



Anderson
Acoustics

PLANNING STAGE AIR QUALITY STATEMENT

1A BRIGHTON ROAD, CROYDON, CR2 6EA

EXTENDING MY HOME

APRIL 2024

PLANNING STAGE AIR QUALITY STATEMENT

1A BRIGHTON ROAD, CROYDON, CR2 6EA

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Client: EXTENDING MY HOME

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EXECUTIVE SUMMARY

An air quality statement for site suitability, an air quality neutral and positive assessment and demolition/construction dust risk assessment have been produced. These assessments demonstrate the site and proposals are suitable for commercial and residential use and also air quality policy compliant.

Air quality positive measures include no combustion plant, no parking spaces and green infrastructure.

1 INTRODUCTION

Anderson Acoustics Ltd was commissioned by Extending my Home to produce an air quality statement to inform the design and determination of the outline planning application for the development of a new 5 storey block at 1a Brighton Road comprising 25 flats and 2 retail units. The site is located within the London Borough of Croydon (LBC) local authority area.

Assessment of the potential effects of existing air quality on the future occupants is achieved through assessing the location of the development against modelled NO₂ and PM₁₀ concentrations in the context of the air quality objectives and limit values. The effect of the proposed development on the environment is assessed through screening the building and transport emissions against criteria, for further assessment if the criteria is exceeded.

An air quality neutral and air quality positive assessment and a dust risk assessment have been conducted to demonstrate compliance of the development with the 'air quality neutral' and 'air quality positive' requirements of policy SI1 of the London Plan, and the Mayor's Supplementary Planning Guidance on Sustainable Design and Construction and Control of Dust and Emissions During Construction and Demolition.

Air quality policy, criteria and baseline concentrations relevant to the assessment have been presented and briefly discussed in Section 2 of this report. A brief description of the site and proposed development is given in Section 3. The air quality assessment is presented in Section 4. The dust risk assessment is presented in Section 5 and the air quality neutral and positive assessments in Section 6. The conclusions are provided in Section 7.

2 AIR QUALITY POLICY, CRITERIA AND BASELINE CONDITIONS

2.1 Air Quality – Pollutants for Consideration

The pollutants for consideration in the LBC are nitrogen dioxide (NO₂) and particulate matter (PM).

PM₁₀ is the fraction of PM that is 10 microns or less in size, and PM_{2.5} is the fraction of PM that is 2.5 microns or less in size. Both can be drawn into the lungs and can cause respiratory illness, cardiovascular illness and mortality. Oxides of nitrogen include nitric oxide (NO) and nitrogen dioxide (NO₂). NO₂ can cause inflammation of the lung and can lead to shortness of breath, coughing and can reduce immunity to infections of the lung such as bronchitis.

2.2 Air Quality Policy and Guidance

2.2.1 European and National Air Quality Standards

Air Quality Directive 2008/50/EC¹ introduced legally binding “limit value” targets for the member governments to reduce air pollution to concentrations at which minimal effects on health are likely to occur. The directive was transposed into law through the Air Quality (England) Standards Regulations² with air quality objectives and dates they were to be achieved by. The sensitive locations, at which the standards and objectives apply, are places where the population is expected to be exposed to the various pollutants over the averaging period in question. For objectives to which an annual mean standard applies, the most common sensitive receptor locations used to measure concentrations are areas of residential housing, since it is reasonable to expect that people living in their homes could be exposed to pollutants over such a period of time. For shorter averaging periods of between 15 minutes, 1 hour or 1 day, the sensitive receptor location can be anywhere where the public could be exposed to the pollutant over these shorter periods of time. The annual mean objectives are not relevant for the building façades of offices or other places of work where members of the public do not have regular access, kerbsides or gardens.

Table 2.1: Air Quality Objectives for PM₁₀, PM_{2.5} and NO₂

Pollutant	Air Quality Objectives for Particulates and NO ₂		Date to be Achieved By
	Concentration	Measured as	
PM ₁₀	50 µg/m ³ not to be exceeded more than 35 times a year	24 hour mean	31 December 2004
	40 µg/m ³	Annual mean	31 December 2004
PM _{2.5}	25 µg/m ³	Annual mean	2020 (but not in UKAQS)
	15% reduction urban background	Annual mean	2010-2020
NO ₂	40 µg/m ³	Annual mean	31 December 2005
	200 µg/m ³ not to be exceeded more than 18 hours in a year	Hourly mean	31 December 2005

¹ Council Directive 2008/50/EC of 21 May 2008 on ambient air quality and cleaner air for Europe.

² DEFRA. 2010. The Air Quality Standards (England) Regulations.

The Environment Act 1995³ introduced the requirement for local authority management of air quality. Part IV of this Act details the duties of local authorities in carrying out their local air quality management (LAQM) to tackle poor air quality. Part of the requirements is for the Review and Assessment of air quality and production of Updating and Screening Assessments (USA) and Status Reports. Where exceedance of these objectives is shown or anticipated, the local authority is required to produce an Air Quality Action Plan to reduce emissions and pollutant concentrations.

2.2.2 National and Regional Planning Policy and Guidance

The **NPPF**⁴ presents the Government’s planning policies for England and how these are expected to be applied, with the development of local and neighbourhood plans under the framework. Paragraph 180 e) of the NPPF identifies that the planning system should aim to conserve and enhance the natural and local environment by *“preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;...”*

Paragraph 192 states *“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 and 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 and 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.”*.

Planning Practice Guidance (PPG)⁵ for air quality has been produced that gives indication of details the local authority may want to consider when there are concerns about air quality, special requirements such as the height of chimneys and securing mitigation measures through planning conditions and obligations. The **PPG** considers that dust can also be a planning concern for effects on local amenity. The guidance considers that assessments should be proportional to the nature and scale of development proposed and the level of concern about air quality. The mitigation of air quality impacts and effects is to depend on the proposed development and should be proportionate to the likely impact.

The London Plan⁶ Policy S11 ‘Improving Air Quality’ continues the aims of the previous London Plan Policy 7.14 air quality policy in the new London Plan and aims for air quality neutral and positive developments. Further information on air quality positive assessment is presented in the London Plan Air Quality Neutral⁷ and Positive Guidance⁸ and includes the presentation of a matrix demonstrating the air quality positive elements of the proposed development.

The requirements for development proposals include:

...B To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:

1) *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) *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:*

³ Office of the Deputy Prime Minister. 1995. The Environment Act.

⁴ Ministry of Housing, Communities & Local Government. National Planning Policy Framework. 2023

⁵ Department for Communities and Local Government. 2019. Planning Practice Guidance – Air Quality. Revision date November 2019.

⁶ Mayor of London. The London Plan. 2021.

⁷ Mayor of London. London Plan. Air Quality Neutral Guidance. 2023.

⁸ Mayor of London. London Plan. Air Quality Positive Guidance. 2023.

- 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.

The Mayor's Environmental Strategy⁹ continues the requirement for all new developments to be air quality neutral, to ensure no new development has a negative impact on local air quality. Policy 4.3.3 aims to phase out the use of fossil fuels to heat, cool and maintain London's buildings, homes and urban spaces, and reduce the impact of building emissions on air quality.

The Mayor's Sustainable Design and Construction Supplementary Planning Guidance (SPG)¹⁰ states that all new gas boilers should produce low levels of nitrogen oxides (NOx) and developments should take measures to reduce and mitigate exposure to air pollution, and details emissions benchmarks for building emissions to avoid increases in NOx and PM emissions across London as a whole, and therefore be air quality neutral. These are considered as minimum benchmarks that will be kept under review and updated in line with technological and commercial advances. The air quality neutral policy applies to all major developments, and NOx and/or PM₁₀ emissions from the building and transport elements of the scheme need to be calculated and compared to the benchmarks. Where schemes do not meet the benchmarks, after mitigation has been implemented on site, the developer will be required to off-set emissions off site. This SPD has been revoked but is still referenced and used by local authority policy.

Offsetting measures where the schemes do not meet the air quality neutral benchmark can include NOx and PM abatement measures in the vicinity of the development, working with the local authority and nearby property owners and secured by planning condition or s106 agreement. Any agreement for off-site measures, including financial contribution, need to be considered by any restrictions imposed by the Community Infrastructure Levy Regulations 2010. These measures can include:

- Green planting/walls with special consideration given to planting that absorbs or suppresses pollutants;
- Upgrade or abatement to combustion plant;
- Retrofitting abatement technology to vehicles and flues; and
- Exposure reduction.

The Mayor's The Control of Dust and Emissions During Construction and Demolition SPG¹¹ seeks to reduce emissions of dust, PM₁₀ and PM_{2.5} from construction and demolition activities in London. It also aims to manage emissions of NOx from construction and demolition machinery by means of a new non-road mobile machinery ultra-low emissions zone (ULEZ). The SPG considers that during the pre-application phase, boroughs should provide and advise on controlling dust and emissions and should set out their requirements for the planning application.

During the detailed application phase, the developer should submit an Air Quality and Dust Risk Assessment (AQDRA), which should confirm that an Air Quality and Dust Management Plan (AQDMP), following the guidance in the SPG, will be submitted to the local authority prior to works commencing on-site.

The AQDRA provides a summary of the risk to soiling (dirt deposited on surrounding structures), health and the natural environment, and recommends emission control measures to be implemented as part of the scheme.

This document considers that the activities on construction sites can be divided into four types to reflect their different impact:

⁹ Mayor of London. London Environmental Strategy. 2018.

¹⁰ Mayor of London. 2014. Sustainable Design and Construction Supplementary Planning Guidance. 2014.

¹¹ Mayor of London. The Control of Dust and Emissions from Construction and Demolition Supplementary Planning Guidance. 2014.

- demolition;
- earthworks;
- construction; and
- trackout.

These activities can lead to three separate dust impacts:

- the risk of health effects due to an increase in exposure to PM₁₀;
- annoyance due to dust soiling; and
- harm to ecological receptors.

2.2.3 Local Air Quality Policy, Guidance and Local Air Quality Management

London Borough of Croydon Local Plan

The LBC Local Plan¹² was first adopted in April 2013. The latest revision of the LBC Local Plan was published in February 2018 and it is understood that the Local Plan is currently under review. Borough-wide strategic objectives relating to air quality within the Local Plan include:

- *“Strategic Objective 5: Ensure that high quality new development both integrates, respects and enhances the borough’s natural environment and built heritage.”*
- *“Strategic Objective 8: Improve accessibility, connectivity, sustainability and ease of movement to, from and within the borough.”*
- *“Strategic Objective 10: Improve the quality and accessibility of green space and nature, whilst protecting and enhancing biodiversity.”*

The LBC Local Plan document sets out policies to achieve the strategic objectives.

Policy DM23: Development and Construction: *“The Council will promote high standards of development and construction throughout the borough by:*

- Ensuring that future development, that may be liable to cause or be affected by pollution through air, noise, dust, or vibration, will not be detrimental to the health, safety and amenity of users of the site or surrounding land;*
- Ensuring that developments are air quality neutral and do not lead to further deterioration of existing poor air quality;*
- Ensuring mitigation measures are put in place to reduce the adverse impacts to acceptable levels. Where necessary, the Council will set planning conditions to reduce the impact on adjacent land uses to acceptable levels, relative to ambient noise levels and the character of the locality; and*
- Encouraging the use of sustainable and innovative construction materials and techniques in developments.”*

2.3 Baseline Conditions

The whole of the borough was declared as an AQMA for annual mean NO₂ in 2003. The Air Quality Action Plan¹³ was adopted by LBC to provide measures for improving air quality, including through sustainable transport and the development control system and a list of actions to meet these aims and objectives. The extent of the AQMA is shown in Figure 2.1. The modelled annual mean NO₂ concentrations for 2019 are shown in Figure 2.2 and the annual mean PM₁₀ concentrations are shown in Figure 2.3.

NO₂ and particulate matter concentrations at the site are influenced by road traffic emissions from the local area, including the A235 Brighton Road and B275 Selsdon Road. Measured NO₂ and PM₁₀ concentrations are presented in the LBC 2022 Annual Status Report¹⁴ (ASR). The annual mean NO₂ concentrations from the location CY52 NO₂ diffusion tube, located around 2.7 km SE on Selsdon Road, are shown in Table 2.2.

¹² London Borough of Croydon. Local Plan. 2018.

¹³ London Borough of Croydon. Air Quality Action Plan 2017-2022. 2017.

¹⁴ London Borough of Croydon. Air Quality Annual Status Report for 2022. 2023.

The site is not in an Air Quality Focus Area (AQFA). The AQFA in Croydon are shown in Figure 2.2. The NO₂ concentrations are indicated to be below the annual mean NO₂ objective of 40 µg/m³. The site of the proposed development is indicated by the LAEI 2019 modelling for 2025 to be in areas below the annual mean NO₂ objectives, with annual mean NO₂ concentrations being 15 - 25 µg/m³ at the proposed development site and can be seen in Figure 2.3. Compliance with the annual mean PM₁₀ objective for 2025 is shown in Figure 2.4 with PM₁₀ concentrations well below the annual mean limit, being under 20 µg/m³.

Table 2.2: Annual mean NO₂ concentrations measured at the location CY52 NO₂ diffusion tube

Year	2017	2018	2019	2020	2021	2022
Annual mean NO ₂ concentration (µg/m ³) CY52 diffusion tube	39.18	37.78	33.36	26.25	31.31	26.15

PM_{2.5} is measured at the Norbury Manor site and the annual mean PM_{2.5} objective has not been exceeded recently, with measured concentrations below the objective of 25 µg/m³ being 12 µg/m³ PM_{2.5} or under since 2017.

Figure 2.1. LBC Air Quality Management Area (entire borough for annual mean NO₂)

London Borough of Croydon AQMA

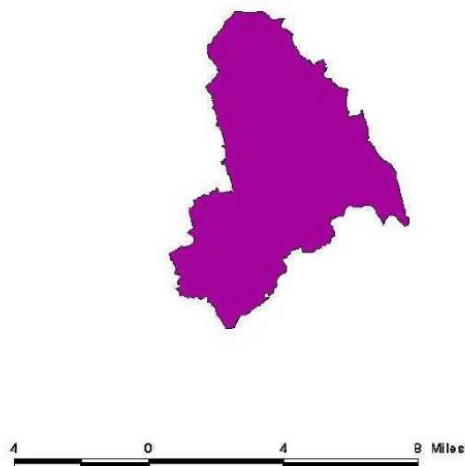


Figure 2.2. 2019 LAEI LBC Air Quality Focus Areas

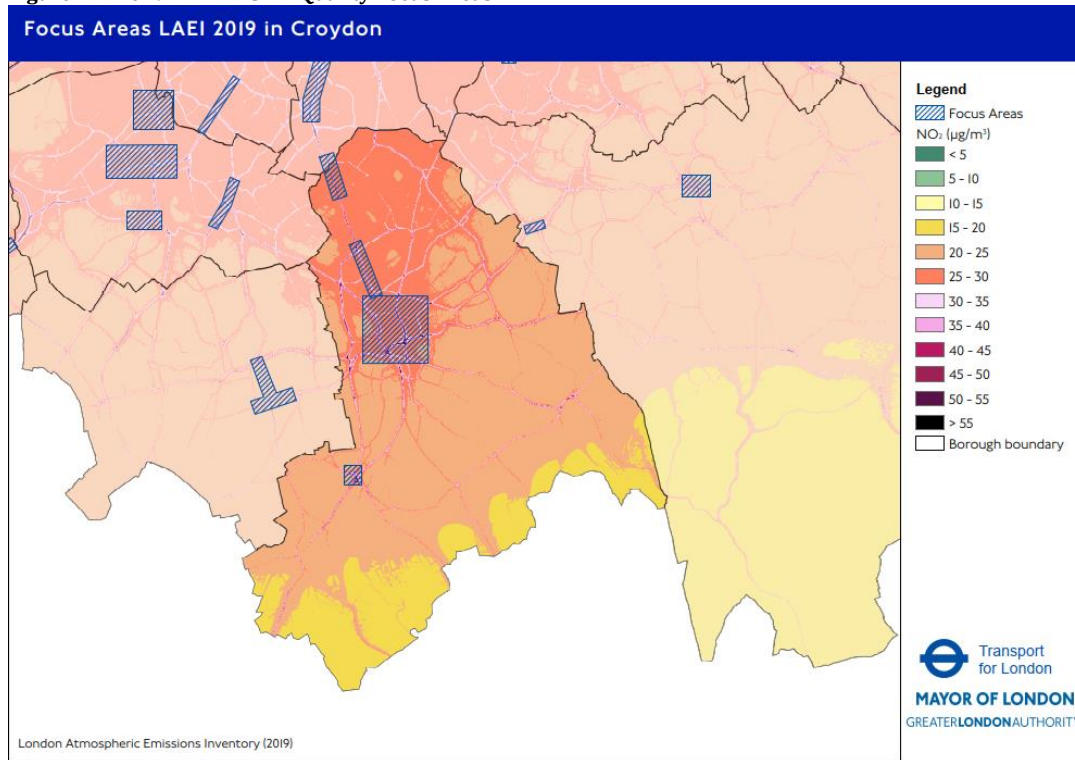



Figure 2.3. 2019 LAEI Modelled NO₂ Concentrations for 2025



Key:

Proposed Building: 

Note: Modelled NO₂ concentrations indicate the proposed development site is not in an area of exceedance of the annual mean NO₂ objective, with concentrations of 15-25 µg/m³.

Figure 2.4. 2019 LAEI Modelled Annual Mean PM₁₀ Concentrations for 2025



Key:

Proposed building:



Note: Modelled PM₁₀ concentrations indicate the proposed development site is not in an area of exceedance of the annual mean PM₁₀ objective, with concentrations of under 20 µg/m³.

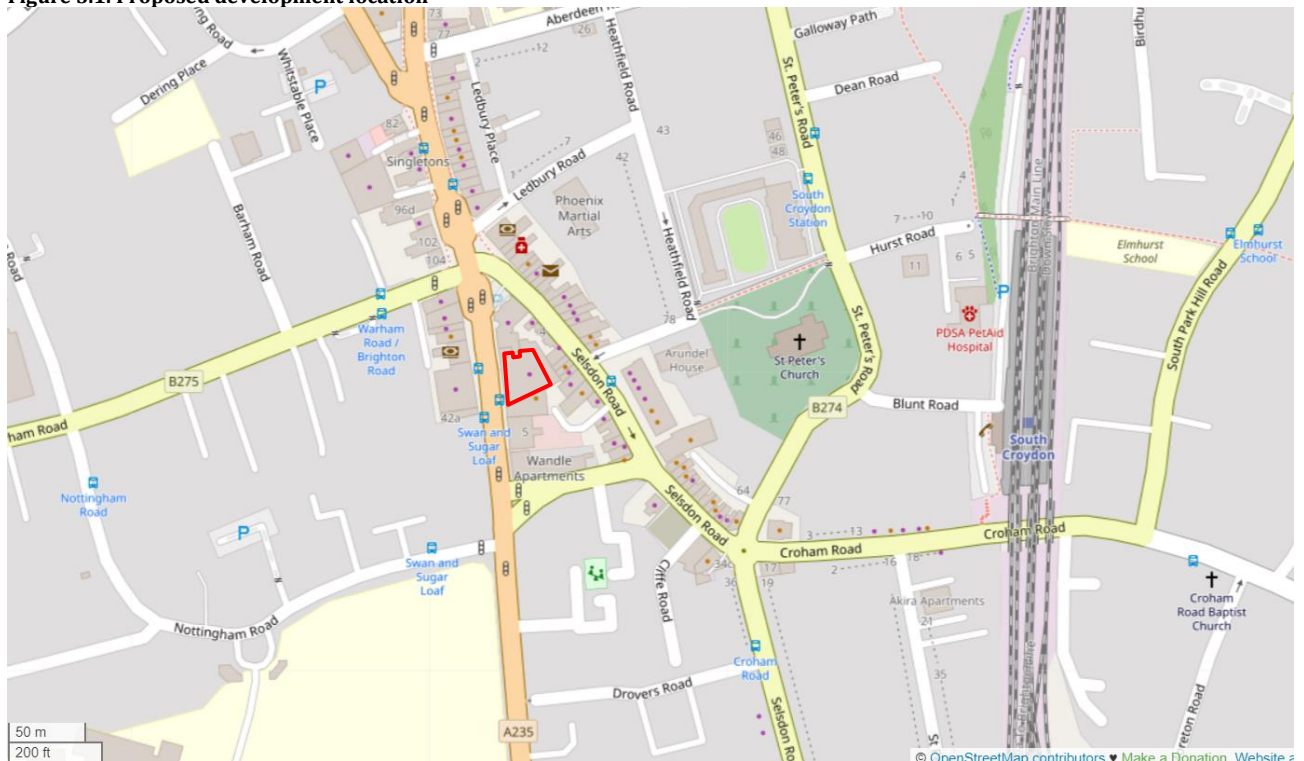
3 PROPOSED DEVELOPMENT

3.1 Proposed Development Site Current Use and Nearby Land Uses

The site located on the eastern side of Brighton Road has an A1 land use. The previous use was as a kitchen and bathroom showroom with offices above. There is car parking to the rear of the site. Surrounding land uses include residential use and commercial uses. There is a Tesco Express to the north of the site, residential above commercial land use to the east, to the south there is a restaurant and residential land use and across the A235 Brighton Road, to the west, there is residential land use.

The outline of the proposed building is presented in Figure 3.1.

Figure 3.1. Proposed development location



Key:

Proposed Building footprint: 

Note: Proposed development site currently has parking spaces and the parking spaces are to be removed by the development.

3.2 Development Proposal

In January 2022 planning permission was granted (ref: 19/04199/FUL) for “Demolition of existing showroom, erection of a 4-storey development consisting of two ground floor commercial units (A1) and 17 residential units with ancillary landscaping, play space, cycle and refuse storage.”

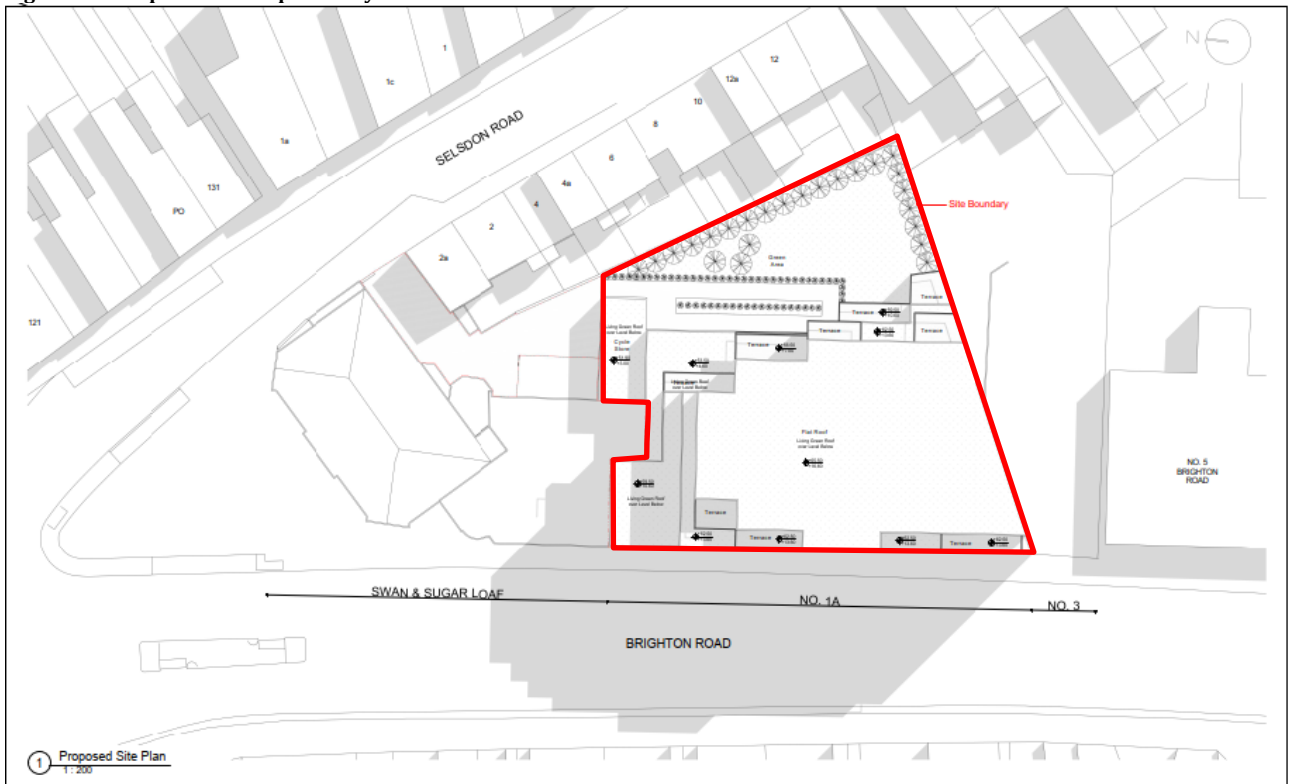
The current application is for outline planning consent for the demolition of the existing showroom and warehouses and the erection of a new 5-storey block comprising 25 flats and 2 retail units within the building footprint of the previous application.

The proposed development is car-free so there are no car parking spaces. The required amount of secure cycle spaces within the building, is 52 Sheffield Stands for the residential element and 6 Sheffield Stands. The stands accommodate 2 cycles each.

No combustion plant is proposed, with the space and water heating through air source heat pumps and electrical boilers and heaters.

The residential dwellings are proposed to be naturally ventilated via trickle vents and opening windows.

Figure 3.2. Proposed development layout



PROJECT TITLE 1A Brighton Road	OPTION # 4	SCALE	1:200	DRAWING TITLE Proposed Site Plan	REV.	DATE	DETAIL	LINE SCALE 0 1m 5m
		SHEET SIZE	A2		A	12.02.2024	New version of the 2022 Scheme	
LOCATION 1A Brighton Rd, South Croydon CR2 6EA, UK	OPTION DETAIL 5 Storey Scheme with same footprint as 2022 scheme	DATE	28.02.2024	SHEET NO.	B	28.02.2024	Ground Floor and Elevation Revisions	NOTES: All critical dimensions must be checked on site prior to commencement of any works.
				A102	C			
					D			

4 AIR QUALITY ASSESSMENT

4.1 Introduction

The impact of the development on the local area is considered, along with the impact of existing sources of pollution in the local area on the proposed development.

The proposed development does not meet the criteria (within the Land-use Planning & Development Control: Planning for Air Quality¹⁵ guidance) for the need to assess the impact of the development on air quality in the local area for the change in traffic flows. There are no parking spaces within the proposed development, and so the indicative screening criteria for further assessment of AADT of 100, or a change in HDV of 25, cannot be met.

The proposed development is in an AQMA and not in an AQFA. There are existing sources of air pollutant emission in the local area including emissions from vehicles on the A235 Brighton Road and B275 Selsdon Road. Therefore, “Simple” assessment of the impact of the existing sources of pollution on the development is undertaken.

The national objective annual mean limit values do not apply to occupational exposure; however, Greater London Authority (GLA) guidance indicates that, where exposure is likely to be around eight hours or more over the day, the annual mean limit values should apply as well as the hourly means. As such staff at the commercial uses are considered as being applicable to the annual mean limit values.

4.2 Methodology

The air quality assessment uses published pollutant concentrations that are supplied in the London Atmospheric Emissions Inventory 2019¹⁶ for the site of the proposed development for 2025.

These concentrations have been evaluated using the “Simple” assessment procedure in the “Planning for Air Quality” guidance using the modelled concentrations. The receptors considered are the human health receptors introduced by the proposed development. The criteria in Table 4.1 have been used to describe the impact of introduction of receptors by the proposed development.

Table 4.1: Assessment Criteria Impact Descriptors for Individual Receptors

Annual mean pollutant concentration in assessment year	% Change in concentration relative to Air Quality Assessment Level (AQAL) – NO ₂ and PM ₁₀ annual mean			
	1	2-5	6-10	>10
75% or less of AQAL	Negligible	Negligible	Slight	Moderate
76-94% or less of AQAL	Negligible	Slight	Moderate	Moderate
95-102% or less of AQAL	Slight	Moderate	Moderate	Substantial
103-109 % or less of AQAL	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Moderate	Substantial	Substantial	Substantial

Note: Where the predicted change is less than 0.5%, the impact descriptor is negligible.

4.3 Impacts

LAEI 2019 modelled annual mean ground floor NO₂ concentrations for 2025 are shown in Figure 2.3. The proposed development is in an area not in exceedance of the annual mean NO₂ objective of 40 µg/m³, with modelled 2025 annual mean ground floor level NO₂ concentrations of 15-25 µg/m³ at the proposed

¹⁵ Institute of Air Quality Management. Land-Use Planning & Development Control: Planning for Air Quality. 2017.

¹⁶ <https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory--laei--2019>

development site. The hourly mean NO₂ objective is unlikely to be exceeded where the annual mean NO₂ concentration is under 60 µg/m³.

The annual mean PM₁₀ concentrations and 24-hour mean PM₁₀ concentrations at the site of the proposed development are in an area well below the limit values.

With no parking spaces and the space and water heating by air source heat pumps and electric boilers, the development is considered to result in a predicted change in NO₂ concentrations of less than 0.5% of the Air Quality Assessment Level for NO₂ and PM₁₀, in an area less than 96% of the NO₂ AQAL. Therefore, the impact of the proposed development is considered as **Negligible**.

4.4 Significance of Air Quality Impacts and Effects

The effect of the introduction of the human health-sensitive receptors through the proposed development is considered as **Not Significant** as concentrations are not predicted to exceed the NO₂ or PM₁₀ limit values.

The effect of the impact of the development on existing receptors is considered as **Negligible** as the proposed development does not have combustion plant and no parking spaces, and so the building and transport emissions are below the IAQM indicative screening criteria for detailed assessment for significant effects.

4.5 Mitigation

To minimise the impact of the development on the environment, the development does not use combustion plant, instead using air source heat pumps and electrical heaters for space and water heating. The vehicle parking spaces associated with the site are also removed, leading to a reduction in transport emissions, from the previous use.

5 DUST RISK ASSESSMENT

5.1 Introduction

The purpose of this assessment is to identify the category of risk from dust emission associated with the demolition, earthworks, construction and track out phases, and to put in place a suitable management and mitigation strategy to ensure negative impacts and adverse effects are controlled and reduced.

Dust from demolition and construction processes contains a range of particle types and material sizes that can cause adverse effects. The pollutant of concern in this assessment is PM₁₀, defined as a mass fraction of airborne particulates with an aerodynamic diameter of 10 microns or less. PM_{2.5} and NO₂ are also considered.

PM₁₀ and PM_{2.5} are respirable and can be drawn deep into the lungs and cause health problems. The fraction of dust that is larger than 10 µm is filtered by the nose and throat. PM₁₀ and PM_{2.5} can cause respiratory and cardiovascular illness and even death. NO₂ inflames the lining of the lung and can lead to shortness of breath and coughing and can reduce immunity to lung infections like bronchitis. Dust can also cause soiling of surfaces and materials.

This assessment follows the procedure in the GLA's Control of Dust and Emissions During Construction and Demolition SPG.

The works are assessed for four phases:

- demolition;
- earthworks;
- construction; and
- trackout.

The first step of the assessment is to conduct screening to establish if there is need to proceed to detailed assessment. A dust risk assessment usually proceeds to detailed assessment if there is a human receptor within 50 m of the boundary of the site or 50 m of the routes used by construction vehicles on the public highway, up to 500 m from the site entrances (for large sites).

The main steps are as follows:

- identify magnitude of dust emission for each of the phases of the worksite;
- identify the sensitivity of the receptors;
- identify the sensitivity of the area;
- determine potential risk category of each works phase; and
- outline how each risk will be mitigated.

There are human and soiling receptors within 50 m of the site, and so the assessment proceeded to a detailed assessment and is described in the following sections.

5.2 Dust Emission Magnitude

Demolition

The demolition phase involves:

- Removal of potentially dusty material (bricks and concrete);
- Building less than <20,000 m³; and
- Removal of buildings less than 10 m in height.

The demolition phase dust emission magnitude is considered as **Medium**, based on the aspects above and the IAQM and GLA dust risk guidance.

Earthworks

The earthworks phase involves:

- site area < 2500 m²;
- <5 earth moving heavy vehicles;
- Bedrock of Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation – Chalk formed during the Cretaceous period. Low potential for dust; and
- Superficial deposits are the Hackney Gravel Member (sand and gravel) with a low potential for dust.

The earthworks phase dust emission magnitude is considered as **Small** for the proposed development.

Construction

The construction phase involves:

- potentially dusty construction material (concrete); and
- total building volume < 25,000 m³.

The construction phase dust emission magnitude is considered as **Medium** for the proposed development.

Trackout

The trackout phase involves:

- use of existing road hard standings;
- unpaved haul road less than 50 m; and
- <10 HDV movements per day.

The Trackout phase dust emission magnitude is considered as **Small**.

The dust emission magnitude is summarised in Table 5.1.

Table 5.1: Dust Emission Magnitude

Phase	Dust emission magnitude
Demolition	Medium
Earthworks	Small
Construction	Medium
Trackout	Small

5.3 Sensitivity of the Area

The next step of the assessment is to define the sensitivity of the area. The sensitivity of the area takes into account a number of factors, including:

- specific sensitivities of receptors in the area;
- the proximity and number of receptors;
- background PM₁₀ concentrations; and
- site specific factors such as topography.

The sensitivity is defined for:

- dust soiling effects;
- human health effects of PM₁₀; and
- ecological effects.

High sensitivity receptors for dust soiling in the vicinity of the site include dwellings. Medium sensitivity receptors for health effects of PM₁₀ include human health receptors in the adjacent residential buildings and

receptors for dust soiling include places of work and retail areas, including food preparation and dining. The closest high sensitivity receptors would be residential uses within 10 m of the site.

Ecological effects are not considered further in this assessment as there are no designated dust sensitive ecological receptors within 50 m of the site boundary, or construction route or within 500 m of the site entrance.

For dust soiling effects there are 10-100 High sensitivity receptors within 20 m of the site boundary and so the sensitivity of the area is defined as **High** for soiling effects.

For human health effects, the baseline annual mean PM₁₀ concentration needs to be considered. The baseline conditions are described in Section 4.3. For the purpose of the dust risk assessment, background PM₁₀ concentrations have been assumed as being below 24 µg/m³, based on the modelled annual mean PM₁₀ concentrations from the LAEI 2019. With the background annual mean PM₁₀ concentration of below 24 µg/m³ and 10-100 high sensitivity receptors within 20 m for demolition, earthworks and construction, the sensitivity of the area is considered as **Low** for human health effects.

The sensitivity of the area is summarised below in Table 5.2.

Table 5.2: Sensitivity of the Area

Receptor sensitivity	Sensitivity of the surrounding area			
	Demolition	Earthworks	Construction	Trackout
Dust soiling	High	High	High	High
Human health	Low	Low	Low	Low

5.4 Risk of Impacts

When the dust emission magnitude is combined with the sensitivity of the area, the risk of impacts with no mitigation applied can be determined. The summary of the dust risk assessment is presented below in Table 5.3. In summary, the site is considered as **Medium Risk** for dust soiling effects and **Medium Risk** for human health effects. The dust risk is used to define the amount of site-specific mitigation that is required. The mitigation measures are described in Section 5.5.

Table 5.3: Dust Risk Summary

Summary	Demolition	Earthworks	Construction	Trackout
Dust soiling	Medium risk	Low risk	Medium risk	Low risk
Human health	Low risk	Negligible risk	Low risk	Negligible risk

5.5 Demolition and Construction Dust and Air Quality Mitigation

Based on the dust risk assessment findings, the following dust and air quality mitigation measures are proposed:

Table 5.4: Dust and Air Quality Mitigation Measures

Reference	Measure	Specific details
Site management		
SM1	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	
SM2	Develop a dust management plan.	
SM3	Display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary.	
SM4	Display the head or regional office contact information.	
SM5	Record and respond to all dust and air quality pollutant emissions complaints.	
SM6	Carry out regular site inspections to monitor compliance with air quality and dust control procedures, record inspection results, and make an inspection log available to the local authority when asked.	
SM7	Increase the frequency of site inspections by those accountable for dust and air quality pollutant emissions issues when activities with a high potential to produce dust and emissions and dust are being carried out, and during prolonged dry or windy conditions.	
SM8	Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and the action taken to resolve the situation is recorded in the log book.	
SM9	Agree a dust flux, dust deposition or real-time PM ₁₀ monitoring regime with the local authority. For a medium risk site real-time PM ₁₀ monitoring at two locations on a site transect in the prevailing wind direction is recommended.	
Preparing and maintaining the site		
PM1	Plan site layout: machinery and dust causing activities should be located away from receptors.	
PM2	Erect solid screens or barriers around dust activities or the site boundary that are, at least, as high as any stockpiles on site.	
PM3	Avoid site runoff of water or mud.	
PM4	Keep site fencing, barriers and scaffolding clean using wet methods.	
PM5	Remove materials from site as soon as possible.	
PM6	Cover, seed or fence stockpiles to prevent wind whipping.	
PM7	Carry out regular dust soiling checks of buildings within 100 m of site boundary and cleaning to be provided if necessary.	
PM8	Fully enclosure specific operations where there is a high potential for dust production and the site is active for an extensive period.	
PM9	Agree locations with local authority and put in place real-time dust and air quality pollutant monitors across the site and ensure they are checked regularly.	
Operating vehicle/machinery and sustainable travel		
OV1	Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone.	
OV2	All NRMM should meet Stage IV emission criteria by 1 st January 2025. A schedule of NRMM will be maintained on site and issued to LBC Environmental Officers at regular intervals or uploaded onto the NRMM register. Diesel sources will be recorded on the same document.	
OV3	Ensure all vehicles switch off engines when stationary – no idling vehicles.	
OV4	Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where possible.	
OV5	Impose and signpost a maximum-speed-limit of 10 mph on surfaced haul routes and work areas.	Existing hardstanding used
OV6	Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).	

OV7	Produce a construction logistics plan.	
Operations		
OP1	Only use cutting, grinding or sawing equipment fitted, or in conjunction with, suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.	
OP2	Ensure an adequate water supply on the site for effective dust/particulate matter mitigation (using recycled water where possible).	
OP3	Use enclosed chutes, conveyors and covered skips.	
OP4	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	
OP5	Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	
Waste Management		
WM1	Reuse and recycle waste to reduce dust from waste materials.	
WM2	Avoid bonfires and burning of waste materials.	
Demolition		
DM1	Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).	
DM2	Ensure water suppression is used during demolition operations.	
DM3	Avoid explosive blasting, using appropriate manual or mechanical alternatives.	
DM4	Bagging and removal of any biological debris or damp down of material prior to demolition.	
Earthworks		
EW1	Revegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as possible.	
Construction		
CS1	Avoid scabbling (roughening of concrete surfaces) if possible.	
CS2	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.	
CS3	For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.	
CS4	Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.	
Trackout		
TR1	Avoid dry sweeping of large areas.	Use wet sweeping
TR2	Ensure vehicles entering and leaving sites are securely covered to prevent escape of materials during transport.	
TR3	Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	Use of jetwash to clean wheels when required

5.6 Non-Road Mobile Machinery

The site is not located within an Opportunity Area and, as such, Non-Road Mobile Machinery (NRMM) have to comply with the standards set within the GLA's Control of Dust and Emissions During Construction and Demolition SPG. All NRMM of net power 37 kW to 560 kW used on the site of a major development in Greater London must meet Stage IIIB of EU Directive 97/68/EC (Directive 97/68/EC of the European Parliament and of the Council, 1997) and its subsequent amendments as a minimum. NRMM must meet Stage IV requirements by the 1st of January 2025.

6 AIR QUALITY NEUTRAL ASSESSMENT

6.1 Introduction

The purpose of the air quality neutral and air quality positive assessment is to demonstrate that the proposed development is compliant with the air quality neutral policy of not exceeding the transport and building emissions minimum benchmarks and meets the aims of the air quality positive policy of improving air quality.

Air quality neutral and positive policy requirements are presented in Section 2 of this report.

6.2 Transport Emissions Assessment

There are no parking spaces associated with the proposed development and this is well below the parking standard maximum for the development. The proposed development can therefore be considered as better than 'air quality neutral' for transport emissions and is an exempt development. The development can also be considered as 'air quality positive' as the proposal encourages sustainable transport and includes secure cycle storage. For the traffic flows associated with servicing of the residential units and commercial units (such as deliveries), the GLA guidance states these are not to be considered, as the source of the movements is to be assessed rather than the delivery point.

6.3 Buildings Emissions Assessment

The development is powered by electricity from the national grid, with the hot water provided by air source heat pumps and electric heaters and boilers. Combustion plant is not proposed. Accordingly, the proposed development is considered as 'air quality neutral' and air quality positive for building emissions.

6.4 Air Quality Neutral and Positive Matrix

A summary of the Air Quality Neutral and Positive measures is presented in Table 6.1.

Table 6.1: Air Quality Neutral and Positive Measures of the Proposed Development

Measure	Summary of measure	Reason for measure	Expected benefits	Qualitative Assessment	Quantitative Assessment	Measure secured through:
Reduction in number of parking spaces and increase in secure cycle storage	Sustainable transport	Minimise traffic emissions	Use of sustainable modes of transport	Y - Air Quality Positive	N	Consent of the development
Ventilation Strategy	Natural ventilation	Air quality within objectives	Reduction in building emissions	Y – Air Quality Neutral	N	Secured through approved plans
No combustion plant	Air source heat pumps and electric boilers	To minimise emissions	No increase in emissions	Y – Air Quality Neutral	N	Secured through approved plans
Green infrastructure	Green roofs	Biodiversity and sustainability	Absorb pollutants	Y- Air Quality Positive	N	Secured through approved plans

7 CONCLUSIONS

Anderson Acoustics Ltd was commissioned by Extending my Home to undertake an air quality assessment, dust risk assessment, air quality neutral and air quality positive assessment for the proposed development of the 25 residential units and 2 commercial units in 5-storey building. The impact of the development on existing receptors is considered **Negligible** and the effect is **Not Significant**.

The 2019 LAEI modelled annual mean NO₂ and PM₁₀ for the site indicate that concentrations at the development site are within the annual mean objectives, with annual mean NO₂ concentrations between 15 and 25 µg/m³ and PM₁₀ concentrations below 25 µg/m³. Therefore, a natural ventilation strategy is proposed. The hourly mean NO₂ objective, the annual mean PM₁₀ objective and the 24-hr PM₁₀ mean objective are unlikely to be exceeded.

The effect of the introduction of the residential and commercial human health receptors is considered as **Not Significant** and the site is considered suitable for residential and commercial use.

The dust risk assessment shows the site to be **Medium Risk** for human health effects and dust soiling during the demolition and construction phases. Construction dust management measures are proposed, and with the mitigation measures in place, the effect of dust from the works is considered as “**Not Significant**”

The air quality neutral and positive assessment shows the development is considered as ‘**air quality neutral**’ and ‘**air quality positive**’. Air quality positive measures include a reduction in parking spaces from the existing use, provision of secure cycle storage and use of air source heat pumps and electrical boilers for space and water heating.

Accordingly, the proposed development is considered a suitable use and compliant with relevant air quality policy.