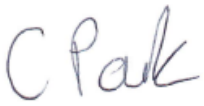
Report for:

London Borough of Camden

Tybalds Estate, Camden

Air Quality Neutral Assessment

Status: Final **Date: 01.06.2021**

Author	 Christine Park Senior Environmental Consultant
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1. INTRODUCTION

ACCON UK Limited (ACCON) has been commissioned by the London Borough of Camden to carry out an Air Quality Neutral Assessment for a development scheme at Tybalds Estate, London.

The Air Quality Neutral Assessment is required to support a planning application for 56 new residential units, community space/facilities, new entrances to the existing tower blocks and a lift to the Devonshire block, and a bulky waste store.

The site is located within the administrative boundary of the London Borough of Camden (LBC).

The site location plan is provided in **Appendix 1.**

This assessment has been undertaken in accordance with the London Plan[1], the Mayor's Air Quality Strategy,[2] the Sustainable Design and Construction Supplementary Planning Guidance (SPG)[3] and relevant local planning policy.

[1] Greater London Authority, (2013). The London Plan: Spatial Development Strategy for Greater London.
[2] Greater London Authority, (2010). Clearing the air: The Mayor's Air Quality Strategy.
[3] Greater London Authority, (2013). The London Plan: Spatial Development Strategy for Greater London.

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2. METHODOLOGY

The National Planning Policy Framework[4] requires that planning policies should contribute towards meeting EU limit values or national objectives for pollutants, accounting for cumulative impacts on air quality from individual sites. In order to prevent cumulative impacts arising due to a small volume of pollutants being emitted from a large number of sources, the London Plan[5] and the Mayor's Air Quality Strategy[6] also require that developments are at least 'Air Quality Neutral.'

The Sustainable Design and Construction SPG indicates that only where the emissions from 'major' developments fall below Transport and Building Emissions Benchmarks, defined in the Air Quality Neutral Planning Support Update (PSU)[7], can they be considered Air Quality Neutral. Where developers do not meet these benchmarks, developers must mitigate their impacts on-site and if further action is required, emissions must be offset off-site.

As the proposed development comprises of more than 10 residential units, this development is classed as a 'major' development and therefore this assessment has been produced in accordance with the requirements of the Sustainable Design and Construction SPG and associated PSU. The methods used to determine the transport and building emissions associated with this development are shown in **Section 2.1** to **Section 2.2** below.

2.1. Calculation of Transport Emissions

2.1.1. Transport Emissions Benchmark (TEB)

The parameters utilised in the calculations for the Transport Emissions Benchmark are identified in **Table 2.1**. As there is no category for "community use" the halls will be categorised as "Retail (A1)", as these are likely to have the most similar traffic patterns.

[4] Department of Communities and Local Government, (2012) National Planning Policy Framework. UK Government.
[5] Greater London Authority, (2013). The London Plan: Spatial Development Strategy for Greater London.
[6] Greater London Authority, (2010). Clearing the air: The Mayor's Air Quality Strategy.
[7] Air Quality Consultants and Environ, (2014). Air Quality Neutral Planning Support Update: GLA 80371.

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Table 2.1: Calculation Parameters for Transport Emission Benchmark (TEB)

Calculation Parameter	Data	Source
Gross internal floor area of C3 (m^2)	5,003	Proposed development plans
Average Number of Trips per Annum (trips/dwelling/annum) (C3 - Inner London)	407	GLA 80371 Air Quality Neutral Planning Support
Average Distance Travelled by Car per Trip C3 (km) Inner London	3.7	GLA 80371 Air Quality Neutral Planning Support
Gross internal floor area of A1 (m^2)	206	Proposed development plans
Average Number of Trips per Annum (trips/dwelling/annum) (A1 - Inner London)	100	GLA 80371 Air Quality Neutral Planning Support
Average Distance Travelled by Car per Trip A1 (km) Inner London	5.9	GLA 80371 Air Quality Neutral Planning Support
Emission Factors NOx (g/vehicle-km) Inner London	0.370	GLA 80371 Air Quality Neutral Planning Support
Emission Factors PM_{10} (g/vehicle-km) Inner London	0.0665	GLA 80371 Air Quality Neutral Planning Support
Transport Emission Benchmark (TEB) NOx	(45.1 – A1, 31.2 – C3) **76.4**	
Transport Emission Benchmark (TEB) PM_{10}	(8.1 – A1, 5.6 – C3) **13.7**	

2.1.2. Calculated Transport Related Emissions (TRE)

In terms of parking numbers, across the whole Tybalds Estate, there are currently 133 spaces and 80 spaces in the proposed scenario (this accounts for all changes associated with on-site parking including commercial, on-site Camden permit CPZ bays, Camden private estate parking bays, disabled bays, unrestricted bays and the ambulance bays), there is therefore a decrease in parking across the Estate of 53 spaces, , therefore there will be no transport related emissions directly associated with the development.

2.2. Calculation of Building Emissions

2.2.1. Building Emissions Benchmark

The Building Emissions Benchmark (BEB) value derived from the PSU for the development is 26.2gNO_x/m^2/annum for Class C3 (residential) and 31.0gNO_x/m^2/annum for Class D1 (c -h) Non-residential institutions. These benchmark values are multiplied by the gross internal floor area for the specific land use classes to derive the BEB for the development as identified in **Table 2.2**.

A worst-case area has been used in the assessment which does not include the circulation areas which are unlikely to result in energy usage and would not generate emissions to the same degree as the residential dwellings and the community halls.

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Table 2.2: Building Emission Benchmark Calculations

Land Use	Class	Total Area	BEB (gNO_x/annum)	BEB ($kgNO_x$/annum)
Residential	C3	5,003	131,100	131.1
Community Halls	D1 (c-h)	206	6,400	6.4
Total			**137,500**	**137.5**

2.2.2. Building Related Emissions

The proposed underbuild units, will connect into the existing district heating scheme, with efficient gas boilers used for these 10 units. The rest of the units will be served by Air Source Heat Pumps (ASHPs) to provide domestic hot water (DHW) and electric panel heaters serving each apartment, therefore there will be no direct emissions of NOx or PM_{10} from the development.

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3. RESULTS

3.1. Calculated Transport Emissions

It has been confirmed that, across the whole Tybalds Estate, there will be a decrease in parking across the Estate of 53 spaces, therefore there will be no transport related emissions directly associated with the development.

The results, which are shown in **Table 3.1**, identifies that the Transport Related Emissions (TRE) is less than the Transport Emissions Benchmark (TEB) by 76.4kg per year for NOx and 13.7kg per year for PM_{10}. Accordingly, mitigation will not be required.

Table 3.1: Calculation Results for development Transport Emissions

Calculation Descriptor	NO_x emissions (kg/year)	PM_{10} emissions (kg/year)
Calculated Transport Related Emissions (TRE)	0.0	0.0
Transport Emissions Benchmark (TEB)	76.4	13.7
Difference	**-76.4**	**-13.7**

3.2. Calculated Buildings Emissions

As there will be no emission creating energy plant on site, no Development Building Emissions (DBE) have been calculated.

The results, which are shown in **Table 3.2**, identifies that the DBE is less than the BEB by 137.5kg per year. Accordingly, mitigation will not be required.

Table 3.2: Calculation Parameters for development Building Emissions

Calculation Descriptor	NO_x emissions (kg/year)
Calculated Development Building Emissions (DBE)	0.0
Building Emissions Benchmark (BEB)	137.5
Difference	**-137.5**

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4. CONCLUSIONS

In order to determine whether the development is 'Air Quality Neutral' the building and transport emissions associated with the development were compared to Building and Transport Emissions Benchmarks outlined in accordance with the requirements of the Sustainable Design and Construction Supplementary Planning Guidance (SPG) accompanying the London Plan, and an associated Planning Guidance Update.

It has been confirmed that the proposed development will not provide car parking spaces, therefore there will be no transport related emissions from the development.

As there are no pollution emitting energy sources on site with only ASHP the building emissions have not been calculated for the development, as they are effectively zero.

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APPENDIX 1
SITE LOCATION

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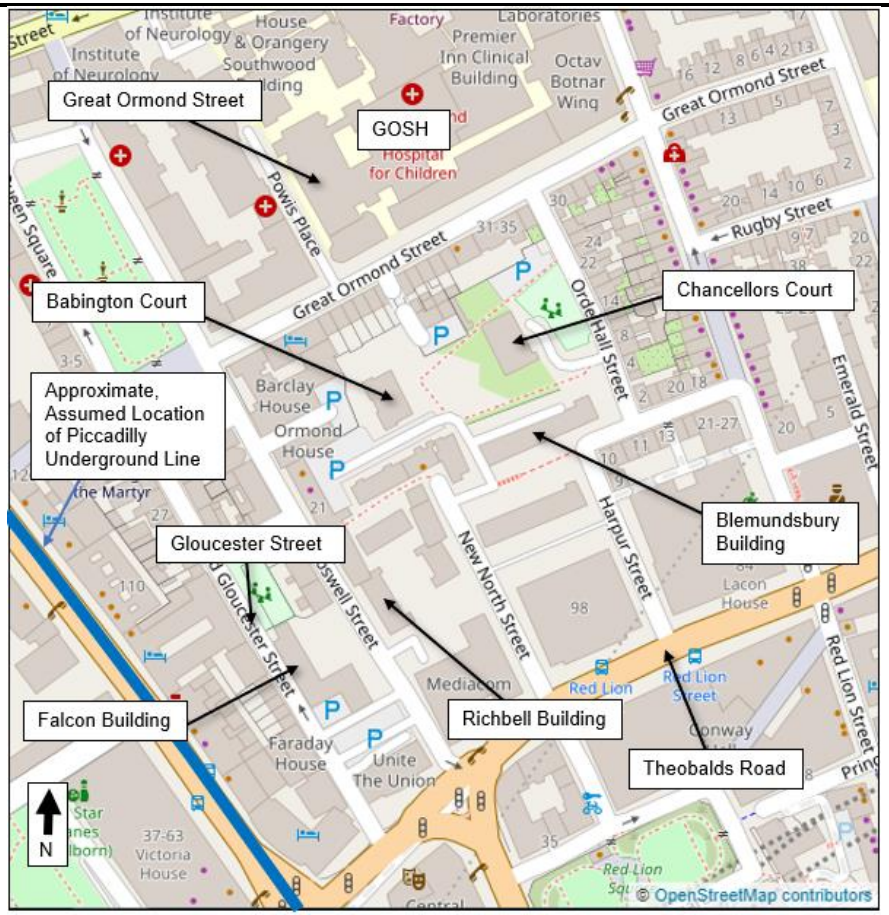
Appendix 1: Site Location Plan



LEGEND

Site Boundary

Client: London Borough of Camden		Description: Site Location Plan		Design	CP	19.05.2021	ACCON UK ENVIRONMENTAL CONSULTANTS
				Drawn	CP	19.05.2021	
Rev: A	Description: FINAL	Project: Tybalds Estate, Camden		Checked	GP	19.05.2021	*Appendix 1*
				Approved	GP	19.05.2021	Scale: Not to Scale

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