

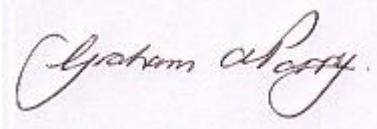


Revised Air Quality Neutral Assessment

June 2016

## 156 West End Lane, West Hampstead

### Air Quality Neutral Assessment

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## 1. INTRODUCTION

ACCON UK Limited (ACCON) has been instructed by Silver Development and Construction Consultancy on behalf of A2 Dominion Developments Limited to carry out an air quality neutral assessment which is required for a planning application submission to the London Borough of Camden (LBC). The whole of the LBC administrative area was declared an Air Quality Management Area (AQMA) in September 2002.

The proposal is to redevelop the site (156 West End Lane), which is located east of West End Lane and north of West Hampstead Thameslink Station. The proposed development includes the demolition of all existing buildings and redevelopment of the site to provide 163 mixed-tenure homes (Use Class C3), new floorspace for town centre uses (Use Classes A1, A2, A3, D1 or D2), new employment floorspace (including four dedicated units for start-up businesses) (Use Class B1), a community meeting room and new and improved public open spaces, together with associated new landscaping, on-site access, servicing and disabled car parking. The site location plan is provided in **Appendix 1**.

The development proposals include for the provision of 2 No. CHP units and 4 No. boiler units. The exact design and models have not as yet been determined. As a result typical units, which will meet the energy criteria requirements for the development have been used as part of this air quality neutral assessment which are:

- Boiler system – 4 x Ultramax R604 boilers; and
- CHP system – 2 x EC Power XRGI CHP engines

This assessment has been undertaken in accordance with the London Plan<sup>1</sup>, the Mayor's Air Quality Strategy,<sup>2</sup> the Sustainable Design and Construction Supplementary Planning Guidance (SPG)<sup>3</sup> and relevant local planning policy. For the purposes of this assessment, development in Camden is considered to take place within Inner London.

This revised Air Quality Neutral Assessment reflects the design revisions made as a result of the feedback received and further information requested by the London Borough of Camden officers following the November 2015 planning submission.

<sup>1</sup> Greater London Authority, (2013). The London Plan: Spatial Development Strategy for Greater London.

<sup>2</sup> Greater London Authority, (2010). Clearing the air: The Mayor's Air Quality Strategy.

<sup>3</sup> Greater London Authority, (2013). The London Plan: Spatial Development Strategy for Greater London.

## 2. METHODOLOGY

The National Planning Policy Framework<sup>4</sup> 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<sup>5</sup> and the Mayor's Air Quality Strategy<sup>6</sup> 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)<sup>7</sup>, 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

The PSU indicates that it is not a requirement to calculate transport emissions associated with "car-free" developments if justification can be provided outlining that traffic would not be displaced onto local roads. In the case of this development, there are three reasons as to why ACCON consider traffic displacement will not occur.

- 1) The proposed development site has excellent public transport accessibility with a Public Transport Accessibility Level of 6a.
- 2) There are only 12 disabled car parking spaces associated with the development which are unlikely to generate a significant number of vehicles movements.
- 3) Residents will not be permitted to apply for on-street parking permits and legal agreements will ensure that future occupants are aware they are not entitled to on street parking permits. As the roads around the site are controlled by permitting and it is conventionally accepted that residents will not walk more than 200m from a parking space, it is considered unlikely that the development will attract car owners. The management overseeing the site will closely monitor and possibly control on-site informal parking.

<sup>4</sup> Department of Communities and Local Government, (2012) National Planning Policy Framework. UK Government.

<sup>5</sup> Greater London Authority, (2013). The London Plan: Spatial Development Strategy for Greater London.

<sup>6</sup> Greater London Authority, (2010). Clearing the air: The Mayor's Air Quality Strategy.

<sup>7</sup> Air Quality Consultants and Environ, (2014). Air Quality Neutral Planning Support Update: GLA 80371.

## 2.2. Building Emissions

### 2.2.1. Building Emissions - Development Baseline

**Table 2.1** summarises the data that has been used to calculate the building emissions associated with the proposed development, and indicates where the data was obtained.

**Table 2.1: Calculation Parameters for development building emissions**

Calculation Parameter	Data	Source
Number of dwellings on development site	163	Proposed development plans
Gross internal floor area of C3 (m <sup>2</sup> )	14,547	Proposed development plans
Gross internal floor area of B1 (office + start up units) (m <sup>2</sup> )	871	Proposed development plans
Gross internal floor area of D1 (community room) (m <sup>2</sup> )	62	Proposed development plans
Gross internal floor area of A1 (retail) (m <sup>2</sup> )	891	Proposed development plans
Max. NO <sub>x</sub> emission (mg/Kwh) (per boiler per hour) (4 x Boilers)	35	Boiler information sheet – ELCO R600
Max. NO <sub>x</sub> emission (mg/Kwh) (per CHP per hour) (2 x CHP)	15.4	CHP information sheet – EC Power XRG 20 and discussions with EC Power
Power output of boiler (kW)	285	Boiler information sheet – ELCO R600
Power output of CHP (kW)	38.7	CHP information sheet – EC Power XRG 20
Time for which boilers will be in use (hrs/year)	8,030	Assumed 22 hours use per day (worst case)
Time for which CHP will be in use (hrs/year)	6,205	Assumed 17 hours use per day

### 2.2.2. Building Emissions Benchmark

The Building Emissions Benchmark (BEB) value derived from the PSU for the development is 26.2gNO<sub>x</sub>/m<sup>2</sup>/annum for Class C3 (residential), 30.8gNO<sub>x</sub>/m<sup>2</sup>/annum for Class B1 (business), 31.0gNO<sub>x</sub>/m<sup>2</sup>/annum for Class D1 (community room) and 22.6gNO<sub>x</sub>/m<sup>2</sup>/annum (retail). 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**.

As the development utilises gas boilers only, calculation of the PM<sub>10</sub> emissions benchmark is not required, as this only applies to boilers powered by oil or solid fuels.

**Table 2.2: Building Emission Benchmark Calculations**

Land Use	Class	Total Area (m <sup>2</sup> )	BEB (gNO <sub>x</sub> /m <sup>2</sup> /annum)	BEB (kgNO <sub>x</sub> /annum)
Residential	C3	14,547	26.2	381.131
Business	B1	871	30.8	26.833
Community Room	D1	62	31.0	1.922
Retail	A1	891	22.6	20.137
<b>Total</b>				<b>430.02</b>

### 3. RESULTS

#### 3.1. Calculated Transport Emissions

As outlined in **Section 2.1**, it is not necessary to calculate the transport emissions associated with the development as the development is essentially car-free, aside from the 12 disabled car parking bays on-site.

#### 3.2. Calculated Buildings Emissions

Using the information presented in **Table 2.1**, the Development Building Emissions (DBE) have been calculated in accordance with the methodology presented in the PSU.

The results, which are shown in **Table 3.1**, identifies that the DBE is considerably less than the BEB, by an amount of 102.2kg per year. Accordingly, mitigation will not be required.

**Table 3.1: Calculation Parameters for development building emissions**

Calculation Descriptor	NO <sub>x</sub> emissions (kg/year)
Calculated development building emissions (DBE)	327.8
Building Emissions benchmark (BEB)	430.02
Difference	<b>-102.2</b>



## 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.

As the development is virtually car-free, with the exception of 12 disabled parking bays, and development traffic would not be generated onto local roads, it is not necessary to calculate a transport emissions footprint and accordingly the Transport Emissions Benchmark is met.

The calculated building emissions footprint is significantly lower than the Building Emissions Benchmark (BEB) for the development and as such mitigation not is required.

## Appendix 1 Site Location

## Appendix 1: Site Location Plan with Existing Receptors





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