytime ($dBL_{Aeq,16h}$) – 89% Westerly / 11% Easterly	Table A7.5.27	Figure 7.5.9-WoD
With Alternation Daytime ($dBL_{Aeq,16h}$) – 89% Westerly / 11% Easterly		Figure 7.5.9-WD
Without Alternation Night-time ($dBL_{Aeq,8h}$) – 85% Westerly / 15% Easterly	Table A7.5.28	Figure 7.5.10-WoD
With Alternation Night-time ($dBL_{Aeq,8h}$) – 85% Westerly / 15% Easterly		Figure 7.5.10-WD
Difference Noise Change Daytime ($dBL_{Aeq,16h}$) – 89% Westerly / 11% Easterly	Table A7.5.29	Figure 7.5.11
Difference Noise Change Night-time ($dBL_{Aeq,8h}$) – 85% Westerly / 15% Easterly	Table A7.5.30	Figure 7.5.12
Without Alternation Daytime (N65) – 89% Westerly / 11% Easterly	Table A7.5.31	Figure 7.5.13-WoD
With Alternation Daytime (N65) – 89% Westerly / 11% Easterly		Figure 7.5.13-WD
Without Alternation Night-time (N60) – 85% Westerly / 15% Easterly	Table A7.5.32	Figure 7.5.14-WoD
With Alternation Night-time (N60) – 85% Westerly / 15% Easterly		Figure 7.5.14-WD
WebTAG – Extreme West Modal Split	Table A7.5.33	-
Difference Noise Change Daytime (N65) – 89% Westerly / 11% Easterly	-	Figure 7.5.15-1
Difference Noise Change Night-time (N60) – 85% Westerly / 15% Easterly	-	Figure 7.5.15-2
Without Alternation Daytime ($dBL_{Aeq,16h}$) – 55% Westerly / 45% Easterly	Table A7.5.34	Figure 7.5.16-WoD
With Alternation Daytime ($dBL_{Aeq,16h}$) – 55% Westerly / 45% Easterly		Figure 7.5.16-WD
Without Alternation Night-time ($dBL_{Aeq,8h}$) – 56% Westerly / 44% Easterly	Table A7.5.35	Figure 7.5.17-WoD
With Alternation Night-time ($dBL_{Aeq,8h}$) – 56% Westerly / 44% Easterly		Figure 7.5.17-WD
Difference Noise Change Daytime ($dBL_{Aeq,16h}$) – 55% Westerly / 45% Easterly	Table A7.5.36	Figure 7.5.18

Content	Table Number	Figure Number (Volume IV of the Environmental Statement)
Difference Noise Change Night-time ($dBL_{Aeq,8h}$) – 56% Westerly / 44% Easterly	Table A7.5.37	Figure 7.5.19
Without Alternation Daytime (N65) – 55% Westerly / 45% Easterly	Table A7.5.38	Figure 7.5.20-WoD
With Alternation Daytime (N65) – 55% Westerly / 45% Easterly		Figure 7.5.20-WD
Without Alternation Night-time (N60) – 56% Westerly / 44% Easterly	Table A7.5.39	Figure 7.5.21-WoD
With Alternation Night-time (N60) – 56% Westerly / 44% Easterly		Figure 7.5.21-WD
WebTAG – Extreme East Modal Split	Table A7.5.40	-
Difference Noise Change Daytime (N65) – 55% Westerly / 45% Easterly	-	Figure 7.5.22-1
Difference Noise Change Night-time (N60) – 56% Westerly / 44% Easterly	-	Figure 7.5.22-2
Without Alternation Daytime ($dBL_{Aeq,16h}$) – 0% Westerly / 100% Easterly	Table A7.5.41	Figure 7.5.23-WoD
With Alternation Daytime ($dBL_{Aeq,16h}$) – 0% Westerly / 100% Easterly		Figure 7.5.23-WD
Without Alternation Night-time ($dBL_{Aeq,8h}$) – 0% Westerly / 100% Easterly	Table A7.5.42	Figure 7.5.24-WoD
With Alternation Night-time ($dBL_{Aeq,8h}$) – 0% Westerly / 100% Easterly		Figure 7.5.24-WD
Difference Noise Change Daytime ($dBL_{Aeq,16h}$) – 0% Westerly / 100% Easterly	Table A7.5.43	Figure 7.5.25
Difference Noise Change Night-time ($dBL_{Aeq,8h}$) – 0% Westerly / 100% Easterly	Table A7.5.44	Figure 7.5.26
Without Alternation Daytime (N65) – 0% Westerly / 100% Easterly	Table A7.5.45	Figure 7.5.27-WoD
With Alternation Daytime (N65) – 0% Westerly / 100% Easterly		Figure 7.5.27-WD
Without Alternation Night-time (N60) – 0% Westerly / 100% Easterly	Table A7.5.46	Figure 7.5.28-WoD
With Alternation Night-time (N60) – 0% Westerly / 100% Easterly		Figure 7.5.28-WD
WebTAG – 100% East Modal Split	Table A7.5.47	-

Content	Table Number	Figure Number (Volume IV of the Environmental Statement)
Difference Noise Change Daytime (N65) – 0% Westerly / 100% Easterly	-	Figure 7.5.29-1
Difference Noise Change Night-time (N60) – 0% Westerly / 100% Easterly	-	Figure 7.5.29-2
Daytime, Night-time and Change in Noise Exposure due to the Proposed Development – Extreme West Mode	Table A7.5.48	-
Daytime, Night-time and Change in Noise Exposure due to the Proposed Development – Extreme East Mode	Table A7.5.49	-
Total Adverse Effects, in Year Monetisation – TAG – Extreme West Mode	Table A7.5.50	-
Total Adverse Effects, in Year Monetisation – TAG – Extreme East Mode	Table A7.5.51	-
Analysis of places of worship for non-residential receptors – Adverse Effect	Table A7.5.52	-
Analysis of places of worship for non-residential receptors – Beneficial Effect	Table A7.5.53	-
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Table A7.5.20 Dwellings, Population and Area exposed to $L_{Aeq,16hr}$ – Standard Mode

Standard Mode, 79%W:21%E, Dwellings & Population (thousands), Area (km^2)						
$L_{Aeq,16hr}$	2028 Without Development			2028 With Development		
Contour	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
51 dB – 54 dB	227.6	532.2	101.8	231.6	544.7	102.6
54 dB – 57 dB	96.4	229.6	56.1	90.5	215.5	56.0
57 dB – 60 dB	39.3	98.8	31.3	37.9	95.1	31.2
60 dB – 63 dB	20.0	56.1	16.7	20.1	57.5	17.0
63 dB – 66 dB	8.6	25.8	12.0	8.9	26.3	12.3
66 dB – 69 dB	1.5	4.3	5.5	1.6	4.4	5.3
≥ 69 dB	0.3	0.8	5.7	0.4	1.3	5.7
Objective Annoyance						
≥ LOAEL	383.3	916.7	205.9	380.1	912.8	206.8
≥ SOAEL	10.4	30.9	23.2	10.9	32.0	23.3
Total Population	Highly Annoyed (HA, SONA14)	93.8		Highly Annoyed (HA, SONA14)	93.4	

Table A7.5.21 Dwellings, Population and Area exposed to $L_{Aeq,8hr}$ – Standard Mode

Standard Mode, 76%W:24%E, Dwellings & Population (thousands), Area (km²)						
$L_{Aeq,8hr}$	2028 Without Development			2028 With Development		
Contour	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
45 dB – 48 dB	152.8	351.3	55.8	154.6	354.2	55.5
48 dB – 51 dB	73.8	172.6	36.7	68.7	160.8	36.2
51 dB – 55 dB	51.2	128.4	34.7	51.6	129.5	35.1
55 dB – 57 dB	8.5	24.8	7.5	8.9	25.6	7.5
57 dB – 60 dB	8.3	24.5	6.0	8.3	24.7	6.0
60 dB – 63 dB	1.0	3.3	2.6	1.1	3.4	2.6
≥ 63 dB	0.2	0.7	3.0	0.3	0.9	3.1
Objective Annoyance						
≥ LOAEL	277.8	652.3	134.7	274.9	644.5	134.3
≥ SOAEL	18.0	53.3	11.6	18.6	54.6	11.7
Total Population	Highly Sleep Disturbed (HSD, SONA14)	73.0		Highly Sleep Disturbed (HSD, SONA14)	72.4	

Table A7.5.22 Change in 2028 Daytime Noise Exposure due to the Proposed Development – Standard Mode

Standard Mode, 79%W:21%E, Population (thousands)											
$L_{Aeq,16hr}$	Reduction in Noise Exposure					No Change	Increase in Exposure				
Exposure With Development	Major > 6	Moderate 3.0 – 5.9	Minor 2.0 – 2.9	Slight 1.0 – 1.9	Negligible 0.1 – 0.9	< 0.1 increase or decrease	Negligible 0.1 – 0.9	Slight 1.0 – 1.9	Minor 2.0 – 2.9	Moderate 3.0 – 5.	Major > 6
51 dB – 54 dB	0.0	0.0	0.0	35.7	33.4	438.1	19.4	3.0	3.0	12.1	0.0
54 dB – 57 dB	0.0	0.0	0.0	22.4	19.2	151.0	17.1	3.0	1.5	1.4	0.0
57 dB – 60 dB	0.0	0.0	0.0	2.8	10.4	59.6	15.4	4.6	1.3	1.1	0.0
60 dB – 63 dB	0.0	0.0	0.0	0.9	7.7	22.3	21.2	3.2	1.4	0.9	0.0
63 dB – 66 dB	0.0	0.0	0.0	0.2	4.7	6.9	11.6	2.7	0.1	0.0	0.0
66 dB – 69 dB	0.0	0.0	0.0	0.1	0.8	0.3	2.9	0.3	0.0	0.0	0.0
≥ 69 dB	0.0	0.0	0.0	0.0	0.4	0.0	0.9	0.0	0.0	0.0	0.0
Totals	**Total Experience Beneficial Magnitude of Change**						**Total Experiencing Adverse Magnitude of Change**				
	0.0	0.0	0.0	62.2	76.4	678.2	88.5	16.8	7.3	15.4	0.0
	Beneficial Changes (> 1 dB)						**Adverse Changes (> 1 dB)**				
	62.1						39.6				

Table A7.5.23 Change in 2028 Night-time Noise Exposure due to the Proposed Development – Standard Mode

Standard Mode, 76%W:24%E, Population (thousands)											
$L_{Aeq,8hr}$	Reduction in Noise Exposure					No Change	Increase in Exposure				
Exposure With Development	Major > 6	Moderate 3.0 – 5.9	Minor 2.0 – 2.9	Slight 1.0 – 1.9	Negligible 0.1 – 0.9	< 0.1 increase or decrease	Negligible 0.1 – 0.9	Slight 1.0 – 1.9	Minor 2.0 – 2.9	Moderate 3.0 – 5.	Major > 6
45 – 48 dB	0.0	0.0	0.0	18.5	17.4	304.0	10.9	3.2	0.2	0.0	0.0
48 – 51 dB	0.0	0.0	0.0	9.2	8.0	131.7	7.5	4.0	0.5	0.0	0.0
51 – 55 dB	0.0	0.0	0.0	1.1	2.6	106.6	15.2	3.7	0.3	0.0	0.0
55 – 57 dB	0.0	0.0	0.0	0.2	0.4	22.4	2.4	0.2	0.0	0.0	0.0
57 – 60 dB	0.0	0.0	0.0	0.0	0.6	21.6	2.4	0.1	0.0	0.0	0.0
60 – 63 dB	0.0	0.0	0.0	0.0	0.0	1.2	2.1	0.1	0.0	0.0	0.0
≥ 63 dB	0.0	0.0	0.0	0.0	0.3	0.0	0.6	0.0	0.0	0.0	0.0
Totals	**Total Experience Beneficial Magnitude of Change**						**Total Experiencing Adverse Magnitude of Change**				
	0.0	0.0	0.0	29.1	29.3	587.5	41.0	11.2	1.0	0.0	0.0
	Beneficial Changes (> 1 dB)						**Adverse Changes (> 1 dB)**				
	29.0						12.3				

Table A7.5.24 Dwellings, Population and Area exposed to N65 – Standard Mode

Standard Mode, 79%W:21%E, Dwellings & Population (thousands), Area (km^2)						
N65	**2028 Without Development**			**2028 With Development**		
Rate	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
0 - 5	116.4	286	97.0	117.9	291.2	98.9
5 - 10	86.9	210.9	83.6	88.6	216.6	82.6
10 - 20	193.2	451.9	121.8	209.4	499.3	128.1
20 - 50	115.2	275.2	62.0	119.9	286.1	63.7
50 - 100	44	105.6	42.9	31.0	75.6	34.9
100 - 200	58.6	146.9	39.7	57.1	140.8	41.7
200 - 300	23.4	67.6	14.4	27.3	79.4	19.0
300 - 400	4.4	11.8	7.4	3.0	8.4	6.4
400 - 500	0.4	0.9	6.8	0.4	0.9	7.9
500 - 600	0.1	0.2	3.6	0.1	0.3	2.4

Table A7.5.25 Dwellings, Population and Area exposed to N60 – Standard Mode

Standard Mode, 79%W:21%E, Dwellings & Population (thousands), Area (km^2)						
N60	**2028 Without Development**			**2028 With Development**		
Rate	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
0 - 5	148.3	335.1	82.7	147.9	333.0	78.7
5 - 10	187.2	430.8	85.9	185.3	425.8	89.7
10 - 20	254.6	611.7	106.0	253.3	609.1	104.4
20 - 50	2.0	5.7	1.6	1.9	5.4	1.7
50 - 100	0.0	0.0	0.0	0.0	0.0	0.0

Table A7.5.26 WebTAG – Standard Mode

Scenario	2028 Without Development	2028 With Development
Total £ from LOAEL (51 dB) WebTAG	£163,914,796	£162,965,503

Table A7.5.27 Dwellings, Population and Area exposed to LAeq,16hr – Extreme West Mode

Extreme West Mode, 89%W:11%E, Dwellings & Population (thousands), Area (km^2)						
$L_{Aeq,16hr}$	2028 Without Development			2028 With Development		
Contour	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
51 dB – 54 dB	228.3	536.1	97.3	228.1	534.9	97.4
54 dB – 57 dB	109.4	258.6	57.5	104.6	247.0	57.2
57 dB – 60 dB	41.7	103.1	33.2	41.7	102.8	33.2
60 dB – 63 dB	19.1	53.3	16.5	19.7	55.4	16.7
63 dB – 66 dB	9.7	28.5	12.0	9.9	29.1	12.1
66 dB – 69 dB	1.8	5.2	5.6	1.8	5.0	5.6
≥ 69 dB	0.4	1.2	5.8	0.4	1.4	5.8
Objective Annoyance						
≥ 51 dB	398.5	951.1	204.5	394.1	940.1	204.5
≥ 63 dB	11.9	34.9	23.4	12.1	35.5	23.5
Total Population	Highly Annoyed (HA, SONA14)	98.1		Highly Annoyed (HA, SONA14)	97.4	

Table A7.5.28 Dwellings, Population and Area exposed to $L_{Aeq,8hr}$ – Extreme West Mode

Extreme West Mode, 85%W:15%E, Dwellings & Population (thousands), Area (km^2)						
$L_{Aeq,8hr}$	2028 Without Development			2028 With Development		
Contour	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
45 dB – 48 dB	158.5	365.8	53.6	157.8	363.0	53.4
48 dB – 51 dB	81.4	188.7	35.6	79.0	183.5	35.4
51 dB – 55 dB	51.9	129.2	34.3	52.1	129.9	34.6
55 dB – 57 dB	9.8	27.6	7.6	9.8	27.8	7.6
57 dB – 60 dB	9.4	27.7	6.1	9.5	27.9	6.1
60 dB – 63 dB	1.5	5.0	2.6	1.5	5.1	2.6
≥ 63 dB	0.3	1.2	3.0	0.3	1.2	3.1
Objective Annoyance						
> 45 dB	291.8	683.7	131.1	288.9	676.4	131.0
> 55 dB	21.0	61.5	11.7	21.1	62.0	11.8
Total Population	Highly Sleep Disturbed (HSD, SONA14)	77.7		Highly Sleep Disturbed (HSD, SONA14)	77.2	

Table A7.5.29 Change in 2028 Daytime Noise Exposure due to the Proposed Development – Extreme West Mode

Extreme West Mode, 89%W:11%E, Population (thousands)											
$L_{Aeq,16hr}$	Reduction in Noise Exposure					No Change	Increase in Exposure				
Exposure With Development	**Major > 6**	**Moderate 3.0 – 5.9**	**Minor 2.0 – 2.9**	**Slight 1.0 – 1.9**	**Negligible 0.1 – 0.9**	**< 0.1 increase or decrease**	**Negligible 0.1 – 0.9**	**Slight 1.0 – 1.9**	**Minor 2.0 – 2.9**	**Moderate 3.0 – 5.**	**Major > 6**
51 dB – 54 dB	0.0	0.0	0.0	20.2	24.9	469.3	15.9	1.7	2.9	0.0	0.0
54 dB – 57 dB	0.0	0.0	0.0	6.9	14.0	206.7	16.7	1.8	0.9	0.0	0.0
57 dB – 60 dB	0.0	0.0	0.0	0.6	7.5	73.4	18.8	1.3	1.2	0.0	0.0
60 dB – 63 dB	0.0	0.0	0.0	0.3	6.0	35.2	12.4	1.2	0.2	0.0	0.0
63 dB – 66 dB	0.0	0.0	0.0	0.1	1.9	22.7	4.3	0.0	0.0	0.0	0.0
66 dB – 69 dB	0.0	0.0	0.0	0.0	0.9	1.1	3.0	0.0	0.0	0.0	0.0
≥ 69 dB	0.0	0.0	0.0	0.0	0.3	0.0	1.1	0.0	0.0	0.0	0.0
Totals	**Total Experience Beneficial Magnitude of Change**						**Total Experiencing Adverse Magnitude of Change**				
	0.0	0.0	0.0	28.2	55.4	808.5	72.2	6.1	5.1	0.0	0.0
	Beneficial Changes (> 1 dB)						**Adverse Changes (> 1 dB)**				
	28.1						11.2				

Table A7.5.30 Change in 2028 Night-time Noise Exposure due to the Proposed Development – Extreme West Mode

Extreme West Mode, 85%W:15%E, Population (thousands)											
$L_{Aeq,8hr}$	Reduction in Noise Exposure					No Change	Increase in Exposure				
Exposure With Development	Major > 6	Moderate 3.0 – 5.9	Minor 2.0 – 2.9	Slight 1.0 – 1.9	Negligible 0.1 – 0.9	< 0.1 increase or decrease	Negligible 0.1 – 0.9	Slight 1.0 – 1.9	Minor 2.0 – 2.9	Moderate 3.0 – 5.	Major > 6
45 – 48 dB	0.0	0.0	0.0	16.3	19.7	315.2	10.9	1.1	0.0	0.0	0.0
48 – 51 dB	0.0	0.0	0.0	0.4	6.1	168.4	5.7	2.8	0.0	0.0	0.0
51 – 55 dB	0.0	0.0	0.0	0.0	3.1	112.1	13.6	1.1	0.0	0.0	0.0
55 – 57 dB	0.0	0.0	0.0	0.0	0.6	25.3	1.9	0.0	0.0	0.0	0.0
57 – 60 dB	0.0	0.0	0.0	0.0	0.5	25.3	2.2	0.0	0.0	0.0	0.0
60 – 63 dB	0.0	0.0	0.0	0.0	0.0	4.4	0.7	0.0	0.0	0.0	0.0
≥ 63 dB	0.0	0.0	0.0	0.0	0.1	1.1	0.0	0.0	0.0	0.0	0.0
Totals	**Total Experience Beneficial Magnitude of Change**						**Total Experiencing Adverse Magnitude of Change**				
	0.0	0.0	0.0	16.7	30.0	651.6	35.1	5.0	0.0	0.0	0.0
	Beneficial Changes (> 1 dB)						**Adverse Changes (> 1 dB)**				
	16.7						5.0				

Table A7.5.31 Dwellings, Population and Area exposed to N65 – Extreme West Mode

Extreme West Mode, 89%W:11%E, Dwellings & Population (thousands), Area (km^2)						
N65	**2028 Without Development**			**2028 With Development**		
Rate	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
0 - 5	79.0	190.1	83.9	81.3	196.9	85.9
5 - 10	96.3	231.2	88.2	114.2	282.8	93.9
10 - 20	171.4	408.8	96.4	170.3	406.6	94.1
20 - 50	97.8	224.3	54.5	91.4	208.9	52.3
50 - 100	45.6	108.5	41.2	43.8	104.5	40.4
100 - 200	52.1	129.1	37.3	52.1	129.0	37.1
200 - 300	34.3	96.3	22.0	35.1	98.4	23.3
300 - 400	4.6	11.8	6.3	4.1	10.7	5.8
400 - 500	0.7	1.7	6.5	0.6	1.5	4.3
500 - 600	0.1	0.3	4.5	0.2	0.5	6.1

Table A7.5.32 Dwellings, Population and Area exposed to N60 – Extreme West Mode

Extreme West Mode, 85%W:15%E, Dwellings & Population (thousands), Area (km^2)						
N60	**2028 Without Development**			**2028 With Development**		
Rate	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
0 - 5	163.3	367.7	90.2	163.0	366.8	82.3
5 - 10	158.4	363.5	68.5	157.1	360.5	70.2
10 - 20	284.4	676.1	107.4	283.8	674.7	106.9
20 - 50	10.7	29.9	4.9	11.2	31.1	5.1
50 - 100	0.0	0.0	0.0	0.0	0.0	0.0

Table A7.5.33 WebTAG – Extreme West Mode

Scenario	2028 Without Development	2028 With Development
Total £ from LOAEL (51 dB) WebTAG	£173,716,177	£172,716,177

Table A7.5.34 Dwellings, Population and Area exposed to $L_{Aeq,16hr}$ – Extreme East Mode

Extreme East Mode, 55%W:45%E, Dwellings & Population (thousands), Area (km²)						
$L_{Aeq,16hr}$	2028 Without Development			2028 With Development		
Contour	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
51 dB – 54 dB	202.7	475.2	109.4	205.7	483.6	113.3
54 dB – 57 dB	71.0	172.0	55.6	74.6	183.4	56.7
57 dB – 60 dB	42.5	110.2	27.7	34.6	91.1	28.1
60 dB – 63 dB	19.5	55.6	16.6	18.3	53.4	15.7
63 dB – 66 dB	6.3	18.8	11.8	8.7	25.6	13.3
66 dB – 69 dB	1.1	3.3	5.1	1.4	4.2	5.1
≥ 69 dB	0.3	0.7	5.7	0.2	0.7	5.6
Objective Annoyance						
≥ 51 dB	335.7	813.0	209.3	333.2	811.5	213.8
≥ 63 dB	7.7	22.8	22.6	10.3	30.5	24.0
Total Population	Highly Annoyed (HA, SONA14)	83.1		Highly Annoyed (HA, SONA14)	83.7	

Table A7.5.35 Dwellings, Population and Area exposed to $L_{Aeq,8hr}$ – Extreme East Mode

Extreme East Mode, 56%W:44%E, Dwellings & Population (thousands), Area (km^2)						
$L_{Aeq,8hr}$	2028 Without Development			2028 With Development		
Contour	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
45 dB – 48 dB	130.8	304.0	58.6	130.2	301.4	59.0
48 dB – 51 dB	53.2	127.1	38.4	53.1	126.2	38.0
51 dB – 55 dB	45.5	116.8	34.8	42.4	110.1	35.0
55 dB – 57 dB	8.1	23.5	7.1	8.2	23.7	7.4
57 dB – 60 dB	4.4	13.6	5.8	4.7	14.5	5.7
60 dB – 63 dB	0.8	2.7	2.6	0.9	2.8	2.6
≥ 63 dB	0.1	0.2	3.0	0.0	0.1	3.1
Objective Annoyance						
≥ 45 dB	229.5	547.9	138.9	225.7	537.7	139.4
≥ 55 dB	13.4	40.0	11.4	13.8	41.1	11.4
Total Population	Highly Sleep Disturbed (HSD, SONA14)	60.1		Highly Sleep Disturbed (HSD, SONA14)	59.3	

Table A7.5.36 Change in 2028 Daytime Noise Exposure due to the Proposed Development – Extreme East Mode

Extreme East Mode, 55%W:45%E, Population (thousands)											
$L_{Aeq,16hr}$	Reduction in Noise Exposure					No Change	Increase in Exposure				
Exposure With Development	Major > 6	Moderate 3.0 – 5.9	Minor 2.0 – 2.9	Slight 1.0 – 1.9	Negligible 0.1 – 0.9	< 0.1 increase or decrease	Negligible 0.1 – 0.9	Slight 1.0 – 1.9	Minor 2.0 – 2.9	Moderate 3.0 – 5.	Major > 6
51 dB – 54 dB	0.0	0.0	2.3	35.6	69.2	309.4	32.2	17.0	4.5	13.5	0.0
54 dB – 57 dB	0.0	0.0	10.1	34.6	24.3	73.2	14.2	8.7	4.2	14.1	0.0
57 dB – 60 dB	0.0	0.0	4.2	13.2	14.2	26.4	22.7	3.1	1.4	5.8	0.0
60 dB – 63 dB	0.0	0.0	1.6	1.6	10.3	5.0	28.1	1.2	1.0	4.0	0.5
63 dB – 66 dB	0.0	0.0	0.5	0.3	5.6	2.2	10.2	1.9	2.3	2.5	0.2
66 dB – 69 dB	0.0	0.0	0.1	0.7	0.1	0.0	0.2	2.6	0.4	0.0	0.0
≥ 69 dB	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.4	0.1	0.0	0.0
Totals	**Total Experience Beneficial Magnitude of Change**						**Total Experiencing Adverse Magnitude of Change**				
	0.0	0.0	18.8	86.3	123.6	416.2	107.6	34.9	13.9	39.9	0.7
	Beneficial Changes (> 1 dB)						**Adverse Changes (> 1 dB)**				
	105.1						89.4				

Table A7.5.37 Change in 2028 Night-time Noise Exposure due to the Proposed Development – Extreme East Mode

Extreme East Mode, 56%W:44%E, Population (thousands)											
$L_{Aeq,8hr}$	Reduction in Noise Exposure					No Change	Increase in Exposure				
Exposure With Development	Major > 6	Moderate 3.0 – 5.9	Minor 2.0 – 2.9	Slight 1.0 – 1.9	Negligible 0.1 – 0.9	< 0.1 increase or decrease	Negligible 0.1 – 0.9	Slight 1.0 – 1.9	Minor 2.0 – 2.9	Moderate 3.0 – 5.	Major > 6
45 – 48 dB	0.0	0.0	0.0	18.7	16.2	249.1	11.8	2.7	2.6	0.3	0.0
48 – 51 dB	0.0	0.0	0.0	19.3	11.9	79.8	9.5	3.1	1.2	1.4	0.0
51 – 55 dB	0.0	0.0	0.0	7.6	3.9	66.0	22.9	6.2	1.7	1.8	0.0
55 – 57 dB	0.0	0.0	0.0	0.2	0.2	17.6	4.6	1.0	0.0	0.0	0.0
57 – 60 dB	0.0	0.0	0.0	0.5	0.2	9.8	3.6	0.4	0.0	0.0	0.0
60 – 63 dB	0.0	0.0	0.0	0.2	0.2	0.0	2.2	0.1	0.0	0.0	0.0
≥ 63 dB	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Totals	**Total Experience Beneficial Magnitude of Change**						**Total Experiencing Adverse Magnitude of Change**				
	0.0	0.0	0.0	46.6	32.8	422.4	54.5	13.5	5.6	3.5	0.0
	Beneficial Changes (> 1 dB)						**Adverse Changes (> 1 dB)**				
	46.5						22.5				

Table A7.5.38 Dwellings, Population and Area exposed to N65 – Extreme East Mode

Extreme East Mode, 55%W:45%E, Dwellings & Population (thousands), Area (km²)						
N65	**2028 Without Development**			**2028 With Development**		
Rate	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
0 - 5	127.7	321.5	104.4	130.8	329.8	104.1
5 - 10	138.2	341.8	91.6	137.3	341.7	88.9
10 - 20	181.9	420.4	121.3	186.8	434.1	125.2
20 - 50	106.7	255	78.4	120.4	296.4	83.8
50 - 100	98.9	245.9	70.9	99.3	243.8	68.1
100 - 200	37.9	99.3	19.2	28.1	74.4	21.2
200 - 300	10.2	28.9	8.6	16.7	49.1	14.5
300 - 400	8.6	24.4	9.9	6.8	20.3	11.9
400 - 500	0.7	1.8	6.6	0.3	0.7	5.8
500 - 600	0.2	0.4	3.6	0.0	0.0	1.4

Table A7.5.39 Dwellings, Population and Area exposed to N60 – Extreme East Mode

Extreme East Mode, 56%W:44%E, Dwellings & Population (thousands), Area (km²)						
N60	**2028 Without Development**			**2028 With Development**		
Rate	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
0 - 5	164.8	383.7	84.0	156.2	363.2	77.7
5 - 10	218.2	510.7	105.0	213.4	494.5	106.0
10 - 20	171.4	415.2	102.7	174.2	426.4	104.9
20 - 50	0.0	0.0	0.2	0.0	0.0	0.4
50 - 100	0.0	0.0	0.0	0.0	0.0	0.0

Table A7.5.40 WebTAG – Extreme East Mode

Scenario	2028 Without Development	2028 With Development
Total £ from LOAEL (51 dB) WebTAG	£141,061,504	£141,153,563

Table A7.5.41 Dwellings, Population and Area exposed to $L_{Aeq,16hr}$ – East Mode

East Mode, 0%W:100%E, Dwellings & Population (thousands), Area (km²)						
$L_{Aeq,16hr}$	2028 Without Development			2028 With Development		
Contour	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
51 dB – 54 dB	79.9	208.1	91.9	81.9	213.3	91.3
54 dB – 57 dB	70.5	174.9	58.3	74.6	183.8	60.6
57 dB – 60 dB	38.9	100.1	30.8	46.8	124.7	36.6
60 dB – 63 dB	27.3	73.3	17.3	18.8	53.6	17.3
63 dB – 66 dB	6.7	18.8	8.6	7.1	21.2	10.5
66 dB – 69 dB	1.0	2.7	4.8	2.6	7.7	6.0
≥ 69 dB	0.5	1.1	5.7	0.1	0.3	5.7
Objective Annoyance						
≥ 51 dB	216.6	556.4	198.3	222.1	575.4	205.8
≥ 63 dB	8.2	22.6	19.1	9.8	29.2	22.2
Total Population	Highly Annoyed (HA, SONA14)	66.6		Highly Annoyed (HA, SONA14)	69.8	

Table A7.5.42 Dwellings, Population and Area exposed to $L_{Aeq,8hr}$ – East Mode

East Mode, 0%W:100%E, Dwellings & Population (thousands), Area (km²)						
$L_{Aeq,8hr}$	2028 Without Development			2028 With Development		
Contour	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
45 dB – 48 dB	39.1	101.6	47.4	37.3	98.0	46.9
48 dB – 51 dB	21.6	59.6	32.6	21.9	60.1	32.8
51 dB – 55 dB	18.7	46.0	30.7	24.1	61.6	34.5
55 dB – 57 dB	5.7	12.6	7.9	2.4	5.9	8.4
57 dB – 60 dB	0.9	2.2	5.9	0.6	1.4	6.4
60 dB – 63 dB	0.3	0.6	2.9	0.2	0.5	2.8
≥ 63 dB	0.2	0.3	2.8	0.1	0.2	2.7
Objective Annoyance						
≥ 45 dB	79.4	207.2	118.6	83.3	219.7	122.6
≥ 55 dB	7.1	15.7	11.6	3.3	8.0	11.9
Total Population	Highly Sleep Disturbed (HSD, SONA14)	23.2		Highly Sleep Disturbed (HSD, SONA14)	23.8	

Table A7.5.43 Change in 2028 Daytime Noise Exposure due to the Proposed Development – East Mode

East Mode, 0%W:100%E, Population (thousands)											
$L_{Aeq,16hr}$	Reduction in Noise Exposure					No Change	Increase in Exposure				
Exposure With Development	Major > 6	Moderate 3.0 – 5.9	Minor 2.0 – 2.9	Slight 1.0 – 1.9	Negligible 0.1 – 0.9	< 0.1 increase or decrease	Negligible 0.1 – 0.9	Slight 1.0 – 1.9	Minor 2.0 – 2.9	Moderate 3.0 – 5.	Major > 6
51 dB – 54 dB	0.0	0.0	4.9	39.9	89.1	13.8	14.0	9.3	14.7	27.5	0.1
54 dB – 57 dB	0.0	0.0	16.4	37.9	54.0	7.3	19.7	16.3	11.6	17.7	2.9
57 dB – 60 dB	0.0	0.0	26.3	34.0	15.0	0.8	5.9	10.2	14.0	15.2	3.4
60 dB – 63 dB	0.0	0.0	6.9	10.8	6.6	1.4	7.5	8.8	2.7	3.9	5.1
63 dB – 66 dB	0.0	0.0	2.6	0.6	1.3	1.0	6.6	1.5	0.5	1.2	5.9
66 dB – 69 dB	0.0	0.0	1.0	0.0	0.5	0.1	0.5	0.1	0.2	1.7	3.5
≥ 69 dB	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Totals	**Total Experience Beneficial Magnitude of Change**						**Total Experiencing Adverse Magnitude of Change**				
	0.0	0.0	58.2	123.2	166.5	24.3	54.3	46.2	43.7	67.2	21.0
	Beneficial Changes (> 1 dB)						**Adverse Changes (> 1 dB)**				
	181.5						178.1				

Table A7.5.44 Change in 2028 Night-time Noise Exposure due to the Proposed Development – East Mode

East Mode, 0%W:100%E, Population (thousands)											
$L_{Aeq,8hr}$	Reduction in Noise Exposure					No Change	Increase in Exposure				
Exposure With Development	Major > 6	Moderate 3.0 – 5.9	Minor 2.0 – 2.9	Slight 1.0 – 1.9	Negligible 0.1 – 0.9	< 0.1 increase or decrease	Negligible 0.1 – 0.9	Slight 1.0 – 1.9	Minor 2.0 – 2.9	Moderate 3.0 – 5.9	Major > 6
45 – 48 dB	0.0	0.0	6.1	19.8	32.5	4.0	8.8	14.9	6.5	4.4	1.1
48 – 51 dB	0.0	0.0	4.9	17.1	9.8	0.7	6.5	12.1	3.6	2.7	2.8
51 – 55 dB	0.0	0.0	2.9	23.6	7.4	1.0	3.5	6.4	5.4	3.0	8.4
55 – 57 dB	0.0	0.0	0.5	2.3	0.0	0.0	0.0	1.4	0.3	0.1	1.3
57 – 60 dB	0.0	0.0	0.1	0.5	0.0	0.0	0.0	0.5	0.2	0.0	0.0
60 – 63 dB	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1	0.0	0.0
≥ 63 dB	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Totals	**Total Experience Beneficial Magnitude of Change**						**Total Experiencing Adverse Magnitude of Change**				
	0.0	0.0	14.5	63.8	49.7	5.7	18.8	35.2	16.2	10.2	13.6
	Beneficial Changes (> 1 dB)						**Adverse Changes (> 1 dB)**				
	78.3						75.3				

Table A7.5.45 Dwellings, Population and Area exposed to N65 – East Mode

East Mode, 0%W:100%E, Dwellings & Population (thousands), Area (km²)						
N65	**2028 Without Development**			**2028 With Development**		
Rate	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
0 - 5	135.9	346.4	96.1	135.7	348.8	86.4
5 - 10	93.3	242.1	80.5	99.0	254.6	68.7
10 - 20	104.6	264.6	74.6	107.5	273.7	80.6
20 - 50	33.1	83.8	38.0	42.9	109.2	47.5
50 - 100	51.9	127.0	39.4	73.7	189.8	51.1
100 - 200	54.7	142.0	27.8	44.7	115.0	22.1
200 - 300	13.2	36.1	4.96	33.5	84.9	38.91
300 - 400	4.7	13.7	2.8	7.2	22.4	4.9
400 - 500	3.9	10.7	1.86	3.8	12.2	3.56
500 - 600	20.5	50.7	26.6	2.2	6.4	5.9

Table A7.5.46 Dwellings, Population and Area exposed to N60 – East Mode

East Mode, 0%W:100%E, Dwellings & Population (thousands), Area (km²)						
N60	**2028 Without Development**			**2028 With Development**		
Rate	**Dwellings**	**Population**	**Area**	**Dwellings**	**Population**	**Area**
0 - 5	141.3	357.5	151.2	136.1	343.1	142.9
5 - 10	60.2	149.3	71.4	67.8	174.7	67.1
10 - 20	36.7	96.2	77.7	33.2	85.3	90.7
20 - 50	8.4	19.6	22.3	6.3	15.0	20.9
50 - 100	0.0	0.0	0.0	0.0	0.0	0.0

Table A7.5.47 WebTAG – East Mode

Scenario	2028 Without Development	2028 With Development
Total £ from LOAEL (51 dB) WebTAG	£100,426,927	£105,039,544

Table A7.5.48 Daytime, Night-time and Change in Noise Exposure due to the Proposed Development – Extreme West Mode

	Without Development (baseline)		With Proposed Development (with Easterly Alternation)		Change due to the Proposed Development	
Daytime Exposure – Extreme West– Population Exposed in 2028 (Thousands)						
Change in the Number of People above LOAEL					-10.4	
51 dB – 54 dB	536.1	**51 to 63 dB** 951.1	534.9	**51 to 63 dB** 940.1	-1.2	**51 to 63 dB** -11.0
54 dB – 57 dB	258.6		247.0		-11.6	
57 dB – 60 dB	103.1		102.8		-0.3	
60 dB – 63 dB	53.3		55.4		+2.1	
63 dB – 66 dB	28.5	**≥ 63 dB** 34.9	29.1	**≥ 63 dB** 35.5	+0.6	**≥ 63 dB** +0.6
66 dB – 69 dB	5.2		5.0		-0.2	
≥ 69 dB	1.2		1.4		+0.2	
Night-time Exposure – Extreme West – Population Exposed in 2028 (Thousands)						
Change in the Number of People above LOAEL					-6.7	
45 dB – 48 dB	365.8	**45 to 55 dB** 683.7	363.0	**45 to 55 dB** 674.6	-2.8	**45 to 55 dB** -9.1
48 dB – 51 dB	188.7		183.8		-4.9	
51 dB – 55 dB	129.2		127.8		-1.4	
55 dB – 57 dB	27.6	**≥ 55 dB** 61.5	29.4	**≥ 55 dB** 63.9	+1.8	**≥ 55 dB** +2.4
57 dB – 60 dB	27.7		27.4		-0.3	
60 dB – 63 dB	5.0		6.0		+1.0	
≥ 63 dB	1.2		1.1		-0.1	

Table A7.5.49 Daytime, Night-time and Change in Noise Exposure due to the Proposed Development – Extreme East Mode

	Without Development (baseline)		With Proposed Development (with Easterly Alternation)		Change due to the Proposed Development	
Daytime Exposure – Extreme East – Population Exposed in 2028 (Thousands)						
Change in the Number of People above LOAEL					+8.9	
51 dB – 54 dB	475.2	**51 to 63 dB** 813	485.8	**51 to 63 dB** 813.8	+10.6	**51 to 63 dB** +0.8
54 dB – 57 dB	172.0		184.7		+12.7	
57 dB – 60 dB	110.2		90.1		-20.1	
60 dB – 63 dB	55.6		53.2		-2.4	
63 dB – 66 dB	18.8	**≥ 63 dB** 22.8	25.9	**≥ 63 dB** 30.9	+7.1	**≥ 63 dB** +8.1
66 dB – 69 dB	3.3		4.1		+0.8	
> 69 dB	0.7		0.9		+0.2	
Night-time Exposure – Extreme East – Population Exposed in 2028 (Thousands)						
Change in the Number of People above LOAEL					-10.1	
45 dB – 48 dB	304.0	**45 to 55 dB** 547.9	299.1	**45 to 55 dB** 536.2	-4.9	**45 to 55 dB** -11.7
48 dB – 51 dB	127.1		128.2		+1.1	
51 dB – 55 dB	116.8		108.9		-7.9	
55 dB – 57 dB	23.5	**≥ 55 dB** 40.0	23.0	**≥ 55 dB** 41.6	-0.5	**≥ 55 dB** +1.6
57 dB – 60 dB	13.6		15.9		+2.3	
60 dB – 63 dB	2.7		2.4		-0.3	
> 63 dB	0.2		0.3		+0.1	

Table A7.5.50 Total Adverse Effects, in Year Monetisation – TAG – Extreme West Mode

Total Adverse Effects – TAG – Extreme West 2028 – In Year Monetisation			
	Without Development (baseline)	**With Proposed Development (with Easterly Alternation)**	**Value of change in noise from LOAEL due to the Proposed Development, in £ (positive value reflects a net benefit (i.e. a reduction in noise)**
Sleep Disturbance	£55,827,363	£55,668,244	£159,119
Amenity	£94,224,871	£93,452,817	£772,054
AMI	£816,950	£839,036	-£22,086
Stroke	£9,108,486	£9,033,264	£75,221
Dementia	£13,738,507	£13,624,707	£113,800
Total	**£173,716,177**	**£172,716,177**	**£1,098,109**

Table A7.5.51 Total Adverse Effects, in Year Monetisation – TAG – Extreme East Mode

Total Adverse Effects – TAG – Extreme East 2028 – In Year Monetisation			
	Without Development (baseline)	**With Proposed Development (with Easterly Alternation)**	**Value of change in noise from LOAEL due to the Proposed Development, in £ (positive value reflects a net benefit (i.e. a reduction in noise)**
Sleep Disturbance	£41,572,981	£41,205,918	£367,063
Amenity	£79,667,021	£80,092,469	-£425,448
AMI	£649,814	£725,590	-£75,776
Stroke	£7,654,283	£7,675,489	-£21,206
Dementia	£11,544,442	£11,576,186	-£31,744
Total	**£141,088,540**	**£141,275,651**	**-£187,111**

Table A7.5.52 Analysis of places of worship for non-residential receptors – Adverse Effect

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
OLD WINDSOR CEMETERY_100123323791 CHURCH ROAD SL4 2PL	N/A	N/A	59.1	56.6	58.1	1.5	153.3	216.0	52.5	60.4	57.4_ARR27R_DEP27L	63.1_ARR09R_DEP09L	125.9_ARR27L_DEP27R	311.2_ARR09R_DEP09L
HEATHROW JAMIA MASJID_100023405669 PARK LANE TW5 9RW	N/A	N/A	59.2	58.9	61.7	2.8	255.7	319.3	56.9	66.0	62_ARR27R_DEP27L	68.7_ARR09R_DEP09L	311.1_ARR27R_DEP27L	333.2_ARR09R_DEP09L
HARLINGTON BAPTIST CHURCH_100227981512 HIGH STREET UB3 5DG	N/A	N/A	56.1	54.9	56.4	1.5	36.4	102.4	51.2	58.8	57.8_ARR27L_DEP27R	61.4_ARR09R_DEP09L	44.2_ARR27L_DEP27R	324.4_ARR09R_DEP09L
HARLINGTON BAPTIST CHURCH HALL_100023416738 HIGH STREET UB3 5DD	N/A	N/A	56.4	55.1	56.6	1.4	37.1	103.2	51.2	58.7	58_ARR27L_DEP27R	61.3_ARR09R_DEP09L	45.1_ARR27L_DEP27R	324.8_ARR09R_DEP09L
ST CHRISTOPHER ROMAN CATHOLIC CHURCH_100958877117 HIGH STREET TW5 9RG	N/A	N/A	56.2	55.8	59	3.3	160.2	224.5	56	63.9	58.3_ARR27R_DEP27L	66.5_ARR09R_DEP09L	191.9_ARR27R_DEP27L	333.2_ARR09R_DEP09L

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
CHURCH OF ST PETER AND ST ANDREW_10012310324 CHURCH ROAD SL4 2JX	N/A	N/A	59.6	57.2	58.7	1.5	215.8	278.5	52.7	61.0	58.3_ARR27L_DEP27R	63.7_ARR09R_DEP09L	168.9_ARR27L_DEP27R	311.2_ARR09R_DEP09L
ST LUKES CHURCH_100123208936 ST LUKES ROAD SL4 2QL	N/A	N/A	58.6	56	57.4	1.3	147.6	210.2	51.8	59.3	56.8_ARR27R_DEP27L	61.9_ARR09R_DEP09L	120.8_ARR27L_DEP27R	310.9_ARR09R_DEP09L
HOLY ANGELS ANGLICAN CHURCH_10095887718 HIGH STREET TW5 9RG	N/A	N/A	56.3	55.9	59.1	3.2	179.2	243.1	56.1	63.9	58.4_ARR27R_DEP27L	66.6_ARR09R_DEP09L	214.8_ARR27R_DEP27L	333.2_ARR09R_DEP09L

Table A7.5.53 Analysis of places of worship for non-residential receptors – Beneficial Effect

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
HATTON ROAD BAPTIST CHURCH_100023400937 HATTON ROAD TW14 9QS	N/A	N/A	65.6	64.3	62.4	-2	500.7	434.5	70.1	67.3	70.1_ARR09L_DEP09R	70.1_ARR09L_DEP09R	333.1_ARR09L_DEP09R	333.1_ARR09L_DEP09R
WINDSOR SPIRITUALIST CHURCH_100123284044 ADELAIDE SQUARE SL4 2AQ	N/A	N/A	58.4	57.3	55.9	-1.4	180.1	117.7	62.4	60.1	62.4_ARR09L_DEP09R	62.4_ARR09L_DEP09R	312_ARR09L_DEP09R	312_ARR09L_DEP09R
FREE GRACE BAPTIST CHURCH_100243487011 POWDER MILL LANE TW2 6EJ	N/A	N/A	57.5	56.5	55.2	-1.3	81.6	68.6	62.9	61.5	62.9_ARR09L_DEP09R	62.9_ARR09L_DEP09R	197.8_ARR09L_DEP09R	197.8_ARR09L_DEP09R
ALL SAINTS C OF E CHURCH_100081270552 FRANCES ROAD SL4 3AJ	N/A	N/A	58	56.9	55.5	-1.4	173.3	111.7	62.1	59.8	62.1_ARR09L_DEP09R	62.1_ARR09L_DEP09R	312.2_ARR09L_DEP09R	312.2_ARR09L_DEP09R
CHURCH OF ENGLAND AND NON-CON CHAPELS_10070711656 HANWORTH ROAD TW4 5NH	N/A	N/A	58	57	55.7	-1.2	81.9	74.6	63.3	61.8	63.3_ARR09L_DEP09R	63.3_ARR09L_DEP09R	198.5_ARR09L_DEP09R	198.5_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
HATTON CEMETERY_100023399840 FAGGS ROAD TW14 0LZ	N/A	N/A	63	61.7	59.8	-1.9	293.7	229.7	67.6	65	67.6_ARR09L_DEP09R	67.6_ARR09L_DEP09R	333.2_ARR09L_DEP09R	333.2_ARR09L_DEP09R
HOUNSLOW CEMETERY_100707111148 HANWORTH ROAD TW4 5NH	N/A	N/A	58	57	55.7	-1.3	82	72.4	63.3	61.8	63.3_ARR09L_DEP09R	63.3_ARR09L_DEP09R	198.7_ARR09L_DEP09R	198.7_ARR09L_DEP09R

Table A7.5.54 Analysis of halls for non-residential receptors – Adverse Effect

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
CRANFORD MEMORIAL HALL_10091692497 HIGH STREET TW5 9RQ	N	No	58.4	58	60.7	2.7	258.1	319.8	56.8	65	61_ARR27R_DEP27L	67.7_ARR09R_DEP09L	309.2_ARR27R_DEP27L	333.3_ARR09R_DEP09L
OLD CHAPEL MEETING ROOM_10012324286 CHURCH ROAD SL4 2PL	N	No	59.2	56.6	58.2	1.6	256.6	319.8	52.7	60.6	57.4_ARR27R_DEP27L	63.3_ARR09R_DEP09L	126_ARR27L_DEP27R	311.2_ARR09R_DEP09L
OLD WINDSOR MEMORIAL HALL_10012305044 STRAIGHT ROAD SL4 2RN	N	No	59.4	56.8	58.5	1.6	153.1	215.9	53.4	61.1	57.8_ARR27L_DEP27R	63.7_ARR09R_DEP09L	120.9_ARR27L_DEP27R	311.2_ARR09R_DEP09L
SIPSON COMMUNITY CENTRE_100023420270 SIPSON WAY UB7 0DD	N	No	58.5	57.2	58.4	1.2	146.1	208.8	52.1	60	60.2_ARR27L_DEP27R	62.6_ARR09R_DEP09L	276.3_ARR27L_DEP27R	332.5_ARR09R_DEP09L

Table A7.5.55 Analysis of halls for non-residential receptors – Beneficial Effect

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
COMMUNITY CENTRE_10024346526 EDGAR ROAD TW4 5QP	N	No	58.1	57	55.8	-1.2	81.9	76.6	63.2	61.8	63.2_ARR09L_DEP09R	63.2_ARR09L_DEP09R	198.4_ARR09L_DEP09R	198.4_ARR09L_DEP09R
FELTHAM LODGE_100023399839 HARLINGTON ROAD WEST TW14 0JJ	N	No	58.3	56.9	55.3	-1.7	128.2	75	63	60.9	63_ARR09L_DEP09R	63_ARR09L_DEP09R	311.1_ARR09L_DEP09R	311.1_ARR09L_DEP09R
FELTHAM HIRA CENTRE_100023399764 HOUNSLOW ROAD TW14 0AX	N	No	58.1	56.7	55.1	-1.6	101.5	70	62.9	60.9	62.9_ARR09L_DEP09R	62.9_ARR09L_DEP09R	246.3_ARR09L_DEP09R	246.3_ARR09L_DEP09R

Table A7.5.56 Analysis of hospitals, nursing homes and hospices for non-residential receptors – Adverse Effect

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
THE MANOR HOUSE CARE HOME_100081269492 CHURCH ROAD SL4 2JW	N	No	60	57.6	59.2	1.7	221.7	284.4	53.3	61.8	58.5_ARR27R_DEP27L	64.5_ARR09R_DEP09L	177.2_ARR27L_DEP27R	311.2_ARR09R_DEP09L

Table A7.5.57 Analysis of hospitals, nursing homes and hospices for non-residential receptors – Beneficial Effect

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
UNITED RESPONSE_100022286681 HARVEY ROAD TW4 5LU	N	No	57.6	56.5	55.3	-1.2	79.9	74.9	62.7	61.3	62.7_ARR09L_DEP09R	62.7_ARR09L_DEP09R	193.5_ARR09L_DEP09R	193.5_ARR09L_DEP09R
UNITED RESPONSE_100022285825 CURTIS ROAD TW4 5PT	N	No	57.8	56.8	55.5	-1.3	82.8	67.5	63.2	61.8	63.2_ARR09L_DEP09R	63.2_ARR09L_DEP09R	200.6_ARR09L_DEP09R	200.6_ARR09L_DEP09R
OSBORNE HOUSE_100081054244 OSBORNE ROAD SL4 3EN	N	No	57.7	56.6	55.2	-1.5	155.3	93	62	59.7	62_ARR09L_DEP09R	62_ARR09L_DEP09R	312_ARR09L_DEP09R	312_ARR09L_DEP09R
NEW BEGINNINGS RESIDENTIAL CARE_100021521620 DORCHESTER DRIVE TW14 8HP	N	No	57	56	55	-1.1	141.9	85	60.1	57.8	60.1_ARR09L_DEP09R	60.1_ARR09L_DEP09R	279.8_ARR09L_DEP09R	279.8_ARR09L_DEP09R
HATTON MEDICAL PRACTICE_200003973446 HATTON ROAD TW14 9PY	N	No	61.1	60	58.8	-1.3	285.5	217.7	64.4	61.7	64.4_ARR09L_DEP09R	64.4_ARR09L_DEP09R	332.7_ARR09L_DEP09R	332.7_ARR09L_DEP09R
THE PRINCESS MARGARET HOSPITAL_1000812	N	No	58	56.8	55.6	-1.2	210	153.3	61.7	59.6	61.7_ARR09L_DEP09R	61.7_ARR09L_DEP09R	313_ARR09L_DEP09R	313_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
70015 OSBORNE ROAD SL4 3SJ														

Table A7.5.58 Analysis of hotels for non-residential receptors – Adverse Effect

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
TOBY CARVERY_100123277398 STRAIGHT ROAD SL4 2RR	N/A	N/A	59.3	56.7	58.3	1.6	145.8	208.5	53.2	60.9	57.7_ARR27L_DEP27R	63.5_ARR09R_DEP09L	120.6_ARR27L_DEP27R	311.2_ARR09R_DEP09L
HESTON HYDE HOTEL_100021556476 NORTH HYDE LANE TW5 0EP	N/A	N/A	54.3	54.3	55.4	1	57.2	59	58.7	60.4	58.8_ARR09L_DEP09R	61.6_ARR09R_DEP09L	133.2_ARR09L_DEP09R	140.5_ARR09R_DEP09L
LEONARDO HOTEL LONDON HEATHROW AIRPORT_200001524656 SIPSON WAY UB7 0DP	N/A	N/A	61.9	60.5	61.8	1.3	305.4	373	53.8	63.4	63.9_ARR27L_DEP27R	66.1_ARR09R_DEP09L	334.3_ARR27L_DEP27R	334.3_ARR27L_DEP27R
PREMIER INN_100023563885 BATH ROAD TW6 2AB	N/A	N/A	61.9	61.3	64.2	2.9	262.9	326	57.6	68.4	64.7_ARR27R_DEP27L	71.2_ARR09R_DEP09L	311_ARR27R_DEP27L	333.2_ARR09R_DEP09L
COURTYARD BY MARRIOTT HOTEL_100023416900 NOBEL DRIVE UB3 5EY	N/A	N/A	65.4	64	65.6	1.6	485.5	551.9	56.2	67.6	67.2_ARR27L_DEP27R	70.4_ARR09R_DEP09L	338.7_ARR27L_DEP27R	338.7_ARR27L_DEP27R
TRAVELODGE M4 MOTORWAY	N/A	N/A	52	51.9	55.4	3.5	30	51.6	55	61	55.1_ARR09L_DEP09R	63.4_ARR09R_DEP09L	72.4_ARR09L_DEP09R	176.5_ARR09R_DEP09L

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
SERVICES WEST BOUND_200003992817 PHOENIX WAY TW5 9NB														
SHERATON SKYLINE HOTEL_10093734460 BATH ROAD UB3 5BP	N/A	N/A	66.2	64.7	66	1.2	373.3	440.2	55.5	67	68.3_ARR27L_DEP27R	69.8_ARR09R_DEP09L	336.3_ARR27L_DEP27R	336.3_ARR27L_DEP27R
HOTEL IBIS_100021415929 BATH ROAD UB3 5AL	N/A	N/A	63.2	61.9	64.4	2.5	499.1	565.1	56.6	67.9	64_ARR27L_DEP27R	70.8_ARR09R_DEP09L	335.2_ARR27L_DEP27R	335.2_ARR27L_DEP27R
RADISSON RED HOTEL_100030013655 BATH ROAD UB7 0DU	N/A	N/A	61	59.5	61.1	1.5	330.7	398.5	52.9	63.2	62.6_ARR27L_DEP27R	65.9_ARR09R_DEP09L	332.9_ARR27L_DEP27R	333.1_ARR09R_DEP09L
LEGOLAND WINDSOR RESORT_10012329787 WINKFIELD ROAD SL4 4AY	N/A	N/A	55.4	52.7	54.5	1.8	99.6	162.2	53.7	58.4	53.7_ARR09L_DEP09R	60.6_ARR09R_DEP09L	62.5_ARR27R_DEP27L	311.2_ARR09R_DEP09L
TRAVELODGE M4 MOTORWAY SERVICES EAST BOUND_200001524402	N/A	N/A	52.9	52.9	55.3	2.4	52.4	56.5	56.9	60.8	56.9_ARR09L_DEP09R	62.8_ARR09R_DEP09L	126.7_ARR09L_DEP09R	146_ARR09R_DEP09L

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
NORTH HYDE LANE TW5 9NA														
HOLIDAY INN ARIEL_10093734236 BATH ROAD UB3 5AJ	N/A	N/A	66.2	64.8	66.2	1.4	484.1	550.3	56.2	67.7	68.1_ARR27L_DEP27R	70.6_ARR09R_DEP09L	338.6_ARR27L_DEP27R	338.6_ARR27L_DEP27R
MOXY HOTEL_10093766863 BATH ROAD TW5 9UH	N/A	N/A	62.4	61.9	63.9	1.9	266.8	325	57.8	66.8	65.5_ARR27R_DEP27L	69.6_ARR09R_DEP09L	311.1_ARR27R_DEP27L	333.5_ARR09R_DEP09L
LEGOLAND WINDSOR RESORT_10012338945 WINKFIELD ROAD SL4 4AY	N/A	N/A	55.1	52.6	54.3	1.7	96	158.4	54.1	58.4	54.1_ARR09L_DEP09R	60.5_ARR09R_DEP09L	61.9_ARR27R_DEP27L	311.2_ARR09R_DEP09L
RADISSON EDWARDIAN INTERNATIONAL HOTEL_10002356332 BATH ROAD UB3 5AW	N/A	N/A	65.7	64.2	65.6	1.3	377.2	444.4	55.1	66.9	67.6_ARR27L_DEP27R	69.8_ARR09R_DEP09L	336.4_ARR27L_DEP27R	336.4_ARR27L_DEP27R
BERKELEY PARK_10022801807 MARLBOROUGH CRESCENT UB3 5FG	N/A	N/A	63.5	62	63.8	1.7	406.9	473.8	55.4	66.2	65.3_ARR27L_DEP27R	69_ARR09R_DEP09L	336.7_ARR27L_DEP27R	336.7_ARR27L_DEP27R
DOUBLE TREE BY HILTON	N/A	N/A	62.6	62.2	63.8	1.6	278.1	330.7	58	66.2	65.7_ARR27R_DEP27L	68.9_ARR09R_DEP09L	311.1_ARR27R_DEP27L	333.8_ARR09R_DEP09L

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
HOTEL_100023405459 BATH ROAD TW5 9QE														
VII HOTEL AND INDIAN RESTAURANT _10091691479 BATH ROAD TW5 9TY	N/A	N/A	64.1	63.5	64.8	1.4	282.4	332.9	58.2	66.6	67.1_ARR27R_DEP27L	69.3_ARR09R_DEP09L	311.1_ARR27R_DEP27L	333.9_ARR09R_DEP09L
IBIS STYLES HOTEL_100023563321 BATH ROAD UB3 5BX	N/A	N/A	63.9	62.5	64.1	1.6	380.9	448.5	54.2	66.2	65.6_ARR27L_DEP27R	69_ARR09R_DEP09L	336.5_ARR27L_DEP27R	336.5_ARR27L_DEP27R
(HOLIDAY LET) HOTEL_10012326047 STRAIGHT ROAD SL4 2RL	N/A	N/A	59.5	56.9	58.5	1.6	144.9	207.6	53.6	61.2	58_ARR27L_DEP27R	63.8_ARR09R_DEP09L	120.3_ARR27L_DEP27R	311.2_ARR09R_DEP09L
BERKELEY PARK HOTEL_100937336 3 MARLBOROUGH CRESCENT UB3 5FG	N/A	N/A	62.9	61.5	63.2	1.8	360.9	428	55.1	65.7	64.7_ARR27L_DEP27R	68.5_ARR09R_DEP09L	335.6_ARR27L_DEP27R	335.6_ARR27L_DEP27R
EASYHOTEL HEATHROW_100023 416828 BRICKFIELD LANE UB3 5DX	N/A	N/A	53.6	52.4	53.9	1.5	26.5	78.9	50.1	56.6	54.9_ARR27L_DEP27R	59.1_ARR09R_DEP09L	32_ARR27L_DEP27R	257.1_ARR09R_DEP09L

Table A7.5.59 Analysis of hotels for non-residential receptors – Beneficial Effect

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
HOTEL_100081305799 OXFORD ROAD SL4 5DX	N/A	N/A	55.7	54.7	53.5	-1.3	128.8	68.9	59.2	56.8	59.2_ARR09L_DEP09R	59.2_ARR09L_DEP09R	297.2_ARR09L_DEP09R	297.2_ARR09L_DEP09R
HOTEL_10012320596 PAVILIONS SL4 5GE	N/A	N/A	56.2	55.3	53.7	-1.6	128.6	65.9	60.7	58.3	60.7_ARR09L_DEP09R	60.7_ARR09L_DEP09R	311.2_ARR09L_DEP09R	311.2_ARR09L_DEP09R
HOTEL_10012333550 ST LEONARDS ROAD SL4 3DH	N/A	N/A	57.7	56.5	55.2	-1.3	174.9	117.4	61.6	59.5	61.6_ARR09L_DEP09R	61.6_ARR09L_DEP09R	312.8_ARR09L_DEP09R	312.8_ARR09L_DEP09R
HILTON GARDEN INN_10022798449 EASTERN PERIMETER ROAD TW6 2SQ	N/A	N/A	65.5	64.3	62.9	-1.4	390.1	389.2	69.6	67.4	69.6_ARR09L_DEP09R	69.6_ARR09L_DEP09R	336.5_ARR09L_DEP09R	336.5_ARR09L_DEP09R
CHANNINS HOUNSLOW HOTEL_100023399907 HOUNSLOW ROAD TW14 0AU	N/A	N/A	57.4	55.9	54.4	-1.5	94.3	62.4	62	60.1	62_ARR09L_DEP09R	62_ARR09L_DEP09R	228.7_ARR09L_DEP09R	228.7_ARR09L_DEP09R
HOTEL_100023399767 HOUNSLOW ROAD TW14 0AX	N/A	N/A	57.6	56.1	54.6	-1.5	94.1	65.1	62.2	60.4	62.2_ARR09L_DEP09R	62.2_ARR09L_DEP09R	228.1_ARR09L_DEP09R	228.1_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
TERMINAL 4_10009947928 SHEFFIELD ROAD TW6 3FH	N/A	N/A	64.3	63.1	62	-1	434.8	367.1	66.5	63.7	66.5_ARR09L_DEP09R	66.5_ARR09L_DEP09R	333_ARR09L_DEP09R	333_ARR09L_DEP09R
ALMA HOUSE GUEST HOUSE_100081052147 ALMA ROAD SL4 3HA	N/A	N/A	57.4	56.4	54.8	-1.6	139.7	77	61.9	59.4	61.9_ARR09L_DEP09R	61.9_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R
ST MARYS COTTAGES_10012332089 GROVE ROAD SL4 1JF	N/A	N/A	58.4	57.4	55.9	-1.5	166	103.4	62.5	60.1	62.5_ARR09L_DEP09R	62.5_ARR09L_DEP09R	311.9_ARR09L_DEP09R	311.9_ARR09L_DEP09R
HOTEL_10012326611 HIGH STREET SL4 1LH	N/A	N/A	56.8	55.7	54.6	-1.1	157.7	97.8	59.6	57.1	59.6_ARR09L_DEP09R	59.6_ARR09L_DEP09R	297.4_ARR09L_DEP09R	297.4_ARR09L_DEP09R
NEW OSCAR_100081055413 VANSITTART ROAD SL4 5DB	N/A	N/A	55.4	54.3	53.1	-1.2	102.8	55.9	58.7	56.3	58.7_ARR09L_DEP09R	58.7_ARR09L_DEP09R	233.4_ARR09L_DEP09R	233.4_ARR09L_DEP09R
HOTEL_100123300977 MAIDENHEAD ROAD SL4 5EQ	N/A	N/A	55.1	54	52.9	-1.1	77	43.9	58.1	55.7	58.1_ARR09L_DEP09R	58.1_ARR09L_DEP09R	165.9_ARR09L_DEP09R	165.9_ARR09L_DEP09R
ST GILES HOTEL_200003966197	N/A	N/A	55	53.4	52.2	-1.2	60.7	37.5	59.3	57.8	59.3_ARR09L_DEP09R	59.3_ARR09L_DEP09R	147.4_ARR09L_DEP09R	147.4_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
HOUNSLOW ROAD TW14 9AD														
THE OLD FARM HOUSE_100081270770 DEDWORTH ROAD SL4 4LH	N/A	N/A	53.7	53	51.2	-1.8	121.8	62.2	59.1	56.7	59.1_ARR09L_DEP09R	59.1_ARR09L_DEP09R	296_ARR09L_DEP09R	296_ARR09L_DEP09R
LORD RAGLAN HOUSE_100081055053 ST LEONARDS ROAD SL4 3DJ	N/A	N/A	57.6	56.4	55.2	-1.2	185.6	130.9	61.3	59.3	61.3_ARR09L_DEP09R	61.3_ARR09L_DEP09R	313.2_ARR09L_DEP09R	313.2_ARR09L_DEP09R
LANGTON HOUSE_100081052146 ALMA ROAD SL4 3HA	N/A	N/A	57.3	56.4	54.8	-1.6	137.5	74.8	61.8	59.3	61.8_ARR09L_DEP09R	61.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R
RIDINGS HOUSE_10012325812 ALMA ROAD SL4 3FJ	N/A	N/A	57.5	56.6	55	-1.6	146.8	84.1	62	59.6	62_ARR09L_DEP09R	62_ARR09L_DEP09R	311.9_ARR09L_DEP09R	311.9_ARR09L_DEP09R
TERMINAL 4_10093733392 SWINDON ROAD TW6 3FJ	N/A	N/A	62	60.9	59.9	-1	375.3	307.6	64.3	61.6	64.3_ARR09L_DEP09R	64.3_ARR09L_DEP09R	333_ARR09L_DEP09R	333_ARR09L_DEP09R
HOTEL_100081270521 ALMA ROAD SL4 3HD	N/A	N/A	57.5	56.5	54.9	-1.6	144.7	82	62	59.5	62_ARR09L_DEP09R	62_ARR09L_DEP09R	311.9_ARR09L_DEP09R	311.9_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
MERCURE CASTLE HOTEL_10012303921 HIGH STREET SL4 1LJ	N/A	N/A	56.9	55.8	54.7	-1.1	158.4	96.3	59.9	57.4	59.9_ARR09L_DEP09R	59.9_ARR09L_DEP09R	308_ARR09L_DEP09R	308_ARR09L_DEP09R
CAMPERDOWN HOUSE_100081052177 ALMA ROAD SL4 3HQ	N/A	N/A	57.2	56.3	54.7	-1.6	136.4	73.7	61.7	59.2	61.7_ARR09L_DEP09R	61.7_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R
HOTEL_100081270155 ST LEONARDS ROAD SL4 3DA	N/A	N/A	57.8	56.8	55.3	-1.5	152.4	89.8	62.2	59.8	62.2_ARR09L_DEP09R	62.2_ARR09L_DEP09R	311.9_ARR09L_DEP09R	311.9_ARR09L_DEP09R
HOTEL_1001232728 7 YORK ROAD SL4 3NX	N/A	N/A	57.5	56.5	55	-1.5	150	87.7	61.9	59.6	61.9_ARR09L_DEP09R	61.9_ARR09L_DEP09R	312_ARR09L_DEP09R	312_ARR09L_DEP09R
HOTEL_100081271060 BEXLEY STREET SL4 5BP	N/A	N/A	56.3	55.3	53.9	-1.4	133.3	71.1	60	57.6	60_ARR09L_DEP09R	60_ARR09L_DEP09R	308.9_ARR09L_DEP09R	308.9_ARR09L_DEP09R
PREMIER TRAVEL INN_10024345820 CHERTSEY ROAD TW2 6LS	N/A	N/A	54.4	53.7	52.5	-1.2	48.8	45.8	59.9	58.4	59.9_ARR09L_DEP09R	59.9_ARR09L_DEP09R	118.2_ARR09L_DEP09R	118.2_ARR09L_DEP09R
HOTEL_100081268605 ARTHUR ROAD SL4 1RU	N/A	N/A	55.8	54.7	53.6	-1.1	114.4	67.9	58.7	56.2	58.7_ARR09L_DEP09R	58.7_ARR09L_DEP09R	231.4_ARR09L_DEP09R	231.4_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under-QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
WILLOW COURT FARM_10095853100 OAKLEY GREEN ROAD SL4 4PZ	N/A	N/A	53.9	53.1	51.4	-1.7	128.1	65.6	59.3	57.1	59.3_ARR09L_DEP09R	59.3_ARR09L_DEP09R	311.4_ARR09L_DEP09R	311.4_ARR09L_DEP09R
HOTEL_100081053236 FRANCES ROAD SL4 3AQ	N/A	N/A	58.1	57	55.6	-1.4	174.4	112.2	62.2	59.8	62.2_ARR09L_DEP09R	62.2_ARR09L_DEP09R	312.1_ARR09L_DEP09R	312.1_ARR09L_DEP09R
HOTEL_100021525091 HANWORTH ROAD TW13 5AB	N/A	N/A	54.2	52.4	51.4	-1	28	21.2	58.3	57	58.3_ARR09L_DEP09R	58.3_ARR09L_DEP09R	67.8_ARR09L_DEP09R	67.8_ARR09L_DEP09R
ROYAL ADELAIDE HOTEL_100123102668 KINGS ROAD SL4 2AG	N/A	N/A	58.4	57.4	55.9	-1.5	175.4	112.8	62.5	60.1	62.5_ARR09L_DEP09R	62.5_ARR09L_DEP09R	311.9_ARR09L_DEP09R	311.9_ARR09L_DEP09R
CHANNINS HOUNSLOW HOTEL_200003985380 HOUNSLOW ROAD TW14 0AU	N/A	N/A	57.4	56	54.5	-1.5	94.7	62.7	62.1	60.2	62.1_ARR09L_DEP09R	62.1_ARR09L_DEP09R	229.5_ARR09L_DEP09R	229.5_ARR09L_DEP09R

Table A7.5.60 Analysis of schools for non-residential receptors – Adverse effects

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
WOLF FIELDS PRIMARY SCHOOL_12141183 NORWOOD ROAD UB2 4JS	N	No	49.7	49.9	52.9	3	44.9	50	55.2	59	55.2_ARR09L_DEP09R	61_ARR09R_DEP09L	109.6_ARR09L_DEP09R	133.2_ARR09R_DEP09L
THREE BRIDGES PRIMARY SCHOOL_12141176 MELBURY AVENUE UB2 4HT	N	No	49.8	49.9	52	2.1	50.7	52.9	55.8	58.3	55.8_ARR09L_DEP09R	59.9_ARR09R_DEP09L	123.8_ARR09L_DEP09R	133.4_ARR09R_DEP09L
OLD RECTORY_100023405671 CHURCH ROAD TW5 9RY	N	No	49.8	49.2	52.1	2.9	0.9	33.1	51.5	57.2	51.5_ARR09L_DEP09R	59.6_ARR09R_DEP09L	2.2_ARR09L_DEP09R	158.4_ARR09R_DEP09L
LITTLEBROOK NURSERY_100929828 67 BATH ROAD UB7 0EN	Y	No	67.3	66.1	66.7	0.6	375.7	389.6	58.9	65.8	69.9_ARR27L_DEP27R	69.9_ARR27L_DEP27R	333.1_ARR27L_DEP27R	338.7_ARR09R_DEP09L
WELLINGTON DAY CENTRE_10093258444 STAINES ROAD TW4 5BA	Y	Yes	65.1	64.3	64.5	0.1	356.7	342.9	59.2	61.1	68_ARR27L_DEP27R	68_ARR27L_DEP27R	311.6_ARR27L_DEP27R	311.6_ARR27L_DEP27R
NORWOOD GREEN NURSERY_12145675 WIMBORNE AVENUE UB2 4JF	N	No	50.6	50.7	52.9	2.2	51.9	53.5	56.3	59	56.3_ARR09L_DEP09R	60.7_ARR09R_DEP09L	126.7_ARR09L_DEP09R	133.4_ARR09R_DEP09L

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
KHOSLA HOUSE_10091691455 PARK LANE TW5 9WA	N	No	60.8	60.4	62.6	2.3	262.3	322.6	57.4	66.2	63.7_ARR27R_DEP27L	68.9_ARR09R_DEP09L	311.1_ARR27R_DEP27L	333.4_ARR09R_DEP09L
NORWOOD GREEN INFANT AND NURSERY SCHOOL_10091692335 THORNCLIFFE ROAD UB2 5RN	N	No	50.9	51	53.6	2.6	50.8	53	56.2	59.6	56.2_ARR09L_DEP09R	61.5_ARR09R_DEP09L	124_ARR09L_DEP09R	133.4_ARR09R_DEP09L
THE DE LACEY DAY NURSERY SCHOOL_10093765636 NORTH HYDE LANE UB2 5TE	N	No	50.6	50.7	53.8	3.1	44.6	49.9	55.5	59.8	55.5_ARR09L_DEP09R	61.9_ARR09R_DEP09L	108.9_ARR09L_DEP09R	133.5_ARR09R_DEP09L
WILLIAM BYRD PRIMARY SCHOOL_100023416869 VICTORIA LANE UB3 5EW	N	No	53.9	52.7	53.8	1.1	23.7	64.1	49.3	55.5	55.4_ARR27L_DEP27R	58_ARR09R_DEP09L	28.7_ARR27L_DEP27R	198.3_ARR09R_DEP09L
HAVELOCK PRIMARY SCHOOL_12141089 HAVELOCK ROAD UB2 4PA	N	No	47.5	47.6	51.4	3.8	13.4	34	52.9	57.7	53_ARR09L_DEP09R	59.9_ARR09R_DEP09L	32.8_ARR09L_DEP09R	132.4_ARR09R_DEP09L
THE CEDARS PRIMARY	N	No	54.4	54	57.5	3.5	77.8	143	55.2	62.6	56_ARR27R_DEP27L	65.2_ARR09R_DEP09L	90_ARR27R_DEP27L	333.1_ARR09R_DEP09L

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
SCHOOL_200003966538 HIGH STREET TW5 9RU														
CRANFORD INFANT AND NURSERY SCHOOL_100023404807 BERKELEY AVENUE TW4 6LB	N	Yes	60.9	60.4	62.2	1.8	382.8	383.6	62.5	66.6	62.5_ARR09L_DEP09R	68.6_ARR09R_DEP09L	332.7_ARR09L_DEP09R	336.5_ARR09R_DEP09L
BERKELEY PRIMARY SCHOOL_100021545524 CRANFORD LANE TW5 9HQ	N	No	55.2	55.1	56.7	1.6	100.5	114.4	58.3	61.3	58.3_ARR09L_DEP09R	63_ARR09R_DEP09L	132.2_ARR09L_DEP09R	198.8_ARR09R_DEP09L
CLIFTON PRIMARY SCHOOL_12141084 CLIFTON ROAD UB2 5QP	N	No	47.8	47.9	51.8	3.9	10.4	32.5	52.8	57.9	52.8_ARR09L_DEP09R	60.2_ARR09R_DEP09L	25.4_ARR09L_DEP09R	132.3_ARR09R_DEP09L
HAVELOCK CHILDREN'S CENTRE_12142875 TRUBSHAW ROAD UB2 4XW	N	No	49	49.1	51.8	2.7	45	50	55	58.2	55_ARR09L_DEP09R	60_ARR09R_DEP09L	109.7_ARR09L_DEP09R	133.2_ARR09R_DEP09L
CRANFORD JUNIOR SCHOOL_100023404711 WOODFIELD ROAD TW4 6ND	N	Yes	61	60.5	62.2	1.7	382.5	383.4	62.6	66.5	62.6_ARR09L_DEP09R	68.5_ARR09R_DEP09L	332_ARR09L_DEP09R	336.4_ARR09R_DEP09L

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
NORWOOD GREEN JUNIOR SCHOOL_200003967537 THORNCLIFFE ROAD UB2 5RN	N	No	50.8	51	53.8	2.8	48.1	51.6	55.9	59.7	55.9_ARR09L_DEP09R	61.7_ARR09R_DEP09L	117.2_ARR09L_DEP09R	133.4_ARR09R_DEP09L
SYBIL ELGAR SCHOOL_12141090 HAVELOCK ROAD UB2 4NY	N	No	47.8	47.8	51.5	3.7	17.9	36.3	53.3	57.9	53.3_ARR09L_DEP09R	60_ARR09R_DEP09L	43.6_ARR09L_DEP09R	132.6_ARR09R_DEP09L
THE OLD WINDSOR DAY NURSERY AND PRE-SCHOOL_10012320871 ST LUKES ROAD SL4 2QJ	N	No	58.8	56.2	57.6	1.4	146.4	209.1	52.2	59.8	57.1_ARR27L_DEP27R	62.4_ARR09R_DEP09L	120.4_ARR27L_DEP27R	311.2_ARR09R_DEP09L
OLD WINDSOR MEMORIAL HALL_10095851172 STRAIGHT ROAD SL4 2RN	N	No	59.4	56.9	58.5	1.6	146.3	209	53.4	61.1	57.8_ARR27L_DEP27R	63.7_ARR09R_DEP09L	121.1_ARR27L_DEP27R	311.2_ARR09R_DEP09L
GROVE ROAD PRIMARY SCHOOL_100023403525 CROMWELL ROAD TW3 3QQ	Y	Yes	64.3	63.6	63.8	0.2	292.4	307.5	57.1	59.7	67.3_ARR27L_DEP27R	67.3_ARR27L_DEP27R	311.6_ARR27L_DEP27R	311.6_ARR27L_DEP27R
THE OLD SCHOOL_12167249	N	No	48.1	48.1	52	3.8	12.6	33.6	53	58.1	53_ARR09L_DEP09R	60.4_ARR09R_DEP09L	30.7_ARR09L_DEP09R	132.4_ARR09R_DEP09L

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
TALBOT ROAD UB2 5QH														

Table A7.5.61 Analysis of schools for non-residential receptors – Beneficial effects

Receptor Name	Insulation Status		Summer Average LAeq,16hr, dB				Summer Average N65		Average Busy Easterly Day LAeq,16hr		Highest Single Mode LAeq,8hr (alternation) in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
KINGDOM HALL_10012309462 GROVE ROAD SL4 1JQ	N	No	58.1	57.2	55.6	-1.5	154.9	92.2	62.4	59.9	62.4_ARR09L_DEP09R	62.4_ARR09L_DEP09R	311.9_ARR09L_DEP09R	311.9_ARR09L_DEP09R
SPARROW FARM PRIMARY SCHOOL_10002339985 7 SPARROW FARM DRIVE TW14 0DG	N	No	58	56.5	55.1	-1.5	87.5	65.6	62.8	61.1	62.8_ARR09L_DEP09R	62.8_ARR09L_DEP09R	212.1_ARR09L_DEP09R	212.1_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average LAeq,16hr, dB				Summer Average N65		Average Busy Easterly Day LAeq,16hr		Highest Single Mode LAeq,8hr (alternation) in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
ST EDWARDS CATHOLIC FIRST SCHOOL_10008127099 1 PARSONAGE LANE SL4 5EN	N	No	55.3	54.4	52.9	-1.6	127	64.9	59.8	57.3	59.8_ARR09L_DEP09R	59.8_ARR09L_DEP09R	308.2_ARR09L_DEP09R	308.2_ARR09L_DEP09R
WINDSOR PIANO SCHOOL_10012306610 CLARENCE ROAD SL4 5AN	N	No	56	55.2	53.5	-1.7	128.1	65.5	60.8	58.4	60.8_ARR09L_DEP09R	60.8_ARR09L_DEP09R	311.3_ARR09L_DEP09R	311.3_ARR09L_DEP09R
POPPIES CHILDRENS CENTRE_10012316923 KENNEALLY ROAD SL4 4XP	N	No	54.6	53.8	52.2	-1.6	128.1	65.6	59.9	57.8	59.9_ARR09L_DEP09R	59.9_ARR09L_DEP09R	311.4_ARR09L_DEP09R	311.4_ARR09L_DEP09R
THE OLD RECTORY_10012305251 HORTON ROAD SL3 9NU	Y	No	66.3	64.8	64.3	-0.5	553.4	490.8	65.6	63	66.1_ARR27L_DEP27R	66.1_ARR27L_DEP27R	335.2_ARR27L_DEP27R	335.2_ARR27L_DEP27R
ALL SAINTS C OF E CHURCH_10012328406 FRANCES ROAD SL4 3AJ	N	No	58	56.9	55.5	-1.4	168.3	106.1	62.1	59.8	62.1_ARR09L_DEP09R	62.1_ARR09L_DEP09R	312.1_ARR09L_DEP09R	312.1_ARR09L_DEP09R
TRINITY ST STEPHEN CE AIDED FIRST SCHOOL_100081271	N	No	55.8	54.8	53.5	-1.3	130.3	68.3	59.5	57	59.5_ARR09L_DEP09R	59.5_ARR09L_DEP09R	307.8_ARR09L_DEP09R	307.8_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average LAeq,16hr, dB				Summer Average N65		Average Busy Easterly Day LAeq,16hr		Highest Single Mode LAeq,8hr (alternation) in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
001 VANSITTART ROAD SL4 5DF														
HILLTOP FIRST SCHOOL_100081270971 CLEWER HILL ROAD SL4 4DW	N	No	55.7	54.7	53.4	-1.3	139.4	85.5	60.3	58.5	60.3_ARR09L_DEP09R	60.3_ARR09L_DEP09R	312.6_ARR09L_DEP09R	312.6_ARR09L_DEP09R
DEDWORTH MIDDLE SCHOOL_100081271342 SMITHS LANE SL4 5PE	N	No	54.9	54.1	52.3	-1.8	128	65.4	60	57.6	60_ARR09L_DEP09R	60_ARR09L_DEP09R	311.1_ARR09L_DEP09R	311.1_ARR09L_DEP09R
TWICKENHAM SCHOOL_100023401494 PERCY ROAD TW2 6JW	N	No	54.6	53.8	52.3	-1.5	71.5	48.9	60.2	58.5	60.2_ARR09L_DEP09R	60.2_ARR09L_DEP09R	173.4_ARR09L_DEP09R	173.4_ARR09L_DEP09R
KINDEROOS PRE SCHOOL AND NURSERY_100021548327 GREAT WEST ROAD TW5 0DG	Y	No	64.8	64.2	64.1	-0.1	301.6	314.2	61.6	60.6	67.5_ARR27R_DEP27L	67.5_ARR27R_DEP27L	311.1_ARR27R_DEP27L	311.1_ARR27R_DEP27L
WHITTON HEALTH CLINIC_100023401562 HOSPITAL BRIDGE ROAD TW2 6LD	N	No	54.9	54.1	52.6	-1.4	73.6	57.3	60.5	58.9	60.5_ARR09L_DEP09R	60.5_ARR09L_DEP09R	178.5_ARR09L_DEP09R	178.5_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average LAeq,16hr, dB				Summer Average N65		Average Busy Easterly Day LAeq,16hr		Highest Single Mode LAeq,8hr (alternation) in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
CARDINAL ROAD INFANT AND NURSERY SCHOOL_100023399191 CARDINAL ROAD TW13 5AL	N	No	53.9	52.2	51.2	-1	20	15.9	58	56.7	58_ARR09L_DEP09R	58_ARR09L_DEP09R	48.6_ARR09L_DEP09R	48.6_ARR09L_DEP09R
DE BROME BUILDING_100023399196 BOUNDARIES ROAD TW13 5DR	N	No	56.4	54.6	53.6	-1	82.4	63.7	60.9	59.8	60.9_ARR09L_DEP09R	60.9_ARR09L_DEP09R	199.7_ARR09L_DEP09R	199.7_ARR09L_DEP09R
MARJORY KINNON SCHOOL_10093260662 HATTON ROAD TW14 9QZ	N	Yes	60.2	59.2	57.8	-1.4	191.8	124.2	64.1	61.5	64.1_ARR09L_DEP09R	64.1_ARR09L_DEP09R	332.6_ARR09L_DEP09R	332.6_ARR09L_DEP09R
DEDWORTH GREEN FIRST SCHOOL_100081271343 SMITHS LANE SL4 5PE	N	No	55.1	54.3	52.5	-1.8	128.1	65.5	60.3	57.9	60.3_ARR09L_DEP09R	60.3_ARR09L_DEP09R	311.3_ARR09L_DEP09R	311.3_ARR09L_DEP09R
PIPPINS SCHOOL_100081266936 RAYMOND CLOSE SL3 0PR	Y	Yes	66.6	65.1	64.9	-0.2	405.8	343.2	62.7	60	68.4_ARR27L_DEP27R	68.4_ARR27L_DEP27R	333.2_ARR27L_DEP27R	333.2_ARR27L_DEP27R
KINGS HOUSE_10012330170	N	No	57.9	56.8	55.5	-1.3	188.2	129.7	61.8	59.6	61.8_ARR09L_DEP09R	61.8_ARR09L_DEP09R	312.7_ARR09L_DEP09R	312.7_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average LAeq,16hr, dB				Summer Average N65		Average Busy Easterly Day LAeq,16hr		Highest Single Mode LAeq,8hr (alternation) in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
FRANCES ROAD SL4 3AQ														
RIVERS ACADEMY_100023400821 TACHBROOK ROAD TW14 9PE	N	No	55.5	54.4	53.1	-1.3	105.4	55.2	59.6	57.5	59.6_ARR09L_DEP09R	59.6_ARR09L_DEP09R	251.3_ARR09L_DEP09R	251.3_ARR09L_DEP09R
TURING HOUSE SCHOOL_10094588441 HOSPITAL BRIDGE ROAD TW2 6LH	N	No	56.5	55.5	54.3	-1.2	76.6	72.6	61.7	60.2	61.7_ARR09L_DEP09R	61.7_ARR09L_DEP09R	185.6_ARR09L_DEP09R	185.6_ARR09L_DEP09R
LITTLE STARS DAY NURSERY_100023404193 HANWORTH ROAD TW4 5NT	N	No	56.8	55.7	54.5	-1.1	82.4	65.5	62.2	60.9	62.1_ARR09L_DEP09R	62.1_ARR09L_DEP09R	199.8_ARR09L_DEP09R	199.8_ARR09L_DEP09R
THE GREEN ROOM SCHOOL_100081271175 ALBERT STREET SL4 5BU	N	No	56	55	53.6	-1.4	128.6	66.4	60	57.5	60_ARR09L_DEP09R	60_ARR09L_DEP09R	308.8_ARR09L_DEP09R	308.8_ARR09L_DEP09R
LITTLE MONKEY'S NURSERY_100080383160 VICTORIA STREET SL4 1HE	N	No	57.6	56.6	55.2	-1.4	153	90.2	61.5	59	61.5_ARR09L_DEP09R	61.5_ARR09L_DEP09R	311.7_ARR09L_DEP09R	311.7_ARR09L_DEP09R
ST EDWARDS ROYAL FREE ECUMENICAL	N	No	55.1	54.2	52.6	-1.6	123.9	63.3	59.5	57.1	59.5_ARR09L_DEP09R	59.5_ARR09L_DEP09R	300.8_ARR09L_DEP09R	300.8_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average LAeq,16hr, dB				Summer Average N65		Average Busy Easterly Day LAeq,16hr		Highest Single Mode LAeq,8hr (alternation) in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
MIDDLE SCHOOL_100081270992 PARSONAGE LANE SL4 5EN														
ALF KING CHILDREN'S CENTRE_100023517810 HANWORTH ROAD TW13 5AF	N	No	54.5	52.8	51.7	-1.1	41.2	28.1	58.7	57.3	58.7_ARR09L_DEP09R	58.7_ARR09L_DEP09R	100_ARR09L_DEP09R	100_ARR09L_DEP09R
HOMER FIRST SCHOOL_100081271002 TESTWOOD ROAD SL4 5RL	N	No	53.7	53	51.2	-1.8	108.5	55.4	58.8	56.4	58.8_ARR09L_DEP09R	58.8_ARR09L_DEP09R	263.5_ARR09L_DEP09R	263.5_ARR09L_DEP09R
THE WINDSOR BOYS SCHOOL_100081321488 MAIDENHEAD ROAD SL4 5EH	N	No	55.2	54.2	53	-1.2	98.9	52.8	58.7	56.2	58.7_ARR09L_DEP09R	58.7_ARR09L_DEP09R	229.8_ARR09L_DEP09R	229.8_ARR09L_DEP09R
SPACE STUDIO WEST LONDON_10093260551 LETCHWORTH AVENUE TW14 9RY	N	No	55	54	52.7	-1.2	78.4	41.5	58.9	56.8	58.9_ARR09L_DEP09R	58.9_ARR09L_DEP09R	185.2_ARR09L_DEP09R	185.2_ARR09L_DEP09R
UPPER CHURCH ROOMS_100123186 77	N	No	55.5	54.5	53.3	-1.2	115.2	61.9	59	56.5	59_ARR09L_DEP09R	59_ARR09L_DEP09R	265.2_ARR09L_DEP09R	265.2_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average LAeq,16hr, dB				Summer Average N65		Average Busy Easterly Day LAeq,16hr		Highest Single Mode LAeq,8hr (alternation) in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
OXFORD ROAD SL4 5DU														
HOMER FIRST SCHOOL_20000084950 TESTWOOD ROAD SL4 5RL	N	No	53.9	53.1	51.3	-1.8	116.2	59.4	59	56.6	59_ARR09L_DEP09R	59_ARR09L_DEP09R	282.4_ARR09L_DEP09R	282.4_ARR09L_DEP09R
HEATHFIELD CHILDRENS CENTRE_10002264629 POWDER MILL LANE TW2 6EX	N	No	55.6	54.7	53.3	-1.4	75.8	61.9	61.2	59.6	61.2_ARR09L_DEP09R	61.2_ARR09L_DEP09R	183.7_ARR09L_DEP09R	183.7_ARR09L_DEP09R
OAKFIELD FIRST SCHOOL_100081270419 IMPERIAL ROAD SL4 3RU	N	No	56.9	56	54.4	-1.6	143.4	81.1	61.6	59.3	61.6_ARR09L_DEP09R	61.6_ARR09L_DEP09R	312_ARR09L_DEP09R	312_ARR09L_DEP09R
BISHOP PERRIN SCHOOL_100023401557 HOSPITAL BRIDGE ROAD TW2 6LF	N	No	55.7	54.8	53.5	-1.3	73.9	66.4	61	59.4	60.9_ARR09L_DEP09R	60.9_ARR09L_DEP09R	179.1_ARR09L_DEP09R	179.1_ARR09L_DEP09R
LAMPTON SCHOOL_100023403901 LAMPTON AVENUE TW3 4EP	Y	Yes	64.1	63.5	63.4	-0.1	300.1	281.8	57.9	56.7	67.1_ARR27R_DEP27L	67.1_ARR27R_DEP27L	311.1_ARR27R_DEP27L	311.1_ARR27R_DEP27L
CLEWER GREEN CE SCHOOL_100081321	N	No	56.1	55	53.8	-1.1	146.4	94	60.3	58.6	60.3_ARR09L_DEP09R	60.3_ARR09L_DEP09R	312.7_ARR09L_DEP09R	312.7_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average LAeq,16hr, dB				Summer Average N65		Average Busy Easterly Day LAeq,16hr		Highest Single Mode LAeq,8hr (alternation) in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
474 HATCH LANE SL4 3RJ														
UPTON HOUSE SCHOOL_10008127053 5 ST LEONARDS ROAD SL4 3DF	N	No	57.8	56.7	55.3	-1.4	166.4	105.4	61.9	59.7	61.9_ARR09L_DEP09R	61.9_ARR09L_DEP09R	312.3_ARR09L_DEP09R	312.3_ARR09L_DEP09R
JUMPING JACKS NURSERY_10024344552 POWDER MILL LANE TW2 6EF	N	No	55.3	54.4	53	-1.4	75.1	60.2	60.8	59.2	60.8_ARR09L_DEP09R	60.8_ARR09L_DEP09R	182_ARR09L_DEP09R	182_ARR09L_DEP09R
ST STEPHENS HALL_100081271417 OXFORD ROAD SL4 5DX	N	No	55.6	54.7	53.4	-1.3	128.1	67.8	59.2	56.8	59.2_ARR09L_DEP09R	59.2_ARR09L_DEP09R	299.9_ARR09L_DEP09R	299.9_ARR09L_DEP09R
BEDFONT PRIMARY SCHOOL_10091692085 HATTON ROAD TW14 9QZ	N	Yes	60.7	59.7	58.4	-1.3	259.6	191.9	64.2	61.6	64.2_ARR09L_DEP09R	64.2_ARR09L_DEP09R	332.7_ARR09L_DEP09R	332.7_ARR09L_DEP09R
DEDWORTH SCHOOLS SITE_10012329387 SMITHS LANE SL4 5PE	N	No	55	54.2	52.4	-1.8	128.1	65.4	60.2	57.8	60.2_ARR09L_DEP09R	60.2_ARR09L_DEP09R	311.2_ARR09L_DEP09R	311.2_ARR09L_DEP09R
ALEXANDER FIRST SCHOOL_10012307686	N	No	54.6	53.7	52.2	-1.5	128.3	67.6	59.7	57.8	59.7_ARR09L_DEP09R	59.7_ARR09L_DEP09R	311.7_ARR09L_DEP09R	311.7_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average LAeq,16hr, dB				Summer Average N65		Average Busy Easterly Day LAeq,16hr		Highest Single Mode LAeq,8hr (alternation) in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
KENNEALLY ROAD SL4 4XP														
THE BRIDGE PRIMARY CENTRE_10093765596 BEDFONT LANE TW14 9NP	N	No	53.5	52.3	51.3	-1.1	11.5	7.4	57.3	55.5	57.3_ARR09L_DEP09R	57.3_ARR09L_DEP09R	27.8_ARR09L_DEP09R	27.8_ARR09L_DEP09R
EDISON PRIMARY SCHOOL_10093260574 VICARAGE FARM ROAD TW5 0AQ	Y	No	64.6	64.1	64	-0.1	301	317.2	61.9	60.7	67.5_ARR27R_DEP27L	67.5_ARR27R_DEP27L	311.1_ARR27R_DEP27L	311.1_ARR27R_DEP27L
HEATHFIELD PRIMARY SCHOOL_100023401558 COBBETT ROAD TW2 6EN	N	No	55.8	54.9	53.5	-1.4	75.7	63.2	61.3	59.7	61.3_ARR09L_DEP09R	61.3_ARR09L_DEP09R	183.5_ARR09L_DEP09R	183.5_ARR09L_DEP09R
THE LAWNS NURSERY SCHOOL_10012334795 IMPERIAL ROAD SL4 3RU	N	No	56.9	56	54.4	-1.5	143.7	81.4	61.5	59.3	61.5_ARR09L_DEP09R	61.5_ARR09L_DEP09R	312_ARR09L_DEP09R	312_ARR09L_DEP09R
JACK AND JILL RECEPTION NURSERY SCHOOL_100023401445	N	No	52.7	52.1	51.1	-1	43	42.4	58.3	57.1	58.3_ARR09L_DEP09R	58.3_ARR09L_DEP09R	104.2_ARR09L_DEP09R	104.2_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average LAeq,16hr, dB				Summer Average N65		Average Busy Easterly Day LAeq,16hr		Highest Single Mode LAeq,8hr (alternation) in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
FIRST CROSS ROAD TW2 5QA														
ASQUITH COURT DAY NURSEY_10070711170 MEADWAY TW2 6PY	N	No	53.4	52.8	51.6	-1.2	43.7	42.7	59	57.6	58.9_ARR09L_DEP09R	58.9_ARR09L_DEP09R	105.8_ARR09L_DEP09R	105.8_ARR09L_DEP09R
HEATHFIELD JUNIOR SCHOOL_100023401599 COBBETT ROAD TW2 6EN	N	No	56	55.1	53.7	-1.4	77	64.9	61.5	59.9	61.5_ARR09L_DEP09R	61.5_ARR09L_DEP09R	186.7_ARR09L_DEP09R	186.7_ARR09L_DEP09R

Table A7.5.62 Analysis of colleges for non-residential receptors – Adverse effects

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
CRANFORD COMMUNITY COLLEGE_200003966541 HIGH STREET TW5 9PD	N	No	51.6	51.2	54.7	3.5	4	58.2	53.5	60.1	53.5_ARR09L_DEP09R	62.5_ARR09R_DEP09L	9.6_ARR09L_DEP09R	272.8_ARR09R_DEP09L

Table A7.5.63 Analysis of colleges for non-residential receptors – Beneficial effects

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
EAST BERKSHIRE COLLEGE_10012313738 ST LEONARDS ROAD SL4 3AZ	N	No	57.6	56.7	55.1	-1.6	143.1	80.4	62	59.5	62_ARR09L_DEP09R	62_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R

Table A7.5.64 Analysis of libraries for non-residential receptors – Adverse effects

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
MEMORIAL HALL_100081269784 STRAIGHT ROAD SL4 2RN	N	No	59.4	56.9	58.5	1.6	146.3	209	53.4	61.1	57.8_ARR27L_DEP27R	63.7_ARR09R_DEP09L	121.1_ARR27L_DEP27R	311.2_ARR09R_DEP09L

Table A7.5.65 Analysis of offices for non-residential receptors – Adverse effects

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
OFFICE_10012336038 WELLEY ROAD TW19 5HQ	N/A	N/A	61.4	59.2	60.7	1.6	276.4	339.1	54.7	63.1	60.1_ARR27L_DEP27R	65.8_ARR09R_DEP09L	214.7_ARR27L_DEP27R	311.2_ARR09R_DEP09L
CLINOGEN LTD_100081321238 ROBIN WILLIS WAY SL4 2PX	N/A	N/A	58.3	55.8	57	1.2	148.7	211.1	51.3	58.6	56.6_ARR27R_DEP27L	61.2_ARR09R_DEP09L	121.2_ARR27L_DEP27R	309.2_ARR09R_DEP09L
PARKWAY TRADING ESTATE_200003966896 CRANFORD LANE TW5 9QA	N/A	N/A	53	52.8	56.3	3.5	29.4	74.4	55.2	61.7	55.2_ARR09L_DEP09R	64.1_ARR09R_DEP09L	53.8_ARR09L_DEP09R	272.3_ARR09R_DEP09L
WORLD BUSINESS CENTRE HEATHROW_10096322619 NEWALL ROAD TW6 2SF	N/A	N/A	69.3	67.9	68.9	1.1	472.6	539.2	56.4	69.3	71.2_ARR27L_DEP27R	72.2_ARR09R_DEP09L	338.7_ARR27L_DEP27R	338.7_ARR27L_DEP27R
OFFICE_10093766890 AERODROME WAY TW5 9QB	N/A	N/A	52.5	52.3	55.8	3.4	31.9	58.3	55.2	61.2	55.3_ARR09L_DEP09R	63.7_ARR09R_DEP09L	75.5_ARR09L_DEP09R	203.3_ARR09R_DEP09L
AVIS RENT A CAR LTD_100023405904 NORTHROP ROAD TW6 2QA	N/A	N/A	65	63.7	66.2	2.5	512.4	577.9	57.7	69.8	64.7_ARR27L_DEP27R	72.6_ARR09R_DEP09L	339.4_ARR27L_DEP27R	339.4_ARR27L_DEP27R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
DIVYA BHAWAN_100228002 34 WEST END LANE UB3 5LX	N/A	N/A	57.8	56.5	57.9	1.4	55	122.5	51.6	59.8	59.5_ARR27L _DEP27R	62.5_ARR09 R_DEP09L	68_ARR27L_ DEP27R	331.5_ARR09 R_DEP09L
OFFICE_1001233343 2 STRAIGHT ROAD SL4 2RT	N/A	N/A	58.8	56.2	57.6	1.4	153	215.8	52	59.7	57.1_ARR27R _DEP27L	62.3_ARR09 R_DEP09L	124.8_ARR27 L_DEP27R	311.2_ARR09 R_DEP09L
THE RECREATION GROUND_10012316 658 ROBIN WILLIS WAY SL4 2PX	N/A	N/A	58.3	55.7	56.9	1.2	151.6	213.9	51.1	58.4	56.7_ARR27R _DEP27L	61_ARR09R _DEP09L	122.3_ARR27 L_DEP27R	308.9_ARR09 R_DEP09L
DALBIAC HOUSE_1000994514 4 CROMER ROAD TW6 1SD	N/A	N/A	62.2	60.7	61.9	1.1	445.4	468	57.5	63.6	63.2_ARR27L _DEP27R	66.1_ARR09 R_DEP09L	335_ARR27L_ DEP27R	335.8_ARR09 R_DEP09L
SILKIN HOUSE_1000234059 41 BATH ROAD TW6 2AA	N/A	N/A	60.1	59.7	62.5	2.9	256.2	319.6	57.1	66.7	62.9_ARR27R _DEP27L	69.5_ARR09 R_DEP09L	311.1_ARR27 R_DEP27L	333.2_ARR09 R_DEP09L
EAST OPERATIONS BASE_10022798451 VANGUARD WAY TW6 2FH	N/A	N/A	61	60.1	61.2	1	298.9	299	64	65.9	64_ARR09L_ DEP09R	67.2_ARR09 R_DEP09L	336_ARR09L_ DEP09R	336.5_ARR09 R_DEP09L
MONDIAL HOUSE_1009532487	N/A	N/A	64.8	63.3	64.8	1.4	359.4	426.7	54.7	66.4	66.6_ARR27L _DEP27R	69.3_ARR09 R_DEP09L	336_ARR27L_ DEP27R	336_ARR27L_ DEP27R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
8 MONDIAL WAY UB3 5AR														
OFFICE_100023405898 BATH ROAD TW6 2AA	N/A	N/A	60.5	60.1	62.8	2.7	257.5	320.2	57.3	66.8	63.4_ARR27R_DEP27L	69.5_ARR09R_DEP09L	311.1_ARR27R_DEP27L	333.3_ARR09R_DEP09L
OFFICE_100023416835 MONDIAL WAY UB3 5AR	N/A	N/A	65.8	64.4	65.8	1.4	401.5	486.6	55.1	67.4	67.6_ARR27L_DEP27R	70.2_ARR09R_DEP09L	337_ARR27L_DEP27R	337_ARR27L_DEP27R
CARETAKERS OFFICE_100023518066 AERODROME WAY TW5 9EW	N/A	N/A	52.4	52.3	55.7	3.4	30.4	57.7	55.2	61.2	55.2_ARR09L_DEP09R	63.7_ARR09R_DEP09L	72_ARR09L_DEP09R	204_ARR09R_DEP09L
OFFICE_100081269791 STRAIGHT ROAD SL4 2RW	N/A	N/A	59.4	56.8	58.5	1.6	146.5	209.2	53.3	61.1	57.8_ARR27L_DEP27R	63.7_ARR09R_DEP09L	121.2_ARR27L_DEP27R	311.2_ARR09R_DEP09L
STANSFIELD HOUSE_10091692095 HIGH STREET TW5 9RU	N/A	N/A	55.5	55.1	58.4	3.3	179.8	243	55.8	63.4	57.4_ARR27R_DEP27L	66_ARR09R_DEP09L	213.9_ARR27R_DEP27L	333.2_ARR09R_DEP09L
OFFICE_100953219445 BATH ROAD TW6 2AA	N/A	N/A	60.5	60.1	62.8	2.7	257.2	320.1	57.2	66.8	63.4_ARR27R_DEP27L	69.6_ARR09R_DEP09L	311.1_ARR27R_DEP27L	333.3_ARR09R_DEP09L

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
INNSITE HOUSE_100023405820 PARK LANE TW5 9RW	N/A	N/A	60.1	59.8	62.3	2.5	259.4	321.2	57.2	66.1	63_ARR27R_DEP27L	68.8_ARR09R_DEP09L	311.1_ARR27R_DEP27L	333.3_ARR09R_DEP09L
AIRPORT BOWL OFFICE_100023416901 NOBEL DRIVE UB3 5EY	N/A	N/A	63.1	61.7	63.8	2	467.1	533.9	55.8	66.7	64.7_ARR27L_DEP27R	69.5_ARR09R_DEP09L	338.2_ARR27L_DEP27R	338.2_ARR27L_DEP27R
WORLD BUSINESS CENTRE HEATHROW_10095322018 NEWALL ROAD TW6 2AH	N/A	N/A	68.9	67.5	68.6	1.1	469.5	536.2	56.3	69.3	70.8_ARR27L_DEP27R	72.2_ARR09R_DEP09L	338.6_ARR27L_DEP27R	338.6_ARR27L_DEP27R
HEATHROW HOUSE_100966809866 BATH ROAD TW5 9QQ	N/A	N/A	61.7	61.3	63.2	1.9	268.5	325.8	57.7	66.2	64.8_ARR27R_DEP27L	68.9_ARR09R_DEP09L	311.1_ARR27R_DEP27L	333.5_ARR09R_DEP09L
BUILDING 255_100023405917 EPSOM SQUARE, ELY ROAD TW6 2EE	N/A	N/A	64.4	63.7	65.8	2.2	380.7	390.2	60.7	69.3	67_ARR27R_DEP27L	72_ARR09R_DEP09L	327.5_ARR27R_DEP27L	336_ARR09R_DEP09L
CAPITAL PLACE_100023563319 BATH ROAD UB3 5AN	N/A	N/A	66.8	65.3	66.5	1.2	437.3	503.7	56	67.6	68.8_ARR27L_DEP27R	70.4_ARR09R_DEP09L	337.6_ARR27L_DEP27R	337.6_ARR27L_DEP27R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
HEATHROW ESTATES_100937668 00 BATH ROAD TW5 9TY	N/A	N/A	64.2	63.6	64.9	1.3	283.9	333.6	58.3	66.6	67.3_ARR27R _DEP27L	69.3_ARR09 R_DEP09L	311.1_ARR27 R_DEP27L	333.9_ARR09 R_DEP09L
BUILDING 202B_100023405912 EPSOM SQUARE, ELGIN CRESCENT TW6 2RX	N/A	N/A	64.3	63.5	65.8	2.3	401.2	410.9	60.7	69.5	66.8_ARR27R _DEP27L	72.2_ARR09 R_DEP09L	341.9_ARR27 R_DEP27L	341.9_ARR27 R_DEP27L
HANOVER ESTATE OFFICE_2000028990 27 POLLARD CLOSE SL4 2PF	N/A	N/A	59.5	57	58.7	1.7	155.8	218.5	53.3	61.3	57.8_ARR27L _DEP27R	64_ARR09R _DEP09L	129.8_ARR27 L_DEP27R	311.2_ARR09 R_DEP09L
COLLABORATION HOUSE_1009532337 4 MONDIAL WAY UB3 5AR	N/A	N/A	63.4	62	63.5	1.5	341.7	409.2	54.1	65.4	65.1_ARR27L _DEP27R	68.2_ARR09 R_DEP09L	335.4_ARR27 L_DEP27R	335.4_ARR27 L_DEP27R
OFFICE_1000234203 70 SIPSON ROAD UB7 0JD	N/A	N/A	58.3	56.9	58.4	1.5	191.3	259	51.7	60.5	59.8_ARR27L _DEP27R	63.2_ARR09 R_DEP09L	231_ARR27L_ DEP27R	332.9_ARR09 R_DEP09L
ADVERTISING HOARDING OPPOSITE ENTRANCE TO RECTORY_20000397 7736	N/A	N/A	53.6	53.3	56.8	3.5	43.6	103	55.2	62.1	55.2_ARR09L _DEP09R	64.7_ARR09 R_DEP09L	37.7_ARR09L _DEP09R	326.3_ARR09 R_DEP09L

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
CRANFORD LANE TW5 9PH														
GRANTLEY HOUSE_10001273780 PARK LANE TW5 9RW	N/A	N/A	60	59.6	62.2	2.6	258.6	320.8	57.2	66.1	62.9_ARR27R_DEP27L	68.8_ARR09R_DEP09L	311.1_ARR27R_DEP27L	333.3_ARR09R_DEP09L
PARKWAY TRADING ESTATE_200003966887 CRANFORD LANE TW5 9QA	N/A	N/A	52.4	52.2	55.8	3.6	15.1	62.1	54.7	61.2	54.7_ARR09L_DEP09R	63.7_ARR09R_DEP09L	34.4_ARR09L_DEP09R	262.2_ARR09R_DEP09L
UNIT 45_200001524406 PHOENIX WAY TW5 9NB	N/A	N/A	53.5	53.4	56.3	2.9	62.4	82.5	56.4	61.6	56.4_ARR09L_DEP09R	63.9_ARR09R_DEP09L	115.4_ARR09L_DEP09R	211.9_ARR09R_DEP09L
STRATA HOUSE_100953208 44 BATH ROAD UB3 5JJ	N/A	N/A	64.2	62.8	64.4	1.6	384.8	452.3	54.3	66.4	65.9_ARR27L_DEP27R	69.3_ARR09R_DEP09L	336.6_ARR27L_DEP27R	336.6_ARR27L_DEP27R
OFFICE_200001877183 SIPSON ROAD UB7 0JD	N/A	N/A	58.7	57.3	58.8	1.5	213.4	281.1	51.9	60.9	60.1_ARR27L_DEP27R	63.6_ARR09R_DEP09L	255.1_ARR27L_DEP27R	333_ARR09R_DEP09L
OFFICE_100916914 74 750-754 BATH ROAD TW5 9TY	N/A	N/A	64.5	63.8	65.1	1.3	285.4	334.4	58.3	66.7	67.5_ARR27R_DEP27L	69.3_ARR09R_DEP09L	311.1_ARR27R_DEP27L	334_ARR09R_DEP09L

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
ROOMS 00018 TO 00020 BUILDING 16219 NO1 MAINTENANCE AREA_10095324442 EPSOM SQUARE TW6 2BJ	N/A	N/A	63.5	62.9	65.1	2.2	381	387.9	61	68.8	66_ARR27R_DEP27L	71.4_ARR09R_DEP09L	323.4_ARR27R_DEP27L	336.1_ARR09R_DEP09L
OFFICE_100023416865 NEW ROAD UB3 5BD	N/A	N/A	59.8	58.4	59.9	1.5	208.6	276.4	52.6	61.9	61.5_ARR27L_DEP27R	64.6_ARR09R_DEP09L	257.8_ARR27L_DEP27R	332.9_ARR09R_DEP09L
OFFICE_100123050445 ST LUKES ROAD SL4 2QQ	N/A	N/A	59	56.4	58	1.5	146.2	208.9	52.7	60.3	57.3_ARR27L_DEP27R	63_ARR09R_DEP09L	120.6_ARR27L_DEP27R	311.2_ARR09R_DEP09L
THE TAPESTRIES_100123289 35 STRAIGHT ROAD SL4 2RN	N/A	N/A	59.7	57.1	58.7	1.6	144.6	207.3	54.1	61.3	58.2_ARR27L_DEP27R	63.9_ARR09R_DEP09L	120.1_ARR27L_DEP27R	311.2_ARR09R_DEP09L
OFFICE_100903313336 SIPSON ROAD UB7 0JE	N/A	N/A	62.4	61	62.6	1.6	345.4	413.1	53.5	64.8	64.1_ARR27L_DEP27R	67.6_ARR09R_DEP09L	334.9_ARR27L_DEP27R	334.9_ARR27L_DEP27R
SHAW COURT_1001232343 4 WILLIAM ELLIS CLOSE SL4 2AF	N/A	N/A	58.7	56.1	57.4	1.4	145.9	208.7	52	59.5	57_ARR27L_DEP27R	62.1_ARR09R_DEP09L	120_ARR27L_DEP27R	311.2_ARR09R_DEP09L

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
PARKWAY TRADING ESTATE_10093256635 CRANFORD LANE TW5 9QA	N/A	N/A	53.5	53.3	56.6	3.3	44.6	89.1	55.6	61.9	55.6_ARR09L_DEP09R	64.4_ARR09R_DEP09L	70.4_ARR09L_DEP09R	286.4_ARR09R_DEP09L
OLD WINDSOR JUBILEE HUB_100081321237 ST LUKES ROAD SL4 2QL	N/A	N/A	59	56.4	57.9	1.5	146.7	209.4	52.6	60.2	57.3_ARR27L_DEP27R	62.9_ARR09R_DEP09L	120.8_ARR27L_DEP27R	311.2_ARR09R_DEP09L
BUILDING 249_100023405936 EPSOM SQUARE, ESHER CRESCENT TW6 2RX	N/A	N/A	63.8	63.1	65.5	2.4	401	409.5	60.9	69.2	66.3_ARR27R_DEP27L	71.9_ARR09R_DEP09L	340.2_ARR27R_DEP27L	340.2_ARR27R_DEP27L
OFFICE_100099486888 HIGH STREET UB3 5DU	N/A	N/A	58.2	56.9	58.5	1.6	192	259.7	52.5	61	59.9_ARR27L_DEP27R	63.7_ARR09R_DEP09L	242.9_ARR27L_DEP27R	332.6_ARR09R_DEP09L
I T G HOUSE_100023416822 HIGH STREET UB3 5LF	N/A	N/A	61.5	60	61.7	1.7	287.3	354.9	54.2	64.2	63.2_ARR27L_DEP27R	66.9_ARR09R_DEP09L	331.7_ARR27L_DEP27R	333_ARR09R_DEP09L
UNITE HOUSE_200001921811 NEW ROAD UB3 5BQ	N/A	N/A	66.6	65.1	66.3	1.2	392.5	459.6	55.4	67.3	68.6_ARR27L_DEP27R	70.2_ARR09R_DEP09L	336.8_ARR27L_DEP27R	336.8_ARR27L_DEP27R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
OFFICE_100023416891 MONDIAL WAY UB3 5AR	N/A	N/A	63.1	61.7	63.2	1.6	340.8	408.3	54	65.2	64.8_ARR27L_DEP27R	68.1_ARR09R_DEP09L	335.2_ARR27L_DEP27R	335.2_ARR27L_DEP27R
UNIT 67_10093258066 PHOENIX WAY TW5 9NB	N/A	N/A	53.8	53.7	56.4	2.8	69.8	91.1	56.6	61.6	56.6_ARR09L_DEP09R	63.9_ARR09R_DEP09L	118.3_ARR09L_DEP09R	220.4_ARR09R_DEP09L
OFFICE_10092981463 SIPSON ROAD UB7 0JD	N/A	N/A	60	58.6	60.2	1.6	291.3	359.1	52.5	62.3	61.6_ARR27L_DEP27R	65.1_ARR09R_DEP09L	319_ARR27L_DEP27R	333.1_ARR09R_DEP09L
OFFICE_10092980238 HIGH STREET UB3 5DU	N/A	N/A	58.1	56.8	58.5	1.7	161.1	228.9	52.5	61.1	59.8_ARR27L_DEP27R	63.8_ARR09R_DEP09L	203.5_ARR27L_DEP27R	332.6_ARR09R_DEP09L
OFFICE_100081269501 ST LUKES ROAD SL4 2QQ	N/A	N/A	59	56.4	57.9	1.5	146.3	209	52.6	60.3	57.3_ARR27L_DEP27R	62.9_ARR09R_DEP09L	120.6_ARR27L_DEP27R	311.2_ARR09R_DEP09L

Table A7.5.66 Analysis of offices for non-residential receptors – Beneficial effects

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
OFFICE_100023399895 DUKES GREEN AVENUE TW14 0LR	N/A	N/A	60.8	59.6	57.7	-1.9	166.3	102	65.5	63	65.5_ARR09L_DEP09R	65.5_ARR09L_DEP09R	332.8_ARR09L_DEP09R	332.8_ARR09L_DEP09R
ARNOLD HAWKER HOUSE_10091692911 CENTRAL WAY TW14 0XQ	N/A	N/A	64.6	63.2	61.6	-1.6	383.3	341.7	68.6	66.1	68.6_ARR09L_DEP09R	68.6_ARR09L_DEP09R	334.3_ARR09L_DEP09R	334.3_ARR09L_DEP09R
SITE OFFICE_100023405973 SWINDON ROAD TW6 3YB	N/A	N/A	62.3	61.2	60.2	-1	386.8	319.1	64.6	61.9	64.6_ARR09L_DEP09R	64.6_ARR09L_DEP09R	333_ARR09L_DEP09R	333_ARR09L_DEP09R
MILL FARM BUSINESS PARK_10070710698 MILLFIELD ROAD TW4 5PY	N/A	N/A	57.6	56.5	55.2	-1.2	83	66.6	62.9	61.6	62.9_ARR09L_DEP09R	62.9_ARR09L_DEP09R	201.1_ARR09L_DEP09R	201.1_ARR09L_DEP09R
GRIFFIN CENTRE_10091692631 STAINES ROAD TW14 0HS	N/A	N/A	60.9	59.6	57.8	-1.8	175.3	123.8	65.6	63.3	65.6_ARR09L_DEP09R	65.6_ARR09L_DEP09R	333.3_ARR09L_DEP09R	333.3_ARR09L_DEP09R
WINDSOR PARK HOUSE_100081268704 SHEET STREET SL4 1BG	N/A	N/A	57.5	56.5	55.2	-1.3	160.5	97.9	61	58.4	61_ARR09L_DEP09R	61_ARR09L_DEP09R	310.7_ARR09L_DEP09R	310.7_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
OFFICE_10012328351 HIGH STREET SL4 1LD	N/A	N/A	57.4	56.4	55.1	-1.3	160.2	97.7	60.9	58.3	60.9_ARR09L_DEP09R	60.9_ARR09L_DEP09R	310.5_ARR09L_DEP09R	310.5_ARR09L_DEP09R
GROVE MEWS_10012328936 FRANCES ROAD SL4 3AE	N/A	N/A	58.2	57.2	55.7	-1.5	158.5	95.8	62.4	60	62.4_ARR09L_DEP09R	62.4_ARR09L_DEP09R	311.9_ARR09L_DEP09R	311.9_ARR09L_DEP09R
OFFICE_10095851321 SHEET STREET SL4 1BN	N/A	N/A	57.9	56.9	55.5	-1.4	160.2	97.5	61.8	59.3	61.8_ARR09L_DEP09R	61.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R
OFFICE_10012304213 OSBORNE MEWS SL4 3DE	N/A	N/A	57.8	56.7	55.2	-1.5	156.6	94.3	62	59.7	62_ARR09L_DEP09R	62_ARR09L_DEP09R	312_ARR09L_DEP09R	312_ARR09L_DEP09R
KINGS ROAD HOUSE_10012304330 KINGS ROAD SL4 2AG	N/A	N/A	58.2	57.3	55.8	-1.5	156.6	93.9	62.4	59.9	62.4_ARR09L_DEP09R	62.4_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R
ADMIRAL HOUSE_10012339631 ST LEONARDS ROAD SL4 3BL	N/A	N/A	57.8	56.8	55.3	-1.5	151	88.3	62.2	59.8	62.2_ARR09L_DEP09R	62.2_ARR09L_DEP09R	311.9_ARR09L_DEP09R	311.9_ARR09L_DEP09R
MERLIN HOUSE_10091694084	N/A	N/A	64.1	62.8	61.2	-1.6	382.1	341.8	68.2	65.8	68.2_ARR09L_DEP09R	68.2_ARR09L_DEP09R	334.3_ARR09L_DEP09R	334.3_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
CENTRAL WAY TW14 0XJ														
SPARROW FARM RESIDENTS ASSOCIATION_10090801794 SPARROW FARM DRIVE TW14 0DW	N/A	N/A	58.2	56.7	55.3	-1.4	86	65.9	63	61.3	63_ARR09L_DEP09R	63_ARR09L_DEP09R	208.4_ARR09L_DEP09R	208.4_ARR09L_DEP09R
KINGS HOUSE_10012324379 FRANCES ROAD SL4 3AQ	N/A	N/A	57.9	56.8	55.5	-1.3	188.1	129.6	61.8	59.6	61.8_ARR09L_DEP09R	61.8_ARR09L_DEP09R	312.7_ARR09L_DEP09R	312.7_ARR09L_DEP09R
OFFICE_100081269189 VICTORIA STREET SL4 1HE	N/A	N/A	57.6	56.6	55.2	-1.4	153.8	91	61.5	59	61.5_ARR09L_DEP09R	61.5_ARR09L_DEP09R	311.7_ARR09L_DEP09R	311.7_ARR09L_DEP09R
FALCON HOUSE_10091694074 CENTRAL WAY TW14 0XJ	N/A	N/A	64.5	63.1	61.5	-1.6	383.1	343.5	68.4	66	68.4_ARR09L_DEP09R	68.4_ARR09L_DEP09R	334.4_ARR09L_DEP09R	334.4_ARR09L_DEP09R
COMMUNITY CENTRE_10094589090 POWDER MILL LANE TW2 6EJ	N/A	N/A	57.6	56.6	55.3	-1.3	81.7	68.7	63	61.5	63_ARR09L_DEP09R	63_ARR09L_DEP09R	198.1_ARR09L_DEP09R	198.1_ARR09L_DEP09R
OFFICE_100081268797	N/A	N/A	57.8	56.8	55.3	-1.6	147.7	85	62.2	59.7	62.2_ARR09L_DEP09R	62.2_ARR09L_DEP09R	311.9_ARR09L_DEP09R	311.9_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
GROVE ROAD SL4 1HS														
OFFICE_100023404374 HANWORTH ROAD TW4 5NP	N/A	N/A	57.8	56.8	55.5	-1.3	81.8	70.8	63.1	61.7	63.1_ARR09L_DEP09R	63.1_ARR09L_DEP09R	198.1_ARR09L_DEP09R	198.1_ARR09L_DEP09R
SCHOOL HOUSE_100023400889 HATTON ROAD TW14 9QZ	N/A	N/A	63.1	62	60.5	-1.5	427	359.6	66.9	64.2	66.9_ARR09L_DEP09R	66.9_ARR09L_DEP09R	333_ARR09L_DEP09R	333_ARR09L_DEP09R
OFFICE_100081268664 VICTORIA STREET SL4 1HE	N/A	N/A	57.7	56.7	55.3	-1.4	154	91.2	61.6	59.1	61.6_ARR09L_DEP09R	61.6_ARR09L_DEP09R	311.7_ARR09L_DEP09R	311.7_ARR09L_DEP09R
THE OLD BREWERY_100081269291 RUSSELL STREET SL4 1HQ	N/A	N/A	57.5	56.6	55	-1.5	142.1	79.3	61.7	59.2	61.7_ARR09L_DEP09R	61.7_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R
OFFICE_100023399747 HARLINGTON ROAD WEST TW14 0JG	N/A	N/A	59.1	57.8	56.1	-1.7	137.3	77.3	63.8	61.6	63.8_ARR09L_DEP09R	63.8_ARR09L_DEP09R	331.1_ARR09L_DEP09R	331.1_ARR09L_DEP09R
BEAUMONT HOUSE_10012322525 BEAUMONT ROAD SL4 1JP	N/A	N/A	57.9	56.8	55.4	-1.5	161.3	99	62.1	59.8	62.1_ARR09L_DEP09R	62.1_ARR09L_DEP09R	312_ARR09L_DEP09R	312_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
OFFICE_100081269989 ST LEONARDS ROAD SL4 3BX	N/A	N/A	57.8	56.8	55.2	-1.6	147.4	84.7	62.2	59.7	62.2_ARR09L_DEP09R	62.2_ARR09L_DEP09R	311.9_ARR09L_DEP09R	311.9_ARR09L_DEP09R
BENSINGTON COURT_100916909017 NEW ROAD TW14 8HX	N/A	N/A	58.1	57.2	56.1	-1.1	161.7	97.8	61	58.6	61_ARR09L_DEP09R	61_ARR09L_DEP09R	313.8_ARR09L_DEP09R	313.8_ARR09L_DEP09R
ROYAL ALBERT HOUSE_100081321517 SHEET STREET SL4 1BE	N/A	N/A	57.6	56.6	55.3	-1.4	159.1	96.4	61.3	58.7	61.3_ARR09L_DEP09R	61.3_ARR09L_DEP09R	311.3_ARR09L_DEP09R	311.3_ARR09L_DEP09R
ADVERTISING HOARDING OUTSIDE 117_200003976869 POPE CLOSE TW14 0JS	N/A	N/A	60.4	59.1	57.3	-1.8	159.5	105.9	65.2	62.9	65.2_ARR09L_DEP09R	65.2_ARR09L_DEP09R	333.1_ARR09L_DEP09R	333.1_ARR09L_DEP09R
OFFICE_100023399758 DUKES GREEN AVENUE TW14 0LS	N/A	N/A	60.5	59.2	57.4	-1.9	156.8	92.8	65.2	62.8	65.2_ARR09L_DEP09R	65.2_ARR09L_DEP09R	332.7_ARR09L_DEP09R	332.7_ARR09L_DEP09R
MORGAN HOUSE_1001233797 8 MADEIRA WALK SL4 1EP	N/A	N/A	57.6	56.6	55.2	-1.4	157.3	94.7	61.3	58.7	61.3_ARR09L_DEP09R	61.3_ARR09L_DEP09R	311.4_ARR09L_DEP09R	311.4_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
BUILDING 16300_10093737935 EAGLE ROAD TW6 2DN	N/A	N/A	63.2	62.1	61.1	-1.1	372.9	372.8	67.7	66.2	67.7_ARR09L_DEP09R	67.7_ARR09L_DEP09R	336.5_ARR09L_DEP09R	336.5_ARR09L_DEP09R
MARCH HOUSE_100081305804 PARK STREET SL4 1LU	N/A	N/A	57.6	56.6	55.3	-1.3	162.5	100	61.1	58.6	61.1_ARR09L_DEP09R	61.1_ARR09L_DEP09R	311_ARR09L_DEP09R	311_ARR09L_DEP09R
ADVERTISING HOARDING OUTSIDE TESCO OFF FAGGS ROAD_200003976984 DUKES GREEN AVENUE TW14 0LG	N/A	N/A	62.2	60.9	59	-1.9	251.7	193.2	66.8	64.3	66.8_ARR09L_DEP09R	66.8_ARR09L_DEP09R	333.3_ARR09L_DEP09R	333.3_ARR09L_DEP09R
GREVILLE HOUSE_100932584 42 HATTON ROAD TW14 9PX	N/A	N/A	61.1	60.1	58.8	-1.3	290.8	223.1	64.5	61.8	64.5_ARR09L_DEP09R	64.5_ARR09L_DEP09R	332.7_ARR09L_DEP09R	332.7_ARR09L_DEP09R
BUILDING 315_10022797547 SOUTHERN PERIMETER ROAD TW6 2JJ	N/A	N/A	67.3	66	64.3	-1.6	413.8	410.1	71.3	68.8	71.3_ARR09L_DEP09R	71.3_ARR09L_DEP09R	344.5_ARR27L_DEP27R	344.5_ARR27L_DEP27R
LANCASTER HOUSE_1001233566 7	N/A	N/A	57.8	56.8	55.4	-1.5	156.2	93.5	61.8	59.2	61.8_ARR09L_DEP09R	61.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
BARRACK LANE SL4 1HD														
OFFICE_10012330186 SHEET STREET SL4 1BG	N/A	N/A	57.5	56.5	55.2	-1.3	160	97.5	61	58.5	61_ARR09L_DEP09R	61_ARR09L_DEP09R	310.8_ARR09L_DEP09R	310.8_ARR09L_DEP09R
OFFICE_100023399966 DUKES GREEN AVENUE TW14 0LR	N/A	N/A	61	59.8	57.9	-1.9	183.6	121.6	65.8	63.3	65.8_ARR09L_DEP09R	65.8_ARR09L_DEP09R	332.9_ARR09L_DEP09R	332.9_ARR09L_DEP09R
OFFICE_100023399868 STAINES ROAD TW14 0JT	N/A	N/A	62.2	60.9	59.1	-1.8	210.7	167.7	66.9	64.6	66.9_ARR09L_DEP09R	66.9_ARR09L_DEP09R	333.6_ARR09L_DEP09R	333.6_ARR09L_DEP09R
OFFICE_100123216660 VICTORIA STREET SL4 1HB	N/A	N/A	57.8	56.9	55.4	-1.4	158.3	95.6	61.8	59.2	61.8_ARR09L_DEP09R	61.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R
WINDSOR HOUSE_100123183537 VICTORIA STREET SL4 1EN	N/A	N/A	57.5	56.5	55.1	-1.4	151.8	89.1	61.4	58.8	61.4_ARR09L_DEP09R	61.4_ARR09L_DEP09R	311.7_ARR09L_DEP09R	311.7_ARR09L_DEP09R
BRADLEY CENTRE_10091692949 CENTRAL WAY TW14 0RX	N/A	N/A	63.1	61.8	60	-1.8	378.4	332.2	67.6	65.1	67.6_ARR09L_DEP09R	67.6_ARR09L_DEP09R	333.9_ARR09L_DEP09R	333.9_ARR09L_DEP09R
OFFICE_10012332008	N/A	N/A	57.7	56.8	55.2	-1.6	145.6	82.9	62.1	59.6	62.1_ARR09L_DEP09R	62.1_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
ST LEONARDS ROAD SL4 3BX														
OFFICE_100081268800 TEMPLE ROAD SL4 1HW	N/A	N/A	57.7	56.7	55.2	-1.6	143.5	80.8	62	59.5	62.1_ARR09L_DEP09R	62.1_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R
PARKSIDE_10012304307 SHEET STREET SL4 1BY	N/A	N/A	58	57	55.6	-1.5	160	97.3	62	59.4	62_ARR09L_DEP09R	62_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R
GROUND FLOOR_100945892 91 POWDER MILL LANE TW2 6EH	N/A	N/A	57.4	56.5	55.2	-1.3	81.7	67.9	62.9	61.4	62.9_ARR09L_DEP09R	62.9_ARR09L_DEP09R	197.9_ARR09L_DEP09R	197.9_ARR09L_DEP09R
THE COURTYARD_10008 1269151 ALEXANDRA ROAD SL4 1HU	N/A	N/A	58	57	55.4	-1.5	152.9	90.2	62.3	59.8	62.3_ARR09L_DEP09R	62.3_ARR09L_DEP09R	311.9_ARR09L_DEP09R	311.9_ARR09L_DEP09R
LEWORTH HOUSE_100081269060 SHEET STREET SL4 1BG	N/A	N/A	57.7	56.7	55.3	-1.4	158.8	96.1	61.4	58.9	61.4_ARR09L_DEP09R	61.4_ARR09L_DEP09R	311.6_ARR09L_DEP09R	311.6_ARR09L_DEP09R
SAXON HOUSE_1001232032 6 VICTORIA STREET SL4 1EN	N/A	N/A	57.7	56.7	55.3	-1.4	157.4	94.7	61.5	59	61.5_ARR09L_DEP09R	61.5_ARR09L_DEP09R	311.7_ARR09L_DEP09R	311.7_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
THE QUADRANT_10012333376 HIGH STREET SL4 1LP	N/A	N/A	57.3	56.3	55.1	-1.2	161.9	99.5	60.6	58.1	60.6_ARR09L_DEP09R	60.6_ARR09L_DEP09R	310_ARR09L_DEP09R	310_ARR09L_DEP09R
FELSTEAD HOUSE_100081270018 FRANCES ROAD SL4 3AA	N/A	N/A	58.2	57.2	55.7	-1.5	154.7	92	62.4	59.9	62.4_ARR09L_DEP09R	62.4_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R
OFFICE_100081305845 ST LEONARDS ROAD SL4 3BZ	N/A	N/A	57.8	56.8	55.3	-1.6	150.9	88.3	62.2	59.8	62.2_ARR09L_DEP09R	62.2_ARR09L_DEP09R	311.9_ARR09L_DEP09R	311.9_ARR09L_DEP09R
FALDO HEADQUARTERS_100081268794 RUSSELL STREET SL4 1HQ	N/A	N/A	57.6	56.6	55.1	-1.5	143	80.3	61.8	59.3	61.8_ARR09L_DEP09R	61.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R
OFFICE_10012328937 TRINITY PLACE SL4 3AS	N/A	N/A	57.6	56.6	55	-1.6	141.1	78.4	61.9	59.4	61.9_ARR09L_DEP09R	61.9_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R
YORK HOUSE_100123378007 SHEET STREET SL4 1DD	N/A	N/A	58.1	57.2	55.7	-1.5	159.9	97.2	62.2	59.6	62.2_ARR09L_DEP09R	62.2_ARR09L_DEP09R	311.8_ARR09L_DEP09R	311.8_ARR09L_DEP09R
ADMIRAL HOUSE_1001233454	N/A	N/A	57.8	56.8	55.3	-1.5	150.8	88.1	62.2	59.8	62.2_ARR09L_DEP09R	62.2_ARR09L_DEP09R	311.9_ARR09L_DEP09R	311.9_ARR09L_DEP09R

Receptor Name	Insulation Status		Summer Average $L_{Aeq,16hr}$, dB				Summer Average N65		Average Busy Easterly Day $L_{Aeq,16hr}$		Highest Single Mode $L_{Aeq,8hr\ (alternation)}$ in 2028		Highest Single Mode N65 (alternation) in 2028	
	Eligible under QNS	Insulated	2019	2028 without Development	2028 with Development	Change in 2028 due to the Proposed Development	2028 without Development	2028 with Development	2028 without Development	2028 with Development	without Development	with Development	without Development	with Development
5 ST LEONARDS ROAD SL4 3BL														
OFFICE_100081270036 ALMA ROAD SL4 3ET	N/A	N/A	57.6	56.4	55.2	-1.3	175.9	119.1	61.5	59.4	61.5_ARR09L_DEP09R	61.5_ARR09L_DEP09R	312.9_ARR09L_DEP09R	312.9_ARR09L_DEP09R
PASSER COURT COMMUNITY CENTRE_10094944380 SPARROW FARM DRIVE TW14 0DJ	N/A	N/A	58.1	56.7	55.2	-1.4	85.9	65.8	63	61.3	63_ARR09L_DEP09R	63_ARR09L_DEP09R	208.3_ARR09L_DEP09R	208.3_ARR09L_DEP09R

Table A7.5.67 Analysis of parks and gardens – No change due to the Proposed Development

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km^2]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Abbey Estate Open Space	(46-46 dB)	0	(52-52 dB)	0	No	N/A	0.01	Adverse	100%
Ascot Place	(42-47 dB)	0	(42-45 dB)	0 to 2	No	N/A	1.16	No Change	100%
Barnes Common	(55-56 dB)	0	(38-40 dB)	0	No	N/A	0.41	No Change	100%
Barnes Green	(56-56 dB)	0	(39-39 dB)	0	No	N/A	0.03	No Change	100%
Battersea Park	(52-54 dB)	0	(34-35 dB)	0	No	N/A	0.81	No Change	100%
Beaversfield Park	(60-60 dB)	0	(63-64 dB)	1	No	N/A	0.04	Beneficial	100%
Berry Hill	(47-48 dB)	0	(39-39 dB)	-1	No	N/A	0.12	No Change	100%
Bishop's Park	(55-55 dB)	0	(37-38 dB)	0	No	N/A	0.09	No Change	100%
Boston Manor Park	(50-52 dB)	0	(48-49 dB)	-1	No	N/A	0.07	Beneficial	100%
Brimmington Park	(50-50 dB)	0	(31-31 dB)	0	No	N/A	0.02	No Change	100%
Brompton Cemetery	(51-53 dB)	0	(35-36 dB)	0	No	N/A	0.15	No Change	100%
Brompton Park	(53-53 dB)	0	(36-36 dB)	0	No	N/A	0.01	No Change	100%
Brunswick Park	(52-52 dB)	0	(32-32 dB)	0	No	N/A	0.02	No Change	100%
Burgess Park	(50-52 dB)	0	(31-32 dB)	0	No	N/A	0.47	No Change	100%
Burnham Park	(51-51 dB)	0	(39-39 dB)	-1	No	N/A	0.07	No Change	100%
Bushy Park	(42-47 dB)	-1 to 0	(48-53 dB)	-1 to 0	No	N/A	4.36	Beneficial	100%
Cambridge Gardens	(52-53 dB)	0	(48-49 dB)	1	No	N/A	0.01	Adverse	100%
Canbury Gardens	(42-44 dB)	0	(48-49 dB)	-1	No	N/A	0.06	Beneficial	100%

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km^2]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Cannizaro Park	(45-45 dB)	0	(51-51 dB)	0	No	N/A	0.14	Beneficial	100%
Caroline Gardens	(50-51 dB)	0	(31-31 dB)	0	No	N/A	0.01	No Change	100%
Chelsea Embankment Gardens	(52-52 dB)	0	(34-34 dB)	0	No	N/A	0.01	No Change	100%
Chelsea Physic Garden	(52-52 dB)	0	(34-34 dB)	0	No	N/A	0.01	No Change	100%
Chertsey Meads	(50-51 dB)	0	(45-47 dB)	-1 to 0	No	N/A	0.71	Beneficial	100%
Chiswick House	(52-55 dB)	0	(39-40 dB)	0	No	N/A	0.27	No Change	100%
Cigarette Island Park	(43-44 dB)	0	(49-49 dB)	-1	No	N/A	0.02	Beneficial	100%
Cippenham Green	(53-53 dB)	0	(40-40 dB)	-1	No	N/A	0.04	No Change	100%
City Of Westminster Cemetery, Hanwell	(50-50 dB)	-1 to 0	(56-56 dB)	-1 to 0	No	N/A	0.09	Beneficial	100%
Clapham Common	(50-53 dB)	0	(36-38 dB)	0	No	N/A	0.73	No Change	100%
Claremont	(46-47 dB)	0	(48-49 dB)	0	No	N/A	0.66	No Change	100%
Cliveden	(47-49 dB)	0	(40-45 dB)	-1	No	N/A	1.37	No Change	100%
Coronation Gardens	(47-47 dB)	0	(53-53 dB)	0	No	N/A	0.04	Mix	50%_Beneficial & 50%_Adverse
Cossall Park	(51-51 dB)	0	(32-32 dB)	0	No	N/A	0.01	No Change	100%
Dean Gardens	(49-49 dB)	-1	(55-56 dB)	-1	No	N/A	0.01	Beneficial	100%
Ditton Common	(44-45 dB)	0	(49-50 dB)	0	No	N/A	0.13	Beneficial	100%
Ditton Park	(52-58 dB)	0	(46-52 dB)	-2	No	N/A	0.96	Beneficial	100%

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km^2]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Dog Kennel Hill	(51-51 dB)	0	(34-34 dB)	0	No	N/A	0.01	No Change	100%
Dolphin Square Gardens	(51-51 dB)	0	(33-33 dB)	0	No	N/A	0.01	No Change	100%
Dorney Common	(49-53 dB)	0	(44-48 dB)	-2	No	N/A	0.61	No Change	100%
Drayton Green	(50-50 dB)	0	(56-56 dB)	0	No	N/A	0.03	Adverse	100%
Dropmore	(47-49 dB)	0	(42-45 dB)	-1	No	N/A	2.77	No Change	100%
Ealing Common	(45-46 dB)	0	(50-52 dB)	-1 to 0	No	N/A	0.12	Beneficial	100%
Eel Brook Common	(54-54 dB)	0	(36-36 dB)	0	No	N/A	0.05	No Change	100%
Esher Green	(46-46 dB)	0	(50-50 dB)	0	No	N/A	0.01	Beneficial	100%
Eton College	(55-56 dB)	0	(47-50 dB)	-2	No	N/A	0.19	No Change	100%
Eton Great Common	(54-55 dB)	0	(46-48 dB)	-2	No	N/A	0.1	No Change	100%
Eythorne Park	(53-53 dB)	0	(33-33 dB)	0	No	N/A	0.03	No Change	100%
Falcon Park	(54-54 dB)	0	(35-36 dB)	0	No	N/A	0.02	No Change	100%
Faraday Gardens	(50-50 dB)	0	(31-31 dB)	0	No	N/A	0.01	No Change	100%
Figge's Marsh	(43-43 dB)	0	(48-48 dB)	0	No	N/A	0.1	Beneficial	100%
Fred Wells Gardens	(54-54 dB)	0	(35-35 dB)	0	No	N/A	0.01	No Change	100%
Fulham Palace	(55-55 dB)	0	(37-37 dB)	0	No	N/A	0.15	No Change	100%
Garrat Lane Old Burial Ground	(51-51 dB)	0	(39-39 dB)	0	No	N/A	0.01	No Change	100%
Garrick's Villa	(46-46 dB)	-1	(52-53 dB)	-1	No	N/A	0.02	No Change	100%
Gogmore Farm Park	(49-50 dB)	0	(46-46 dB)	0	No	N/A	0.06	No Change	100%

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km^2]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Goose Green	(50-50 dB)	0	(34-34 dB)	0	No	N/A	0.02	No Change	100%
Great Fosters	(51-53 dB)	0	(44-44 dB)	0	No	N/A	0.09	No Change	100%
Grove House	(50-53 dB)	0	(41-43 dB)	0	No	N/A	0.07	No Change	100%
Halliford Park	(45-45 dB)	0	(50-50 dB)	-1	No	N/A	0.05	Beneficial	100%
Ham Common	(48-49 dB)	-1 to 0	(54-55 dB)	-1 to 0	No	N/A	0.42	No Change	100%
Ham House	(49-50 dB)	0	(53-55 dB)	0	No	N/A	0.18	Adverse	100%
Hampton Court	(41-44 dB)	0	(46-49 dB)	-1 to 0	No	N/A	2.89	Beneficial	100%
Hampton Court Green	(44-44 dB)	0	(50-50 dB)	-1	No	N/A	0.07	Beneficial	100%
Hampton Court House	(44-44 dB)	-1 to 0	(50-50 dB)	-1	No	N/A	0.03	Beneficial	100%
Hanger Hill Park	(48-48 dB)	0	(54-55 dB)	0	No	N/A	0.13	Beneficial	100%
Harmondsworth Moor	(51-62 dB)	0	(50-57 dB)	0 to 4	No	N/A	0.71	Adverse	100%
Haven Green	(48-48 dB)	0	(54-54 dB)	0	No	N/A	0.02	Beneficial	100%
Heathbrook Park	(53-54 dB)	0	(34-34 dB)	0	No	N/A	0.02	No Change	100%
Hedsor House	(47-48 dB)	0	(45-46 dB)	-1	No	N/A	0.77	No Change	100%
Herschel Park (Formerly Upton Park)	(53-54 dB)	0	(43-44 dB)	-2	No	N/A	0.03	No Change	100%
Heston Pools And Fitness	(55-56 dB)	0	(60-60 dB)	-1 to 0	No	N/A	0.05	Adverse	100%
Holland Gardens	(44-44 dB)	0	(50-50 dB)	0	No	N/A	0.01	No Change	100%
Huntercombe Manor	(52-53 dB)	0	(39-39 dB)	-1	No	N/A	0.07	No Change	100%

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km^2]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Hurst Park	(45-47 dB)	-1 to 0	(51-53 dB)	-1	No	N/A	0.21	Beneficial	100%
Hythe Park	(54-55 dB)	0	(44-44 dB)	0	No	N/A	0.05	No Change	100%
Inwood Park	(61-61 dB)	0	(53-54 dB)	2	No	N/A	0.06	Adverse	100%
Isleworth Promenade	(59-59 dB)	0	(48-48 dB)	1	No	N/A	0.01	No Change	100%
Jersey Gardens	(57-57 dB)	0	(51-52 dB)	-2 to -1	No	N/A	0.02	Beneficial	100%
Kedermister Park	(50-51 dB)	0	(44-45 dB)	-2	No	N/A	0.11	No Change	100%
Kennedy Memorial Landscape	(54-55 dB)	0	(46-47 dB)	3	No	N/A	0.02	No Change	100%
Kennington Park	(51-52 dB)	0	(32-32 dB)	0	No	N/A	0.16	No Change	100%
Kew Green	(54-55 dB)	0	(42-43 dB)	-1 to 0	No	N/A	0.04	No Change	100%
King George's Park	(47-50 dB)	0	(40-41 dB)	0	No	N/A	0.11	No Change	100%
Laleham Park	(50-52 dB)	0	(47-47 dB)	0	No	N/A	0.24	Beneficial	100%
Lampton Park	(58-64 dB)	0	(56-59 dB)	-1 to 1	No	N/A	0.17	Mix	88%_Beneficial & 12%_Adverse
Landscaping To Alton West Estate	(48-51 dB)	0	(43-44 dB)	0	No	N/A	0.18	No Change	100%
Langford Garden	(54-55 dB)	0	(36-36 dB)	0	No	N/A	0.01	No Change	100%
Larkhall Park	(53-53 dB)	0	(34-34 dB)	0	No	N/A	0.05	No Change	100%
Leader's Gardens	(55-55 dB)	0	(38-38 dB)	0	No	N/A	0.01	No Change	100%

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km^2]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Lettsom Gardens	(51-51 dB)	0	(33-33 dB)	0	No	N/A	0.01	No Change	100%
Leyton Square	(51-51 dB)	0	(31-31 dB)	0	No	N/A	0.01	No Change	100%
Loughborough Park	(52-52 dB)	0	(35-35 dB)	0	No	N/A	0.02	No Change	100%
Lucas Gardens	(52-52 dB)	0	(32-33 dB)	0	No	N/A	0.02	No Change	100%
Ludlow Road Open Space	(47-48 dB)	0	(52-54 dB)	0	No	N/A	0.11	Adverse	100%
Marbaix Gardens	(61-61 dB)	0	(52-52 dB)	-1	No	N/A	0.01	Beneficial	100%
Max Roach Park	(52-53 dB)	0	(34-34 dB)	0	No	N/A	0.02	No Change	100%
Montpelier Park	(48-48 dB)	0	(55-55 dB)	0	No	N/A	0.02	Adverse	100%
Mortlake Green	(57-57 dB)	0	(41-41 dB)	0	No	N/A	0.01	No Change	100%
Myatt's Fields	(52-53 dB)	0	(33-33 dB)	0	No	N/A	0.05	No Change	100%
Nashdom Abbey	(49-49 dB)	0	(42-42 dB)	-1	No	N/A	0.05	No Change	100%
Normand Park	(52-53 dB)	0	(36-37 dB)	0	No	N/A	0.03	No Change	100%
Norwood Green	(53-53 dB)	0	(59-59 dB)	0	No	N/A	0.03	No Change	100%
Nunhead Cemetery (All Saints)	(49-50 dB)	0	(33-34 dB)	-1 to 0	No	N/A	0.2	No Change	100%
Nursery Green	(49-49 dB)	-1 to 0	(55-55 dB)	-1	No	N/A	0.02	Beneficial	100%
Oaklands Park	(50-50 dB)	0	(43-43 dB)	1	No	N/A	0.01	No Change	100%
Oatlands	(47-50 dB)	0	(44-44 dB)	-1 to 0	No	N/A	0.23	Beneficial	100%
Odney Common	(47-47 dB)	0	(45-45 dB)	-1	No	N/A	0.03	No Change	100%

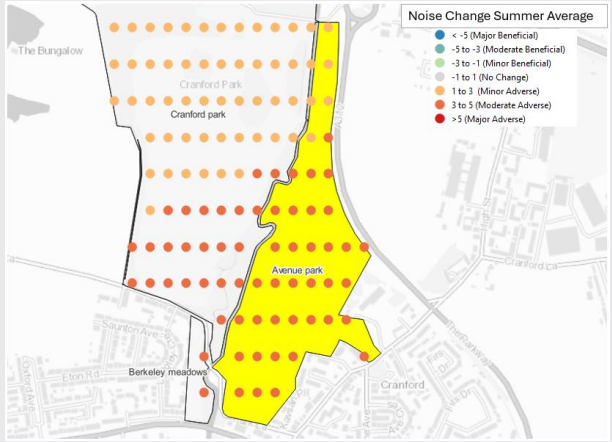
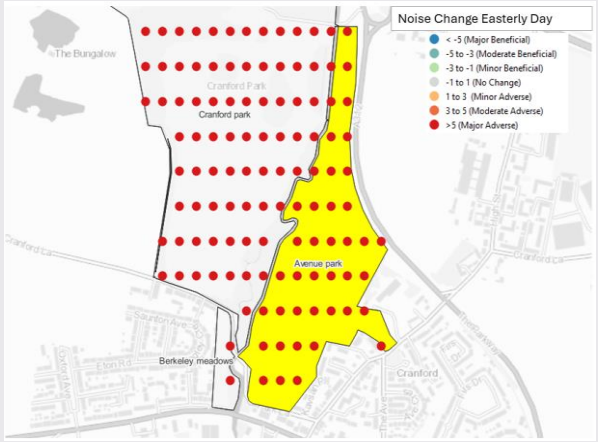
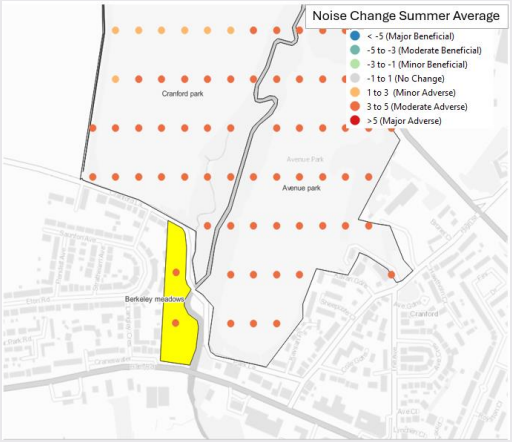
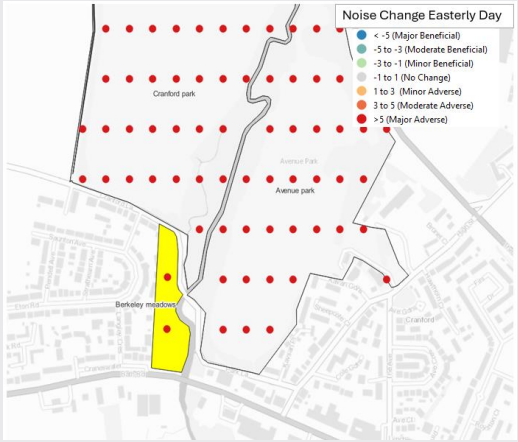
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km^2]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Orleans Gardens	(50-50 dB)	0	(54-54 dB)	0	No	N/A	0.02	Adverse	100%
Palewell Common	(52-54 dB)	0	(42-43 dB)	0	No	N/A	0.06	No Change	100%
Peckham Rye Park	(49-50 dB)	0	(34-36 dB)	-1 to 0	No	N/A	0.39	No Change	100%
Pesthouse Common	(54-55 dB)	0	(45-45 dB)	0 to 1	No	N/A	0.01	No Change	100%
Pope's Garden	(50-50 dB)	-1 to 0	(56-56 dB)	-1	No	N/A	0.01	Beneficial	100%
Putney Lower Common	(55-56 dB)	0	(38-38 dB)	0	No	N/A	0.17	No Change	100%
Putney Vale Cemetery	(45-45 dB)	0	(47-49 dB)	0	No	N/A	0.16	Beneficial	100%
Raleigh Road Recreation Ground	(58-58 dB)	0	(43-43 dB)	0	No	N/A	0.01	No Change	100%
Richmond Green	(56-58 dB)	0	(46-47 dB)	1	No	N/A	0.04	No Change	100%
Richmond Park	(45-53 dB)	0	(43-54 dB)	-1 to 1	No	N/A	9.54	Mix	56%_Beneficial & 44%_Adverse
Richmond Terrace Walk	(50-51 dB)	0	(49-49 dB)	1	No	N/A	0.03	Adverse	100%
Riverside Gardens	(46-46 dB)	0	(39-40 dB)	-1	No	N/A	0.02	No Change	100%
Roundwood Park	(44-44 dB)	0	(50-50 dB)	0	No	N/A	0.14	No Change	100%
Royal Borough Of Kensington And Chelsea	(50-50 dB)	0	(56-57 dB)	0	No	N/A	0.06	No Change	100%

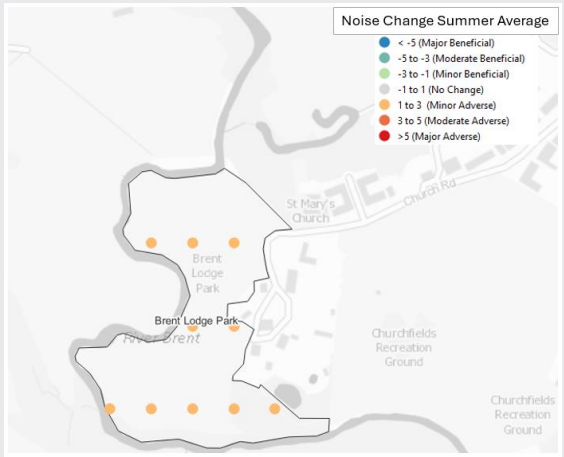
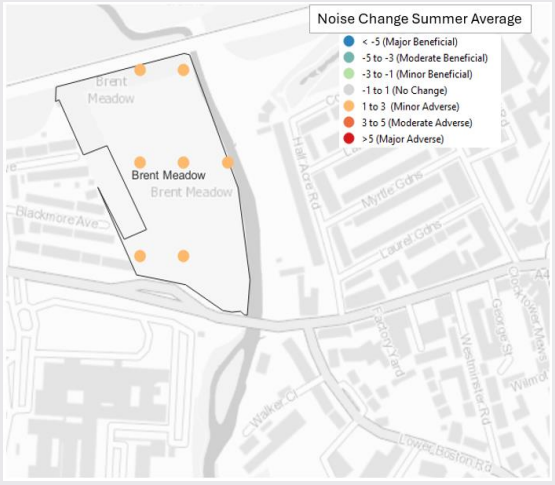
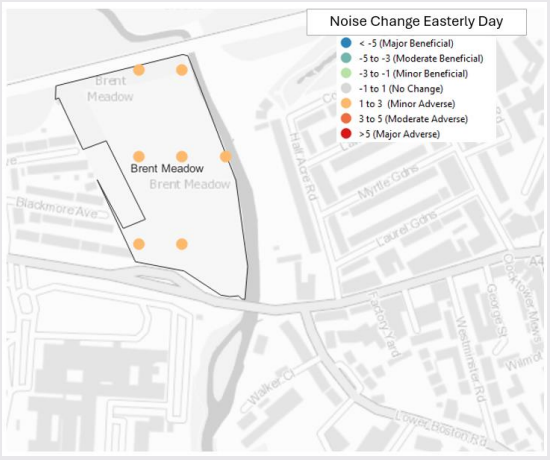
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km^2]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Cemetery, Hanwell									
Royal Botanic Gardens, Kew	(54-59 dB)	0	(42-48 dB)	-1 to 1	No	N/A	2.72	No Change	100%
Royal Hospital, Chelsea And Ranelagh Gardens	(50-52 dB)	0	(34-34 dB)	0	No	N/A	0.24	No Change	100%
Runnymede Pleasure Ground	(56-57 dB)	0	(45-45 dB)	2	No	N/A	0.06	No Change	100%
Rush Common	(50-51 dB)	0	(36-37 dB)	0	No	N/A	0.02	No Change	100%
Ruskin Park	(51-52 dB)	0	(34-35 dB)	0	No	N/A	0.15	No Change	100%
Sceaux Gardens	(52-52 dB)	0	(32-32 dB)	0	No	N/A	0.01	No Change	100%
Shillington Street Open Space	(54-54 dB)	0	(35-36 dB)	0	No	N/A	0.02	No Change	100%
Silverhall Park	(58-58 dB)	0	(47-47 dB)	0	No	N/A	0.01	No Change	100%
Slade Gardens	(53-53 dB)	0	(33-34 dB)	0	No	N/A	0.02	No Change	100%
South Park Gardens	(44-44 dB)	0	(49-49 dB)	0	No	N/A	0.02	Beneficial	100%
Spencer Park	(51-52 dB)	0	(38-38 dB)	0	No	N/A	0.02	No Change	100%
Splash Meadow	(46-46 dB)	0	(49-49 dB)	-1	No	N/A	0.01	Beneficial	100%
St Ann's Court	(47-48 dB)	0	(45-46 dB)	0	No	N/A	0.04	No Change	100%
St Ann's Hill And The Dingle	(48-50 dB)	0	(45-46 dB)	0	No	N/A	0.16	Beneficial	100%
St George's Square Garden	(50-51 dB)	0	(33-33 dB)	0	No	N/A	0.01	No Change	100%

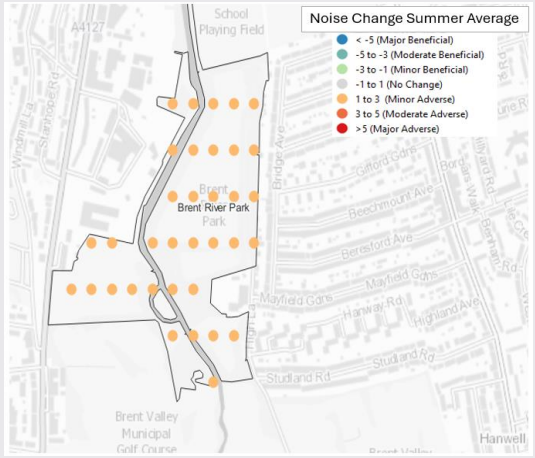
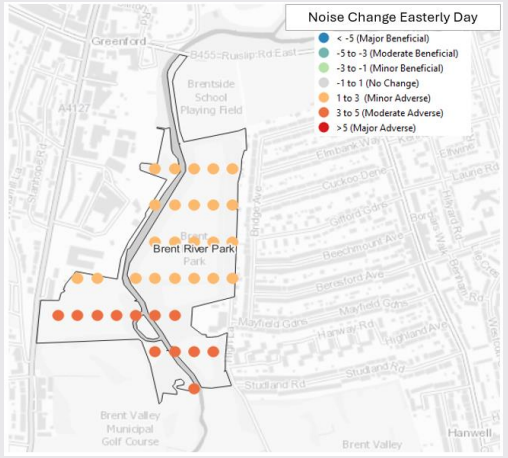
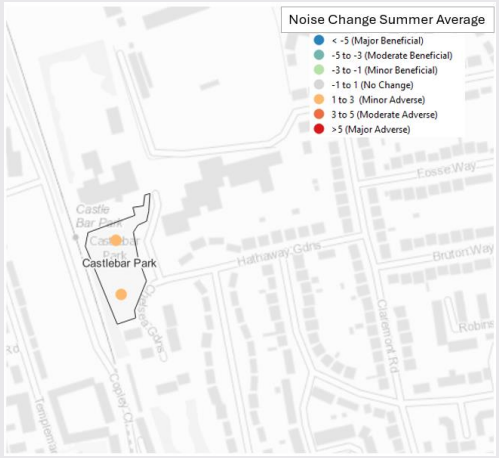
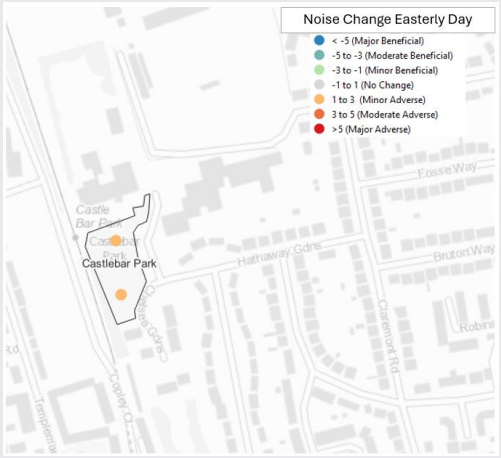
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km^2]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
St John's Gardens	(58-58 dB)	0	(48-48 dB)	0	No	N/A	0.02	No Change	100%
Staines Park	(48-49 dB)	0	(45-45 dB)	0	No	N/A	0.07	No Change	100%
Sunningdale Park (Civil Service College)	(46-47 dB)	0	(43-43 dB)	0	No	N/A	0.29	No Change	100%
Sunray Gardens	(50-50 dB)	0	(36-36 dB)	0	No	N/A	0.02	No Change	100%
Syon Park	(57-60 dB)	0	(44-46 dB)	-1 to 0	No	N/A	0.83	No Change	100%
Taplow Court	(48-49 dB)	0	(39-40 dB)	-1	No	N/A	0.3	No Change	100%
Terrace And Buccleuch Gardens	(50-52 dB)	0	(48-49 dB)	1	No	N/A	0.04	Adverse	100%
Terrace Gardens	(45-46 dB)	-1	(51-52 dB)	-1	No	N/A	0.01	Beneficial	100%
Thames Meadow	(46-47 dB)	0	(45-46 dB)	-1	No	N/A	0.07	Beneficial	100%
The Copse	(49-49 dB)	0	(54-55 dB)	0 to 1	No	N/A	0.08	Adverse	100%
The Moor	(53-54 dB)	0	(46-46 dB)	1	No	N/A	0.01	No Change	100%
Upton Court Park	(52-56 dB)	0	(44-48 dB)	-2	No	N/A	0.63	No Change	100%
Vauxhall Park	(52-52 dB)	0	(32-33 dB)	0	No	N/A	0.03	No Change	100%
Vauxhall Pleasure Gardens	(50-51 dB)	0	(32-32 dB)	0	No	N/A	0.03	No Change	100%
Wandle Meadow Nature Park	(44-44 dB)	0	(48-49 dB)	0	No	N/A	0.05	Beneficial	100%

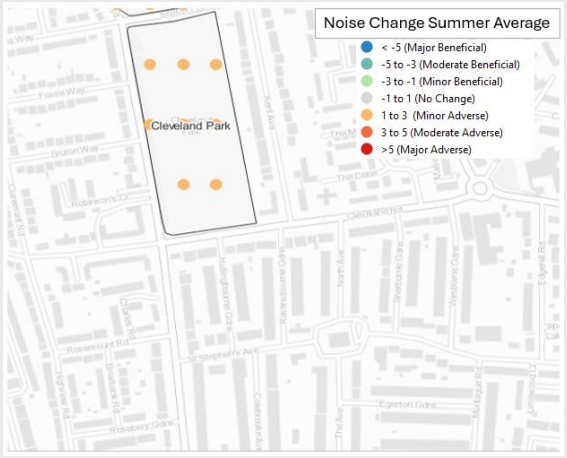
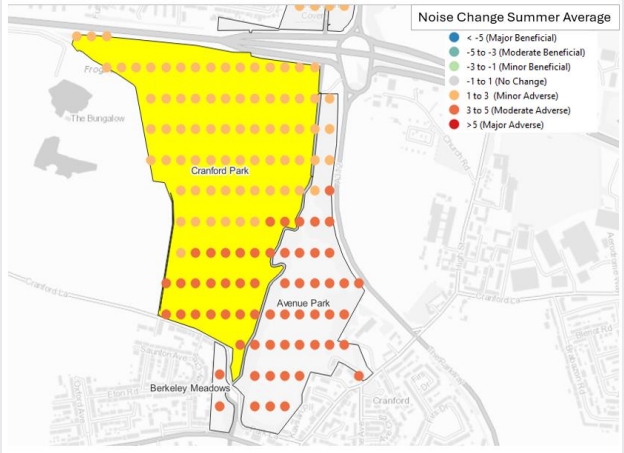
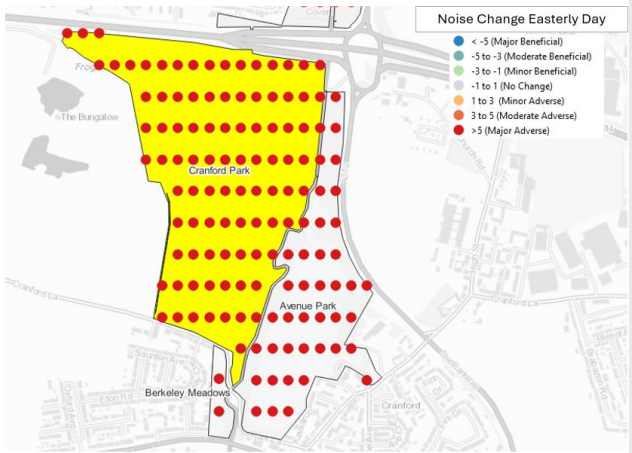
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km^2]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Wandle Park	(44-44 dB)	0	(49-49 dB)	0	No	N/A	0.04	Beneficial	100%
Wandsworth Common	(45-52 dB)	0	(38-42 dB)	0	No	N/A	0.44	No Change	100%
Wandsworth Park	(53-54 dB)	0	(38-38 dB)	0	No	N/A	0.09	No Change	100%
Watermans Park	(52-53 dB)	0	(44-44 dB)	-1	No	N/A	0.01	No Change	100%
Westfield Park	(54-54 dB)	0	(35-35 dB)	0	No	N/A	0.01	No Change	100%
Willesden Jewish Cemetery (United Synagogue Cemetery)	(44-44 dB)	0	(50-50 dB)	0	No	N/A	0.08	No Change	100%
Wimbledon Common	(44-46 dB)	0	(47-52 dB)	0	No	N/A	2.9	Beneficial	100%
Wimbledon Park	(44-45 dB)	0	(45-49 dB)	0	No	N/A	0.6	Beneficial	100%
Woburn Farm	(49-50 dB)	0	(44-46 dB)	0	No	N/A	0.51	Beneficial	100%
Wyck Gardens	(52-52 dB)	0	(34-34 dB)	0	No	N/A	0.02	No Change	100%
York Gardens	(54-54 dB)	0	(36-36 dB)	0	No	N/A	0.03	No Change	100%

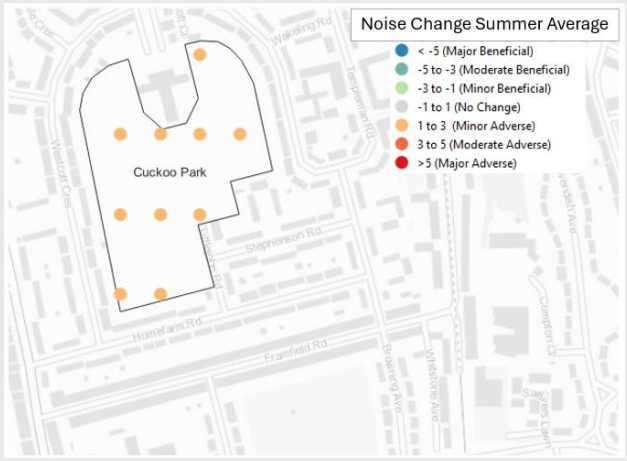
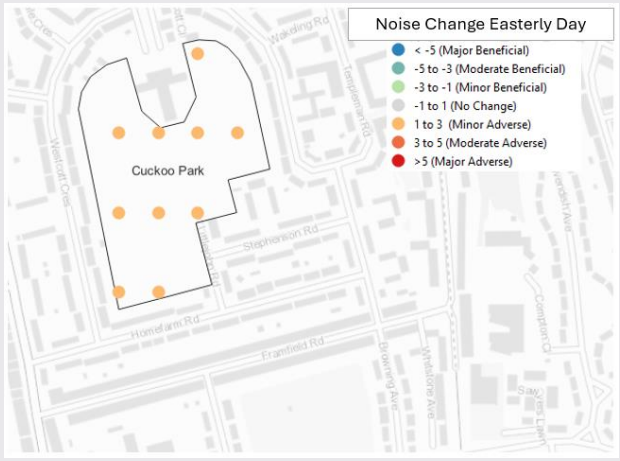
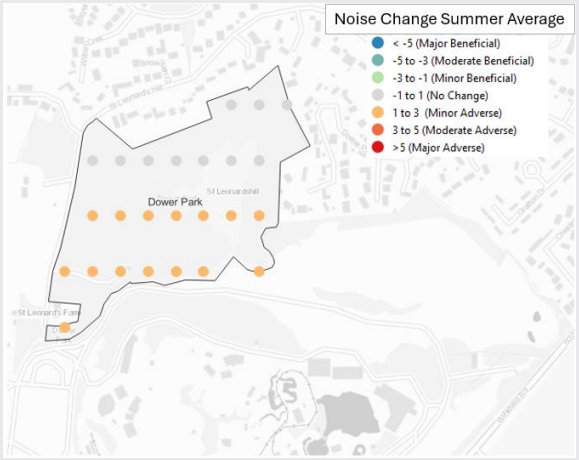
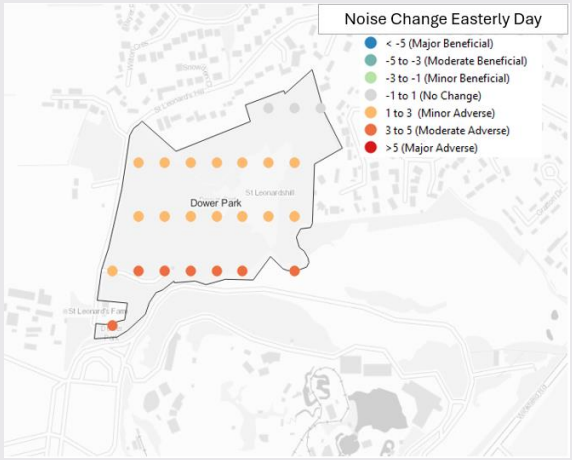
Table A7.5.68 Analysis of parks and gardens – Adverse changes due to the Proposed Development

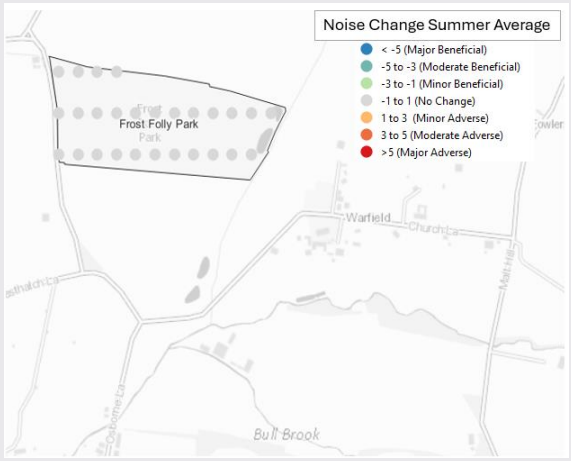
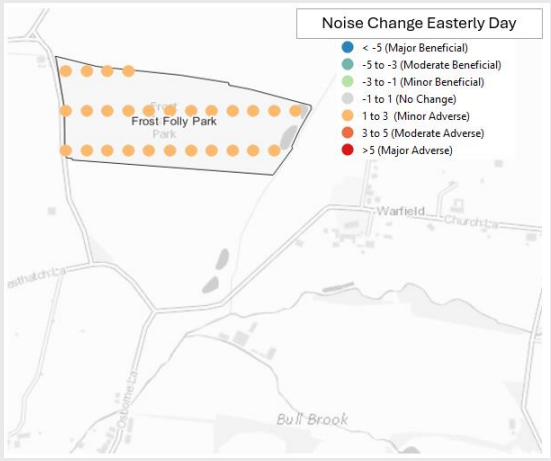
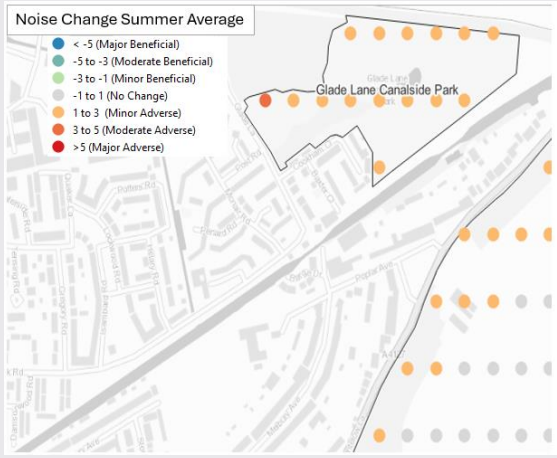
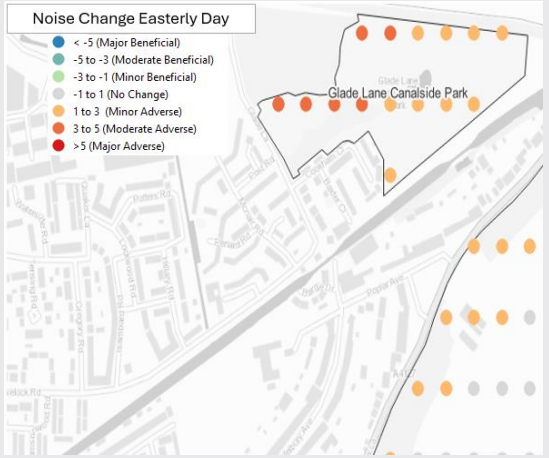
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Avenue Park located in Hounslow Borough, northeast of the LHR Airport	(52-60 dB)	3 to 4	(56-65 dB)	6 to 9	Yes, adverse	Significant Wide	0.2	Adverse	100%
								
Berkeley Meadows located in Hillingdon Borough, northeast of the LHR Airport	(59-60 dB)	3 to 4	(64-65 dB)	8 to 9	Yes, adverse	Significant Wide	0.02	Adverse	100%
								

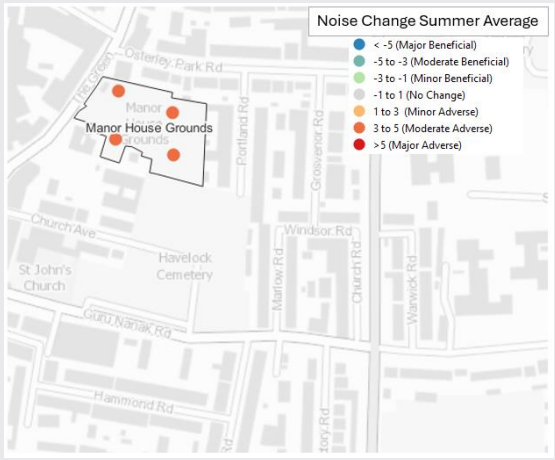
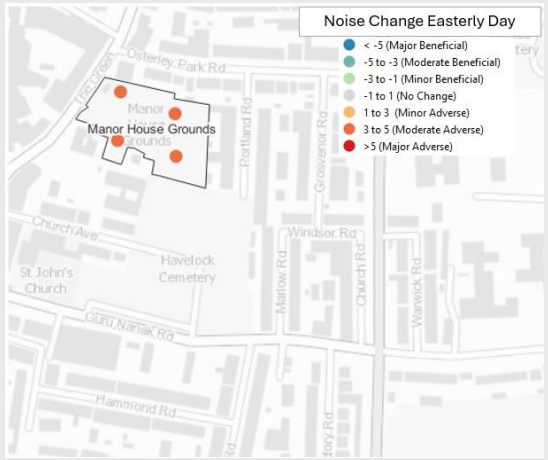
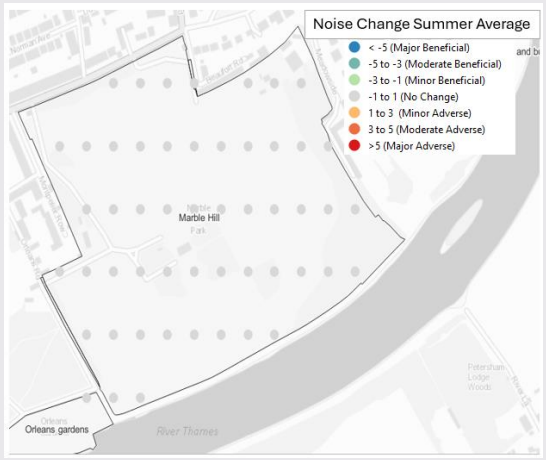
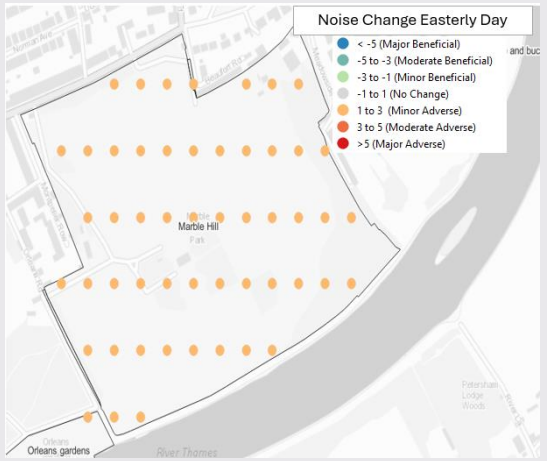
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Brent Lodge Park located in Ealing Borough, northeast of the LHR Airport	(49-50 dB)	2 to 3	(56-56 dB)	3	Yes, adverse	Not significant	0.05	Adverse	100%
								
Brent Meadow located in Ealing Borough, northeast of the LHR Airport	(50-51 dB)	1 to 2	(57-57 dB)	1 to 2	Yes, adverse	Not significant	0.03	Adverse	100%
								

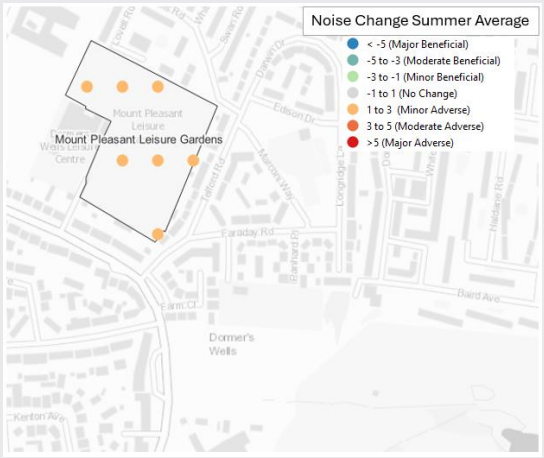
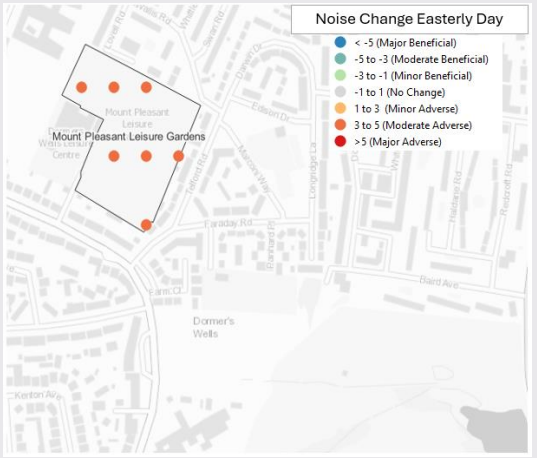
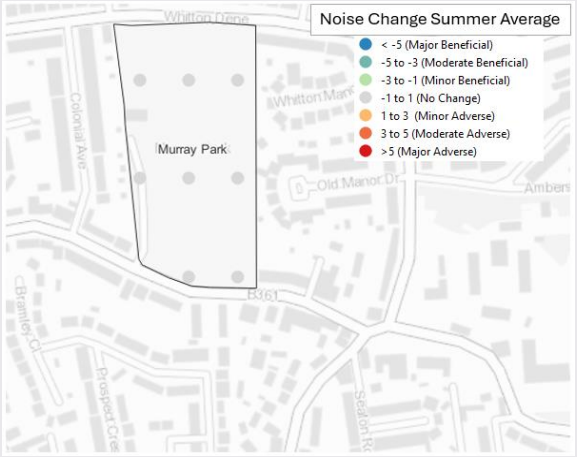
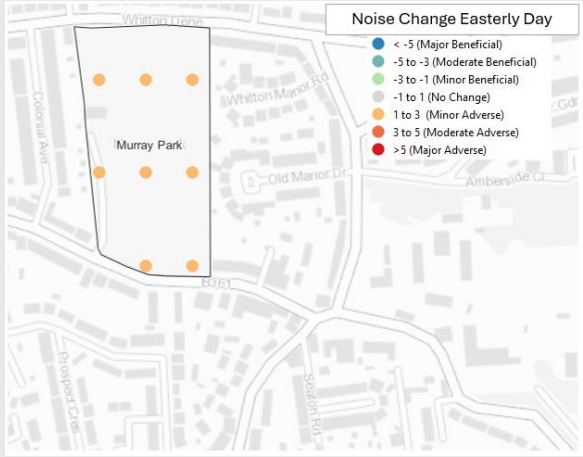
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Brent River Park located in Ealing Borough, northeast of the LHR Airport	(45-47 dB)	2 to 3	(51-53 dB)	3	Yes, adverse	Not significant	0.19	Adverse	100%
								
Castlebar Park located in Ealing Borough, northeast of the LHR Airport	(48-48 dB)	2	(54-54 dB)	2	Yes, adverse	Not significant	0.01	Adverse	100%
								

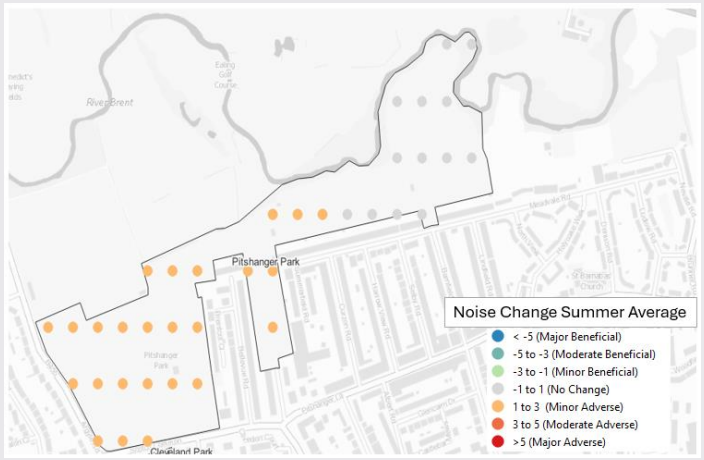
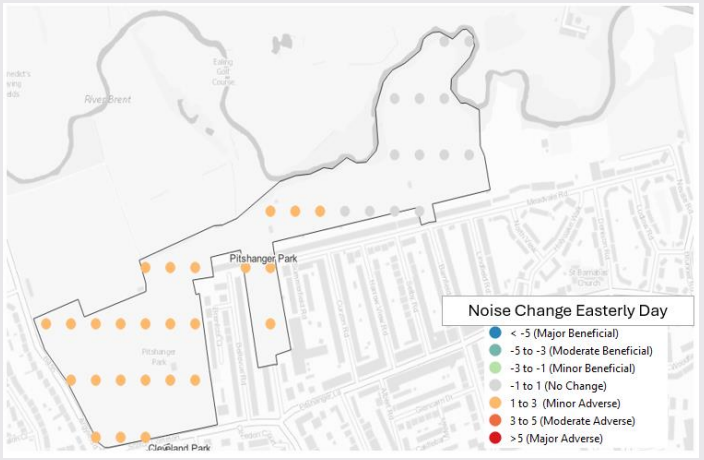
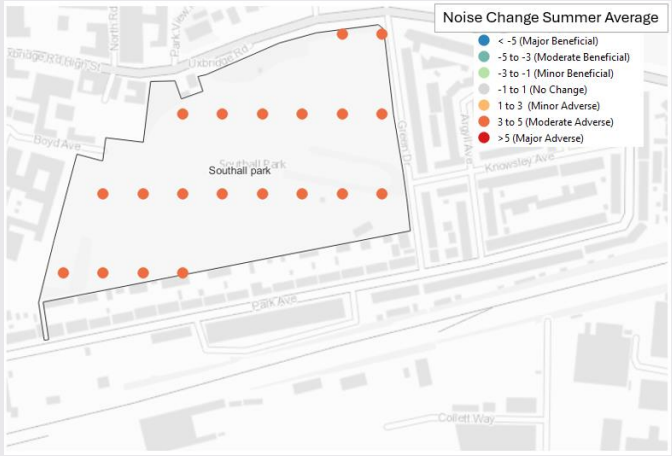
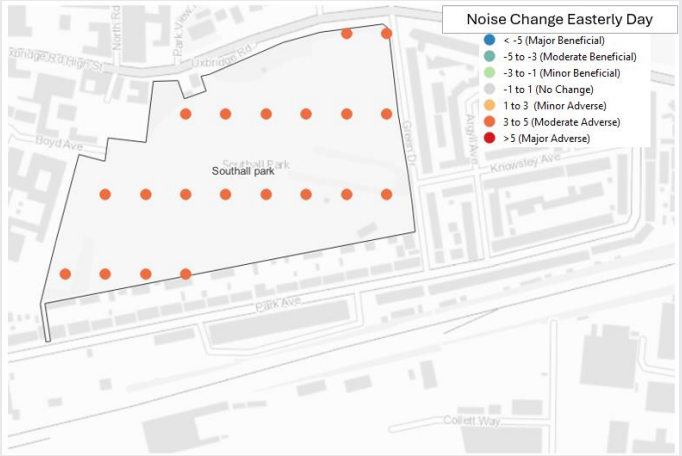
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Cleveland Park located in Ealing Borough, northeast of the LHR Airport	(48-49 dB)	1	(54-55 dB)	1	Yes, adverse	Not significant	0.05	Adverse	100%
								
Cranford Park located in Hillingdon Borough, northeast of the LHR Airport	(51-58 dB)	2 to 4	(54-63 dB)	5 to 8	Yes, adverse	Significant Wide	0.46	Adverse	100%
								

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Cuckoo Park located in Ealing Borough, northeast of the LHR Airport	(48-49 dB)	2	(54-55 dB)	2	Yes, adverse	Not significant	0.05	Adverse	100%
								
Dower Park located in Windsor, west of the LHR Airport	(53-54 dB)	0 to 2	(58-58 dB)	1 to 4	Yes, adverse	Not significant	0.12	Adverse	100%
								

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Frost Folly Park located in Windsor, west of the LHR Airport	(47-47 dB)	0 to 1	(47-48 dB)	2 to 3	Yes, adverse	Not significant	0.13	No Change	100%
								
Glade Lane Canalside Park located in Ealing Borough, northeast of the LHR Airport	(51-52 dB)	2 to 3	(57-58 dB)	2 to 3	Yes, adverse	Not significant	0.06	Adverse	100%
								

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Manor House Grounds located in Ealing Borough, northeast of the LHR Airport	(50-50 dB)	4	(56-56 dB)	5	Yes, adverse	Significant Wide	0.01	Adverse	100%
							
Marble Hill located in Richmond upon Thames Borough, southeast of the LHR Airport	(49-51 dB)	0 to 1	(51-54 dB)	1 to 2	Yes, adverse	Not significant	0.26	Adverse	100%
							

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Mount Pleasant Leisure Gardens located in Ealing Borough, northeast of the LHR Airport	(45-46 dB)	3	(51-52 dB)	3 to 4	Yes, adverse	Not significant	0.03	Adverse	100%
								
Murray Park located in Richmond upon Thames Borough, east of the LHR Airport	(54-56 dB)	1	(57-57 dB)	2 to 3	Yes, adverse	Not significant	0.03	Adverse	100%
								

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Pitshanger Park located in Ealing Borough, northeast of the LHR Airport	(46-48 dB)	1	(53-54 dB)	1 to 2	Yes, adverse	Not significant	0.18	Adverse	100%
								
Southall Park located in Ealing Borough, northeast of the LHR Airport	(48-49 dB)	3 to 4	(54-55 dB)	4	Yes, adverse	Not significant	0.1	Adverse	100%
								

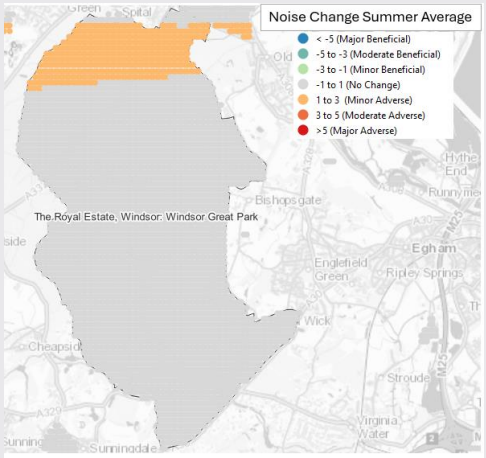
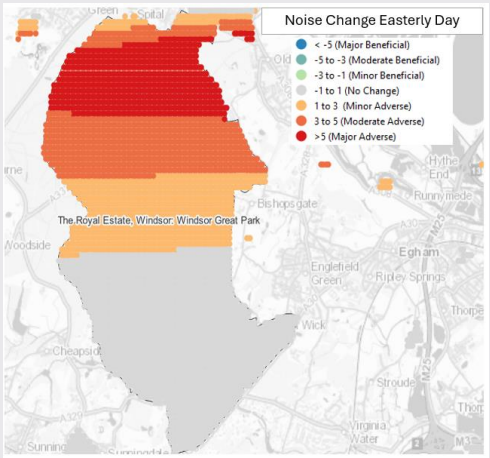
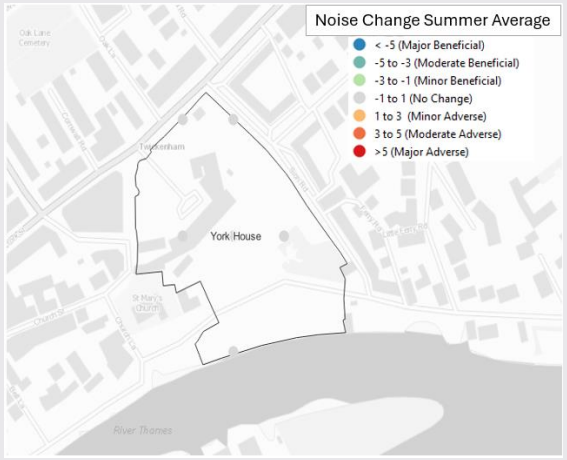
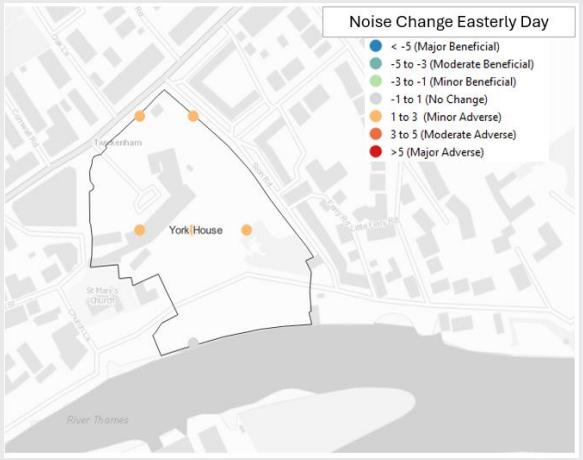
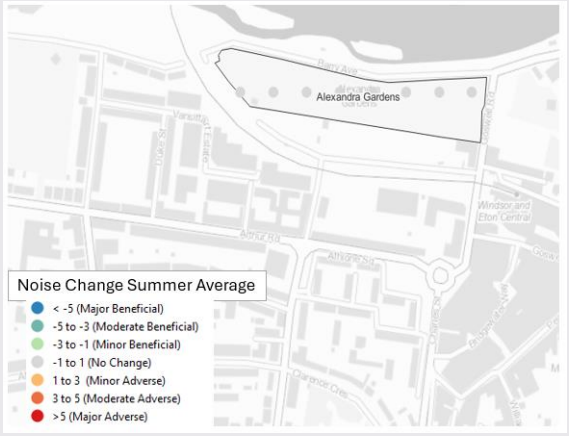
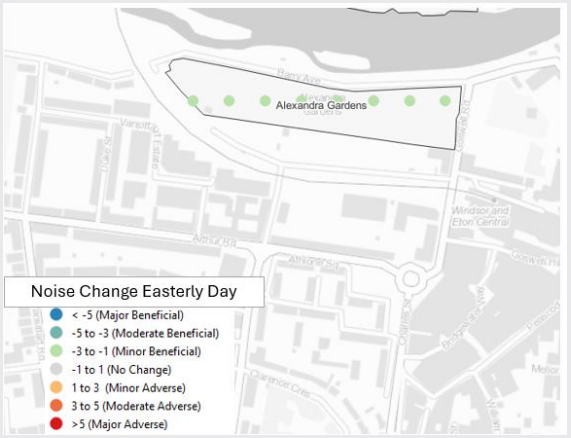
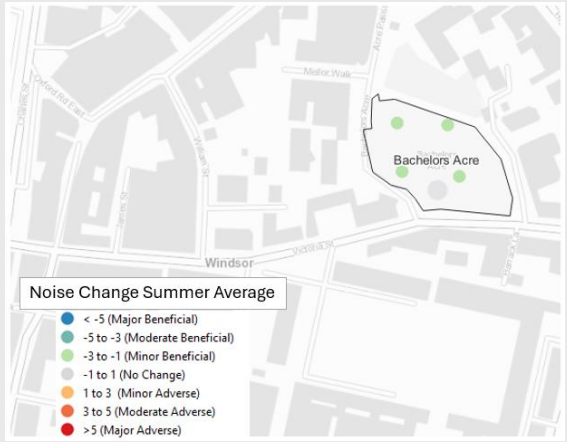
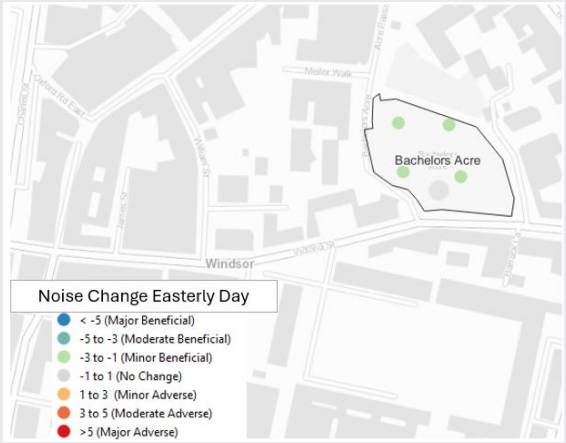
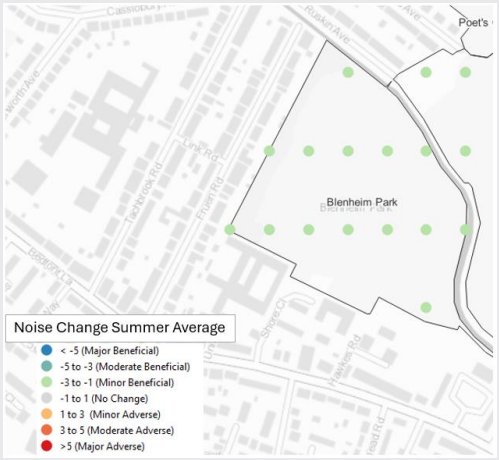
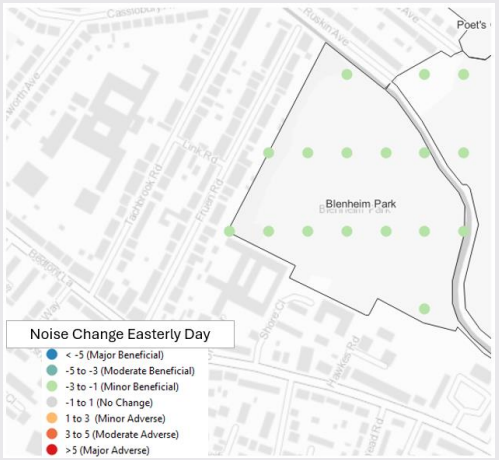
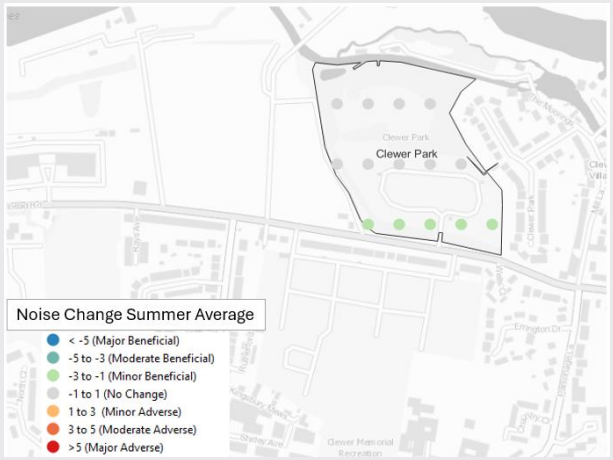
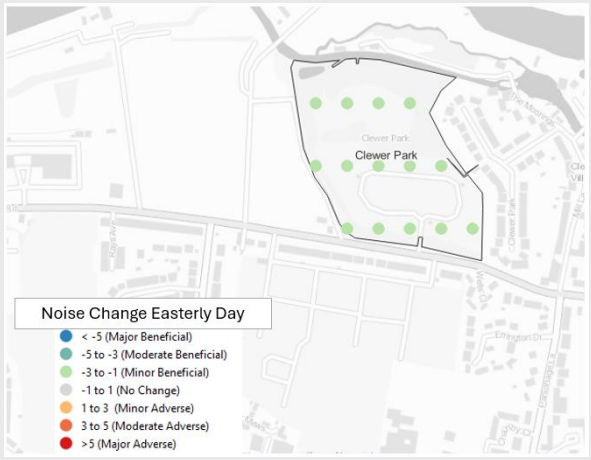
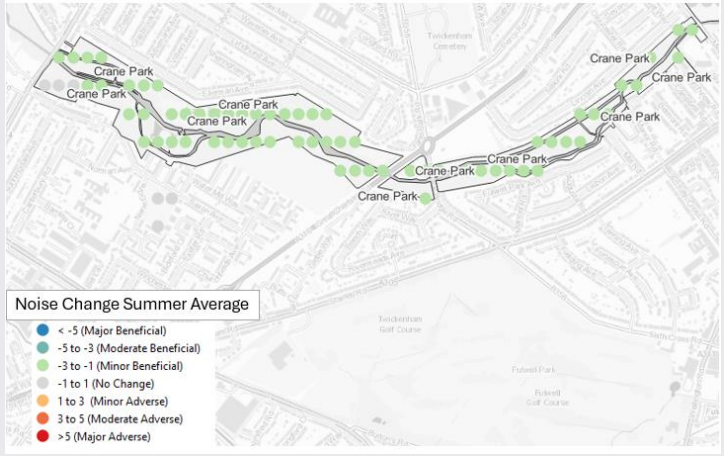
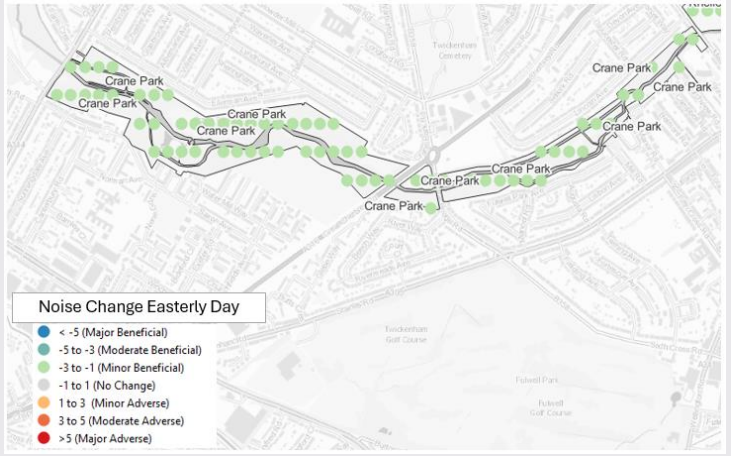
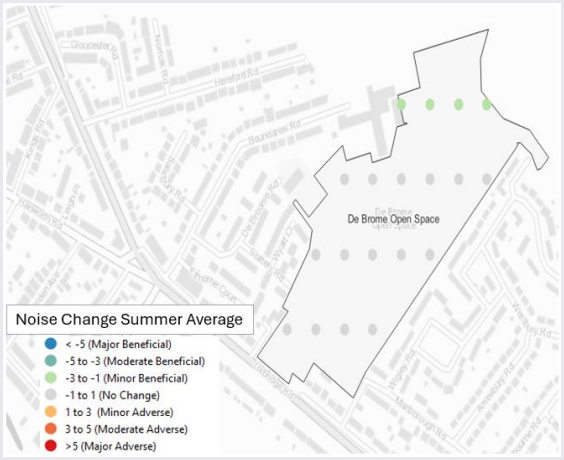
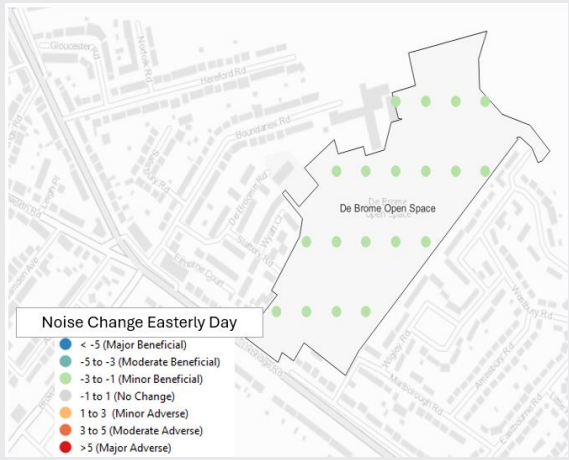
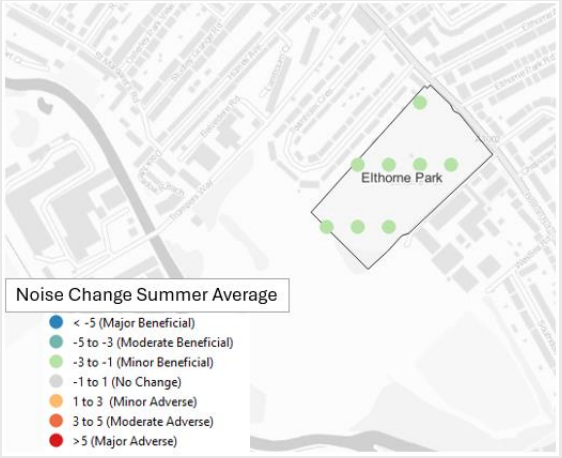
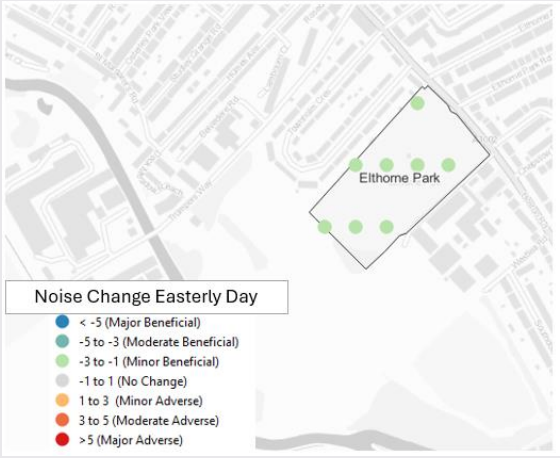
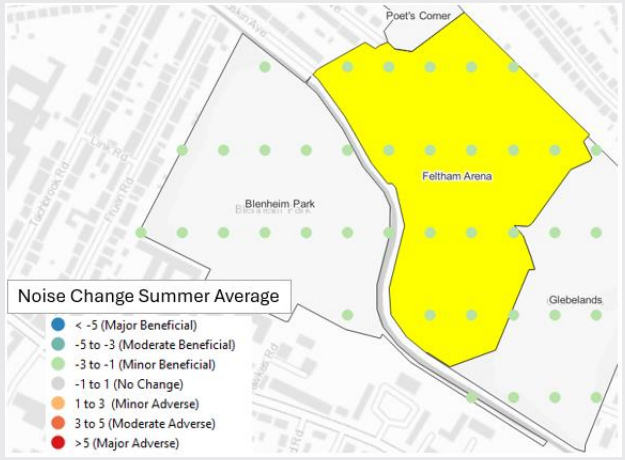
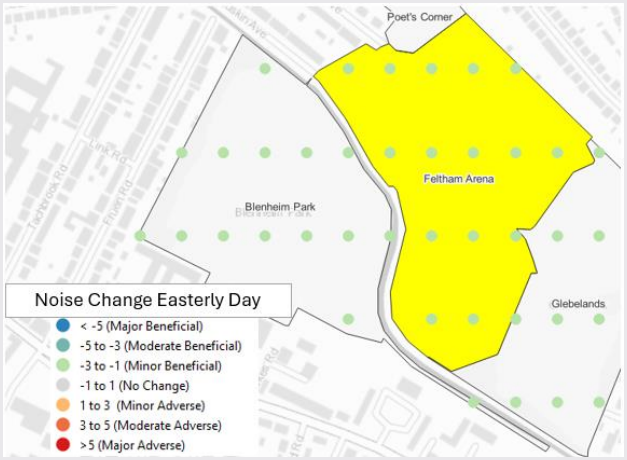
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Windsor Great Park, located in Windsor, southwest of the LHR Airport	(54-56 dB)	0 to 1	(53-59 dB)	1 to 5	Yes, adverse	Significant Localised	0.05	Adverse	100%
								
York House located in Richmond upon Thames Borough, southeast of the LHR Airport	(50-51 dB)	1	(55-55 dB)	1	Yes, adverse	Not significant	0.03	Adverse	100%
								

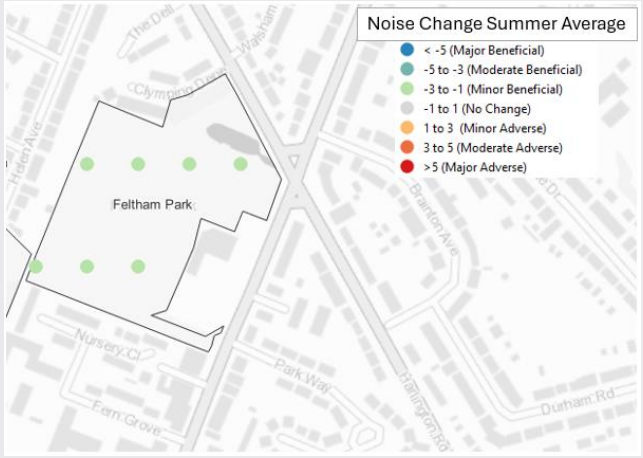
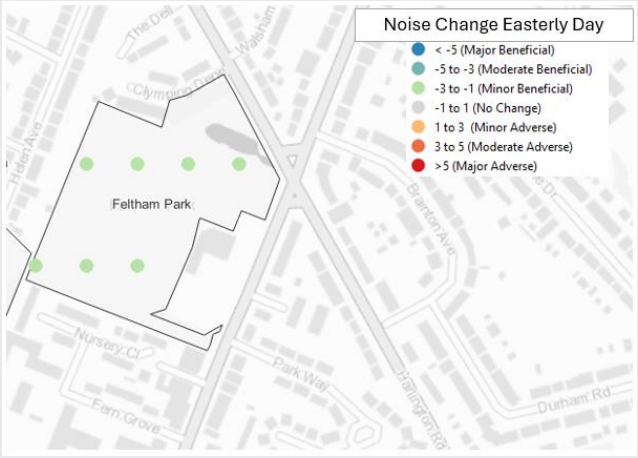
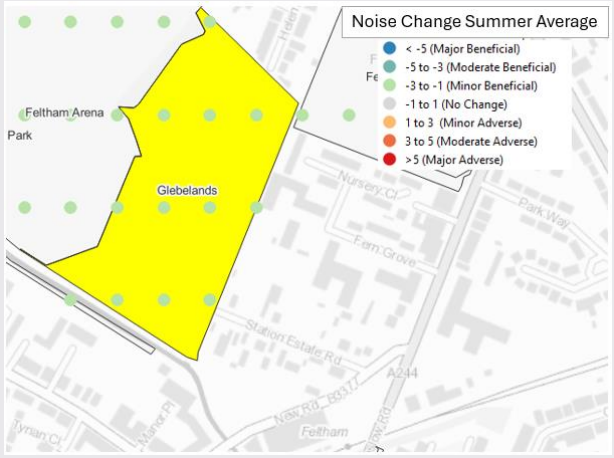
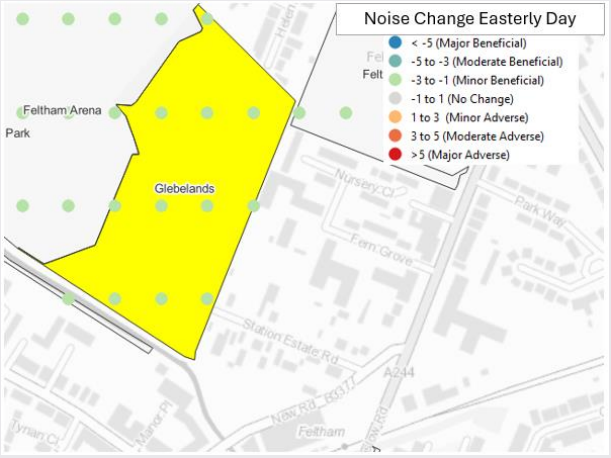
Table A7.5.69 Analysis of parks and gardens – Beneficial changes due to the Proposed Development

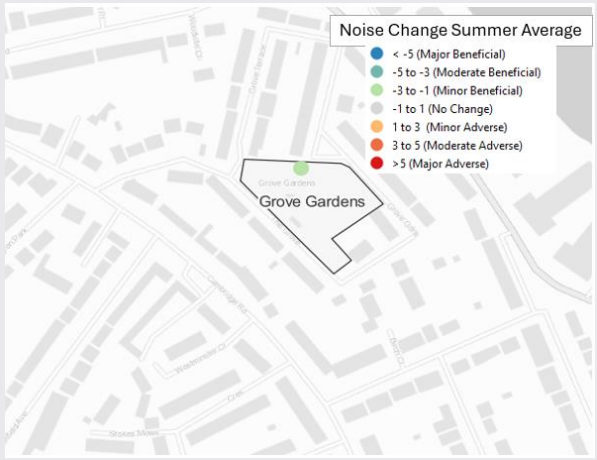
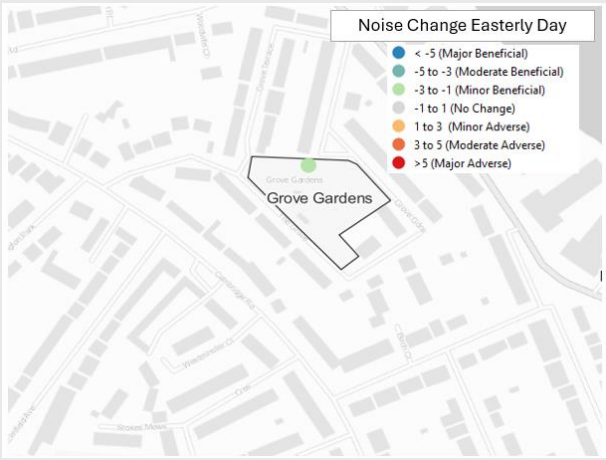
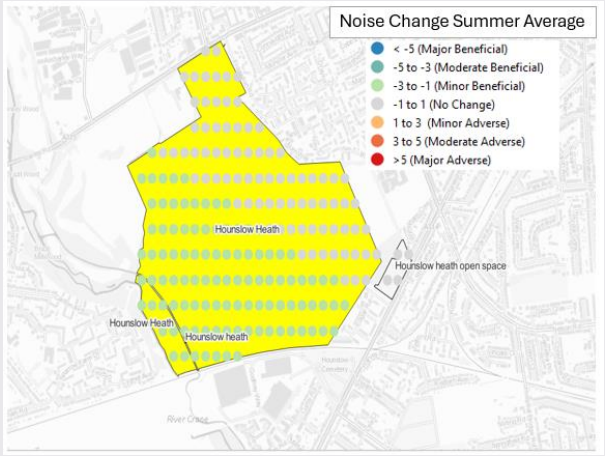
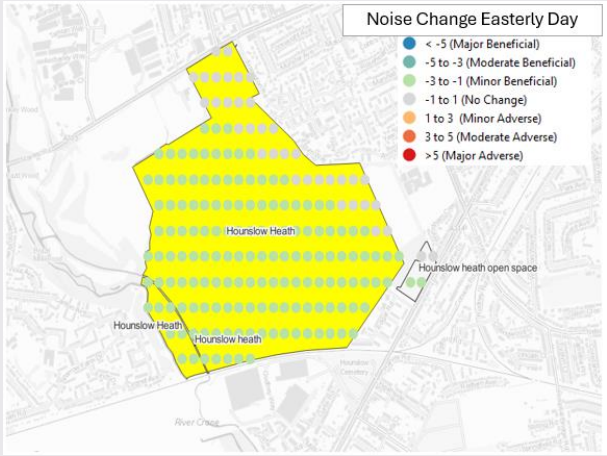
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Alexandra Gardens located in Windsor, west of the LHR Airport	(53-54 dB)	-1	(55-55 dB)	-2	Yes, beneficial	Not significant	0.03	Beneficial	100%
								
Bachelors Acre located in Windsor, west of the LHR Airport	(55-55 dB)	-1	(58-58 dB)	-3	Yes, beneficial	Not significant	0.01	Beneficial	100%
								

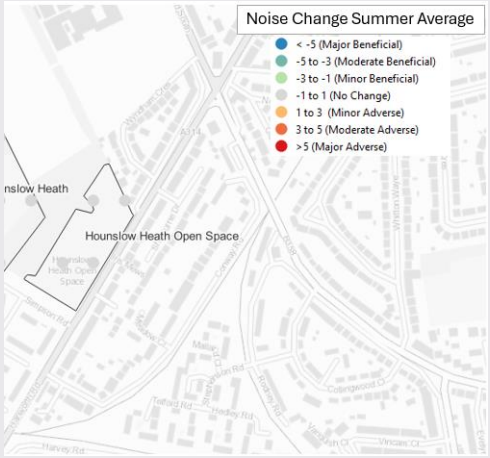
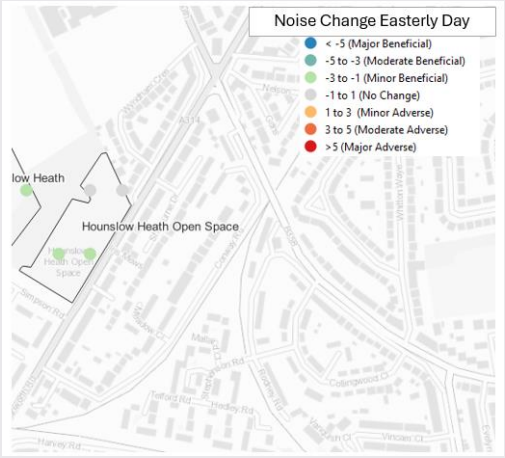
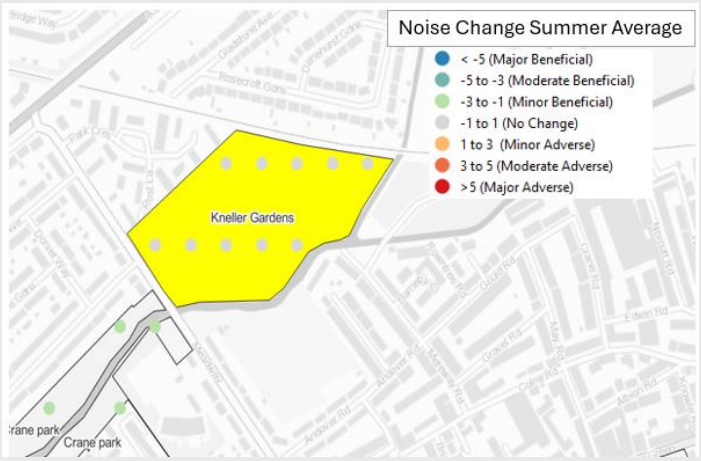
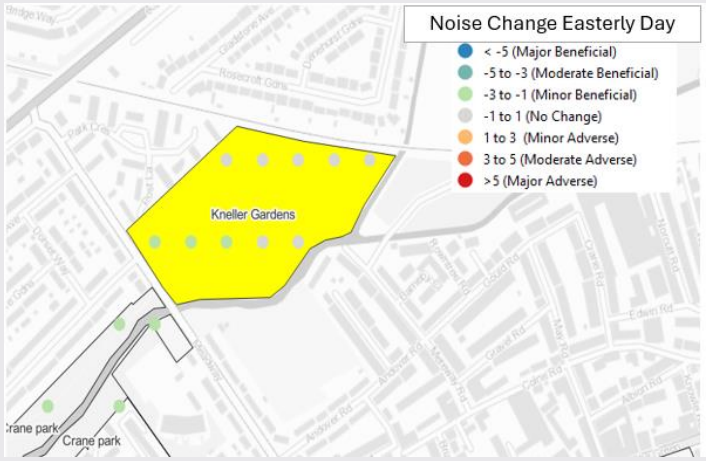
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km^2]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Blenheim Park located in Hounslow Borough, southeast of the LHR Airport	(52-53 dB)	-1	(57-58 dB)	-2	Yes, beneficial	Not significant	0.07	Beneficial	100%
								
Clewer Park located in Windsor, west of the LHR Airport	(51-52 dB)	-1	(53-54 dB)	-2	Yes, beneficial	Not significant	0.07	Beneficial	100%
								

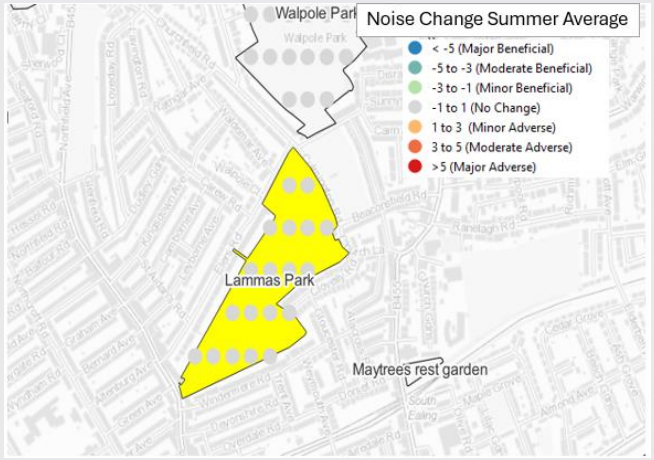
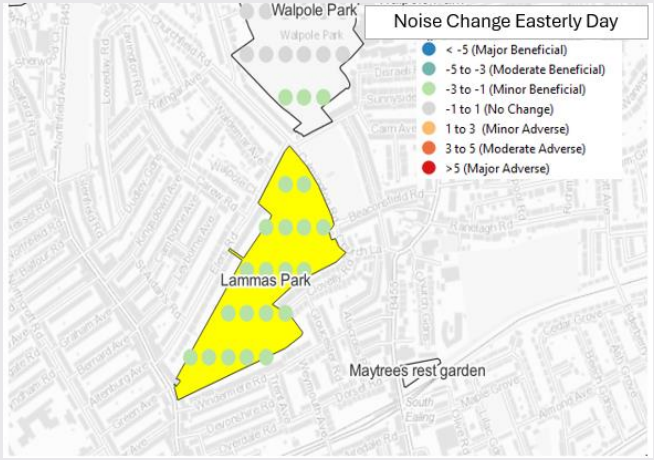
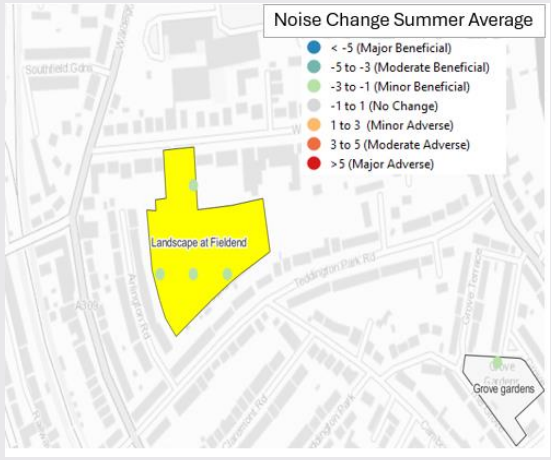
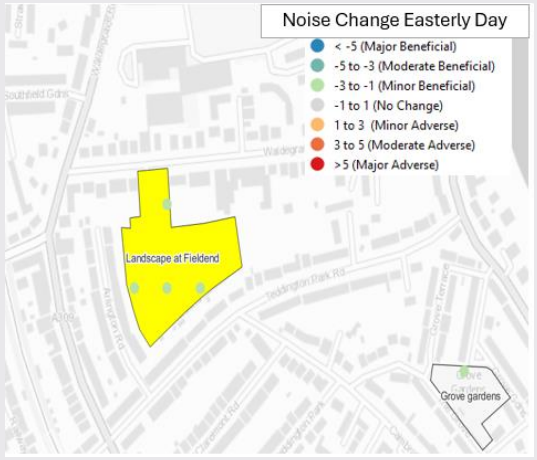
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km^2]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Crane Park located in Hounslow and Richmond upon Thames Borough, southeast of the LHR Airport	(51-54 dB)	-1	(57-60 dB)	-2 to -1	Yes, beneficial	Not significant	0.31	Beneficial	100%
								
De Brome Open Space located in Hounslow Borough, southeast of the LHR Airport	(52-54 dB)	-1	(58-60 dB)	-1	Yes, beneficial	Not significant	0.1	Beneficial	100%
								

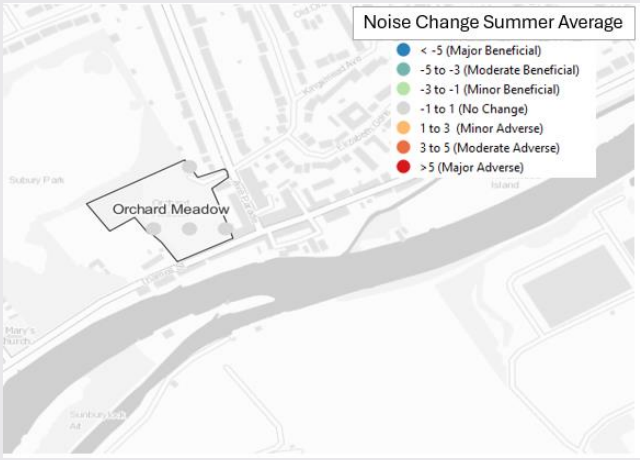
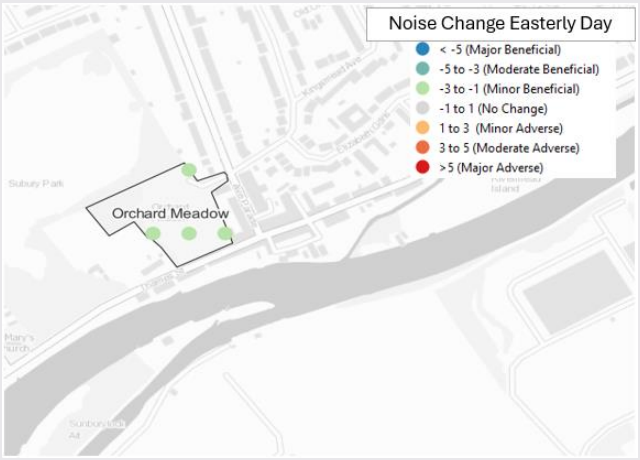
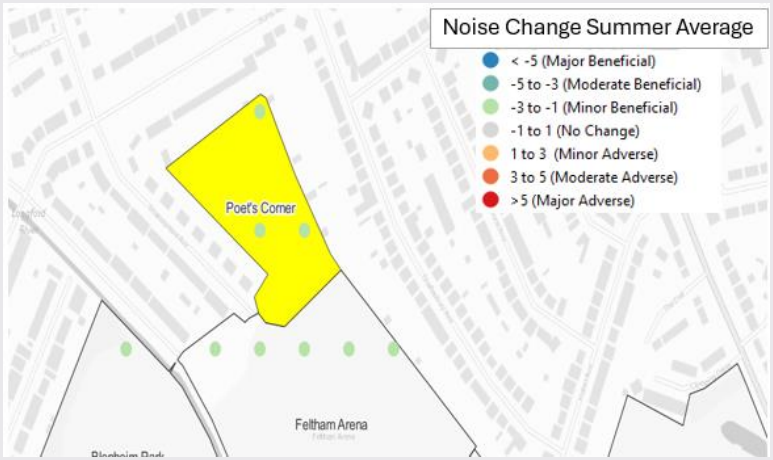
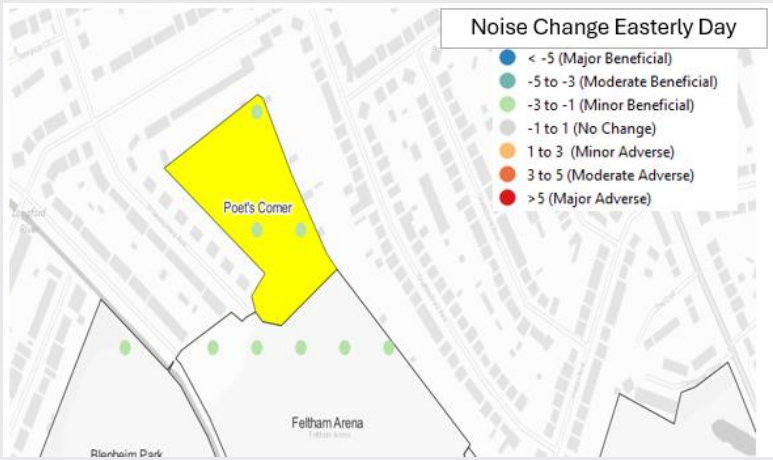
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km^2]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Elthorne Park located in Ealing Borough, northeast of the LHR Airport	(49-50 dB)	-1	(53-56 dB)	-2 to -1	Yes, beneficial	Not significant	0.05	Beneficial	100%
								
Feltham Arena located in Hounslow Borough, southeast of the LHR Airport	(52-54 dB)	-1	(57-59 dB)	-2	Yes, beneficial	Not significant	0.08	Beneficial	100%
								

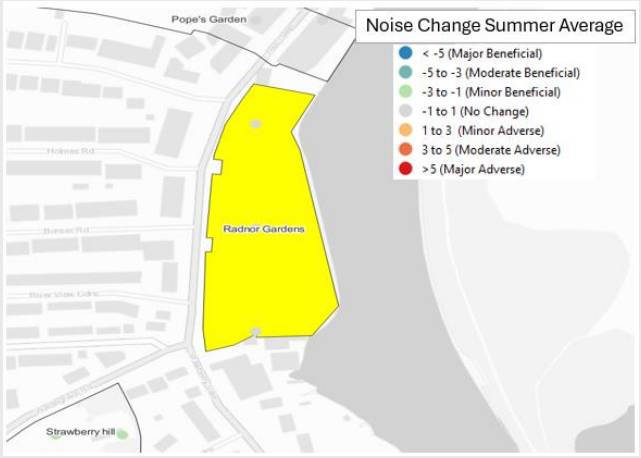
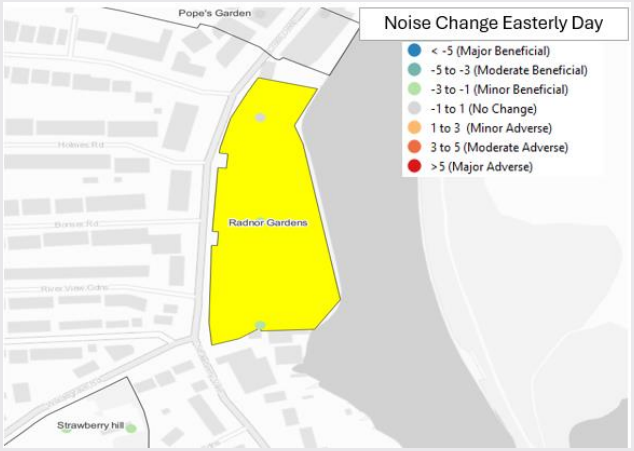
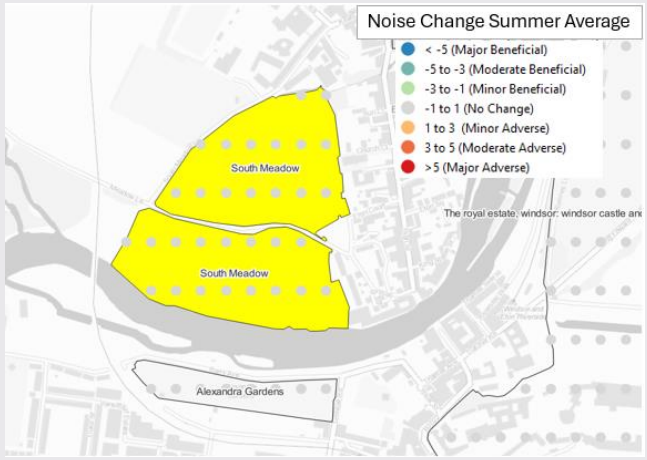
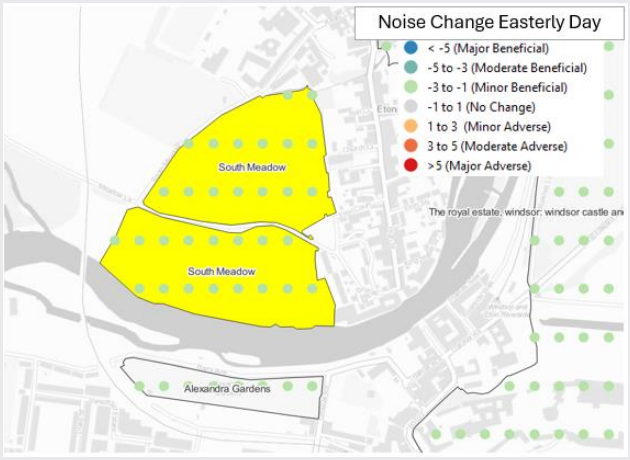
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Feltham Park located in Hounslow Borough, southeast of the LHR Airport	(53-54 dB)	-1	(58-60 dB)	-2	Yes, beneficial	Not significant	0.03	Beneficial	100%
								
Glebelands located in Hounslow Borough, southeast of the LHR Airport	(52-53 dB)	-1	(57-59 dB)	-2	Yes, beneficial	Not significant	0.05	Beneficial	100%
								

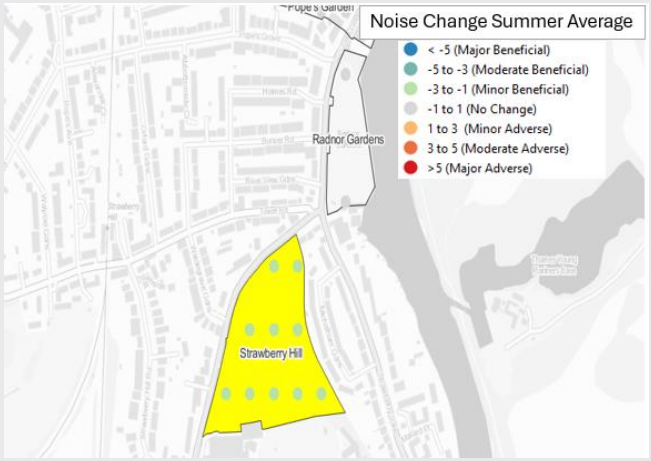
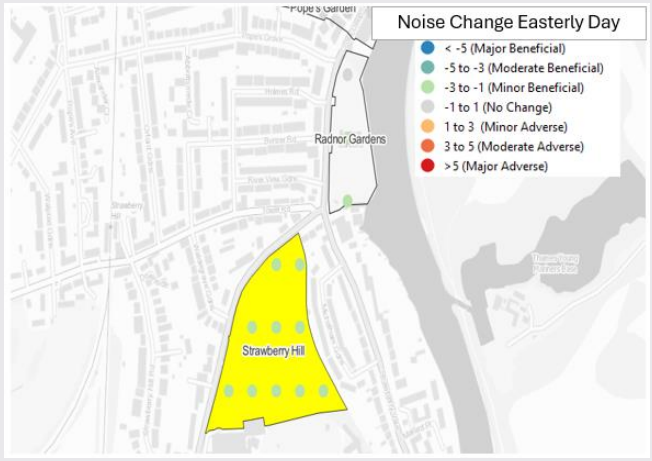
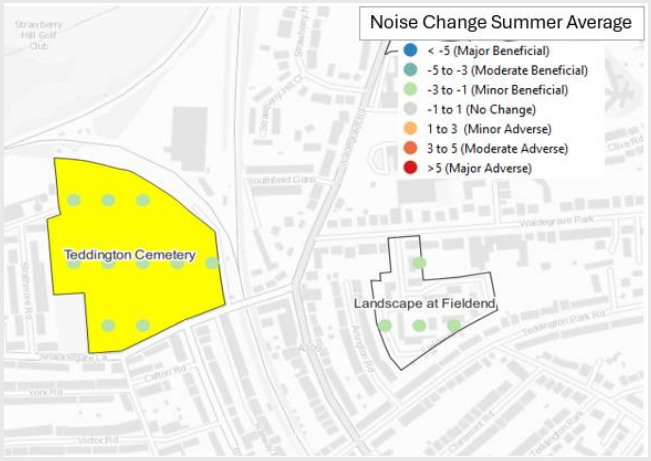
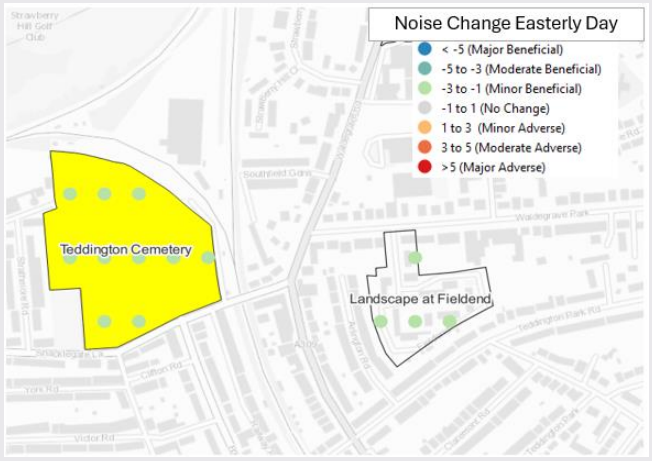
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Grove Gardens located in Richmond upon Thames Borough, southeast of the LHR Airport	(48-48 dB)	-1	(54-54 dB)	-1	Yes, beneficial	Not significant	0.01	Beneficial	100%
								
Hounslow Heath located in Hounslow and Richmond upon Thames Borough, southeast of the LHR Airport	(56-63 dB)	-1 to 0	(61-64 dB)	-2 to 0	Yes, beneficial	Not significant	0.91	Beneficial	100%
								

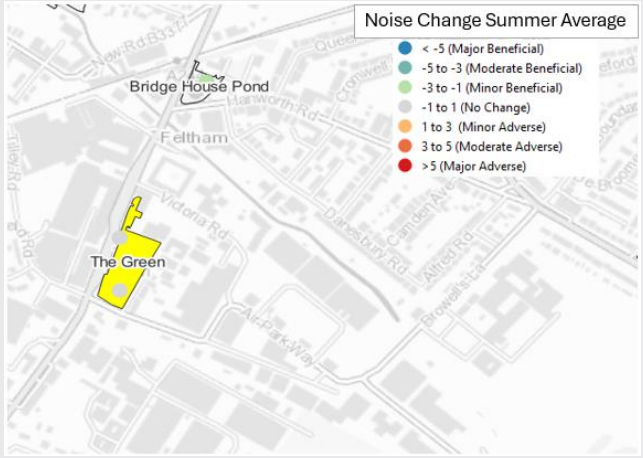
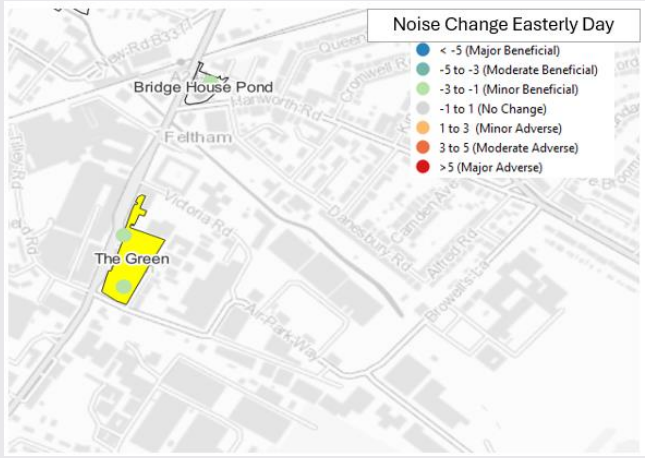
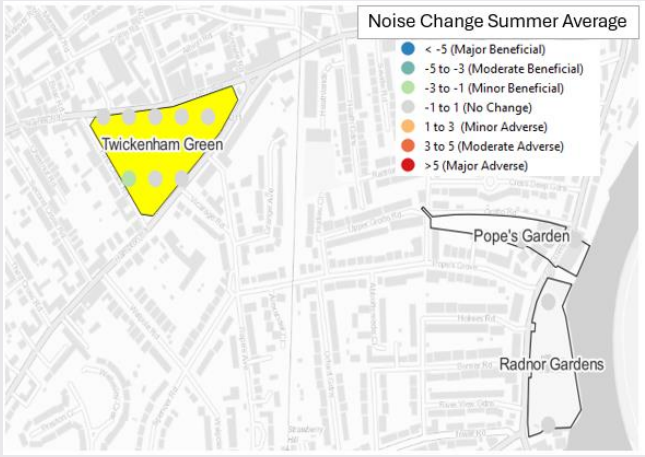
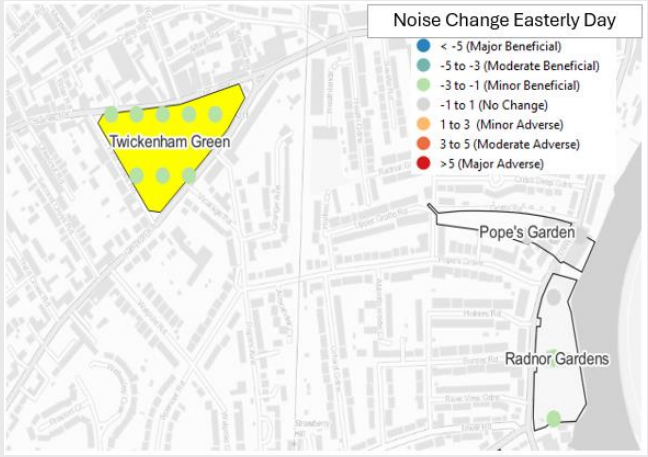
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Hounslow Heath Open Space located in Hounslow and Richmond upon Thames Borough, southeast of the LHR Airport	(56-56 dB)	-1	(61-61 dB)	-1	Yes, beneficial	Not significant	0.02	No change	100%
								
Kneller Gardens located in Richmond upon Thames Borough, southeast of the LHR Airport	(52-52 dB)	-1 to 0	(57-58 dB)	-1	Yes, beneficial	Not significant	0.05	Beneficial	100%
								

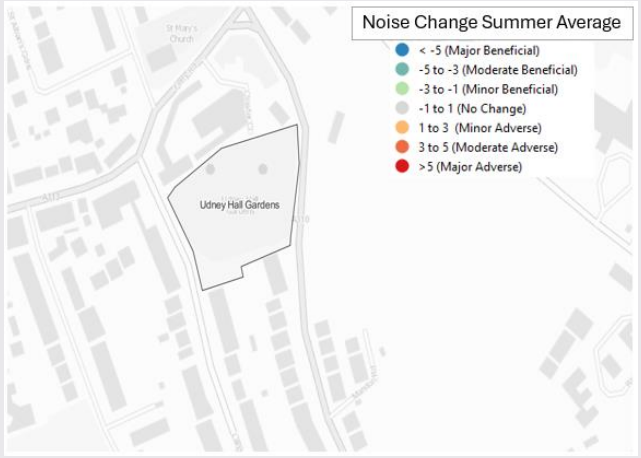
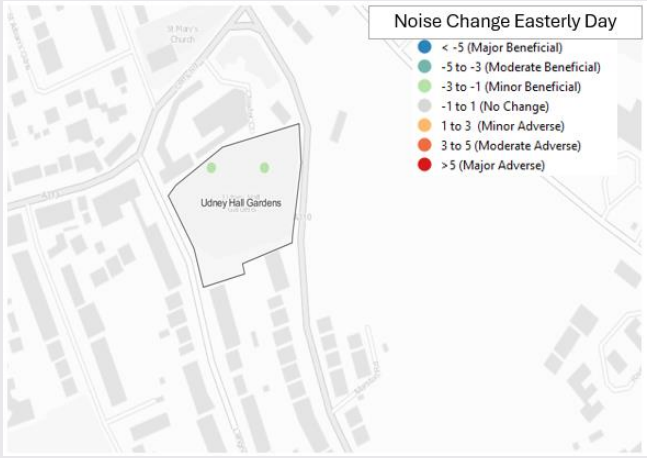
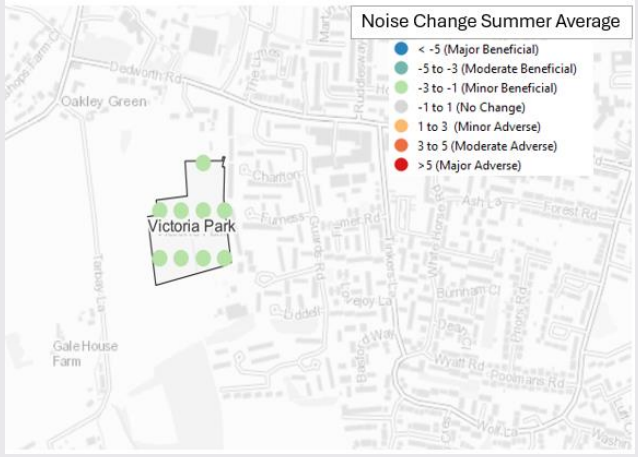
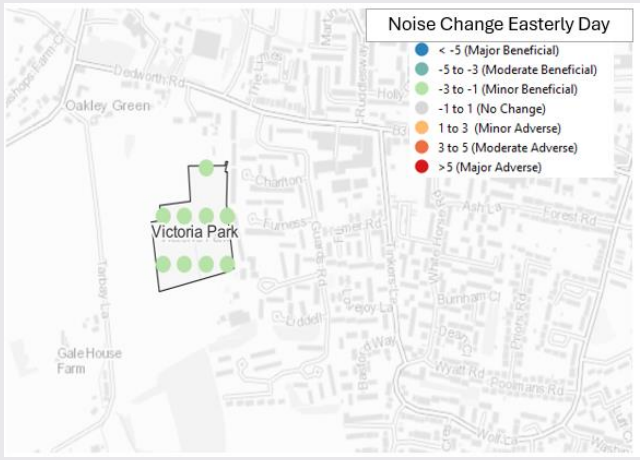
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Lammas Park located in Ealing Borough, northeast of the LHR Airport	(47-53 dB)	-1 to 0	(44-53 dB)	-1 to 1	Yes, beneficial	Not significant	0.16	Beneficial	100%
								
Landscape at Fieldend located in Richmond upon Thames Borough, southeast of the LHR Airport	(48-48 dB)	-1	(54-54 dB)	-1	Yes, beneficial	Not significant	0.02	Beneficial	100%
								

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Orchard Meadow located in Richmond upon Thames Borough, southeast of the LHR Airport	(44-44 dB)	-1	(49-50 dB)	-1	Yes, beneficial	Not significant	0.02	Beneficial	100%
								
Poet's Corner located in Hounslow Borough, southeast of the LHR Airport	(54-55 dB)	-2	(59-60 dB)	-2	Yes, beneficial	Not significant	0.02	Beneficial	100%
								

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Radnor Gardens located in Richmond upon Thames Borough, southeast of the LHR Airport	(50-50 dB)	-1	(56-56 dB)	-1	Yes, beneficial	Not significant	0.02	Beneficial	100%
								
South Meadow located in Windsor, west of the LHR Airport	(53-55 dB)	-1 to 0	(51-53 dB)	-2	Yes, beneficial	Not significant	0.16	Beneficial	100%
								

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Strawberry Hill located in Richmond upon Thames Borough, southeast of the LHR Airport	(49-50 dB)	-1	(55-56 dB)	-2 to -1	Yes, beneficial	Not significant	0.05	Beneficial	100%
								
Teddington Cemetery located in Richmond upon Thames Borough, southeast of the LHR Airport	(48-49 dB)	-1	(54-55 dB)	-2 to -1	Yes, beneficial	Not significant	0.05	Beneficial	100%
								

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
The Green located in Hounslow Borough, southeast of the LHR Airport	(48-55 dB)	-1 to 0	(39-59 dB)	-1 to 0	Yes, beneficial	Not significant	0.05	No change	100%
									
Twickenham Green located in Richmond upon Thames Borough, southeast of the LHR Airport	(51-51 dB)	-1	(57-57 dB)	-1	Yes, beneficial	Not significant	0.03	Beneficial	100%
									

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Udney Hall Gardens located in Richmond upon Thames Borough, southeast of the LHR Airport	(46-46 dB)	-1	(52-52 dB)	-1	Yes, beneficial	Not significant	0.01	Beneficial	100%
								
Victoria Park located in Windsor, west of the LHR Airport	(52-52 dB)	-2	(57-58 dB)	-2	Yes, beneficial	Not significant	0.03	Beneficial	100%
								

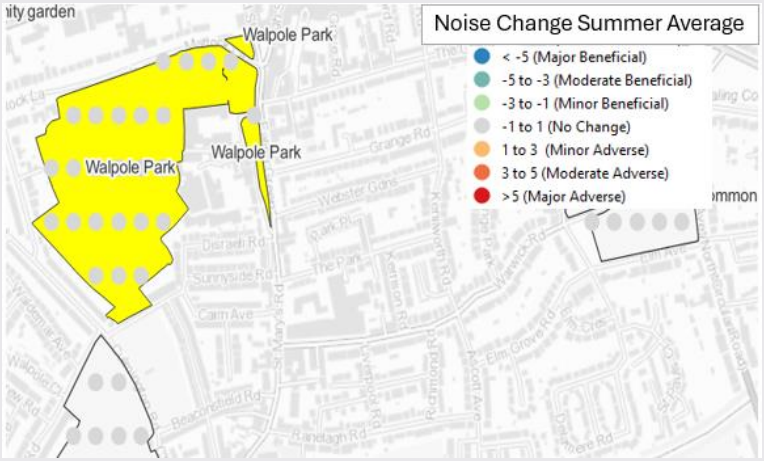
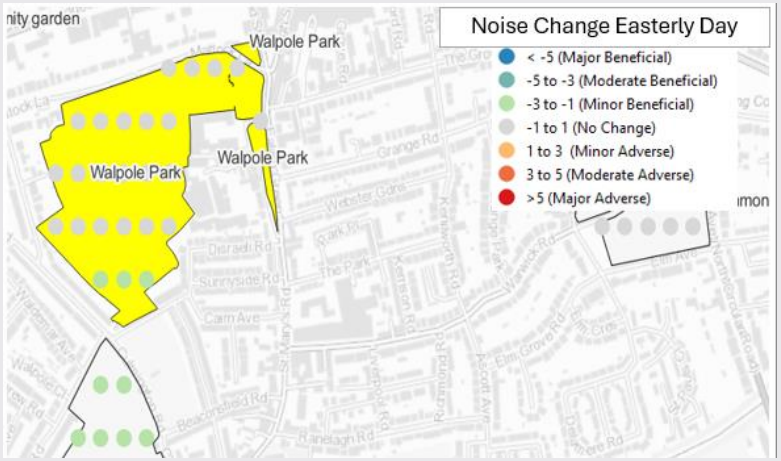
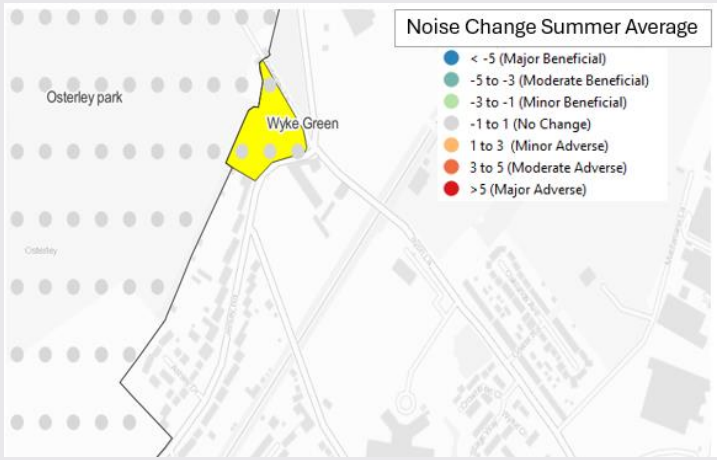
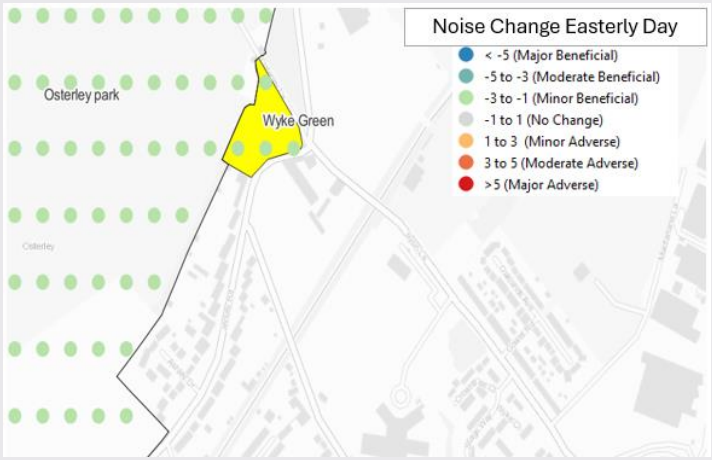
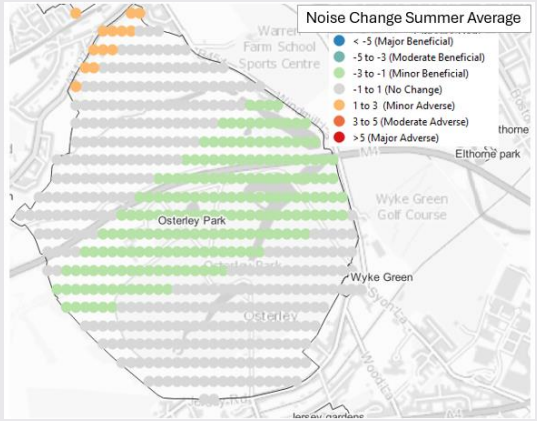
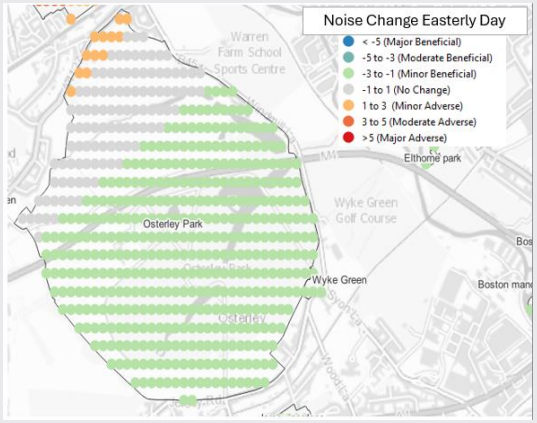
Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km^2]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Walpole Park located in Ealing Borough, northeast of the LHR Airport	(47-48 dB)	-1	(53-54 dB)	-1	Yes, beneficial	Not significant	0.14	Beneficial	100%
								
Wyke Green located in Hounslow Borough, southeast of the LHR Airport	(52-52 dB)	-1	(53-53 dB)	-2	Yes, beneficial	Not significant	0.01	Beneficial	100%
								

Table A7.5.70 Analysis of parks and gardens – Mix changes due to the Proposed Development

Name	Summer Average $L_{Aeq,16hr}$, dB		Easterly Day $L_{Aeq,16hr}$, dB		Change due to Easterly Alternation	Overall Effect	Total Area [km²]	Additional Metrics	
	2028 With Development	Noise Change	2028 With Development	Noise Change				N65 Impact	% of Area effected
Osterley Park located in Hounslow Borough, southeast of the LHR Airport	(51-56 dB)	-1 to 2	(52-59 dB)	-2 to 2	Yes, mixed	Not significant	2.6	Mix	84%_Beneficial & 16%_Adverse
								
The Royal Estate, Windsor: Windsor Castle and Home Park	(54-59 dB)	-1 to 1	(49-62 dB)	-3 to 6	Yes, mixed	Significant Limited	3.41	Mix	85%_Beneficial & 15%_Adverse