Vernon and Sicilian House

Air Quality Assessment

June 2022

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

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Comments

Comments

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Executive Summary

This Air Quality Assessment has been prepared by Waterman Infrastructure & Environment Ltd on behalf of Hogarth Properties and Edmond De Rothschild, to accompany the planning application for the redevelopment of Vernon and Sicilian House and 21 Southampton Row, Holborn.

The main likely effects on local air quality during construction relate to the generation of dust and particulates. A range of measures to minimise or prevent dust and particulates would be implemented throughout the construction works. Therefore, it is considered that likely residual effects due to dust emissions would not be significant.

It is anticipated the effect of construction vehicles on air quality would not be significant in the context of existing local road traffic emissions.

The Development is car-free and would not result in a change in Annual Average Daily Traffic (AADT) of more than 100 light duty vehicle flows or 25 heavy duty vehicle flows within or adjacent to an AQMA. The change in vehicle trips would therefore be below the Environmental Protection UK and Institute of Air Quality Management (EPUK/IAQM) guidance criteria for Developments within an AQMA. In addition, the Development would not include a centralised combustion plant, and therefore would not give rise to any significant adverse air quality impacts.

Based on the low trip generation and absence of a centralised combustion plant, according to the EPUK/ IAQM guidance, the Development is not expected to give rise to air quality impacts. As such the likely effect of the operational Development on local air quality would not be significant.

A review of the local monitoring data, and Defra background maps, indicate future concentrations for future users of the Development would not be significant.

1. Introduction

1.1. Waterman Infrastructure & Environment Ltd (hereafter referred to as 'Waterman') was instructed by Hogarth Properties and Edmond De Rothschild to undertake an air quality assessment in support of the redevelopment of Vernon and Sicilian House and 21 Southampton Row within the London Borough of Camden, hereafter referred to as the 'Site'.

1.2. The proposal would include the refurbishment of the building to provide commercial and office space with associated cycle storage and roof terrace, hereafter referred to as the 'Development'.

1.3. The Site covers an area of approximately 1,200m^2 within the London Borough of Camden (LBC). LBC have declared the whole borough an Air Quality Management Area (AQMA) for exceedances of the annual mean NO_2 and 24-hour mean PM_{10} objectives. The Site is located within this AQMA.

1.4. The Greater London Authority has identified 187 Air Quality Focus Areas (AQFAs) in London, these are locations that exceed the EU annual mean limit value for NO_2 and have high levels of human exposure. The site is located within the Holborn High Street and Southampton Row Junction AQFA.

1.5. The most significant pollutant during construction relates to the creation of nuisance dust and emissions from construction vehicles and construction plant. A qualitative assessment has been undertaken based on relevant air quality guidance.

1.6. With regards to the operational phase, the Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM) planning development guidance[1] sets out criteria for when an air quality assessment is required to accompany a planning development. The guidance states an air quality assessment is required if there is a change of more than 100 Light Duty Vehicles (LDV's) or 25 Heavy Duty Vehicles (HDV) in Annual Average Daily Traffic (AADT) flows for developments within or adjacent to an AQMA.

1.7. The Development would be car-free and not result in a change of more than 100 LDVs or 25 HDVs and would therefore be below the EPUK and IAQM guidance criteria for when an air quality assessment is required. Additionally, the Development would not include a centralised combustion plant. The Development would therefore not give rise to any significant adverse air quality impacts.

1.8. Based on the low trip generation and the absence of a centralised combustion plant, according to the EPUK/ IAQM guidance, the Development is not expected to give rise to air quality impacts. As such the likely effect of the operational Development on local air quality would be not significant.

1.9. Given the above, the purpose of the air quality assessment is to assess the potential effect of the Development on the local air quality during construction and to qualitatively consider the potential air quality concentrations future users of the Development would be exposed to.

1.10. The Development would not provide any vehicle parking and would therefore be 'car free'. The Development would also not include a centralised combustion plant. In accordance with the Air Quality Neutral Consultation draft[2], the Development is considered to meet both the transport and building emissions benchmarks. The Development would therefore be 'Air Quality Neutral' and has not been considered within this report.

1.11. Section 2 of this report gives a summary of legislation, planning policy, and guidance relevant to air quality. Section 3 provides a summary of the baseline conditions. Section 4 provides details of the construction assessment methodology, the qualitative construction assessment and relevant

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

2 Mayor Of London. 2021. London Plan Guidance, Air Quality Neutral Consultation Draft, November 2021

mitigation measures. Section 5 predicts the future exposure of the operational Development. A summary of the main findings and conclusions of the assessment is given in section 6. The air quality assessment is supported by:

- Appendix A: Summary of Relevant Legislation, Planning Policy and Guidance; and
- Appendix B: Assessor Experience.

2. Air Quality Legislation and Planning Policy

2.1. The following legislation, planning policy and guidance are considered relevant to this air quality assessment. A summary of these documents is provided in **Appendix A**:

- Legislation:
  - EU Framework Directive 2008/50/EC, 2008[3];
  - Air Quality Standards Regulations, 2010[4];
  - The UK Air Quality Strategy, 2007[5];
  - The Environment Act 1995[6];
- Planning Policy
  - National Planning Policy Framework, 2021[7];
  - The London Plan: The Spatial Development Strategy for Greater London, March 2021[8];
  - London Environment Strategy, 2018[9];
  - London Borough of Camden Local Plan[10];
- Guidance:
  - Department for Environment, Food and Rural Affairs, Clean Air Strategy, 2019[11];
  - Improving Air Quality in the UK: Tackling Nitrogen Dioxide in our Towns and Cities. UK Air Quality Plan for Tackling Nitrogen Dioxide, 2017[12];
  - Environmental Protection UK & Institute of Air Quality Management Guidance; Land-Use Planning & Development Control: Planning for Air Quality, 2017[13];
  - Planning Practice Guidance[14];
  - Institute of Air Quality Management: Guidance on the Assessment of Dust from Demolition and Construction, 2014[15];
  - London Local Air Quality Management Policy Guidance, 2016[16];
  - The Mayor's Air Quality Strategy 'Clearing the Air', 2010[17];
  - Mayor of London's Supplementary Planning Guidance: Sustainable Design and Construction, 2014[18];

3 Council Directive 2008/50/EC of 21 May 2008 on ambient air quality and cleaner air for Europe.
4 Defra, (2010) The Air Quality Standards (England) Regulations.
5 Department of the Environment, Food and Rural Affairs (Defra), (2007). 'The Air Quality Strategy for England, Scotland, Wales & Northern Ireland'
6 Office of the Deputy Prime Minister (ODPM), 1995, 'The Environment Act' 1995.
7 Department for Communities and Local Government, 2021, 'National Planning Policy Framework'. DCLG, London.
8 Greater London Authority. 2021. The London Plan: The Spatial Development Strategy for Greater London, March 2021, GLA, London
9 Greater London Authority. 2018. London Environment Strategy, May 2018
10 LBC, 2017, Camden Local Plan, adopted June 2017
11 Defra (2019) Clean Air Strategy, 2019
12 Defra (2017) Improving Air Quality in the UK: Tackling nitrogen dioxide in our towns and cities. Draft UK Air Quality Plan for Tackling Nitrogen Dioxide (Consultation Document)
13 Environmental Protection UK & Institute of Air Quality Management (2017), 'Land-Use Planning & Development Control: Planning for Air Quality', EPUK & IAQM, London.
14 DCLG (2014), 'Planning Practice Guidance: Air Quality (ID 32)' (06 March 2014).
15 Institute of Air Quality Management, 2014, 'Guidance on the Assessment of dust from demolition and construction.
16 Defra (2016), 'London Local Air Quality Management (LLAQM) Policy guidance 2016 (LLAQM.PG (16))', DEFRA, London.
17 Greater London Authority (GLA), 'The Mayor's Air Quality Strategy: Cleaning London's Air', London, 2002.
18 Greater London Authority (2014), 'Sustainable Design and Construction - Supplementary Planning Guidance', Greater London Authority, London.

- Camden Planning Guidance on Air Quality, March 2019[19]
- London Borough of Camden Air Quality Action Plan, 2019-2022[20]
- London Borough of Camden Guide for Contractors Working in Camden, 2008[21]
- Central London Air Quality Cluster Group: Cost Effective Actions to Cut Central London Air Pollution, 2012[22]

19 Camden Planning Guidance on Air Quality, March 2019
20 London Borough of Camden Air Quality Action Plan, 2019-2022
21 LBC, 2008, 'Guide for Contractors Working in Camden'
22 Central London Air Quality Cluster Group, 2012, 'Cost Effective Actions to Cut Central London Air Pollution'

3. Baseline Conditions

London Borough of Camden Review and Assessment Process

3.1. In July 2002, as part of their Review and Assessment of air quality process, LBC declared an AQMA for exceedances of the annual mean NO_2 and 24-hour mean PM_{10} objective from road traffic emissions. The AQMA encompasses the entire borough.

Air Quality Focus Areas

3.2. Related to the EU Limit Values, there are 187 AQFA's in London designated by the GLA. These are locations that not only exceed the EU annual mean Limit Value for NO_2 but are also locations with high human exposure. The areas were defined to address concerns raised by boroughs within the LAQM review process and forecasted air pollution trends.

3.3. The Site is located within the Holborn High Street and Southampton Row Junction AQFA.

London Borough of Camden Local Monitoring

3.4. Due to the COVID-19 pandemic, 2020 and 2021 monitoring data was not considered representative of baseline air quality conditions at and surrounding the Site. 2020 and 2021 monitoring data has therefore been considered no further.

3.5. In 2019 LBC undertook monitoring of NO_2 and particulate matter (PM_{10}[23] and $PM_{2.5}$[24]) at four locations using automatic monitors:

- London Bloomsbury - Russell Square Gardens (BL0), an urban background monitor measuring NO_2, PM_{10} and $PM_{2.5}$, located approximately 0.5km north of the Site;
- Euston Road (CD9), a roadside monitor measuring NO_2, PM_{10} and $PM_{2.5}$, located approximately 1.2km north of the Site;
- Coopers Lane (KGX), an urban background monitor measuring PM_{10}, located approximately 1.7km north of the Site; and
- Swiss Cottage (Finchley Road) (CD1), a kerbside monitor measuring NO_2, PM_{10} and $PM_{2.5}$, located approximately 4.7km north-west of the Site.

3.6. The monitoring results for NO_2, PM_{10} and $PM_{2.5}$ at the three automatic monitors closest to the Site are presented in **Table 1**.

23 Particulate matter with a mean aerodynamic diameter less than 10 microns (or micrometres – µm)
24 Particulate matter with a mean aerodynamic diameter less than 2.5 microns

Table 1: Monitored Concentrations at the London Bloomsbury, Euston Road and Coopers Lane Automatic Monitors

ID	Pollutant	Averaging Period	AQS Objective	2016	2017	2018	2019
BL0	NO_2	Annual Mean	40µg/m^3	**42**	38	36	32
		1 Hour Mean (Number of Exceedances)	200µg/m^3 not to be exceeded more than 18 times per year	0	0	0	0
	PM_{10}	Annual Mean	40µg/m^3	20	19	17	18
		24-Hour Mean (Number of Exceedences)	50µg/m^3 not to be exceeded more than 35 times per year	9	6	1	9
	$PM_{2.5}$	Annual Mean	25µg/m^3	12	13	10	11
CD9	NO_2	Annual Mean	40µg/m^3	**88**	**83**	**82**	**70**
		1 Hour Mean (Number of Exceedances)	200µg/m^3 not to be exceeded more than 18 times per year	**39**	**25**	18	7
	PM_{10}	Annual Mean	40µg/m^3	24	20	21	22
		24-Hour Mean (Number of Exceedences)	50µg/m^3 not to be exceeded more than 35 times per year	10	3	2	8
	$PM_{2.5}$	Annual Mean	25µg/m^3	17	14	15	14
KGX	PM_{10}	Annual Mean	40µg/m^3	-	-	15	15
		24-Hour Mean (Number of Exceedences)	50µg/m^3 not to be exceeded more than 35 times per year	-	-	1	5

Notes: Data obtained from London Borough of Camden Air Quality Status Report for 2019
Exceedances of the AQS Objectives shown in **bold** text

3.7. The monitoring results in **Table 1** indicate that the annual mean NO_2 objectives was exceeded at the Euston Road (CD9) automatic monitor in 2019. All other AQS objectives were met in 2019 at all three monitors.

3.8. In addition to the automatic monitors, NO_2 is also measured at 33 locations using diffusion tubes within LBC. **Table 2** presents the most recent results from the nine diffusion tubes within 2km of the Site.

Table 2: NO_2 Concentrations at the LBC diffusion tubes within 2km of Site

Site ID	Location	Classification	Distance to Site (km)	2019 Annual Mean NO_2 Concentration (µg/m^3)
CA21	Bloomsbury Street	Kerbside	0.5	**48.48**
CA6	St. George's Gardens (prev. 'Wakefield Gardens')	Urban Background	0.8	24.65
CA28	St. George's Gardens East	Urban Background	0.9	27.67
CA11	Tottenham Court Road*	Kerbside	0.9	**61.22**
CA10	Tavistock Gardens	Urban Background	0.9	33.13
CA29	Endsleigh Gardens	Roadside	1.1	**48.34**
CA27	Euston Road LAQN colocation	Roadside	1.2	**63.81**
CA4A (new)	Euston Road	Kerbside	1.2	**69.06**
CA20A	Brill Place	Roadside	1.6	**43.13**

Notes: Data obtained from the London Borough of Camden Air Quality Annual Status Report for 2019, Exceedances of the AQS Objectives shown in **bold** text.

3.9. **Table 2** indicates the annual mean NO_2 objective of 40µg/m^3 was exceeded at six of the nine diffusion tubes monitoring locations within 2km of the Site in 2019.

City of Westminster's Local Monitoring

3.10. The City of Westminster is located within 700m of the Site. In 2019, Westminster City Council (WCC) undertook monitoring of NO_2 and particulate matter (PM_{10} and $PM_{2.5}$) at 10 locations using automatic monitors:

- Covent Garden, an urban background monitor, located approximately 0.7km south-west of the Site;
- Strand, a roadside monitor, located approximately 0.8km south of the Site;
- Oxford Street East (94 Oxford Street), a roadside monitor, located approximately 1.0km west of the Site;
- Cavendish Square, a roadside monitor, located approximately 1.7km west of the Site;
- Duke Street, a roadside monitor, located approximately 2.1km west of the Site;
- Oxford Street (Selfridges), a kerbside monitor, located approximately 2.2km west of the Site;
- Marylebone Road, a kerbside monitor, located approximately 2.4km north-west of the Site;
- Horseferry Road, an urban background monitor, located approximately 2.7km south-west of the Site;
- Buckingham Palace Road, a roadside monitor, located approximately 3.3km south-west of the Site; and

3.11. Ebury Street, a roadside monitor, located approximately 3.4km south-west from the Site. Monitored concentrations from the Covent Garden, Strand and Oxford Street East (94 Oxford Street) monitors are presented in **Table 3** below.

Table 3: Measured Concentrations at the Covent Garden, Strand and Oxford Street East monitors

ID	Pollutant	Averaging Period	AQS Objective	2016	2017	2018	2019
Covent Garden	NO_2	Annual Mean (µg/m^3)	40µg/m^3	-	37	39	39
		1-Hour Mean (No. of Hours)	200µg/m^3 not to be exceeded more than 18 times a year	-	0	0	0
Strand	NO_2	Annual Mean (µg/m^3)	40µg/m^3	**101**	**92**	**88**	**76**
		1-Hour Mean (No. of Hours)	200µg/m^3 not to be exceeded more than 18 times a year	**235**	**26**	**34**	**21**
Oxford Street East (94 Oxford Street)	NO_2	Annual Mean (µg/m^3)	40µg/m^3	-	-	**76**	**51**
		1-Hour Mean (No. of Hours)	200µg/m^3 not to be exceeded more than 18 times a year	-	-	11	5
	PM_{10}	Annual Mean (µg/m^3)	40µg/m^3	-	-	28	24
		24-Hour Mean (No. of Days)	50µg/m^3 not to be exceeded more than 35 times a year	-	-	1	0

Source: Data obtained from the Westminster City Council Air Quality Annual Status Report for 2020, 16 August 2021
Exceedences of the AQS objectives in **Bold**

3.12. The monitoring results in **Table 3** show the annual mean and 1-hour mean NO_2 AQS objective was exceeded in all years at the Strand automatic monitor. The annual mean NO_2 AQS objective was also exceeded at the Oxford Street East automatic monitor in 2018 and 2019. All other AQS objectives were met at all years at the Covent Garden and Oxford Street East automatic monitors.

Defra Background Maps

3.13. In addition to the monitoring undertaken by LBC, background concentrations of NO_x, NO_2, PM_{10} and $PM_{2.5}$ are available from the Defra Air Quality Archive for 1x1km grid squares for assessment years between 2018 and 2030. **Table 4** presents the Defra background concentrations for the year 2019 for the grid square the Site is located within (530500, 181500).

Table 4: Defra Background Maps in 2019 for the Grid Square of the Site

Pollutant	AQS Objective	2019 Annual Mean Concentration (µg/m^3)
NO_x	-	83.1
NO_2	40µg/m^3	**44.2**
PM_{10}	40µg/m^3	19.9
$PM_{2.5}$	25µg/m^3	12.9

Data Source: http://uk-air.defra.gov.uk

3.14. The data in **Table 4** shows the annual mean NO_2 AQS objective was exceeded at the grid square the Site is located in. All other pollutants are below the respective AQS objectives.

4. Construction Phase Qualitative Assessment

Assessment Methodology

Dust Emissions

4.1. The construction assessment was based on guidance set out in the Mayor of London's Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance (SPG)[25]. The SPG guidance was based on the IAQM's Guidance on the Assessment of Dust from Demolition and Construction[26]. The construction dust assessment has been based on the following:

- Consideration of planned construction activities and their phasing; and
- A review of the sensitive uses in the area immediately surrounding the Site in relation to their distance from the Site.

4.2. The SPG identifies that receptors within 350m of the Site boundary, and within 50m of construction routes would be sensitive to emissions and nuisance dust from construction activities.

4.3. In accordance with the SPG, construction activities can be divided into the following four distinct activities:

- Demolition - any activity involved in the removal of an existing building, including any deconstruction;
- Earthworks – the excavation, haulage, tipping and stockpiling of material, but may also involve levelling the site and landscaping;
- Construction – any activity involved with the provision of a new structure; and
- Trackout – the movement of vehicles from unpaved ground on a site, where they can accumulate mud and dirt, onto the public road network where dust might be deposited.

4.4. The SPG considers three separate dust effects for:

- annoyance due to dust soiling;
- potential effects on human health due to significant increase in exposure to PM10; and
- harm to ecological receptors which are habitats that might be sensitive to dust.

4.5. In accordance with the SPG, to determine the risk of the Construction phase, the following four step process, as set out in **Table 5**, has been undertaken.

Table 5: Summary of the Guidance for Undertaking a Construction Dust Assessment

Step		Description
1.	Screen the Need for a Detailed Assessment	Simple distance based criteria are used to determine the requirement for a detailed dust assessment. An assessment would normally be required where there are 'human receptors' within 50m of the boundary of the site and / or within 50m of the route(s) used by construction vehicles on public highway, up to 350m from the site entrance or 'ecological receptors' within 50m of the boundary of the site and/or within 50m of the route(s) used by construction vehicles on public highway, up to 500m from the site entrance.

25 Greater London Authority (2014), 'Sustainable Design and Construction - Supplementary Planning Guidance', Greater London Authority, London.
26 Institute of Air Quality Management, 2014, 'Guidance on the Assessment of dust from demolition and construction.

Step		Description
2.	Assess the Risk of Dust Impacts	The risk of dust arising in sufficient quantities to cause annoyance and/or health or ecological effects should be determined using four risk categories: insignificant, low, medium and high based on the following factors: the scale and nature of the works, which determines the risk of dust arising (i.e. the magnitude of potential dust emissions) classed as small, medium or large; and the sensitivity of the area to dust effects, considered separately for ecological and human receptors (i.e. the potential for effects) defined as low, medium or high.
	a. Define the potential Dust Emission Magnitude	Classify the magnitude of the likely risk as small, medium or large for the four activities.
	b. Define the Sensitivity of the Areas	Define the sensitivity of receptors as High, Medium or Low. Define sensitivity of people to Dust Soiling Effects and define the sensitivities of people to the health effects of PM10.
	c. Define the Risk of Impacts	Combine the magnitude (as detailed in 2a) and the sensitivity (in 2b) to determine the risk of impacts with no mitigation applied. Summarise the risk of dusts impacts for the four activities in a table.

4.6. Following the above air quality dust risk assessment, appropriate dust and pollution measures are provided to ensure the air quality impacts of construction are minimised and any mitigation measures employed are effective.

4.7. The potential impacts and effects of construction activities on local air quality were based on professional judgement and reference to the criteria set out in the SPG. This includes an assessment of the risk of dust effects arising from the likely construction activities, based on the magnitude of potential dust emissions and the sensitivity of the receptors potentially affected.

Construction Vehicle Exhaust Emissions

4.8. The IAQM *Guidance on the Assessment of dust from demolition and construction* states:

"Experience of assessing the exhaust emissions from on-site plant (also known as non-road mobile machinery or NRMM) and site traffic suggests that they are unlikely to make a significant effect on local air quality, and in the vast majority of cases they will not need to be quantitatively assessed. For site plant and on-site traffic, consideration should be given to the number of plant/vehicles and their operating hours and locations to assess whether a significant effect is likely to occur. For site traffic on the public highway, if it cannot be scoped out, then if should be assessed using the same methodology and significance criteria as operational traffic impacts".

4.9. Given the size of the Development and the duration of the construction works, in accordance with the IAQM Guidance, it is considered that a quantitative assessment of the exhaust emissions from construction traffic is not required. Accordingly, a qualitative assessment is deemed appropriate and is provided in this Report.

Construction Plant Emissions

4.10. In accordance with Part 7 of the Mayor of London Control of Dust and Emissions SPG, all construction plant would need to adhere to the emissions standards for NO_2 and PM_{10} set out for

Non-Road Mobile Machinery. As such, in line with the IAQM guidance on assessing construction effects, it is considered that an assessment is not required, and has not been considered further.

Determining Significance of Effects

Dust Emissions

4.11. The potential effects of the Construction works on local air quality were based on professional judgement and with reference to the criteria set out in the Mayor of London Control of Dust and Emissions During Construction and Demolition SPG. Details of the assessor's experience and competence to undertake the dust assessment is provided in **Appendix B**.

4.12. The assessment of the risk of dust effects arising from each of the construction activities as identified by the SPG, is based on the magnitude of potential dust emission and the sensitivity of the area. The risk category matrix for each of the construction activity types, taken from the criteria set out in the SPG, are presented in **Table 6** to **Table 9**.

Table 6: Risk Category from Demolition Activities

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Insignificant

Table 7: Risk Category from Earthworks Activities

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Insignificant

Table 8: Risk Category from Construction Activities

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Insignificant

Table 9: Risk Category from Trackout Activities

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
Medium	Medium Risk	Low Risk	Insignificant
Low	Low Risk	Low Risk	Insignificant

4.13. The risk category determined for each of the construction activity types is used to define the appropriate and Site-specific mitigation measures that should be applied. The IAQM guidance recommends that significance is only assigned to the effect after considering mitigation because it assumes that all actions to avoid or reduce the environmental effects are an inherent part of the Development, and that, in the case of construction, mitigation measures (secured through planning conditions, legal requirements or required by regulations) would ensure that likely significant adverse residual effects would not occur.

Construction Vehicle Exhaust Emissions

4.14. The significance of the effects from construction vehicle exhaust emissions on air quality were based on professional judgement.

Construction Effects

Dust Emissions

4.15. The following construction dust assessment follows the methodology set out in **Table 5**.

Step 1- Site Evaluation / Screen the Need

4.16. The Site is located in a predominantly commercial and residential area. The nearest sensitive receptors are within 20m; the Cats London School and residential properties located on Southampton Place west of the Site. Additionally, St Joseph's Primary School is located approximately 220m south of the Site.

4.17. Therefore, in accordance with **Table 5,** the assessment would proceed to detailed assessment. There are no ecological receptors within 50m of the Site boundary or the routes used by construction vehicles, therefore ecological effects have not been considered further.

Step 2 - Potential Dust Emission Magnitude

4.18. The risk of dust impacts from the Construction Works has been considered based upon the magnitude of works as detailed in the SPG. This includes:

- Demolition– The total volume of building to be demolished is estimated to be less than 20,000m^3**.** Based on this and considering the criteria in step 2A of the SPG, the potential dust emissions during earthworks activities would be of **small** magnitude.
- Earthworks – The Site area is approximately 1,200m^2. Based on this and considering the criteria in paragraph 4.29 of the SPG, the potential dust emissions during earthworks activities could be of **small** magnitude.
- Construction–The estimate for the total volume of buildings to be constructed would be less than 25,000m^3. Based on this and considering the criteria in step 2A of the SPG, the potential dust emissions during construction activities would be **small**.

- Trackout – It is estimated that construction traffic would be between 10-50 outward HDV movements in any one day. Based on this and considering the criteria in Step 2A of the SPG, the potential for dust emissions due to trackout activities would be of **medium** magnitude.

Step 3 - Sensitivity of the Area

4.19. In accordance with the SPG (paragraph 4.36 of the SPG, Step 2B: Define the Sensitivity of the Area), the sensitivity of the area has taken account of the following factors:

- the specific sensitivities of receptors in the area;
- the proximity and number of those receptors;
- the local background PM_{10} concentration; and
- Site-specific factors, such as whether there are trees or other vegetation to reduce the risk of wind-blown dust.

Step 4 - Sensitivity of the Area to Dust and Soiling Effects on People and Property

4.20. There are estimated to be 10-100 high sensitivity residential receptors within 20m of the Site boundary. Based on Table 4.2 of the SPG, it is considered the area could be of **high** sensitivity to dust and soiling effects on people and property.

Step 5 - Sensitivity of the Area to Human Health Impacts

4.21. The 2019 monitored annual mean PM_{10} concentration was 18µg/m^3 at the London Bloomsbury (Russel Square Gardens) (BL0) urban background automatic monitor. This is below the annual mean AQS objective for PM_{10} of 40µg/m^3. There are estimated to be 10-100 high sensitivity residential receptors within 20m of the Site boundary. Based on the above and Table 4.3 of the SPG, it is considered the area is of **low** sensitivity to human health impacts.

Step 6 - Risk of Impacts

4.22. Based on the dust emissions magnitude and taking account of the sensitivity of the area, the overall risk impacts have been identified and presented in **Table 10**. The overall risk impacts is based on the matrices set out in Tables 4.6 to 4.9 of the Mayor's SPG. The predicted impacts are prior to, and do not take account of, mitigation applied.

Table 10: Summary of Risk

Potential Effect	Risk			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Medium Risk	Low Risk	Low Risk	Medium Risk
Human Health	Negligible	Negligible	Negligible	Low Risk

4.23. As outlined in **Table 10**, the Site is a **medium-risk** site, due to dust soiling effects. Therefore, Site specific mitigation measures would be required to ensure that there are no adverse effects from the Construction works.

Construction Vehicle Exhaust Emissions

4.24. Given the Development proposals it is estimated that number of HDVs would be between 10-50 HDV outward movements in any one day. Therefore, emissions from construction traffic would be relatively small compared to existing road traffic emissions. For example, in 2019 on Southampton

Row to the east of the Site there were 12,574 daily vehicles including 7.8%[27]. Therefore, the likely effect of construction vehicles entering and egressing the Site on air quality would be **not significant** during the construction period.

Construction Mitigation Measures and Residual Effects

Dust Emissions

4.25. The Site is a medium-risk site in relation to nuisance dust emissions (referred to earlier in this Report). Consequently, a range of environmental management controls would be developed with reference to Appendix 7 of the SPG for medium-risk sites. The mitigation measures would be included within a Construction Environmental Management Plan (CEMP) and implemented to prevent the release of dust to the atmosphere and / or being deposited on nearby receptors.

4.26. Mitigation measures are routinely and successfully applied to construction projects throughout the UK and are proven to significantly reduce the potential for adverse nuisance dust effects associated with the various stages of the construction work. Therefore, it is considered that residual effects due to fugitive dust emissions would be **not significant**.

Construction Vehicle Exhaust Emissions

4.27. All construction traffic logistics would be agreed with LBC. Consideration would also be given to the avoidance, or limited use, of traffic routes in proximity to sensitive uses and the avoidance, or limited use, of roads during peak hours, where practicable. The likely residual effect of construction vehicles entering and egressing the Site to air quality would remain **not significant**.

27 Road traffic statistics - Manual count point: 75099 (dft.gov.uk)

5. Operational Development

Predicted Future Exposure

5.1. The London Bloomsbury (Russell Square Gardens) (BL0) urban background automatic monitor and the Bloomsbury Street (CA21) kerbside diffusion tube are the nearest two monitors to the Site, located approximately 500m north and north-west respectively.

5.2. The Bloomsbury Street (CA21) kerbside diffusion tube, located on A400 Bloomsbury Street, is considered a conservative representation of NO_2 concentrations the Site would be exposed to.

5.3. In accordance with Box 1.1 of LAQM.TG(16) only the short-term objectives apply to office and retail uses. Research[28] undertaken on behalf of Defra has indicated the hourly mean limit value and objective for NO_2 is unlikely to be exceeded at a roadside location where the annual-mean NO_2 concentration is less than 60µg/m^3, LAQM.TG(16) confirms that this assumption is still valid.

5.4. The annual mean NO_2 concentration at the Bloomsbury Street (CA21) kerbside diffusion tube is below 60µg/m^3 and therefore unlikely to exceed the hourly mean NO_2 objective.

5.5. The City of Westminster is located west of the Site - within 700m. In 2019, WCC conducted monitoring of NO_2, PM_{10} and $PM_{2.5}$ at 10 automatic monitors. The Oxford Street East roadside automatic monitor, located at 94 Oxford Street is approximately 1km west of the Site, is considered representative of PM_{10} concentrations at the Site. The 2019 annual mean PM_{10} concentration at the Oxford Street East Automatic monitor was 27µg/m^3 - below the annual mean PM_{10} AQS objective.

5.6. The Defra background maps were considered representative of $PM_{2.5}$ concentrations at the Site. The 2019 concentrations were below the respective AQS objectives for $PM_{2.5}$.

5.7. Based on the pollutant concentrations in **Tables 1, 2, 3** and **4**, it is considered the AQS objectives are likely to be met for users of the Site. The effect of the Development on air quality would therefore be **not significant**.

28 Defra (2016), 'Local Air Quality Management Policy guidance PG(16)', DEFRA, London

6. Summary and Conclusions

6.1. A qualitative assessment of dust effects during the construction phase has been carried out using the IAQM guidance. The implementation of a range of appropriate of appropriate site management practices to control dust emissions would significantly reduce the potential for adverse nuisance dust effects associated with the various stages of the construction phase. It is considered that likely residual effects due to fugitive emissions would be **not significant**.

6.2. Emissions from construction vehicles would be small in comparison to the emissions from the volume of vehicles travelling on roads in the surrounding area of the Site and would not significantly affect air quality. Therefore, it is anticipated that the effect of construction vehicles entering and egressing the Site during the construction period would be **not significant**.

6.3. As the Development is car free, the trips generated by the Development would not result in a change of more than 100 LDVs or 25 HDVs and would therefore be below the EPUK and IAQM guidance criteria for when an air quality assessment is required. Additionally, the Development would not include a centralised combustion plant. Based on the low trip generation and the absence of centralised combustion plant according to the EPUK/IAQM guidance, the Development is not expected to give rise to air quality impacts. As such the likely effect of the operational Development on local air quality would be **not significant**.

6.4. A review of the LBC and LBW monitoring data indicate that air quality concentrations would be suitable for future users of the Development. The effect of the Development on future users would be **not significant.**

APPENDICES

Appendix A Summary of Relevant Legislation, Planning Policy and Guidance

Appendix A: Summary of Relevant Legislation, Planning Policy and Guidance

Legislation

EU Framework Directive 2008/50/EC, 2008

Air pollutants at high concentrations can have adverse effects on the health of humans and ecosystems. European Union (EU) legislation on air quality forms the basis for UK legislation and policy on air quality.

The EU Framework Directive 2008/50/EC on ambient air quality assessment and management came into force in May 2008 and was implemented by Member States, including the UK, by June 2010. The Directive aims to protect human health and the environment by avoiding, reducing or preventing harmful concentrations of air pollutants.

Air Quality Standards Regulations, 2010

The Air Quality Standards Regulations implement Limit Values prescribed by the EU Framework Directive 2008/50/EC. The Limit Values are legally binding and the Secretary of State, on behalf of the UK Government, is responsible for their implementation.

The UK Air Quality Strategy, 2007

The current UK Air Quality Strategy (UK AQS) was published in July 2007 sets out the objectives for Local Planning Authorities (LPA) in undertaking their Local Air Quality Management (LAQM) duties. The 2007 UK AQS introduced a national level policy framework for exposure reduction for fine particulate matter. Objectives in the UK AQS are in some cases more onerous than the Limit Values set out within the relevant EU Directives and the Air Quality Standards Regulations 2010. In addition, objectives have been established for a wider range of pollutants.

The UK AQS objectives of air pollutants relevant to this assessment are summarised in Table A1.

Table A1: Summary of Relevant UK AQS Objectives

Pollutant	Objective		Date by which Objective to be Met
	Concentration	Measured as	
Nitrogen Dioxide (NO_2)	200µg/m^3	1 hour mean not to be exceeded more than 18 times per year	31/12/2005
	40µg/m^3	Annual Mean	31/12/2005
Particulate Matter (PM_{10}) (a)	50µg/m^3	24 hour mean not to be exceeded more than 35 times per year	31/12/2004
	40µg/m^3	Annual Mean	31/12/2004
Particulate Matter ($PM_{2.5}$) (b)	Target of 15% reduction in concentrations at urban background locations	Annual Mean	Between 2010 and 2020
	25µg/m^3	Annual Mean	01/01/2020

Note: (a) Particulate matter with a mean aerodynamic diameter less than 10 microns (or micrometres – µm)
(b) Particulate matter with a mean aerodynamic diameter less than 2.5 microns

The Environment Act, 1995

In a parallel process, the Environment Act 1995 required the preparation of a national air quality strategy setting health-based air quality objectives for specified pollutants and outlining measures to be taken by LPAs in relation to meeting these objectives (the LAQM system).

Part IV of the Environment Act 1995 provides a system of LAQM under which LPAs are required to review and assess the future quality of the air in their area by way of a staged process. Should this process suggest that any of the AQS objectives will not be met by the target dates, the LPA must consider the declaration of an Air Quality Management Area (AQMA) and the subsequent preparation of an Air Quality Action Plan (AQAP) to improve the air quality in that area in pursuit of the AQS objectives.

Planning Policy

National Planning Policy

National Planning Policy Framework, 2021

The National Planning Policy Framework (NPPF), published in July 2021 sets out the Government's planning policies for England and how these should be applied.

Paragraph 105 states *"The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making."*

Paragraph 174 states *"Planning policies and decisions should contribute to and enhance the natural and local environment by: … preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans"*

Paragraph 185 states *"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.".*

Paragraph 186 states *"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.".*

Regional Planning Policy

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

The Mayor of London's London Plan will run to 2041 to provide a longer-term view of London's development to inform decision making.

Policy SI1 'Improving air quality' states that:

"A. Development plans, through relevant strategic, site specific and area-based policies should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality.

B. To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:

1. Development proposals should not:

a) lead to further deterioration of existing poor air quality

b) create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits

c) create unacceptable risk of high levels of exposure to poor air quality.

2. In order to meet the requirements in Part 1, as a minimum:

a) Development proposals must be at least air quality neutral

b) Development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retro-fitted mitigation measures

c) Major development proposals must be submitted with an Air Quality Assessment. Air quality assessments should show how the development will meet the requirements of B1

d) Development proposals in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people, which do not demonstrate that design measures have been used to minimise exposure should be refused.

C. Masterplans and development briefs for large-scale development proposals subject to an Environmental Impact Assessment should consider how local air quality can be improved across the area of the proposal as part of an air quality positive approach. To achieve this a statement should be submitted demonstrating:

a) How proposals have considered ways to maximise benefits to local air quality, and

b) What measures or design features will be put in place to reduce exposure to pollution, and how they will achieve this.

D. In order to reduce the impact on air quality during the construction and demolition phase development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance.

E. Development proposals should ensure that where emissions need to be reduced to meet the requirements of Air Quality Neutral or to make the impact of development on local air quality acceptable, this is done on-site. Where it can be demonstrated that emissions cannot be further reduced by on-site measures, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated within the area affected by the development'.

It may not always be possible in practice for developments to achieve Air Quality Neutral standards or to acceptably minimise impacts using on-site measures alone. If a development can demonstrate that it has exploited all relevant on-site measures it may be possible to make the development acceptable through additional mitigation or offsetting payments".

London Environment Strategy, 2018

The London Environment Strategy includes the following proposals to improve air quality:

- The introduction of the toxicity charge (T-charge) from October 2017 and the Ultra-Low Emission Zone by 2019;
- Making the whole bus fleet zero emission by 2037 and phasing out fossil fuels in the taxi and private hire fleets;
- The Mayor working with government and other partners to seek reductions in emissions from aviation activity (in London and the south east particularly from Heathrow), and also from rail transport and at stations;
- Providing better information about air quality, especially during high and very high pollution episodes;
- Using the planning system to help ensure that new schools and other buildings that will be used by people who are particularly vulnerable to pollutants are not located in areas of poor air quality;
- The Mayor promoting and prioritising more sustainable travel in London including walking, cycling and public transport, as part of the Healthy Streets Approach; and
- Considering introducing a new Air Quality Positive standard so new building developments would ensure that emissions and exposure to pollution are reduced.

Local Planning Policy

London Borough of Camden Local Plan, 2017

The Local Plan forms the basis for planning decisions and future development in the borough. Policy CC4 Air quality of the Local Plan states:

"*The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough.*

The Council will take into account the impact of air quality when assessing development proposals, through the consideration of both the exposure of occupants to air pollution and the effect of the development on air quality. Consideration must be taken to the actions identified in the Council's Air Quality Action Plan.

Air Quality Assessments (AQAs) are required where development is likely to expose residents to high levels of air pollution. Where the AQA shows that a development would cause harm to air quality, the Council will not grant planning permission unless measures are adopted to mitigate the impact. Similarly, developments that introduce sensitive receptors (i.e. housing,

schools) in locations of poor air quality will not be acceptable unless designed to mitigate the impact.

Development that involves significant demolition, construction or earthworks will also be required to assess the risk of dust and emissions impacts in an AQA and include appropriate mitigation measures to be secured in a Construction Management Plan."

Guidance

Department for Environment, Food and Rural Affairs, Clean Air Strategy, 2019

Published in January 2019 the Clean Air Strategy sets out a coherent framework and national action to improve air quality throughout the UK.

The Strategy is underpinned by new national powers to control major sources of air pollution, in line with the risk they pose to public health and the environment, plus new local powers to act in areas with an air pollution problem. The Strategy also supports the creation of Clean Air Zones to lower emissions from all sources of air pollution, backed up with clear enforcement mechanisms.

Improving Air Quality in the UK: Tackling Nitrogen Dioxide in our Towns and Cities. UK Air Quality Plan for Tackling Nitrogen Dioxide, 2017

The UK Government was required by the High Court to release an Air Quality Plan to meet the NO_2 Limit Value in the shortest timescale as possible. This document was adopted on 26th July 2017.

The plan focuses on reducing concentrations of NO_x and NO_2 around road vehicle emissions within the shortest possible time. With the principal aims to:

a. reduce emissions of NOx from the current road vehicle fleet in problem locations now; and

b. accelerate road vehicle fleet turnover to cleaner vehicles to ensure that the problem remains addressed and does not move to other locations.

The other aims include reducing background concentrations of NO_x from:

- Other forms of transport such as rail, aviation and shipping;
- Industry and non-road mobile machinery; and
- Buildings, both commercial and domestic, and other stationary sources.

The Plan provides measures to reduce NO_x and NO_2 concentrations in the UK, such measures include:

- Mandate local authorities to implement Clean Air Zones within the shortest possible time;
- Consultation on proposal for a Clean Air Zone Framework for Wales;
- Consultation on a draft National Low Emission Framework for Scotland;
- Commitment to establishing a Low Emission Zone for Scotland by 2018;
- Tackling air pollution on the English Road network;
- New real driving emissions requirement to address real world NOx emissions;
- Additional funding to accelerate uptake of hydrogen vehicles and infrastructure;
- Additional funding to accelerate the uptake of electric taxis;

- Further investment in retrofitting alongside additional support of low emission buses and taxis;
- Regulatory changes to support the take up of alternatively fuelled light commercial vehicles;
- Exploring the appropriate tax treatment for diesel vehicles;
- Call for evidence on updating the existing HGV Road User Levy;
- Call for evidence on use of red diesel;
- Ensure wider environmental performance is apparent to consumers when purchasing cars;
- Updating Government procurement policy;
- New emissions standards for non-road mobile machinery;
- New measures to tackle NOx emissions from Medium Combustion Plants; and
- New measures to tackle NOx emissions from generators.

The above measures do not provide any actions which are relevant to the operation or design of the Development.

A High Court ruling on 21st February 2018, stated the UK Governments air quality improvement plan adopted on 31st July 2017 was unlawful as '*it does not contain measures sufficient to ensure substantive compliance with the 2008 Directive and the English Regulations'*. The UK Government '*must ensure steps are taken to achieve compliance as soon as possible, by the quickest route possible and by a means that makes that outcome likely'*.

The judgement stated that the UK Government must produce a supplementary plan, setting out requirements for feasibility studies to be undertaken in the 33 Local Authority Areas. Greater London including LBC is not considered within this judgement.

Environmental Protection UK & Institute of Air Quality Management Guidance; Land-Use Planning & Development Control: Planning for Air Quality, 2017

Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) provide guidance for air quality considerations within the local development control processes, promoting a consistent approach to the treatment of air quality issues.

The EPUK and IAQM guidance explains how development proposals can adopt good design principles to reduce emissions and contribute to better air quality. The guidance also provides a method for screening the need for an air quality assessment and a consistent approach for describing the impacts at individual receptors. The EPUK and IAQM Guidance, advises that:

"In arriving at a decision about a specific proposed development the local planning authority is required to achieve a balance between economic, social and environmental considerations. For this reason, appropriate consideration of issues such as air quality, noise and visual amenity is necessary. In terms of air quality, particular attention should be paid to:

- *Compliance with national air quality objectives and of EU Limit Values;*
- *Whether the development will materially affect any air quality action plan or strategy;*
- *The overall degradation (or improvement) in local air quality; or*
- *Whether the development will introduce new public exposure into an area of existing poor air quality".*

Planning Practice Guidance

The Government's online Planning Practice Guidance (PPG) states that air quality concerns are more likely to arise where development is proposed within an area of existing poor air quality, or where it would adversely impact upon the implementation of air quality strategies and / or action plans. The PPG notes that when deciding whether air quality is relevant to a planning application, considerations would include whether the development would lead to:

- Significant effects on traffic, such as volume, congestion, vehicle speed, or composition;
- The introduction of new point sources of air pollution, such as furnaces, centralised boilers and Combined Heat and Power (CHP) plant; and
- Exposing occupants of any new developments to existing sources of air pollutants and areas with poor air quality.

Institute of Air Quality Management: Guidance on the Assessment of Dust from Demolition and Construction, 2014

The IAQM Construction Dust Guidance provides guidance to consultants and Environmental Health Officers (EHOs) on how to assess air quality impacts from construction related activities. The guidance provides a risk-based approach based on the potential dust emission magnitude of the site (small, medium or large) and the sensitivity of the area to dust impacts. The importance of professional judgement is noted throughout the guidance. The guidance recommends that once the risk class of the site has been identified, the appropriate level of mitigation measures are implemented to ensure that the construction activities have no significant impacts.

London Local Air Quality Management Policy Guidance, 2016

The Local Air Quality Management Policy Guidance LLAQM.PG(16) provides additional guidance on the links between transport and air quality. LLAQM.PG(16) describes how road transport contributes to local air pollution and how transport measures may bring improvements in air quality. Key transport-related Government initiatives are set out, including regulatory measures and standards to reduce vehicle emissions and improve fuels, tax-based measures and the development of an integrated transport strategy.

LLAQM.PG (16) also provides guidance on the links between air quality and the land use planning system. The guidance advises that air quality considerations should be integrated within the planning process at the earliest stage, and is intended to aid local authorities in developing action plans to deal with specific air quality issues and create strategies to improve air quality. LLAQM.PG (16) summarises the means in which the land use planning system can help deliver compliance with the air quality objectives.

The Mayor's Air Quality Strategy 'Clearing the Air', 2010

The Greater London Authority (GLA) Act 1999 requires the GLA to produce an AQS for Greater London that sets out air quality objectives (to be no less stringent than national objectives) and present measures that the Mayor, GLA and London Boroughs will take towards meeting these objectives. The Mayor's AQS aims to improve air quality within London by targeting the reduction of emissions related to transport and construction. Some of the initiatives proposed are as follows:

- Targeted measures for areas with poor air quality; and
- Use of the planning system for reducing emissions from new developments.

Mayor of London's Supplementary Planning Guidance: Sustainable Design and Construction, 2014

The Sustainable Design and Construction Supplementary Planning Guidance (SPG) provides guidance to support the implementation of the London Plan. Section 4.3 of the SPG focusses on air pollution and the effects from the construction and operation of new developments to ensure that they are 'Air Quality Neutral'. Emission benchmarks are provided within the SPG for:

- Emissions from buildings; and
- Transport emissions.

The SPG sets out the criteria for when an Air Quality Neutral Assessment is required. This includes:

- For dwellings: where 10 or more are to be constructed (or if number not given, area is more than 0.5 hectares); and/or
- For all other uses: where the floor space is 1000 square metres or more (or the size area is 1 hectare or more,

Section 4.3.17 and Appendix 5 of the SPG note that two sets of Building Emission Benchmarks (BEBs) have been defined for a series of land-use classes, one for NO_x and one for $PM_{10.}$ Section 4.3.18 and Appendix 6 of the SPG note that the design of a development should encourage and facilitate walking, cycling and the use of public transport, thereby minimising the generation of air pollutants.

Given the Proposed Development is car free and there are no emissions to air from the heating and energy plant, the Proposed Development is Air Quality Neutral and has not been considered further.

Mayor of London: The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance, 2014

The Control of Dust and Emissions during Construction and Demolition SPG seeks to reduce emissions of dust, PM_{10} and $PM_{2.5}$ from construction and demolition activities in London. It also aims to manage emissions of NO_x from construction and demolition plant by means of a new non-road mobile machinery Ultra-Low Emissions Zone (ULEZ). The SPG provides guidance on the implementation of London Plan Policy 7.14 'Improving Air Quality', as well as a range of policies that deal with environmental sustainability, health and quality of life.

Camden Planning Guidance on Air Quality, January 2021

The Camden Planning Guidance on Air quality supports Local Plan Policy CC4 Air quality of the Camden Local Plan 2017. The 'Assessing air quality impacts' section explains when assessments for air quality are required and the level of information they should include according to the Development.

London Borough of Camden Air Quality Action Plan, 2019-2022

The LBC Air Quality Action Plan (AQAP), Camden's Clean Air Action Plan 2019-2022 outlines the action to improve air quality in Camden between 2019 and 2022, replacing the previous action plan, 2016-2018. The aim of the action plan is to make Camden a clean, vibrant and sustainable place where no one experiences poor health because of the air they breathe. To achieve this LBC will address emissions from the following seven key themes:

- Building emissions;
- Construction emissions;
- Transport emissions;
- Communities and schools;
- Delivery servicing and freight;
- Public health and awareness raising; and
- Lobbying.

London Borough of Camden Guide for Contractors Working in Camden, 2008

LBC have produced a guide to reduce disturbances due to dust and smoke arising from demolition and construction work on all building sites within the Borough. The document sets out Best Practicable Means (BPM) to mitigate dust emissions from construction sites these include:

"a. Carry out demolition and construction work in accordance with the Best Practise Guidance Note 'The control of dust and emissions from construction and demolition' (2006). This outlines BPM to effectively manage construction work in order to mitigate air pollution emissions.

b. When carrying out demolition or construction work during periods of dry or windy weather, there can often be dust problems on sites bordered by homes. You must take measures to reduce the formation and spread of dust. You must control dust at source by using a continuous fine-water spray. You must provide a suitable water supply, and make sure there are enough hoses to reach all parts of the site and a way of getting rid of wastewater.

c. There must be adequate screening and damping down during all demolition activities, sandblasting, clearance work, breaking up of existing ground services and other site preparations and activities. You must use existing features of the site, such as boundary walls to provide screening where practicable.

d. You must enclose scaffolding with appropriate sheeting material.

e. You must provide easy-to-clean hard-standings for vehicles.

f. You must keep heavily used areas clean by brushing vehicles and spraying them with water regularly.

g. You must control the cutting or grinding of materials on the site.

i. Buildings or structures that are being demolished, or small areas of land that are being prepared for development must be damped down using high-pressure hoses.

k. On sites where a large amount of dust has been produced and is laying on the ground, you must use a specialist vehicle to remove dust (by vacuuming) before you damp down the site.

l. Major haul routes on the site must be watered as necessary to reduce dust. Where practical, you must compact the route to reduce the amount of soil and other material that is moved around the site. This applies especially near to exits. If machinery movements produce dust, you must set effective speed limits and reschedule work if necessary. If the development involves machinery moving across open land, you must create a suitable track to reduce the amount of dust produced.

m. You must enclose materials at all times, and damp down dusty materials using water sprays during dry weather.

n. All materials that create dust, including soil, must be stored away from the site boundary, screened to prevent wind spreading the dust and damped down where practical. You will need to consider the size and shape of stockpiles to reduce dust.

o. Paved roads near to exits must be kept clean. Vehicles transporting materials onto or off the site must be suitably covered where necessary to prevent dust.

p. You must use rubble chutes and skips where appropriate. There must be an effective close-fitting cover over the skip to contain all the dust and other rubbish. The chutes must be continuous until they reach the skip, with no gaps, and maintained in good condition.

q. You must not allow rubbish and waste materials to build up on the site.

r. You must plant, turf or securely cover completed earthworks to stabilise the surface.

s. Reducing dust, fumes or other nuisance or environmental effects, which may cause offence to the local community or environment.

t. Reduce environmental effects which may cause offence to the local community by promoting proactive community relations."

Central London Air Quality Cluster Group: Cost Effective Actions to Cut Central London Air Pollution, 2012

The Central London Air Quality Cluster Group consists of the amalgamation of eight central London Boroughs, including LBC, to improve air quality within central London. The 'Cost Effective Actions to Cut Central London Air' guidance provides action measures which London Boroughs can implement to improve air quality. Such measures range from business engagement, car clubs, encouraging cycling, to energy efficiency in buildings and ultra-low NO_X boilers. The following measures are applicable to the Development:

- New buildings to be air quality neutral;
- New buildings to include a Level 4 BREEAM assessment; and
- Boilers are replaced by ultra-low NO_X models instead of Class 4 or 5.

Appendix B Assessor Experience

Appendix B: Assessor Experience

Name: Eleri Paterson Hughes

Years of Experience: 1

Qualifications:

- BSc (Hons)
- Msc (Hons)
- Associate member of IES
- Associate Member of IAQM

Eleri is a graduate air quality consultant with experience in preparing the technical delivery of a wide range of air quality projects for a variety of clients in both the public and private sector.

Name: Andy Fowler

Years of Experience: 11

Qualifications:

- CEnv
- BSc (Hons)
- Member of the IAQM
- AIEMA (Associate Member of the Institute of Environmental Management and Assessment)
- Full Member of the Institution of Environmental Sciences (IES)

Andy has been responsible for the technical delivery of a wide range of air quality projects for a variety of clients in both the public and private sector. These projects include consideration of emissions from both transportation and industrial sources, through both monitoring and modelling, and therefore he has an in depth understanding of the regulatory requirements for these sources and the published technical guidance for their assessment.

UK and Ireland Office Locations