Appendix 9.3: Air Quality Neutral Assessment

1.1 Calculations have been undertaken by Waterman Infrastructure & Environment (Waterman IE) to accompany the planning permission for the re-development of New City Court in the London Borough of Southwark, London. The purpose of the calculations is to demonstrate how the Development performs against relevant 'air quality neutral' benchmarks.

1.2 This air quality neutral was updated in July 2021 to assess 'the Proposed Amendments'.

Assumptions, Exclusions and Limitations

1.3 The Air Quality Neutral assessment has been based on the Greater London Authority's Sustainable Design and Guidance – Supplementary Planning Guidance (SPG) and Air Quality Consultants Air Quality Neutral Planning Support: GLA 80371, April 2014, referred to later in the report. These guidance documents apply an emission benchmark based on the Land Use Classes detailed in the Use Classes Order 1987 (as amended) in force at that time. However, the most recent amendment of the Use Classes Order of 1st September 20201 resulted in an change to the list of Land Use Classes. However, for consistency with the guidance documents, the Land Use Classes referred to in this report reflect those in place prior to September 2020.

1.4 Details of the trip generation were provided by Transport Planning Practice Ltd, the Transport Consultant for the Development. The vehicle trips generated by the Development were split by office and retail elements.

1.5 The Development proposes the use of air source heat pumps rather than gas fired boilers for the provision of heating and hot water. The Development would also provide two emergency generators – one for life safety and the other a tenant fit option. The life safety generator would be tested for a maximum of 16 hours annually and apart from testing would only be used for life safety purposes. The generator flue would be located at a suitable distance from sensitive receptors to allow for good dispersion and prevent any air quality impacts.

1.6 The tenant fit out generator would be designed to meet relevant guidance. A planning condition attached to the granting of any planning permission would ensure that emissions generated by the tenant generator would not result in an impact to local air quality. Combustion plant has therefore not been considered within the air quality assessment. As such, it is considered the heating plant would not impact local air quality and the Development would be 'Air Quality Neutral' with regard building emissions.

1.7 For the purposes of the Air Quality Neutral Assessment, the Development is in the Central Activity Zone.

Description of the Development

1.8 The proposals (hereafter referred to as the 'Development') as described in the planning application form is as follows:

'*Redevelopment to include demolition of the 1980s office buildings and erection of a 26-storey building (plus mezzanine and two basement levels), restoration and refurbishment of the listed terrace (nos. 4-16 St Thomas Street), and redevelopment of Keats House (nos. 24-26 St Thomas Street) with removal, relocation and reinstatement of the historic façade on a proposed building, to provide office floorspace, flexible office/retail floorspace, restaurant/café floorspace and a public rooftop garden, associated public realm and highways improvements,*

[1] https://www.legislation.gov.uk/uksi/1987/764/contents/made

provision for a new access to the Borough High Street entrance to the Underground Station, cycling parking, car parking, service, refuse and plant areas, and all ancillary or associated works'.' The Development would include two disabled car parking spaces.

1.9 The total amount of floor space proposed by the Development, in Gross Internal Area (GIA), is set out below in **Table A1** below.

Table A1: The Development Proposals

Land Use	Use Class		Proposed GIA (m^2)	Change (m^2)
	Pre- September 2020	Current		
Office	B1	E	44,141	-171
Affordable Workspace	B1	E	4,908	-109
Flexible Office / Retail	B1/ A1-A5	E	328	-12
Food and Drink	A3	E	421	0
Shared Rooftop Garden Access	-	-	183	-25
Shared Facilities and plant	-	-	5,480	+237
Total			**55,461**	**-80**

Note: For a conservative assessment the shared rooftop garden access & shared facilities and plant were not considered further in the Air Quality Neutral Assessment

Planning Policy and Guidance

The London Plan, March 2021

1.10 Policy SI1 Improving air quality of the Mayor of London's London Plan[2] states that:

"…a) development proposals must be at least Air Quality Neutral…"

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

1.11 Similarly, the Mayor's Air Quality Strategy[3] states that:

"New developments in London shall as a minimum be 'air quality neutral' through the adoption of best practice in the management and mitigation of emissions".

Sustainable Design and Construction - Supplementary Planning Guidance, 2014

1.12 The Sustainable Design and Guidance – Supplementary Planning Guidance (SPG) provides updated guidance to support the implementation of the London Plan.

[2] Greater London Authority. 2021. The London Plan: The Spatial Development Strategy for Greater London, March 2021, GLA, London

3 Greater London Authority (GLA), 'The Mayor's Air Quality Strategy: Cleaning London's Air', London, 2002.

1.13 Further to Policy 7.14 of the London Plan, Section 4.3 of the SPG focusses on air pollution and the effects from the operation of new developments within Greater London. The SPG requires all new developments to be at least 'air quality neutral'.

1.14 Paragraph 4.3.15 of the SPG states:

"This policy applies to all major developments in Greater London. Developers will have to calculate the NO_x and / or PM_{10} emissions from the buildings and transport elements of their developments and compare them to the benchmarks set out in Appendix 5 and 6."

1.15 The SPG presents emission benchmarks for buildings (associated with emissions from combustion plant introduced as part of a development to provide heating and power) and transport (associated with vehicle trips related to the operation of the development). It is considered that where a development does not exceed these benchmarks, it would be 'air quality neutral' and would not increase NO_x (oxides of nitrogen) and PM_{10} (particulate matter of 10µm diameter or less) emissions across London as a whole. A discussion on the Building Emission Benchmarks and the Transport Emission Benchmarks (TEBs) as set out within the SPG is presented below.

Air Quality Neutral Planning Support: GLA 80371, April 2014

1.16 In April 2014, the GLA published the Air Quality Neutral Planning Support (AQNPS): GLA 80371[4] to provide support to the development of the Mayor's policy related to 'air quality neutral' developments. The report provides a method to enable a development to be assessed against the air quality neutral benchmarks set out in the Sustainable Design and Construction SPG.

1.17 The report provides a methodology required to apply the air quality neutral policy. It requires the transport and building emissions for the development to be identified and then compared to the benchmark emissions. The report notes that the building and transport emissions should be calculated separately and not combined.

Transport Emissions Benchmarks (TEBs)

1.18 Paragraph 4.3.18 and Appendix 6 of the SPG sets out the TEBs defined by a series of land-use class for both NO_x and PM_{10}. The TEBs are presented in **Table A2**.

[4] Air Quality Consultants Environ Air Quality Neutral Planning Support: GLA 80371. April 2014

Table A2: 'Air Quality Neutral' Emissions Benchmarks for Transport

Land Use	London Central Activity Zone	Inner	Outer
NO_x (g/m^2/annum)			
Retail (A1)	169	219	249
Office (B1)	1.27	11.4	68.5
NO_x (g/dwelling/annum)			
Residential (C3)	234	558	1553
PM_{10} (g/m^2/annum)			
Retail (A1)	29.3	39.3	42.9
Office (B1)	0.22	2.05	11.8
PM_{10} (g/dwelling/annum)			
Residential (C3)	40.7	100	267

1.19 Section 4.3.18 of the SPG notes 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.

1.20 As well as providing benchmarks, the SPG also recommends emission standards for combustion plant to comply with, in addition to meeting the overall 'air quality neutral' benchmark.

Air Quality Neutral Calculation

1.21 The Air Quality Neutral Assessment of the Development has been based on the approach and methodology detailed within the Air Quality Neutral Planning Support Document. The calculations are presented below.

Transport Emissions

1.22 Details of the trip generation per day for the Development have been provided by Transport Planning Practice Ltd (the Applicant's transport consultant) -split into office and retail trips. The calculation of the total transport emissions for the Development, as set out within the Air Quality Neutral planning support document, are presented in **Table A3**.

Table A3: Calculation of the Transport Emissions

Land Use	Trips per day	Trips per annum	Average Distance per trip[a]	Distance travelled km/annum	Emission Factors (g/vehicle-km)[b]	Transport Emission (kg/annum)	
						NO_x	PM_{10}
Retail	11	4171	9.3	38790	NO_x: 0.4224 PM_{10}: 0.0733	16.4	2.8
Office	59	21,379	3.0	64137		27.1	4.7
Total Transport Emissions						**43.5**	**7.5**

Note: [a] Average distance travelled by car per trip for sites within Central Activities Zone
[b] Emissions factors used as presented in Table 10 of the Air Quality Neutral Planning Support Document

1.23 The Benchmarked Transport Emissions of the Development are calculated by multiplying the floorspace with the TEB (as presented in **Table A2**). The total benchmarked transport emissions for the Development are presented in **Table A4**.

Table A4: Calculation of the Benchmarked Transport Emissions

Land Use	GIA Floorspace (m^2)	Transport Emissions Benchmark (g/m^2/annum)		Benchmarked Emissions (kg/annum)	
		NO_x	PM_{10}	NO_x	PM_{10}
Office	44,141	1.27	0.22	56.1	9.7
Affordable Workspace	4,908	1.27	0.22	6.2	1.1
Flexible Office / Retail*	328	1.27	0.22	0.4	0.1
Food and Drink	421	169	29.3	71.1	12.3
Total Transport Emissions				**133.9**	**23.2**

Note: * For conservative assessment Flexible Office / Retail assumed to be Office

1.24 The total Transport Emissions for NO_x (43.5kgNOx/annum) are below the Transport Benchmark NO_x Emissions (133.9kgNO_x/annum). Similarly, the Total Transport Emissions for PM_{10} (7.5kgPM_{10}/annum) is below the Transport Benchmark PM_{10} Emissions (23.2kgPM_{10}/annum). Therefore, the Proposed Amendment' to the Development would be 'Air Quality Neutral' in relation to transport emissions, and no further mitigation measures would be required.