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12-13 Eldon Grove, Hampstead, NW3 5PT



Air Quality Statement

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Executive Summary

WYG have undertaken an Air Quality review to present the findings of an investigation regarding the suitability of a premises for residential use in terms of air quality at the existing property at 12-13 Eldon Grove, Hampstead, NW3 5PT.

Following a review of the baseline conditions, measurements taken from the London Air Emissions Index, LondonAir, Local Monitoring Data, and Defra Backgrounds, there is not predicted to be an exceedance of the AQO for NO_2 or PM_{10} at 12-13 Eldon Grove, Hampstead, NW3 5PT. The site is therefore suitable for residential use.



1. Introduction

WYG have undertaken an Air Quality review to present the findings of an investigation regarding the suitability of a premises for residential use in terms of air quality at the existing 12-13 Eldon Grove, Hampstead, NW3 5PT.

1.1 Site Location and Context

The site is bounded to the north and east by residential properties, and to the south and west by Eldon Grove and residential properties. The approximate site United Kingdom National Grid Reference (NGR) is approximately 526859, 185444.



2. Policy and Planning Context

2.1 Legislation and Policy Background

European Legislation

European air quality legislation is consolidated under Directive 2008/50/EC, which came into force on 11th June 2008. This Directive consolidates previous legislation which was designed to deal with specific pollutants in a consistent manner and provides new air quality objectives for fine particulates, and includes:

- **Directive 1999/30/EC** the First Air Quality "Daughter" Directive sets ambient air limit values for nitrogen dioxide and oxides of nitrogen, sulphur dioxide, lead and particulate matter;
- **Directive 2000/69/EC** the Second Air Quality "Daughter" Directive sets ambient air limit values for benzene and carbon monoxide; and,
- Directive 2002/3/EC the Third Air Quality "Daughter" Directive seeks to establish longterm objectives, target values, an alert threshold and an information threshold for concentrations of ozone in ambient air.

The fourth daughter Directive was not included within the consolidation and is described as:

Directive 2004/107/EC – sets health-based limits on polycyclic aromatic hydrocarbons, cadmium, arsenic, nickel and mercury, for which there is a requirement to reduce exposure to as low as reasonably achievable.

UK Legislation

The Air Quality Standards Regulations (Amendments 2016) seek to simplify air quality regulation and provide a new transposition of the Air Quality Framework Directive, First, Second and Third Daughter Directives and also transpose the Fourth Daughter Directive within the UK. The Air Quality Limit Values are transposed into the updated Regulations as Air Quality Standards, with attainment dates in line with the European Directives. SI 2007 No. 64 Regulation 14 extends powers, under Section 85(5) of the Environment Act (1995), for the Secretary of State to give directions to Local Authorities (LAs) for the implementation of these Directives.

The UK Air Quality Strategy is the method for implementation of the air quality limit values in England, Scotland, Wales and Northern Ireland and provides a framework for improving air quality and protecting human health from the effects of pollution.



For each nominated pollutant, the Air Quality Strategy sets clear, measurable, outdoor air quality standards and target dates by which these must be achieved; the combined standard and target date is referred to as the Air Quality Objective (AQO) for that pollutant. Adopted national standards are based on the recommendations of the Expert Panel on Air Quality Standards (EPAQS) and have been translated into a set of Statutory Objectives within the Air Quality (England) Regulations (2000) SI 928, and subsequent amendments.

The AQOs for pollutants included within the Air Quality Strategy and assessed as part of the scope of this report are presented in Table 2.1 along with European Commission (EC) Directive Limits and World Health Organisation (WHO) Guidelines.

Pollutant	Applies	Objective	Concentration Measured as	Date to be achieved and maintained thereafter	European Obligations	Date to be achieved and maintained thereafter	New or existing
PM ₁₀	UK	50µg/m ³ by end of 2004 (max 35 exceedances a year)	24-hour mean	1 st January 2005	50µg/m ³ by end of 2004 (max 35 exceedances a year)	1 st January 2005	Retain Existing
	UK	40µg/m ³ by end of 2004	Annual mean	1 st January 2005	40µg/m³	1 st January 2005	
PM _{2.5}	UK	25µg/m³	Annual Mean	31 st December 2010	25µg/m³	1 st January 2010	Retain Existing
NO ₂	UK	200µg/m ³ not to be exceeded more than 18 times a year	1-Hour Mean	31 st December 2005	200µg/m ³ not to be exceeded more than 18 times a year	1 st January 2010	Retain Existing
	UK	40µg/m³	Annual Mean	31 st December 2005	40µg/m³	1 st January 2010	

Table 2.1 Air Quality Standards, Objectives, Limit and Target Values

Within the context of this assessment, the annual mean objectives are those against which facades of residential receptors will be assessed and the short-term objectives apply to all other receptor locations, where people may be exposed over a short duration, both residential and non-residential such as using gardens, balconies, walking along streets, using playgrounds, footpaths or external areas of employment uses.

Local Air Quality Management

Under Section 82 of the <u>Environment Act</u> (1995) (Part IV) Local Authorities (LAs) are required to periodically review and assess air quality within their area of jurisdiction under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves assessing present and likely future air quality against the AQOs. If it is predicted that levels at the façade of buildings where members of the public are regularly present (normally residential properties) are likely to be exceeded, the LA is required to declare an



Air Quality Management Area (AQMA). For each AQMA, the LA is required to produce an Air Quality Action Plan (AQAP), the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

National Policy

The National Planning Policy Framework (NPPF), revised February 2019, principally brings together and summarises the suite of Planning Policy Statements (PPS) and Planning Policy Guidance (PPG) which previously guided planning policy making. The NPPF states that:

'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 or 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 or 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'.

The Planning Practice Guidance (PPG) web-based resource was updated by the Ministry for Housing, Communities and Local Government (MHCLG) on 1st November 2019 to support the National Planning Policy Framework and make it more accessible. A review of PPG: Air Quality identified the following guidance (Paragraph: 001 Reference ID: 32-001-20191101):

"The 2008 Ambient Air Quality Directive sets legally binding limits for concentrations in outdoor air of major air pollutants that affect public health such as particulate matter (PM₁₀ and PM_{2.5}) and nitrogen dioxide (NO₂).

The UK also has national emission reduction commitments for overall UK emissions of 5 damaging air pollutants:

- fine particulate matter (PM_{2.5})
- ammonia (NH₃)
- nitrogen oxides (NO_x)
- sulphur dioxide (SO₂)
- non-methane volatile organic compounds (NMVOCs)

As well as having direct effects on public health, habitats and biodiversity, these pollutants can combine in the atmosphere to form ozone, a harmful air pollutant (and potent greenhouse gas)



which can be transported great distances by weather systems. Odour and dust can also be a planning concern, for example, because of the effect on local amenity."

Regional Policy

The London Borough of Camden lies within the Greater London Authority (GLA) Area. The London Plan addresses the improvement of air quality. Policy 7.14 within the London Plan specifically relates to air quality improvement:

'Policy 7.14 Improving Air Quality

A. The Mayor recognises the importance of tackling air pollution and improving air quality to London's development and the health and well-being of its people. He will work with strategic partners to ensure that the spatial, climate change, transport and design policies of this plan support implementation of his Air Quality and Transport strategies to achieve reductions in pollutant emissions and minimise public exposure to pollution.

Planning Decisions

- A. Development proposals should: minimise increased exposure to existing poor air quality and make provision to address local problems of air quality (particularly within Air Quality Management Areas (AQMAs) and where development is likely to be used by large numbers of those particularly vulnerable to poor air quality, such as children or older people) such as by design solutions, buffer zones or steps to promote greater use of sustainable transport modes through travel plans (see policy 6.3)
- B. promote sustainable design and construction to reduce emissions from the demolition and construction of buildings following the best practice guidance in the GLA and London Councils' 'The control of dust and emissions from construction and demolition'
- *C.* be at least 'air quality neutral' and not lead to further deterioration of existing poor air quality (such as areas designated as Air Quality Management Areas (AQMAs)
- D. ensure that where provision needs to be made to reduce emissions from a development, this is usually made on-site. Where it can be demonstrated that on-site provision is impractical or inappropriate, and that it is possible to put in place measures having clearly demonstrated equivalent air quality benefits, planning obligations or planning conditions should be used as appropriate to ensure this, whether on a scheme by scheme basis or through joint area based approaches
- E. where the development requires a detailed air quality assessment and biomass boilers are included, the assessment should forecast pollutant concentrations. Permission should only be granted if no adverse air quality impacts from the biomass boiler are identified.



The London Plan (Intend to Publish) has also been reviewed for any policies relevant to Air Quality. Policy SI1, Improving Air Quality, was identified as relevant and has been outlined below;

"SI1: Improving Air Quality;

Local Policy

- 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:
 - *i. lead to further deterioration of existing poor air quality*
 - *ii. 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*
 - *iii. 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 should demonstrate that design measures have been used to minimise exposure.
- 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.



Local Policy

London Borough of Camden (LBC) adopted The Camden Plan in July 2017 which outlines the Council's broad planning strategy. Following a review of policies within the Camden Plan, the following was identified as being relevant to the proposed development from an air quality perspective:

"Policy CC4: Air quality

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."

The development complies with both of these policies.



3. Baseline Conditions

3.1 Air Quality Review and Assessment

This section provides a review of the existing air quality in the vicinity of the proposed development site in order to provide a benchmark against which to assess potential air quality impacts of the proposed development. Baseline air quality in the vicinity of the proposed development site has been defined from a number of sources, as described in the following sections.

Air Quality Review

As required under section 82 of the Environment Act 1995, The London Borough of Camden (LBC) has conducted an ongoing exercise to review and assess air quality within its area of jurisdiction. The assessments have indicated that concentrations of NO₂ are above the relevant AQOs at a number of locations of relevant public exposure within the Borough. LBC therefore has one designated Air Quality Management Area (AQMAs) as outlined below;

• Camden AQMA: An area encompassing the whole borough.

The proposed development site is located within the Camden AQMA, but as the AQMA is borough wide this does not necessarily mean that levels at the site are above the relevant NO₂ objective at all locations within the borough.

Air Quality Monitoring

Monitoring of air quality within LBC is undertaken through continuous and non-continuous monitoring methods. These have been reviewed in order to provide an indication of existing air quality in the area surrounding the proposed development site.

Continuous Monitoring

LBC operated four automatic monitoring locations during 2019. The closest automatic monitoring station is located 1 km south west of 12-13 Eldon Grove, NW3 5PT. The representative continuous monitoring data is from 2018, which is presented in Table 3.1.



Table 3.1 Automatic Monitoring Locations

Site ID	Location	Site Type	Distance to Kerb of Nearest Road (m)	Inlet Height (m)	NO ₂ Annual Mean Concentration 2019 (µg/m ³)
B0	London Bloomsbury	Urban Background	27	4	32
CD1	Swiss Cottage	Kerbside	1.5	3	43
CD9	Euston Road	Kerbside	0.5	2.5	70
KGX Coopers Lane		Urban Background/Industrial	55	2.5	-

Non-continuous Monitoring

LBC operated a network of diffusion tube monitoring locations during 2019. The closest diffusion tube monitoring is located 384m south west of 12-13 Eldon Grove, NW3 5PT. The representative continuous monitoring data is from 2019, which is presented in Table 3.2.

Table 3.2 Diffusion Tube Monitori	ing Locations
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Site ID	Location	Site Type	Distance to Kerb of Nearest Road (m)	Inlet Height (m)	NO ₂ Annual Mean Concentration 2019 (µg/m ³)
CA25A	Emmanuel Primary School	Roadside	2	2	37.88
CA7	Frognal Way	Urban Background	30	3	22.82
CA17	47 Fitzjohn's Avenue	Roadside	5	2	42.53
CA15	Swiss Cottage	Kerbside	<1	2.5	49.74
CTLEN1	Haverstock Hill	Roadside	0.5	2.2	32.31

It should be noted that all of these locations (with the exception of CA7 Urban Background) are next to busy roads, whereas the site is located on a relatively minor road.

3.2 Background Concentrations

Background sources of pollutants include industrial, domestic and rail emissions within the vicinity of the study site. Background concentrations were referenced from the UK National Air Quality Information Archive database based on the National Grid Co-ordinates of 1×1 km grid squares nearest to the development site.

The updated mapped background concentrations for the 2019 are summarised in Table 3.3 below.



UK NG	GR(m)	2019				
X	Y	NO ₂	NOx	PM 10	PM _{2.5}	
526500	185500	26.27	40.44	17.85	11.67	
527500	185500	26.93	41.88	18.01	11.82	
525500	185500	25.89	39.49	18.41	11.93	
526500	184500	30.29	48.70	19.22	12.30	

Table 3.3 Published Background Air Quality Levels (µg/m³)

The predicted background concentrations of NO₂ in the vicinity of 12-13 Eldon Grove, NW3 5PT are below the objective and range between 64.73% to 75.73% of the relevant the AQO of 40 μ g/m³.

The predicted background concentrations of PM_{10} in the vicinity of the proposed development site are below the objective and range between 44.63% to 48.05% of the relevant the AQO of 40 μ g/m³.

London Air Background Maps

London Air is the website of the London Air Quality Network (LAQN), and shows air pollution in London and south east England. The website provides information for the public, for policy users, and for scientists. Figure 3.1 below illustrates shows the annual mean pollution as modelled by Londonair for NO₂ during 2016 in detail across London.



Figure 3.1 London Air Background Map at Proposed Development

Based on Figure 3.1 the London Air 2016 Background Concentration map shows a concentration of around 40



µg/m³ at 12-13 Eldon Grove, NW3 5PT, equal to the air quality objective of 40µg/m³.



Figure 3.2 Proposed Site Location

Local Authority Monitoring Background

London Borough of Camden Diffusion Tube Monitoring on Haverstock Hill (CTLEN1), to the south east of 12-13 Eldon Grove, NW3 5PT, is shown to monitor NO₂ at 32.31 μ g/m³. When inputting the relevant information into Defra's NO₂ 'fall off with distance' calculator, the calculated NO₂ level at the site would be 27.6 μ g/m³. This is based upon the site being located 40m from the kerb of A502, rounded down as a worst case as the site is located approximately 46m south west of A502. Calculations using the 'fall off with distance' calculator are shown in Figure 3.3 below.



4. Conclusions

WYG have undertaken an air quality review to present the findings of an investigation regarding the suitability of a premises for residential use in terms of air quality at the existing 12-13 Eldon Grove, Hampstead, NW3 5PT.

Measurements taken from the London Air Emissions Index, LondonAir, Local Monitoring Data, and Defra Backgrounds, show that concentrations of NO₂, the primary pollutant of concern at the premises, is below the Air Quality Objective of 40 µg/m³. The site is therefore considered suitable for residential use.



Appendix A Report Terms & Conditions

This Report has been prepared using reasonable skill and care for the sole benefit of James Vogl ("the Client") for the proposed uses stated in the report by [WYG Environment Planning Limited] ("WYG"). WYG exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder's permission.

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The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The "shelf life" of the Report will be determined by a number of factors including; its original purpose, the Client's instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors.