Land Adjacent to 1 St Johns Wood Park

Basic / Screening Air Quality Assessment

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Comments

Comments

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1. Introduction

1.1. This Basic/ Screening Air Quality Assessment has been prepared by Waterman Infrastructure & Environment to accompany the planning application for the redevelopment of land adjacent to 1 St Johns Wood Park, London, NW8 6QS (hereafter referred to as the 'Site') to provide nine residential dwellings, cycle storage, refuse storage and plant (hereafter referred to as the 'Proposed Development').

1.2. The Site is located within the administrative area of London Borough of Camden (LBC). LBC has designated an Air Quality Management Area (AQMA) for exceedances of the annual mean nitrogen dioxide (NO_2) objective and the 24-hour mean objective for particulate matter with a diameter of less than 10 micrometres (µm) (PM_{10}). The AQMA covers the whole Borough. Consequently, the Site is located within this AQMA.

1.3. LBC has its own guidance[1] which sets out the criteria for when an air quality assessment is required to accompany a planning application and the methodology for such an assessment. The LBC Guidance states an assessment is required for the following types of applications:

- *All major development;*
- *Any development involving biomass boilers, biomass or gas CHP (including connections to existing networks where the increased capacity is not already covered in an existing AQA);*
- *Substantial earthworks or demolition; or*
- *Any development that could have a significant impact on air quality either directly or indirectly.*

1.4. The guidance states the following air quality assessment is also required:

- *The AQA needs to consider measures to reduce any impact to acceptable levels. This should be proportionate to the scale and type of development.*
- *A basic AQA should be submitted for new buildings/ substantial refurbishments and changes of use where occupants will be exposed to poor air quality.*
- *You must submit more detailed AQAs on the following types of development:*
  - *Major applications where the occupants will be exposed to poor air quality where the development is located along a busy road, diesel railway lines, or generally congested area;*
  - *The development has more than 75 new residences;*
  - *commercial developments with a floorspace of 2,500 sqm floorspace or more;*
  - *development involving substantial earthworks or demolition;*
  - *development with the potential to significantly change road traffic on any busy roads (those in excess of 10,000 vehicles per day); and*
  - *development that introduces sensitive uses into an area of poor air quality.*

1.5. Given the Site is highly accessible to public transport (a Public Transport Accessibility Level rating of 6a (High Level), detailed in the Transport Statement) the Proposed Development does not include any car parking and is therefore car free. In addition, the Energy Strategy of the Proposed Development includes the use of Air Source Heat Pumps (ASHP) located on the roof. As such the Proposed Development does not include any emissions to air during its operation and, based on the above criteria, an air quality assessment of the operation phase is not considered necessary.

1.6. During consultation (see **Appendix A: London Borough of Camden Consultation)**, LBC's Sustainability Officer (Planning) has requested an air quality assessment is undertaken to quantify

[1] London Brough Camden (2018) Camden's Local Area Requirements for Planning Applications

air quality conditions future users of the Proposed Development would be exposed too and to ensure the Proposed Development does not introduce sensitive uses into an area of poor air quality.

1.7. To consider air quality conditions future users of the Proposed Development would be exposed to a Basic/ Screening Air Quality Assessment has been undertaken. This approach has been discussed with LBC and the Sustainability officer (Planning), as detailed in **Appendix A: London Borough of Camden Consultation**.

1.8. During the construction phase, the 2014 IAQM Guidance[2] states with the implementation of appropriate mitigation measures, the impact of construction activities on air quality can be non-significant. A Construction Environmental Management Plan will be attached to a planning permission, which will set out the controls measures in place during all site preparation and construction activities. In addition, all construction traffic logistics will be agreed with LBC. The construction traffic logistics will be attached to a planning permission and will avoid, or limit use of, traffic routes in proximity to sensitive routes (i.e. residential roads, etc.) and the avoidance (or limited) use of roads during peak hours, where practicable. All construction plant will need to adhere to the emissions standards for NO_2 and PM_{10} set out for Non-Road Mobile Machinery (NRMM). As such it is considered the likely effect on local air quality from the construction phase will be **not significant** and has not been considered further.

1.9. Section 2 of this Air Quality Assessment gives a summary of legislation, planning policy, and guidance relevant to air quality. Section 3 provides a summary of the baseline conditions and considers the future air quality conditions residential users would be exposed to. The main findings and conclusions of the assessment is given in Section 4.

[2] Institute of Air Quality Management (2015). Assessment of dust from demolition and construction. IAQM. London.

2. Air Quality Legislation, Planning Policy and Guidance

Legalisation

European Legalisation

EU Framework Directive 2008/50/EC, 2008

2.1. Air pollutants at high concentrations can give rise to 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.

2.2. The EU Framework Directive 2008/50/EC[3] 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.

National Legislation

Air Quality Standards Regulations, 2010

2.3. The Air Quality Standards Regulations[4] 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 the implementation.

The UK Air Quality Strategy, 2007

2.4. The current UK Air Quality Strategy (AQS)[5], sets out the objectives for Local Planning Authorities (LPA) in undertaking their Local Air Quality Management (LAQM) duties. The UK AQS objectives of air pollutants relevant to transport emissions are summarised in **Table 1**.

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 Defra, 2007. 'The Air Quality Strategy for England, Scotland, Wales & Northern Ireland'

Table 1: Summary of Traffic Related AQS Objectives Pollutants

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

2.9. Under Part IV of the Environment Act 1995[6] , 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 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.

2.10. LBC has designated the entire Borough as an AQMA for annual mean NO_2 and 24-hour mean PM_{10}. Details of LBC's Air Quality Action Plan and a summary of the LBC review and assessment of air quality are provided later in this Report.

Planning Policy

National Planning Policy

National Planning Policy Framework, 2018

2.11. The National Planning Policy Framework (NPPF)[7], published in July 2018, sets out the Government's planning policies for England and how these should be applied, replacing the first NPPF published in March 2012[8].

2.12. Paragraph 170 (previously 109) states "… *Development should, wherever possible, help to improve local environmental conditions such as air and water quality* …"

2.13. Furthermore, Paragraph 180 (previously 124) states "…*Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement…".*

6 Office of the Deputy Prime Minister (ODPM), 1995, 'The Environment Act' 1995.
7 Department for Communities and Local Government, 2018, 'National Planning Policy Framework'. DCLG, London.
8 Department for Communities and Local Government, 2012, 'National Planning Policy Framework'. DCLG, London.

Planning Practice Guidance, 2014

2.14. The Government's online Planning Practice Guidance[9] (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.

Regional Planning Policy

The London Plan: The Spatial Development Strategy for Greater London; Consolidated with Alterations since 2011, 2016

2.15. Policy 7.14 'Improving Air Quality' of the adopted consolidated London Plan[10] states that development proposals should:

"A. 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 approach; and

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."

9 DCLG (2014), 'Planning Practice Guidance: Air Quality (ID 32)' (06 March 2014).
10 Greater London Authority (2016): The London Plan –– The Spatial Development Strategy for London consolidated with alterations since 2011, GLA, London.

Draft New London Plan, 2017

2.16. The Mayor of London's Draft New London Plan[11] is currently being prepared after consultation ended in March 2018. The final Plan will also take account of the comments received during the consultation process and the recommendations of the panel that conduct the Examination in Public. The document will run from 2019 to 2041 to provide a longer-term view of London's development to inform decision making.

2.17. Policy SI1 Improving air quality states that:

'*London's air quality should be significantly improved and exposure to poor air quality, especially for vulnerable people, should be reduced.*

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) reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality; and

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

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. Particular care should be taken with developments that are 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.

The development of large-scale redevelopment areas, such as Opportunity Areas and those subject to an Environmental Impact Assessment should propose methods of achieving an Air Quality Positive approach through the new development. All other developments should be at least Air Quality Neutral.

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.

Air Quality Assessments (AQAs) should be submitted with all major developments, unless they can demonstrate that transport and building emissions will be less than the previous or existing use.

Development proposals should ensure that where emissions need to be reduced, this is done on-site. Where it can be demonstrated that on-site provision is impractical or inappropriate, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated'.

A City for all Londoners, 2016

2.18. The Mayor of London's A City for All Londoners[12] document outlines the challenges and opportunities across priority policy areas in London, as well as the changes that City Hall wants to deliver over the next four years to improve air quality. The Mayor is committed to improving air quality through the design of 'Healthy Streets'. Such measures detailed include:

11 Mayor of London (2017) Draft New London Plan, Draft for Public Consultation, 2017 London
12 Mayor of London (2016) A City for All Londoners, London

- Introducing an emissions surcharge (or 'Toxicity Charge') in 2017 for high-polluting older vehicles in central London;
- Introducing a Central-London Ultra-Low Emission Zone (ULEZ) in 2019 and potentially enlarging the area it covers, up to the North and South Circular Roads for all vehicles and London wide for the most polluting heavy vehicles. The new ULEZ would incorporate the J1/M1;
- Replace diesel buses with green buses (hybrid or zero emission) this includes a retrofit scheme of 3000 buses outside central London by 2020;
- All buses in central London to be 'Euro 6' hybrid by 2019;
- All new buildings in London to be air quality positive to include reducing emissions and associated exposure;
- Planting trees on a busy road to provide a buffer between pedestrians and traffic, as well as absorbing pollutants to improve air quality; and
- Increase the use of cycling and walking.

London Environment Strategy, 2018

2.19. The London Environment Strategy[13] includes the following proposals to improve air quality:

- introducing the toxicity charge (T-charge) from October 2017 and introducing the Ultra-Low Emission Zone (ULEZ) 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's Site Allocations Proposed Submission Document, 2012

2.20. The LBC Site Allocations Document[14] states that:

"As set out in the Core Strategy, the Council will support and promote the Central London area of Camden as a successful and vibrant part of the capital to live in, work in and visit. We will:

2.21. *…continue to designate Central London as a Clear Zone Region to reduce congestion, promote walking and cycling and improve air quality."*

13 Greater London Authority, 2018. London Environment Strategy, May 2018
14 LBC, March 2012, 'Camden Site Allocations Proposed Submission Document'

London Borough of Camden Core Strategy 2010-2025, 2010

2.22. The LBC Core Strategy[15] sets out the key elements of the Council's vision for the Borough. Policy CS9 – 'Achieving a successful Central London' states:

"The Council will support and promote the Central London Area of Camden as a successful and vibrant part of the capital to live in, work in and visit. We will:

…k) continue to designate Central London as a Clear Zone Region to reduce congestion, promote walking and cycling and improve air quality;"

2.23. Policy CS16 - Improving Camden's health and well-being states:

"The Council will seek to improve health and well-being in Camden. We will:

…e) recognise the effect of poor air quality on health and implement Camden's Air Quality Action Plan which aims to reduce air pollution levels."

London Borough of Camden Development Policies 2010-2025, 2010

2.24. The LBC Development Policies 2010-2025[16] sets out the detailed planning criteria that LBC will use to determine applications for planning permission in the Borough. 'Policy DP32: 'Air quality and Camden's Clear Zone' states:

"The Council will require air quality assessments where development could potentially cause significant harm to air quality. Mitigation measures will be expected in developments that are located in areas of poor air quality.

2.25. *The Council will also only grant planning permission for development in the Clear Zone region that significantly increases travel demand where it considers that appropriate measures to minimise the transport effect of development are incorporated. We will use planning conditions and legal agreements to secure Clear Zone measures to avoid, remedy or mitigate the effects of development schemes in the Central London Area."*

2.26. The Site is located within the Clear Zone.

London Borough of Camden Local Plan, 2017

2.27. The Local Plan[17] replaced the Core Strategy and Camden Development Policies documents as the basis for planning decisions and future development in the borough. The Local Plan was adopted in July 2017.

2.28. 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

15 LBC, 2010, 'Camden Local Development Framework Camden Core Strategy 2012-2025 - Adopted Version 2010'
16 LBC, November 2010, 'Camden Development Policies 2010-2025 Local Development Framework'
17 LBC, 2016, Camden Local Plan Submission Draft 2016

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

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

2.29. 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 the 26th July 2017[18].

2.30. The revised plan focuses on reducing concentrations of NO_x and NO_2 around road vehicle emissions within the shortest possible time; the principal aims are 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.

2.31. 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.

2.32. The Consultation Document provides additional measures to reduce NO_x and NO_2 concentrations in the UK, further than the measures detailed in the adopted 2016 Plan. 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;

18 Defra (July 2017) Improving Air Quality in the UK: Tackling nitrogen dioxide in our towns and cities. UK Air Quality Plan for Tackling Nitrogen Dioxide

- 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.

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

2.34. A High Court ruling[19] on 21st February 2018, stated the UK Governments air quality improvement plan 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'*.

2.35. The judgement stated that the UK Government must produce a supplementary plan, setting out requirements for feasibility studies to be undertaken in 33 Local Authority Areas. DMBC is not one of the local authorities that is required to undertake a feasibility study.

2.36. In May 2018, it was announced the European Union (EU) was going to take the UK Government to the European Commission over failure to meet the Limit Values for NO_2.

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

2.37. 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.

2.38. 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".*

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

2.39. The Greater London Authority (GLA) Act 1999[20] requires the GLA to produce an AQS for Greater London that sets out air quality objectives (to be no less than national objectives) and present measures that the Mayor, GLA and London Boroughs will take towards meeting these objectives.

19 https://www.judiciary.gov.uk/judgments/the-queen-on-the-application-of-clientearth-no-3-claimant-v-secretary-of-state-for-environment-food-and-rural-affairs-and-othrs/

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

The Mayor's AQS[21] 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

2.40. The Sustainable Design and Construction Supplementary Planning Guidance[22] (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.

2.41. 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.

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

London Local Air Quality Management Policy Guidance, 2016

2.43. The Local Air Quality Management Policy Guidance LLAQM.PG (16)[23] 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.

2.44. 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.

London Borough of Camden Air Quality Action Plan, 2016-2018

2.45. The LBC Air Quality Action Plan (AQAP), Camden's Clean Air Action Plan 2016-2018[24] aims to continue to reduce concentrations of PM_{10} and $PM_{2.5}$, and to meet the EU Objective for NO_2. The key objectives of the plan are to:

21 Greater London Authority (2010), 'Clearing the air – The Mayor's Air Quality Strategy', GLA, London.
22 Greater London Authority (2014), 'Sustainable Design and Construction - Supplementary Planning Guidance', Greater London Authority, London.
23 Defra (2016), 'London Local Air Quality Management (LLAQM) Policy guidance 2016 (LLAQM.PG (16))', DEFRA, London.
24 LBC, 2013, 'Camden's Clean Air Action Plan 2016-2018'

- *“Encourage reductions in fossil fuel use, the adoption of clean fuels and low emission technology and promote energy efficiency;*
- *Raise awareness about air quality in Camden and promote lifestyle changes which can help reduce levels of air pollution and minimise exposure to air pollution;*
- *Improve the health and well-being of the local population, including those that work and visit Camden;*
- *Work in partnership with national and regional bodies, and with local public and private organisations, to foster and drive improvements in air quality;*
- *Lead by example and reduce NO2 and PM10 emissions associated with the Council’s own buildings and transport services; and*
- *Ensure actions which serve to reduce NO2 and PM10 emissions complement actions to mitigate CO2 emissions.”*

3. Baseline Conditions

London Borough of Camden Review and Assessment Process

3.1. Between 1998 and 2001 LBC undertook the first round of Review and Assessment of air quality[25], which concluded that it was necessary to declare the whole Borough as an AQMA for the annual mean objective for NO_2 and the 24-hour mean objective for PM_{10}.

3.2. The Updating and Screening Assessments (USAs) completed in August 2003[26], 2006[27] and 2009[28] concluded that the LBC AQMA designation should remain and no further air quality assessment was required.

3.3. The fourth round of Review and Assessment[29] identified that Camden no longer exceeded the 24-hour mean objective for PM_{10} at three of their automatic monitoring sites. However, LBC attributed this to the change in the methodology used to measure PM_{10} concentrations rather than improvements in emissions, and therefore, the AQMA order remained unchanged.

3.4. The fourth round of Review and Assessment additionally indicated that several diffusion tube sites and one automatic site at roadside locations exceeded the 1-hour mean NO_2 AQS objective. LBC undertook further modelling work to understand the spatial distribution of PM_{10} and NO_2 exceedances across the Borough. The modelling revealed that a number of roads in Camden which experience high volumes of traffic and a large proportion of HGV vehicles, exceeded both short and long term NO_2 and PM_{10} AQS objectives.

3.5. The report published by LBC as part of the fifth round of Review and Assessment[30] confirmed that the NO_2 annual mean AQS objective was still being exceeded at all the Council's automatic monitoring sites and most of the NO_2 diffusion tube sites. Although the report confirmed that PM_{10} concentrations now meet the AQS objectives at all monitoring sites, no amendment to the AQMA order has been suggested.

3.6. The latest report[31] published by LBC and available on their website confirmed the findings of the previous rounds of review and assessment and while there has been a declining trend in NO_2 levels across the borough, most levels exceeded the annual mean objective and therefore the AQMA should be retained.

Local Air Quality Monitoring

Bloomsbury Automatic Monitor

3.7. LBC currently undertakes air quality monitoring at four automatic monitors within the Borough. During consultation, LBC have considered the urban background automatic monitor at Bloomsbury, 4km to the south east of the Site, representative of concentrations at the Site (see **Appendix A: London Borough of Camden Consultation**). The monitoring results for NO_2 and PM_{10} at the Bloomsbury automatic monitor are presented in **Table 2** from 2013 to 2017.

25 LBC, June 1998, 'Statutory Review and Assessment of Air Quality in the London Borough of Camden Stages 1 and 2'
26 LBC, August 2003, 'Second Round of Review and Assessment of Air Quality: Updating and Screening Assessment'
27 LBC, August 2006, 'Third Round of Review and Assessment of Air Quality: Updating and Screening Assessment'
28 LBC, August 2009, '2009 Air Quality Updating and Screening Assessment for London Borough of Camden'
29 LBC, June 2010, '2009 Progress Report for London Borough of Camden'
30 LBC, July 2013, '2013 Air Quality Progress Report for the London Borough of Camden'
31 LBC, May 2017, 'LB Camden Air Quality Annual Status Report for 2016'

Table 2: Measured Concentrations at the Bloomsbury Urban Background Monitor

Pollutant	Averaging Period	AQS Objective	2013	2014	2015	2016	2017
NO_2	Annual Mean (µg/m^3)	40µg/m^3	**44**	**45**	**48**	**42**	38
	1-Hour Mean (No. of Hours)	200µg/m^3 not to be exceeded more than 18 times a year	**0**	0	0	0	0
PM_{10}	Annual Mean (µg/m^3)	40µg/m^3	18	20	22	20	19
	24-Hour Mean (No. of Days)	50µg/m^3 not to be exceeded more than 35 times a year	4	11	6	9	6
$PM_{2.5}$	Annual Mean (µg/m3)	25µg/m^3	-	-	11	12	13

Notes: Data obtained from LBC Air Quality Annual Status Report for 2017
Exceedences of the AQS Objectives shown in **bold** text.

3.8. The data in **Table 2** shows the annual mean NO_2 AQS objective of 40µg/m^3 was exceeded between 2013 to 2016 but was below the annual mean NO_2 AQS objective in 2017 (as 38µg/m^3).

3.9. Whilst not presented in **Table 2**, as the data is still being collected and is unadjusted, the annual mean NO_2 monitoring data for 2018 at the Bloomsbury automatic monitor shows concentrations below the AQS objective (as 36µg/m^3 at the time of writing)[32].

3.10. As shown in **Table 2**, from 2013 to 2017 (2018 if the unadjusted results are considered) there has been a decline in annual mean NO_2 concentration, with a year on year decline from 2015 to 2017 (or 2018).

3.11. The NO_2 1-hour mean objective and the PM_{10} and $PM_{2.5}$ objectives were met in all years.

Frognal Way Urban Background NO_2 Diffusion Tube

3.12. LBC also use NO_2 diffusion tubes to monitor air quality at 14 locations throughout the Borough. This includes an urban background diffusion tube at Frognal Way, approximately 1.7km north of the Site.

3.13. The results for the latest years from the Frognal Way diffusion tube are presented in **Table 3**.

Table 3: Measured NO_2 Concentrations at the Frognal Way Diffusion Tubes (µg/m^3)

ID	Site	Classification	Distance to centre of Site (km)	2013	2014	2015	2016	2017
CA7	Frognal Way	Urban Background	1.7	31.95	28.55	27.78	27.91	29.10

Notes: 2013-2016 Data obtained from LBC Air Quality Annual Status Report for 2016, 2017 Data from: https://opendata.camden.gov.uk/stories/s/Camden-Air-Quality-Monitoring/bmrm-k7pv/
Exceedences of the AQS Objectives shown in **bold** text.

3.14. The results in **Table 3** shows the annual mean NO_2 AQS objective of 40µg/m^3 was met in all years between 2013 and 2017.

Defra Air Quality Background Maps

3.15. In addition to the urban background 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 1 x 1km grid squares for assessment years between 2015 and 2030. **Table 4** presents the Defra background concentrations for the year 2017 for the grid square the Site is located within (526500,184500).

[32] http://www.londonair.org.uk

Table 4: Defra Background Map in 2017 for the Grid Square at the Location of the Site

Pollutant	Annual Mean Concentration (µg/m^3)	AQS Objective
NO_x	51.1	-
NO_2	31.8	40µg/m^3
PM_{10}	18.8	40µg/m^3
$PM_{2.5}$	11.9	25µg/m^3

3.16. The data in **Table 4** shows that all pollutants are below the respective AQS objectives. The Defra background map annual mean NO_2 concentration (of 31.8µg/m^3) is lower than the 2017 monitored concentration at the Bloomsbury automatic monitor (of 38µg/m^3). The Defra background map is higher than the Frognal Way diffusion tube in 2017 (of 29.10µg/m^3).

London Atmospheric Emissions Inventory

3.17. The London Atmospheric Emissions Inventory (LAEI) and associated pollution maps, produced by the GLA, provide detailed estimates of pollution levels London-wide for select years. The maps for the latest predicted year is 2020 and the pollutant concentrations at the Site (grid reference as 526500,184000) are shown below in **Table 5**.

Table 5: LAEI Maps in 2020 for the Grid Square at the Location of the Site

Pollutant	Annual Mean Concentration (µg/m^3)	AQS Objective
NO_x	59.6	
NO_2	35.6	40µg/m^3
PM_{10}	24.3	40µg/m^3
$PM_{2.5}$	15.0	25µg/m^3

Notes Data Source: https://data.london.gov.uk/dataset?q=laei

3.18. The data in **Table 5** shows that all pollutants are below the respective AQS objectives.

Predicted Future Exposure (Residential Users)

3.19. During consultation with LBC the Sustainability Officer (Planning) has requested background concentrations at the Site should be determined by comparing the Bloomsbury automatic air quality monitor (average of the most recent years) against the Defra background map. The highest concentration should then be used.

3.20. The Defra background map annual mean NO_2 concentration (of 31.8µg/m^3) is lower than the 2017 monitored concentration at the Bloomsbury automatic monitor (of 38µg/m^3) and is lower than the average of the most recent years of monitoring at the Bloomsbury automatic monitor (as 43.4µg/m^3, not taking account of the 2018 unadjusted monitoring data). If the average concentration from the Bloomsbury monitor is considered to be representative of concentrations at the Site, then the Proposed Development is above the AQS objective for annual mean NO_2.

3.21. However, the average from the Bloomsbury automatic monitor is unrealistic as the data does not take account of the following factors:

- as shown in **Table 2**, the improvements in annual mean NO_2 concentrations from 2013 to 2017 at the Bloomsbury automatic monitor and the year on year decline from 2015 to 2017 (or 2018);
- annual mean NO_2 concentrations are below the AQS objective in 2017 (and 2018) at the Bloomsbury automatic monitor (see **Table 2**); in all years at the Frognal Way diffusion tube (see

Table 3); in 2017 at the Defra Air Quality map (see **Table 4**); and in 2020 at the LAEI map (see **Table 5**);

- all monitoring data is taken from head height and does not take account of conditions improving with height due to the greater distance from direct tailpipe emissions, allowing for greater mixing and dilution of vehicle emission;
- improvements in NO_2 concentrations following the recent UK High Court Ruling, which requires NO_2 concentrations to be reduced in the shortest timescale possible (see 'UK Air Quality Plan for Tackling Nitrogen Dioxide' in **Section 2: Air Quality Legislation, Planning Policy and Guidance**);
- the UK Government's commitment to ban diesel and petrol cars by 2040 and the promotion of zero emission vehicles; and
- the Mayor of London's measures to improve air quality in the shortest timescale possible (see measures as listed under 'A City for all Londoners' in **Section 2: Air Quality Legislation, Planning Policy and Guidance**).

3.22. Taking account of the above it is considered air quality conditions at the Site are likely to be below the annual mean NO_2 AQS objective. However, for the purposes of this assessment a conservative approach has been considered and the design of the Proposed Development has considered conditions at the Site to be above the annual mean NO_2 AQS objective.

3.23. The EPUK and IAQM guidance states:

"Where the air quality is such that an air quality objective at the building façade is not met, the effect on residents or occupants will be judged as significant, unless provision is made to reduce their exposure by some means"

3.24. Consequently, the Proposed Development includes a mechanical ventilation strategy with air being taken from the roof. Given the results from the closest monitoring (**Tables 2** and **3**) and the predicted mapped conditions at the Site (**Tables 4** and **5**) it is considered taking air from height is suitable, as the air is away from direct tailpipe emissions, and the most recent monitoring for head height show concentrations are currently below the AQS objective.

3.25. Taking account of the approach to mechanical ventilation, following the EPUK and IAQM guidance it is considered residential exposure is adequately mitigated and the effects of air quality on future users is **not significant**.

4. Summary and Conclusions

4.1. This Basic/ Screening Air Quality Assessment has been undertaken to accompany the planning application for the redevelopment of land adjacent to 1 St Johns Wood Park, London, NW8 6QS to provide nine residential dwellings, cycle storage, refuse storage and plant.

4.2. The Proposed Development does not include any car parking and is therefore car free. In addition, the Energy Strategy of the Proposed Development includes the use of ASHP located on the roof. As such the Proposed Development does not include any emissions to air during its operation.

4.3. Given the above, during consultation with LBC the Sustainability Officer (Planning) has requested an air quality assessment is undertaken to quantify air quality conditions future users of the Proposed Development would be exposed to.

4.4. To determine concentrations at the Site, LBC has requested the average monitored data for the most recent years from the Bloomsbury automatic air quality monitor should be compared against the Defra air quality background maps for the Site. The highest concentration should then be used. Details of the consultation are included in **Appendix A: London Borough of Camden Consultation**.

4.5. The average concentration from the Bloomsbury monitor is above the AQS objective for annual mean NO_2. However, this approach is conservative and does not take account of the most recent monitoring background data which shows NO_2 concentrations are below the AQS objective or the wider London and National Government measures to improve air quality in the shortest timescale possible.

4.6. For the purposes of this assessment, the Site has been considered to be above the AQS objective and the Proposed Development includes a mechanical ventilation strategy with air being taken from the roof.

4.7. It is considered taking air from roof height is suitable, as the air is away from direct tailpipe emissions, and the most recent urban background monitoring (for head height) shows NO_2 concentrations are currently below the AQS objective.

4.8. Taking account of the approach to mechanical ventilation, and following Air Quality Guidance, it is considered residential exposure is adequately mitigated and the effects of air quality on future users is **not significant**.

APPENDIX A: LONDON BOROUGH OF CAMDEN CONSULTATION

From: Frost, Katherine <Katherine.Frost@camden.gov.uk>
Sent: 18 December 2018 14:16
To: Guido Pellizzaro <guido.pellizzaro@watermangroup.com>
Cc: Farrant, Ben <Ben.Farrant@camden.gov.uk>
Subject: RE: St Johns Wood - Air Quality

Dear Guido

The use of Defra background concentrations is the method in London Local Air Quality Management (LLAQM) Technical Guidance 2016 and IAQM guidance on Land-Use Planning and Development Control: Planning For Air Quality 2017 . The Defra figure for the site and Bloomsbury station data should be compared (Average of most recent years valid data sets), and the higher of the two applied for the scheme assessment.

The maps published by the LAEI are used to determine if the area is a poor AQ area or not and are not background maps, but predictions of total concentrations within 20m grids.

Please note we do not accept future projected data in any case due to continuing uncertainty about the trajectory of AQ in the UK.

Kind regards

Katherine

Katherine Frost
Senior Sustainability Officer (Planning)
Telephone: 020 7974 5922

From: Guido Pellizzaro <guido.pellizzaro@watermangroup.com>
Sent: 18 December 2018 12:23
To: Frost, Katherine <Katherine.Frost@camden.gov.uk>
Cc: Farrant, Ben <Ben.Farrant@camden.gov.uk>
Subject: RE: St Johns Wood - Air Quality

Hi Katherine,

Thanks for the response, much appreciated.

I have looked into the area and the predicted conditions at the Site at bit further, and my view is that future users would not be explored to poor air quality.

I note the LAEI maps (for 2013 as provided) show conditions are above the AQS objective (as 44.5µgm-3). However the 2020 LAEI maps (which are closest to the opening year of the Development) are predicting conditions at the Site will be below the objective (as 35.6µgm-3) and thus suitable for residential exposure. Also the LAEI maps are based on projections and do not take account of concentrations above ground floor or the building topography (acting as screens) and thus are showing the worst conditions from Finchley Road only.

Also the London wide mitigation measures such as the ULEZ/ improvements to the bus fleet etc etc will improve local conditions and the concentrations presented in the LAEI maps.

Given the concern on air quality, the development is car free and uses air source heat pumps and so there are no emissions from its operation. With regards to residential exposure, this has already been considered within the design with ventilation intakes from height, which is considered adequate mitigation given the 2020 LAEI maps.

Based on the above, and considering Camden Guidance, I would consider a basic or screening assessment is applicable.

Would you agree with this approach, given the additional information?

Thanks

Guido Pellizzaro

Associate Director – Air Quality

Waterman Infrastructure & Environment Ltd

Linkedin Contact: https://www.linkedin.com/in/guido-pellizzaro-5b045273/

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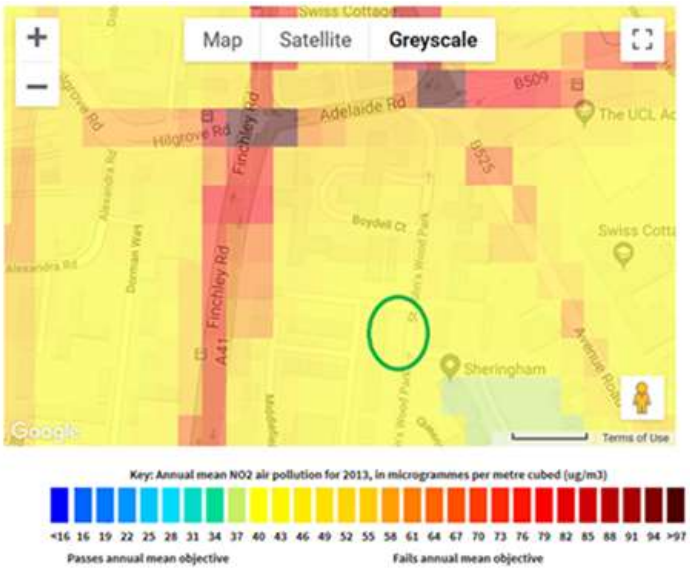
From: Frost, Katherine <Katherine.Frost@camden.gov.uk>
Sent: 17 December 2018 12:16
To: Guido Pellizzaro <guido.pellizzaro@watermangroup.com>
Cc: Farrant, Ben <Ben.Farrant@camden.gov.uk>
Subject: RE: St Johns Wood - Air Quality

Dear Guido

Apologies I have been in a meeting.

You may wish to initially undertake a basic or screening assessment to determine if the development is at risk of poor air quality. However, it seems to be clear (see map below) that it is in an area of poor air quality and that residential occupants will be considered sensitive receptors. As such we would then expect a detailed air quality assessment to be undertaken which will assess the impacts on residents and propose mitigation measures (which may include amongst other things air intakes from height at the rear of the building away from direct traffic emissions, as you have indicated below). Therefore you may wish to skip the assessment/ basic step and move straight to a detailed assessment to save yourselves time?



Regards

Katherine

Katherine Frost
Senior Sustainability Officer (Planning)
Telephone: 020 7974 5922

From: Guido Pellizzaro <guido.pellizzaro@watermangroup.com>
Sent: 17 December 2018 12:04
To: Frost, Katherine <Katherine.Frost@camden.gov.uk>
Subject: RE: St Johns Wood - Air Quality

Katherine,

Sorry to chase.

I have tried calling your direct number this morning but have been unable to get through to yourself. Would you be able to respond on the below/ able to call me to discuss today?

Kind Regards

Guido Pellizzaro

Associate Director – Air Quality

Waterman Infrastructure & Environment Ltd

Linkedin Contact: https://www.linkedin.com/in/guido-pellizzaro-5b045273/

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From: Guido Pellizzaro
Sent: 14 December 2018 13:19
To: Katherine.Frost@camden.gov.uk
Subject: St Johns Wood - Air Quality

Hi Katherine,

I tried to call you a moment ago regarding the requirement of an air quality assessment for the redevelopment of a former garage site on St Johns Wood Road to form 6 storey (plus basement) residential block containing 9no. units (under Planning application ref no. 2018/4763/P).

The Development would be car free (no parking) and would be powered by air source heat pumps, and as such there would be no emissions to air. The Development is located on St Johns Wood so not a major or congested road and the ventilation strategy is in design with the current strategy to include air intakes from height at the rear of the building away from direct traffic emissions, to provide clean air to residents.

Looking at the Camden Air Quality Assessment Requirement I consider that a basic air quality assessment would be applicable for this Development. I would appreciate your recommendations/ confirmation on this.

I am available today should be able to call me and confirm.

Thank you in advance,

Guido Pellizzaro

Associate Director – Air Quality

Waterman Infrastructure & Environment Ltd

Linkedin Contact: https://www.linkedin.com/in/guido-pellizzaro-5b045273/

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