

Chemistry (Conversion of NOx to NO₂)

Roads

- E7.2. Concentrations of road-NOx and primary NO₂ have been predicted at each receptor using the ADMS-Roads model. The primary NO₂ emission factor (f-NO₂) at each receptor has been calculated by taking the ratio of predicted primary NO₂ concentration to road-NOx concentration.
- E7.3. The f-NO₂ values along with the adjusted modelled road-NOx concentrations and background NO₂ concentrations have been inputted into Defra's NOx to NO₂ calculator (v8.1) in order to obtain predicted road-NO₂ concentrations at each receptor. This tool has been run assuming the traffic is described as 'All London Traffic', which is considered appropriate for the traffic associated with Camden. It should be noted, however, that receptor specific f-NO₂ values have been used in the NOx to NO₂ calculated, which supersede the traffic selection.

Total Concentrations

E7.4. Total annual mean concentrations have been calculated by adding 2025 background concentrations, sourced from the national pollution maps published by Defra (2023), to the adjusted road and rail contributions for each pollutant. The background maps cover the whole of the country on a 1x1km grid of average concentrations.

E8. Uncertainty and limitations

- E8.1. The assessment involves a range of uncertainties, including the model inputs, assumptions, the model and post-processing of model results.
- E8.2. Although there is uncertainty associated with air quality modelling, the predictions made by this assessment have been carried out in a robust manner in order to minimise uncertainties where possible; the approach has been to use reasonable worst-case assumptions.
- E8.3. A brief overview of the key uncertainties is discussed below.
- E8.4. This report does not consider the impacts on air quality associated with the Covid-19, as there remains too much uncertainty at this stage to consider this explicitly. In addition, the potential long-term implications of the pandemic on behaviour has not been considered, as it is too uncertain at this stage.

Roads Modelling

- E8.5. There are inherent uncertainties associated with the traffic data, however the Transport Consultant for the project has reviewed the traffic data available and provided the appropriate AADT information. The data did not include any breakdown of vehicle type, which introduces uncertainties, but information on HDVs, a key parameter, was obtained from DfT counts of local roads to help minimise uncertainties.
- E8.6. The emission factors also involve a considerable amount of uncertainty. Emissions from the EFT are link averages and do not explicitly take account of acceleration or deceleration. Modelled speeds



AIR POLLUTION SERVICES

have been adjusted to account for this where possible. Future year vehicle emission rates are also based on a range of factors, such as expected improvements in emission reduction technologies, expected uptake rates of different vehicles based on government policies, etc. It is therefore possible that the expected future emission rates in the EFT may differ from reality. Historically, evidence suggests that Defra's EFT over estimated reductions in NOx emissions from diesel vehicles which were not seen in practice. However, analyses of recent NOx measurements now provide evidence that diesel vehicle emission controls are working and as a result Defra's EFT (v11.0) is considered to be a reasonable reflection of the rate of reductions of specific vehicle emissions into the future. There remains significant uncertainty of the future traffic fleet composition (built into the EFT). In the absence of officially published alternative emissions, the approach of this assessment has been to utilise the EFT as recommended by Defra in the LAQM.TG22 guidance (Defra, 2022). However, a sensitivity test has also been carried out which uses the 2022 fleet composition and emissions derived for the 2025 year.

- E8.7. The model itself is based on assumptions of a range of parameters, including road geometries, road widths, street canyons and meteorological related parameters. There is uncertainty in all these parameters, but the modelling has been setup in a robust way based on professional experience to best represent the conditions. One of the main uncertainties in the model is meteorological data; this has been based on measurements made at a representative meteorological station, and although meteorological conditions will remain similar, it is entirely likely that meteorological conditions will vary in subsequent years and lead to marginally different concentrations.
- E8.8. The ambient background concentrations are also uncertain. While these are provided by Defra, the 1x1 km resolution is coarse, and the maps do not include all sources of pollution. Given the urban location of the Proposed Development, it is considered likely that the background maps for this area are likely to be reasonable. To minimise uncertainty in the spatial resolution of the maps, the background concentrations have been interpolated to each receptor; essentially smoothing out the coarseness of the maps.
- E8.9. Evidence (Grange, S, et al., 2017) suggests that the f-NO₂ has been decreasing in recent years, which is not taken into account within Defra's EFT or NOx to NO₂ Calculator. If lower f-NO₂ values were assumed, then the predicted concentrations would likely be slightly lower throughout the Proposed Development and local area. Until more detailed scientific analysis is undertaken to understand the full extent of why f-NO₂ is decreasing and how it will behave in the future, it remains an uncertainty.
- E8.10. A model verification exercise has been undertaken to adjust the predicted concentrations from the model so that they match local conditions as best as possible. This has adjusted concentrations to match average conditions; some locations will remain underpredicted and some overpredicted.

E9. Glossary

AADT	Annual Average Daily Traffic flow
APS	Air Pollution Services
AQMA	Air Quality Management Area

P1150A_E1-3

E32 of E34

www.airpollutionservices.co.uk Air Pollution Services is trading name of KALACO Group Limited, companies house registration number: 11808160



COPERT 5	Computer Programme to Calculate Emissions from Road Transport
EFT	Emissions Factors Toolkits
EPUK	Environmental Protection UK
f-NO ₂	Fraction of nitrogen dioxide
GLA	Greater London Authority
HDV	Heavy Duty Vehicles
IAQM	Institute of Air Quality Management
LAEI	London Atmospheric Emissions Inventory
LBC	London Borough of Camden
NO ₂	Nitrogen dioxide
NOx	Nitrogen oxides
NRMM	Non-Road Mobile Machinery
NWP	Numerical Weather Prediction
PM ₁₀	Small airborne particles, more specifically particulate matter less than 10 micrometres in aerodynamic diameter
PM _{2.5}	Small airborne particles, more specifically particulate matter less than 2.5 micrometres in aerodynamic diameter
TfL	Transport for London
WRF	Weather Research and Forecasting
μg/m³	Microgrammes per cubic metre

E10. References

- Defra. (2022). Local Air Quality Management Technical Guidance (TG22). Retrieved from https://laqm.defra.gov.uk/technical-guidance/
- Defra. (2023). *Background mapping data for local authorities*. Retrieved from UK AIR Air Information Resource: https://uk-air.defra.gov.uk/data/laqm-background-home
- DfT. (2020). *Road Traffic Statistics (TRA)*. Retrieved from https://roadtraffic.dft.gov.uk/#6/55.254/-6.064/basemap-regions-countpoints
- Grange, S, et al. (2017). Lower vehicular primary emissions of NO2 in Europe than assumed in policy projections. *Nature GeoScience*(ISSN 1752-0908), pp 914-920.
- NAEI. (2020). UK Emissions Interactive Map. Retrieved from National Atmospheric Emissions Inventory: https://naei.beis.gov.uk/emissionsapp/





Chapel House, Barton Manor, Bristol, BS2 ORL Tel: 01179 112434. Email: contact@airpollutionservices.co.uk

Construction Dust Risk Assessment: Highgate Studios, Camden

Client: Kentish Town UK Reference: P1150A_F1-3 Date Published: 18 April 2023 Office Propco Ltd

Rev.	Date	Description	Prepared	Reviewed	Authorised
01	06/02/2023	Draft	TW	GB/CH	СН
02	04/04/2023	Issued	TW	KL	KL
03	18/04/2023	Client Name Change	TW	KL	KL

This document has been prepared by Air Pollution Services on behalf of the Client, taking account of the agreed scope of works. Unless otherwise agreed, this document and all other associated Intellectual Property Rights remain the property of Air Pollution Services. In preparing this note, Air Pollution Services has exercised all reasonable skill and care, taking account of the objectives and the agreed scope of works. Air Pollution Services does not accept any liability in negligence for any matters arising outside of the agreed scope of works. Air Pollution Services shall not be liable for the use of or reliance on any information, advice, recommendations, and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only if Air Pollution Services and the intervent of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment. Air Pollution Services does not accept any responsibility for any unauthorised changes made by others.

F1. Introduction

- F1.1. Air Pollution Services (APS) has been commissioned to assess the air quality impacts associated with the proposed development at Highgate Studios, Camden (herein the 'Proposed Development').
- F1.2. This document sets out the construction dust risk assessment (CDRA) related dust impacts associated with the Proposed Development and sets out relevant mitigation for the construction works.

F2. Guidance

F2.1. The assessment has been carried out using approaches set out in the following guidance.

The Control of Dust and Emissions during Construction and Demolition

F2.2. The Greater London Authority's (GLA's) Supplementary Planning Guidance (SPG) on The Control of Dust and Emissions During Construction and Demolition (2014a) provides a risk-based methodology for considering the potential for dust generation from a development site during construction and demolition phases. The SPG sets out what mitigation measures should be implemented to minimise the dust impacts, dependent on the outcomes of the risk assessment. This guidance is largely based on the Institute of Air Quality Management's (IAQM's) guidance, and it states that *"the latest version of the IAQM Guidance should be used"*.

Guidance on the Assessment and Control of Dust from Demolition and Construction

F2.3. The Institute of Air Quality Management (IAQM) produced guidance (2016) on the assessment of dust from demolition and construction. This document provides a risk-based methodology for assessing construction impacts, including demolition and earthworks where appropriate. The

P1150A_F1-3



guidance has been used throughout this assessment, which should be read in conjunction with this document.

F3. Construction Dust Assessment Approach

- F3.1. The assessment method follows the approach provided by the IAQM guidance document (2016) which supersedes the GLA SPG. This approach follows a sequence of steps:
 - Step 1 is a basic screening stage, to determine whether the more detailed assessment provided in Step 2 is required.
 - Step 2 is to assess the risk of dust impacts.
 - Step 2a determines the potential for dust to be raised from on-site works and by vehicles leaving the site.
 - Step 2b defines the sensitivity of the area to any dust that may be raised.
 - Step 2c combines the information from Steps 2a and 2b to determine the risk of dust impacts without appropriate mitigation.
 - Step 3 uses this information to determine the appropriate level of site-specific mitigation required to ensure that there should be no significant impacts.
 - Step 4 is to examine the residual effects and to determine whether these are significant.
- F3.2. The approach developed by IAQM, divides the activities on construction sites into four types to reflect their different potential impacts. These are:
 - demolition;
 - earthworks;
 - construction; and
 - trackout.

F4. The Proposed Development

- F4.1. The Proposed Development site location is shown in Figure F1. The Proposed Development is located within the administrative area of the London Borough of Camden (LBC).
- F4.2. The construction works may give rise to a risk of dust impacts during construction activities.







F5. Step 1

F5.1. Step 1 of the assessment procedure is to screen the need for a detailed assessment. The guidance provides distance-based criterion in Box 1 of the guidance which states:

An assessment will normally be required where there is:

- a 'human receptor' within:
 - \circ 350 m of the boundary of the site; or
 - 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).
- an 'ecological receptor' within:
 - o 50 m of the boundary of the site; or
 - 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).
- F5.2. There are human receptors within the distances set out in the guidance (see Figure F1), thus a detailed assessment is required for human receptors. There are no nationally designated ecological receptors within the screening distances and therefore effects on ecological receptors can be discounted as not significant.



F6. Step 2

F6.1. The following section sets out Step 2 of the assessment procedure.

Potential Dust Emission Magnitude

F6.2. The guidance explains that the dust emission magnitude is based on the scale of the anticipated works and should be classified as Small, Medium, or Large. The guidance provides examples of the magnitude classification for each of the potential stages.

Demolition

F6.3. The plans for the site involve demolishing and refurbishing the existing buildings on site. The total building volume to be demolished is estimated to be approximately 12,000 m³. The construction material for the buildings to be demolished are brick and concrete and some buildings are below 10 m whereas one building is close to 20 m. Based on the illustrative criteria in the IAQM guidance, the dust emission class for demolition is considered to be *Medium*.

Earthworks

F6.4. The dust generated by the earthworks depends on the nature of the earth and soil at the application site. The characteristics of the soil have been defined using the British Geological Survey's UK Soil Observatory website (2022) and are set out in Table F1. Overall, it is considered that, when dry, this soil has the potential to be moderately dusty.

Category	Record
Soil layer thickness	Deep
Soil texture	Medium to Light (Silty) to heavy
Subsoil grain size	Argillaceous – a clay and silt-rich subsoil
European Soil Bureau Description	Prequaternary marine/ Estuarine sand and silt
Table notes: -	

Table F1: Soil Conditions at the Application Site

F6.5. The whole site covers an area that is approximately 11,000 m². The exact area of earthworks is unknown but as many existing buildings are being retained there are not likely to be significant earthworks for significant portions of the site. Dust will arise mainly from the handling and transport of dusty materials (such as dry soil). Considering the soil conditions at the site and the area of the site likely to have substantial earthworks and based on the illustrative criteria in the IAQM guidance document, the dust emission magnitude for earthworks is considered *Medium*.

Construction

F6.6. The Proposed Development includes the construction of three new blocks and the refurbishment and extension of three other blocks. The total volume for construction will be approximately 49,000 m³ and is likely to use common construction materials like brick and concrete. Based on the illustrative criteria in the IAQM, the dust emission class for construction is considered to be *Medium*.



Trackout

F6.7. The number of HDVs leaving the site on a single day has been provided by RGP, the transport consultant for the project. There is expected to be approximately 11 HDV movements leaving the site per day. The length of unpaved roads within the site is unknown but based on the site layout could be a maximum of approximately 140 m but is likely to be significantly less than this. These HDVs may lead to dust and dirt being tracked out. Based on the example definitions set out in the IAQM guidance, the dust emission magnitude for trackout is considered *Medium*.

Summary of Potential Dust Emission Magnitude

F6.8. Table F2 summarises the dust emission magnitude from the construction phases of the Proposed Development.

	<u> </u>
Activity	Dust Emission Magnitude
Demolition	Medium
Earthworks	Medium
Construction	Medium
Trackout	Medium
Table notes: -	

Table F2: Summary of Potential Dust Emission Magnitudes

Sensitivity of the Study Area

- F6.9. The guidance explains that the sensitivity of the area should take account of a number of factors including:
 - the specific sensitivities of receptors in the area;
 - the proximity and number of those receptors;
 - in the case of PM₁₀, the local baseline concentration; and
 - site-specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of wind-blown dust.
- F6.10. The IAQM guidance document provides examples of high, medium and low sensitivity receptors for each of the potential effects. These are provided in Box 6 to Box 8 of the guidance and consideration should be given to the additional factors presented in Box 9 of the guidance. The guidance also provides a series of matrices (Tables 2, 3 and 4 of the guidance document) to determine the sensitivity of the area based on the receptor sensitivity, number of receptors, the proximity to the dust emission activity and baseline PM₁₀ concentration. Residential properties are considered high sensitivity receptors to dust soiling and elevated levels of PM₁₀.
- F6.11. Figure F2 shows the site location with several bands representing 20 m, 50 m, and 100 m distances from the application site. There are more than 10 high sensitivity properties within 20 m of the application site. Based on Table 2 of the IAQM guidance document, the sensitivity of the area to dust soiling impacts will be *High*.



AIR POLLUTION

F6.12. Annual mean PM_{10} predicted background concentrations in the vicinity of the Proposed Development are predicted to be a maximum of 18.3 µg/m³ (most appropriate value set out in the air quality baseline assessment). There are more than 10 high sensitivity properties that are likely to be exposed to these concentrations within 20 m of the application site. Based on Table 3 of the IAQM guidance, the sensitivity of the area to human health impacts due to elevated levels of PM_{10} during the demolition, earthworks and construction stages will be *Low*.



Figure F2: Distance Buffers from Application Site

F6.13. Footnote C of Table 2 of the guidance explains that where there is a *Medium* dust emission magnitude for trackout there is a risk of material being tracked up to 200 m from the application site. There will be more than 100 high sensitivity properties within 20 m of the roads along which material could be tracked, and thus the area is considered to be of *High* sensitivity to dust soiling impacts due to trackout. In terms of human health, the area is considered to be of *Medium* sensitivity.



<figure><figure>

Figure F3: Distance Buffers from road lanes where dirt may be tracked out from the site

F6.14. Table F3 summarises the sensitivity of the area around the proposed construction works based on the highest level of sensitivity determined for each stage.

Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	High	High	High	High
Human Health	Low	Low	Low	Medium
Table notes:				
IAQM Guidance states magnitude sites, and 50	that trackout may occur alo) m from small magnitude s	ng the public highway for up to ites, as measured from the site	o 500 m from large magnitude si e exit.	tes, 200 m from medium

Table F3: Summary of Sensitivity of the Surround Area

Risk of Dust Effect

- F6.15. The guidance has, helpfully, provided a series of matrices (Table 2, Table 3 and Table 4 of the guidance document) to determine the potential impact at receptors based on the receptor sensitivity, number of receptors and the proximity to the dust emission activity.
- F6.16. The dust emission magnitudes in Table F2 have been combined with the sensitivities of the area in Table F3 using the matrices in the guidance (Table 6, Table 7, Table 8 and Table 9 of the guidance), in order to assign a risk category to each activity. The resulting risk categories for the four construction activities, without mitigation, are set out in Table F4.



Table F4: Summary of Dust Risk for each Stage

Potential Impact	Risk			
	Demolition ^a	Earthworks ^b	Construction ^c	Trackout ^d
Dust Soiling	Medium Risk	Medium Risk	Medium Risk	Medium Risk
Human Health	Low Risk	Low Risk	Low Risk	Low Risk
Table notes: a. Based on Table 6 of the IAQM guidance document.				
b. Based on Table 7 of the IAQM guidance document.				
c. Based on Table 8 of the IAQM guidance document.				
d. Based on Table 9 of the IAQM guidance document.				

Significance of effects

F6.17. The IAQM guidance does not provide a method for assessing the significance of effects before mitigation and advises that pre-mitigation significance should not be determined.

F7. Step 3

F7.1. The risk categories set out in Table F4 have been used to determine the appropriate level of mitigation as set out in Section F8 below of this document (step 3 of the assessment procedure).

F8. Mitigation

- F8.1. Measures to mitigate emissions will be required during the construction phase of the Proposed Development in order to minimise impacts upon nearby sensitive receptors.
- F8.2. The Proposed Development has been identified as Medium Risk site for dust soiling effects during all construction stages, and a Low Risk for human health effects during all construction stages, as set out in Table F4.
- F8.3. The IAQM guidance document describes measures that should be employed, as appropriate, to reduce the impacts. In addition to this the IAQM has also published guidance on monitoring during demolition and construction (IAQM, 2018). Based on the finding of this assessment, a set of measures that are both highly recommended and desirable to be incorporated into the specification for the construction works has been drawn up. These measures are shown in Table F5, to Table F10.
- F8.4. The mitigation measures for the application site should be written into a dust management plan (DMP). The DMP may be integrated into a Code of Construction Practice or the Construction Environmental Management Plan and may require monitoring.
- F8.5. Where mitigation measures rely on water, it is expected that only sufficient water will be applied to damp down the material. There should not be any excess to potentially contaminate local watercourses.



Table F5: Communication

Measure	Highly Recommend / Desirable
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	Highly Recommend
Display the name and contact details of person(s) account- able for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.	Highly Recommended
Display the head or regional office contact information.	Highly Recommended
Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. In London additional measures may be required to ensure compliance with the Mayor of London's guidance. The DMP may include monitoring of dust deposition, dust flux, real-time PM ₁₀ continuous monitoring and/or visual inspections.	Highly Recommended

Table F6: Dust Management

Measure	Highly Recommend / Desirable
Site Management	
Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.	Highly Recommended
Make the complaints log available to the local authority when asked.	Highly Recommended
Record any exceptional incidents that cause dust and/or air emissions, either on- or off- site, and the action taken to resolve the situation in the log book.	Highly Recommended
Monitoring	
Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of site boundary, with cleaning to be provided if necessary.	Desirable
Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.	Highly Recommended
Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.	Highly Recommended
Agree dust deposition, dust flux, or real-time PM ₁₀ continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.	Highly Recommended
Preparing and maintaining the site	
Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	Highly Recommended
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	Highly Recommended



AIR POLLUTION

Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period.	Highly Recommended
Install green walls, screens or other green infrastructure to minimise the impact of dust and pollution	Desirable
Avoid site runoff of water or mud.	Highly Recommended
Keep site fencing, barriers and scaffolding clean using wet methods.	Highly Recommended
Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.	Highly Recommended
Cover, seed or fence stockpiles to prevent wind whipping.	Highly Recommended
Operating vehicle/machinery and sustainable travel	
Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone, Ultra-Low Emission Zone, and the London NRMM standards, where applicable.	Highly Recommended
Ensure all non-road mobile machinery (NRMM) comply with the London NRMM standards.	Highly Recommended
Ensure all vehicles switch off engines when stationary - no idling vehicles.	Highly Recommended
Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.	Highly Recommended
Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).	Desirable
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials	Highly Recommended
Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).	Desirable
Operations	
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.	Highly Recommended
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	Highly Recommended
Use enclosed chutes and conveyors and covered skips.	Highly Recommended
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	Highly Recommended
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.	Highly Recommended
Waste management	
Reuse and recycle waste to reduce dust from waste materials.	Highly Recommended
	Highly Recommonded



Table F7: Measures Specific to Demolition

Measure	Highly Recommend / Desirable
Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).	Desirable
Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.	Highly Recommended
Avoid explosive blasting, using appropriate manual or mechanical alternatives.	Highly Recommended
Bag and remove any biological debris or damp down such material before demolition.	Highly Recommended

Table F8: Measure Specific to Earthworks

Measure	Highly Recommend / Desirable
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.	Desirable
Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.	Desirable
Only remove the cover in small areas during work and not all at once.	Desirable

Table F9: Measure Specific to Construction

Measure	Highly Recommend / Desirable
Avoid scabbling (roughening of concrete surfaces) if possible.	Desirable
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.	Highly Recommended
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.	Desirable
For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.	Desirable

Table F10: Measure Specific to Trackout

Measure	Highly Recommend / Desirable
Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.	Highly Recommended
Avoid dry sweeping of large areas.	Highly Recommended
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	Highly Recommended
Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.	Highly Recommended
Record all inspections of haul routes and any subsequent action in a site log book.	Highly Recommended



Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.	Highly Recommended
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	Highly Recommended
Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.	Highly Recommended
Access gates to be located at least 10 m from receptors where possible.	Highly Recommended

F9. Summary

F9.1. The construction works have the potential to create dust and emissions. During construction it will therefore be necessary to apply a package of mitigation measures to minimise dust emission. With these measures in place, it is expected that any residual effects will be 'not significant'. The IAQM guidance recognises that even with a rigorous dust management plan in place, it is not possible to guarantee that the dust mitigation measures will be effective all the time, for instance under adverse weather conditions. The local community may therefore experience occasional, short-term annoyance. The scale of this would not normally be considered sufficient to change the conclusion that the effects will be 'not significant'.

F10. Glossary

APS	Air Pollution Services			
DMP	Dust Management Plan			
GLA	Greater London Authority			
HDV	Heavy Duty Vehicle			
IAQM	Institute of Air Quality Management			
LEZ	Low Emission Zone			
μg/m³	Microgrammes per cubic metre			
NRMM	Non-Road Mobile Machinery			
PM ₁₀	Small airborne particles, more specifically particulate matter less than 10 micrometres in aerodynamic diameter			
SPG	Supplementary Planning Guidance			
WRF	Weather Research and Forecasting			

F11. References

- British Geological Survey. (2022). *UK Soil Observatory (UKSO)*. Retrieved from British Geological Survey: http://mapapps2.bgs.ac.uk/ukso/home.html
- GLA. (2014a). The control of dust and emissions during construction and demolition supplementary planning guidance.

P1150A_F1-3



IAQM. (2016). Guidance on the assessment of dust from demolition and construction.

IAQM. (2018). Guidance on Monitoring in the Vicinity of Demolition and Construction Sites.



Chapel House, Barton Manor, Bristol, BS2 ORL Tel: 01179 112434. Email: contact@airpollutionservices.co.uk

Air Quality Site Suitability: Highgate Studios, Camden

	Kentish Tov Office Prop	vn UK Reference: co Ltd	P1150A_I1-4 Da	ite Published: 18	8 April 2023
Client	:				
Rev.	Date	Description	Prepared	Reviewed	Authorised
01	08/02/2023	Draft	тw	KL	KL
02	04/04/2023	Issued	TW	KL	KL
03	13/04/2023	Added text regarding Camden Planning Guidance for Air Quality	тw	KL	KL
04	18/04/2023	Minor Text Changes	тw	KL	KL

This document has been prepared by Air Pollution Services on behalf of the Client, taking account of the agreed scope of works. Unless otherwise agreed, this document and all other associated Intellectual Property Rights remain the property of Air Pollution Services. In preparing this note, Air Pollution Services has exercised all reasonable skill and care, taking account of the objectives and the agreed scope of works. Air Pollution Services does not accept any liability in negligence for any matters arising outside of the agreed scope of works. Air Pollution Services shall not be liable for the use of or reliance on any information, advice, recommendations, and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only if Air Pollution Services and the third party have executed a reliance agreement or collateral warranty. Information, advice, recommendations, and opinions in the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment. Air Pollution Services does not accept any responsibility for any unauthorised changes made by others.

I1. Introduction

- 11.1. Air Pollution Services (APS) has been commissioned to assess the air quality impacts associated with the proposed development at Highgate Studios, Camden (herein the 'Proposed Development').
- 11.2. This document sets out the site suitability of the Proposed Development with regards to air quality.

Location Context

- 11.3. The Proposed Development is located within the administrative area of the London Borough of Camden (LBC). The Proposed Development will introduce human health exposure to the application site. Future occupiers may be affected by both short-term and long-term exposure to air pollutants.
- 11.4. The main air quality concern regarding the suitability of the application site for future occupants is the combined effects of background pollutant concentrations and pollutant contributions from local roads and railways.

I2. Methodology

Guidance

12.1. The assessment has been carried out incorporating approaches set out in the following guidance.

Guidance on Land-Use Planning & Development Control: Planning For Air Quality

12.2. Environmental Protection UK (EPUK) in partnership with the Institute of Air Quality Management (IAQM) have produced guidance (EPUK/IAQM, 2017) on Land-Use Planning & Development Control: Planning For Air Quality. EPUK and IAQM have produced this guidance to ensure that air quality is adequately considered in the land-use planning and development control processes. It



provides a means of reaching sound decisions, having regard to the air quality implications of development proposals and provides guidance on how air quality considerations of individual schemes may be considered within the development control process, by suggesting a framework for the assessment.

LAQM Technical Guidance

12.3. Defra and the devolved administrations have published a guidance document on Local Air Quality Management (LAQM) – Local Air Quality Management Technical Guidance (LAQM.TG22) (Defra, 2022). This document is designed to support local authorities in carrying out their duties under the Environment Act 1995 and subsequent regulations. LAQM is the statutory process by which local authorities monitor, assess, and take action to improve local air quality. The Technical Guidance provides tools, approaches and technical information related to the assessment of air quality.

LLAQM Technical Guidance

12.4. The Greater London Authority (GLA) have published a similar guidance document on London specific Local Air Quality Management – London Local Air Quality Management (LLAQM.TG (19)) (GLA, 2019). This document is largely based on LAQM.TG16 but it does incorporate London-specific elements of the LAQM system.

Camden Planning Guidance – Air Quality

12.5. LBC's Air Quality Planning Guidance (2021) outlines their specific requirements for inclusion in an air quality assessment broken down into a number of assessment topics. The assessment topics outlined are emissions, modelling, impact and significance, cumulative impacts and air quality neutral assessments. The guidance also discusses strategies for minimising emissions into the air and under what circumstances these are required.

Approach Overview

- 12.6. The approach to determining site suitability considers two elements:
 - Compliance with regulatory thresholds in the context of the planning regime; and
 - A review of the potential air quality health indicators.

Compliance with regulatory thresholds

12.7. The human-health related Air Quality Objectives (AQOs) and Limit Values (LVs) for England for the pollutants relevant to this project are detailed in Table 11.

Pollutant	Time Period	Criteria Type	Concentration, and the number of exceedances allowed per year (if any)	Date AQO / LV to be Achieved From and Maintained After
Nitrogen Dioxide (NO ₂)	1-hour Mean	AQO / LV	200 μg/m ³ not to be exceeded more than 18 times a year	31 st December 2005 / 1 st January 2010
	Annual Mean	AQO / LV	40 μg/m ³	31 st December 2005 / 1 st January 2010
Fine Particles (PM ₁₀)	24-hour Mean	AQO / LV	50 µg/m ³ not to be exceeded more than 35 times a year	31 st December 2004

Table	11:	Air	Quality	^v Ob	iectives	and	Limit	Values
1 0010		· · · · ·	addity	- U N	10001000	and		1 41400



	Annual Mean	AQO / LV	40 μg/m³	31 st December 2004		
Fine Particles (PM _{2.5}) ^a	Annual Mean	AQO / LV	25 μg/m³ / 20 μg/m³	2020 / 2020		
Table notes:						

a. Air Quality Objectives (AQOs) are from the Air Quality Strategy; limit values, target values and critical levels are from the Air Quality Standards Regulations.

- 12.8. The National Planning Policy Framework (NPPF) explicitly requires planning decisions to sustain and contribute towards compliance with the LVs and relevant national AQOs. This report therefore primarily considers whether the introduction of new exposure to the application site would result in an AQO or LV being exceeded in relevant locations.
- 12.9. The Environment Act 2021 put a duty on the Secretary of State to set a least one long-term target for PM_{2.5}. The Government's Environmental Improvement Plan 2023 (HM Government, 2023) sets two targets. These are an annual mean concentration target (AMCT) of 10 µg/m³ and a population exposure reduction target (PERT) of 35% compared to 2018 levels, both to be achieved by the end of 2040.
- I2.10. Furthermore, there is an interim AMCT of 12 μ g/m³ and a PERT by 22% or greater to be achieved by the end of January 2028 (HM Government, 2023).
- 12.11. At the date of this assessment guidance on how to consider a development in relation to these targets is not available, however, the AMCTs are used to inform the assessment.

Air Quality Health Indicators

12.12. The World Health Organization (WHO) has revised its air quality guidelines (AQGs) and produced Interim Targets (ITs) (2021) for six pollutants, including PM₁₀, PM_{2.5} and NO₂. The air quality guidelines for these pollutants are more stringent than in the previous AQGs (World Health Organization, 2006). Table I2 presents the WHO AQGs and ITs for the pollutants of concern.

Pollutant	Time Period	IT Levels	IT Levels				
		1	2	3	4		
Nitrogen	1-hour Mean	-	-	-	-	200 µg/m³	
Dioxide (NO ₂)	24-hour Mean	120	50	-	-	25 μg/m³	
	Annual Mean	40	30	20	-	10 µg/m³	
Fine Particles	24-hour Mean	150	100	75	50	45 μg/m³	
(PM ₁₀)	Annual Mean	70	50	30	20	15 μg/m³	
Fine Particles (PM _{2.5})	24-hour Mean	75	50	37.5	25	15 μg/m³	
	Annual Mean	35	25	15	10	5 μg/m³	
Table notes: -							

Table	12:	WHO	Guide	ines

12.13. In recognition of the difficultly of meeting the AQGs, a series of ITs are proposed by the WHO which should be considered steps towards ultimately achieving the AQGs, rather than as end targets. The WHO document aims to provide quantitative health-based recommendations for air quality management.

P1150A_I1-4



- 12.14. The guidelines are not legally binding standards; however, they should be used to inform legislation and policy. Ultimately, the goal of the guidelines is to help reduce the health burden resulting from exposure to air pollution. Air pollution increases morbidity and mortality from cardiovascular and respiratory disease and from lung cancer and there is increasing evidence of effects on all other organ systems.
- 12.15. The WHO AQGs are based solely on the latest epidemiological evidence, whereas the AQOs and LVs were based on health evidence from the 1990s. They also take account of other factors such as the technical and economic feasibility of meeting the standard by a defined date.
- 12.16. It is more than 15 years since WHO published its last AQGs (2006). Over that period there has been a large increase in the evidence of health effects of air pollution. New epidemiological studies have shown adverse effects at much lower levels than had previously observed.
- 12.17. The WHO guidelines are not currently in Regulations and there is no legal requirement for local authorities to meet them.
- 12.18. The Government's recent PM_{2.5} targets demonstrate that the government consider there is a risk to health at lower levels than the objectives and limit values. However in setting the AMCT and PERT consideration was given to the feasibility of achieving them. and therefore, they are not solely based on health considerations.
- I2.19. To review the potential for health effect due to air quality, consideration has therefore also been given to the 2021 WHO AQGs and ITs. As stated earlier, these thresholds are based solely on the latest evidence of health effects of air pollution.
- 12.20. WHO acknowledges that in many countries, including the UK, achieving the AQGs is difficult, and has set ITs to encourage the reduction in air pollution towards the AQGs. A pragmatic approach has been adopted for identifying an appropriate local level (IT or AQG) for this assessment based on the background concentrations in the local area in 2025. This is the level members of the public can reasonably expect to enjoy if away from local emission sources such as road traffic. The aim is to provide information of the level of exposure future users of the application site may experience.
- 12.21. The modelling carried out for the assessment is not suitable for assessing against the WHO short term ITs and there is currently no proxy method for assessment and therefore the focus is on the annual mean levels.

Step 1 – Define AQLs

- 12.22. Table 13 provides descriptions and Air Quality Levels (AQLs) based on the WHO AQGs and ITs. The descriptors are in the context of current air quality in the UK and over time, as air quality improves, will need to be updated to drive reductions in air pollution.
- 12.23. For site suitability assessments accompanying outline planning applications it is recommended that the development AQL be based on the worst-case concentration at the site boundary. This will provide a conservative assessment and could help inform the design for a detail full planning application. Where the development site includes areas which are clearly not potential locations for relevant exposure (i.e. buildings could not be erected in specific parts of the site) it may be appropriate to not use the concentration at the site boundary but rather the area where buildings could be located.



- 12.24. For site suitability assessments accompanying reserved matters planning applications it would be more appropriate to base the development AQLs on the concentrations at the worst-case building facades as indicated on the development site plan. Two AQLs are identified for the first year of occupation of the development:
 - Background AQL derived from the background concentrations in the 1km x 1km grid where the development is located (Defra, 2020)¹ or suitable local background monitoring data (with relevant forward projection). Where a development covers several grids or is close to the boundary of one with much lower concentrations, it would be prudent to use the highest background concentrations as a worst case scenario or interpolating to be relevant to the site.
 - Development AQL derived from the predicted concentrations at the site i.e. taking into account local sources of air pollution, such as the emissions from a nearby road. This would be at the site boundary (outline applications) or at the worst-case facade of the buildings on the site plan (detailed and full applications).
- 12.25. Table 13 provides descriptors and Air Quality Levels (AQLs) for the area of the proposed development based on the WHO AQGs and ITs. The descriptors are in the context of current air quality in the UK.
- 12.26. The AQLs are used to define the air quality in the general area of the proposed development, in the year of first occupation, and are the background concentration provided by Defra's maps (Defra, 2020) or suitable local background monitoring.

Pollutant	Concentrations (µg/m³)*	AQL	Description**
NO ₂ ***	<u>≤</u> 10 μg/m³	1	Achieves WHO AQG.
	11-20 μg/m³	2	Achieves WHO IT3.
	21-30 μg/m³	3	Achieves WHO IT2.
	31-40 μg/m³	4	Achieves WHO IT1.
	>40 μg/m³	5	Exceeds regulatory thresholds.****
PM _{2.5}	<u><</u> 5 μg/m³	1	Achieves WHO AQG.
	6-10 μg/m³	2	Achieves WHO IT4.
	11-15 μg/m³	3	Achieves WHO IT3
	16-20 μg/m³	4	Achieves WHO IT2
	>20 µg/m³	5	Exceeds regulatory thresholds.****
PM ₁₀	<u><</u> 15 µg/m³	1	Achieves WHO AQG.
	16-20 μg/m³	2	Achieves WHO IT4.
	21-30 μg/m³	3	Achieves WHO IT3.
	31-40 μg/m³	4	Achieves WHO IT2.
	>40 μg/m³	5	Exceeds regulatory thresholds.****
Note:			

Table I3: Future Air Quality Levels*

1 Or equivalent background maps for the other nations.

P1150A I1-4



Table I3: Future Air Quality Levels*							
Pollutant Concentrations AQL Description**							
**Descriptors are within the o	context of 2022 air quality in th	ne UK and the WHO air quality	guidelines				
*** For NO ₂ there is no WHO IT4							
**** Regulatory thresholds refer to the limit values and air quality objectives.							

<u>Step 2 – Define Risk</u>

- 12.27. The difference between the development AQL and the background AQL is used to assess the risk to the health of future occupiers of the site as illustrated in Table I4.
- 12.28. This comparison is based on the assumption that air quality does not influence the decision to develop in a particular district, but that sensitive development should be located where there is relatively good air quality in the local context.

Future Background		Number of AQLs change in future year at site (i.e. Background AQL – Maximum AQL at Proposed Development)*				
		0	-1	-2	-3	-4
	AQL 1	Negligible	Low	Medium	High	Extremely high
2025 Background AQL	AQL 2	Low	Medium	High	Extremely high	Extremely high
	AQL 3	Medium	High	Extremely high	**	**
	AQL4	High	Extremely high	**	**	**
	AQL 5	Extremely high	**	**	**	**
Notes:						

Table I4: Health Risk for Future Occupiers of the Proposed Development

*The difference in Background Air Quality Level - Proposed Development Air Quality Level (see Table I3)

** The grey cells are non-feasible options

Step 3 - Evaluation

- 12.29. Where sensitive development is located where the air quality is poor in the local context additional exposure reduction measures should be adopted to reduce the exposure. In this way future users of the development will be exposed to better air quality than without the additional exposure reduction measures. This is consistent with the WHO advice to use the ITs to drive improvement.
- 12.30. Air quality is forecast to improve in the future and therefore time is an important factor when considering the recommended exposure reduction measures to reduce the risk. Thus if future occupiers will suffer exposure for one year the risk is different to exposure over, say, 10 years. If high levels of air pollution is forecast for many years it may be that the site is not suitable for the proposed use or additional exposure reduction measures are required to reduce the health risk. Information on the rate of change in annual mean concentrations in the locality (e.g. from the local authority's annual status report), together with professional judgement, should be used to assess how long it will be before the development AQL will drop to the same level as the background AQL. For example, where the development predicted concentration is near the top of the AQL band then it is likely that it would take longer for an improvement in air quality to reach the next band down.



Where the prediction is just above the lower threshold of the band there is potential for the next AQL to be achieved in a relatively short period.

- 12.31. Greater consideration as to whether a site is suitable, or not, should be given to those sites with increased risk of health effects for future users. Proposals which result in an unacceptable risk to health could be considered for refusal.
- 12.32. Where the risk is assessed to be medium or above all opportunities to improve AQ should be explored, taking into account the risk of disbenefits of other environmental factors such as the need to meet net zero emissions.
- 12.33. High and extremely high sites may not be suitable for the proposed land-use, unless suitable exposure reduction measures are introduced to ensure appropriate exposure. This is particular the case where a large number of people will be exposed and/or the people exposed are likely to be from deprived communities who tend to have a greater risk of poor health. Furthermore,
- 12.34. A proportionate health impact assessment is recommended for extremely high risk sites, while it may also be beneficial for high risk sites in supporting a determination of significant effects on health.
- 12.35. The greatest level of risk from any pollutant should be used. However, exposure reduction measures to improve are likely to be pollutant focused.

Relevant exposure

12.36. The locations of relevant exposure for each type of AQAL are set out in Table 15.

Table I5: Locations of relevant exposure

Receptor Locations	Relevant exposure
AQO	The annual mean AQO applies at locations where members of the public might be regularly exposed, such as building façades of residential properties, schools, hospitals, and care homes.
	The 24-hour mean AQO applies at the annual mean locations of exposure as well as at hotels and residential gardens.
	The 1-hour mean AQO applies at the annual mean locations of exposure and at hotels, residential gardens and any outdoor location where members of the public might reasonably be expected to spend one hour or longer, such as busy pavements, outdoor bus stations and locations with outdoor seating.
	Places of work like factories or offices are not considered places where members of the public might be regularly exposed and therefore the AQO's do not apply at these locations.
LV	In accordance with Article 2(1), Annex III, Part A, paragraph 2 of Directive 2008/50/EC detailed locations where compliance with the LVs does not need to be assessed:
	"Compliance with the limit values directed at the protection of human health shall not be assessed at the following locations:
	a) Any locations situated within areas where members of the public do not have access and there is no fixed habitation;
	b) In accordance with Article 2(1), on factory premises or at industrial installations to which all relevant provisions concerning health and safety at work apply; and
	c) On the carriageway of roads; and on the central reservation of roads except where there is normally pedestrian access to the central reservation".
	The government models compliance with the Directive at locations 4 m from the kerbside, 2 m high, more than 25 m from major road junctions and adjacent to at least 100 m of road length where the LVs apply.



WHO	The WHO criteria apply wherever there is relevant exposure in relation to each time period for each pollutant.
Table notes: n/a	

Impacts of Emissions Sources on the Development

- 12.37. The EPUK and IAQM guidance explains consideration should be given to:
 - the background and future baseline air quality and whether this will be likely to approach or exceed the thresholds set by air quality objectives;
 - the presence of a heavily trafficked road, with emissions that could give rise to sufficiently high concentrations of pollutants (in particular NO₂), that would cause unacceptably high exposure for users of the new development; and
 - the presence and location of Air Quality Management Areas (AQMAs) as an indicator of local hotspots where the air quality objectives may be exceeded.

Annual Mean vs Short Term Impacts

12.38. The assessment focuses on annual mean concentrations, however, consideration in relation to compliance with the short-term regulatory thresholds is also provided.

Planning Significance

- 12.39. The approach developed by EPUK and IAQM (2017) has been used. The guidance is that the assessment of significance should be based on professional judgement, with the overall air quality impact described as either 'significant' or 'not significant' (i.e. the site is suitable or not suitable for the proposed use).
- 12.40. In drawing the determination of significance, the following factors should be taken account of:
 - the extent of future population exposure to any impacts;
 - the influence and validity of any assumptions adopted when undertaking the prediction of impacts; and
 - the judgement on significance relates to the consequences of the impacts; i.e. will they have an effect on human health that could be considered as significant?
- 12.41. The guidance is clear that other factors may be relevant in individual cases. It also states that the effect on the users of any new development where an AQO is not met will be judged as significant.

I3. Site Suitability Assessment

- I3.1. The suitability of the site for future users has been considered. The existing conditions are based on various sources of information available as outlined in the air quality baseline document (ref: P1150A_D1-3). Air quality has been improving over the past decade, largely due to improvements in vehicle emissions, and is expected to continue to improve into the future, as old vehicles are replaced by new lower emission alternatives.
- 13.2. The Proposed Development is in close proximity to Highgate Road, a moderately significant road in inner London. A number of railway lines are also within 200 m of the Proposed Development. Contributions from this road and the railway lines have been assessed using dispersion modelling, details of which are set out in the air quality modelling document (ref: P1150A_E1-3). Background



concentration of pollutants, road traffic contributions and railway locomotive contributions have been considered.

Predicted Concentrations

I3.3. Table I6 shows the modelled annual mean concentrations for NO₂, PM₁₀ and PM_{2.5} at modelled onsite receptors for the year of 2025. Background concentration of pollutants and road traffic and railway locomotive contributions have been considered. The locations of the receptors are shown in Figure I1. Receptors shaded in grey in the table are only relevant for comparison with the short term exposure and not the annual mean exposure.

Table I6: Predicted Annual Mean Concentrations at the Proposed Development in 2025 (µg/m³) ^a

Receptor	NO ₂	PM ₁₀	PM _{2.5}
P1	23.1	16.9	11.0
P2	23.0	16.8	11.0
Р3	23.0	16.8	10.9
P4	23.0	16.8	10.9
Р5	23.0	16.8	10.9
P6	23.0	16.8	10.9
Р7	23.0	16.8	10.9
P8	22.9	16.8	10.9
Р9	23.1	16.9	11.0
P10	23.1	16.9	11.0
P11	23.2	16.9	11.0
P12	23.1	16.9	11.0
P13	23.2	16.9	11.0
P14	23.1	16.9	11.0
P15	22.9	16.7	10.9
P16	22.9	16.7	10.9
P17	22.9	16.8	10.9
P18	22.9	16.7	10.9
P19	22.9	16.8	10.9
P20	23.0	16.8	10.9
P21	23.0	16.8	10.9
P22	22.9	16.7	10.9
P23	22.9	16.8	10.9
P24	22.9	16.8	10.9
AQO	40	40	25 ^b
LV °	40	40	20
WHO AQG Level (ITs) ^b	10 (40, 30, 20)	15 (70, 50, 30, 20)	5 (35, 25, 15, 10)
Table notes:			

a. Receptor locations only relevant for comparison with the short term AQOs are shaded in grey.

b. Not in Regulations and there is no legal requirement for local authorities to meet it.



Table I6: Predicted Annual Mean Concentrations at the Proposed Development in 2025 (µg/m³) ^a

Receptor	NO ₂	PM ₁₀	PM _{2.5}			
c. Reporting of LV exceedances is only carried out based on approved reference monitoring and at relevant reporting locations. Therefore,						
while the value is included, the monitoring presented is unlikely to comply with the requirements for LV reporting and assessment.						

13.4. Predicted pollutant concentrations at the Proposed Development were also modelled applying a sensitivity test to comply with LBCs requirements for a more robust assessment (as set out in an air quality proforma available on LBC's website (London Borough of Camden, 2023)). The sensitivity test takes account of LBC's concerns over projected Defra background concentrations and over projected emissions factors from Defra's Emissions Factor Toolkit. The resulting concentrations and precise methodology for this approach is outlined in a Technical Note (ref: P1150A_B1-2).



Figure I1: Receptor Locations within the Proposed Development

Compliance with regulatory thresholds and statutory standards

Air Quality Objectives

- 13.5. Concentrations are predicted to be well below the AQOs at all receptors relevant for the annual mean objective (Receptors P11 to P24).
- I3.6. The predicted short term NO₂ and PM₁₀ AQOs are also likely to be achieved (at all receptors) as the predicted concentrations are well below the proxy annual mean equivalents for these AQOs of 60 μ g/m₃ for 1-hour NO₂ and 32 μ g/m³ for 24-hour mean PM₁₀.

P1150A_I1-4



Limit Values

- 13.7. The application site boundary is over 4 m from the kerb of the local major roads e.g. Fortress Road and Kentish Town Road (i.e. location used for LV compliance reporting) and therefore reporting of LVs at the application site is not required. Highgate Road is not included by Defra as a road relevant for LV compliance reporting.
- 13.8. However, in recognition that LVs apply anywhere members of the public can access, concentrations at the Proposed Development have been considered. The maximum predicted concentrations within the Proposed Development in 2025 are all well below the LVs. There is thus unlikely to be a breach of the LVs within the Proposed Development.

Environment Act 2021 Targets

13.9. While achievement of the AMCT and interim AMCT are set for 17 and 5 years in the future respectively consideration hasbeen given to compliance with these $PM_{2.5}$ targets. The $PM_{2.5}$ concentration at the proposed development is below the interim AMCT of 12 µg/m³ set to be achieved by the end of January 2028 but marginally above the 2040 target of 10 µg/m³. On the basis that national policies will act to reduce concentrations in the long term, by 2040 it is anticipated that the concentrations will be below the target set for the whole of the country.

Mitigation Measures

13.10. No further mitigation measures are proposed. Although it should be noted that each of the blocks within the Proposed Development will include Air Handling Units (AHUs) (with their air intakes all located away from Highgate Road), which is likely to improve the air quality for future users of the Proposed Development. The Proposed Development will also not include any on-site combustion plant for its energy strategy (all electric including PV panels) or for its life safety systems (utilising an uninterrupted power supply with battery storage). Combustion plant has the potential for impacting on the air quality for future users so it is beneficial that they will not be included in the design.

Air Quality Health Indicators

I3.11. Table I7 sets out the predicted background concentrations in the Proposed Development site, the WHO level (IT or AQG) which the background concentration achieves, the maximum predicted concentration at the application site, and the WHO level (IT or AQG) that is predicted to be achieved at the Proposed Development in 2025.

Pollutant	Background Concentrations (µg/m³) ^b	Applicable AQL ^a	Maximum predicted concentration on Application Site (µg/m³)	Applicable AQL ^a	Change in WHO Level	Risk
NO ₂	22.6 – 22.9	3	22.9 - 23.1	3	0 levels	Medium
PM10	16.7 – 16.9	2	16.7 – 16.9	2	0 levels	Low
PM _{2.5}	10.9 - 11.0	3	10.9 - 11.0	3	0 levels	Medium
Note: a. See Table I	4.					

Table 17: 2025 Annual Mean Concentrations and Relevant WHO Levels

P1150A_I1-4



- 13.12. The application site is currently occupied and, thus, there is some existing exposure. The Proposed Development will introduce exposure at AQL 2 and 3 depending on the pollutant, based on the maximum modelled concentration at the Proposed Development. This is considered, based on the descriptors in Table 14, to be:
 - 'Medium Risk' for NO₂;
 - 'Low Risk' for PM₁₀; and
 - 'Medium Risk' for PM_{2.5}.
- I3.13. Concentrations at the Proposed Development are expected to remain at the same AQL as the background (no change in AQL), which suggests specific local road traffic sources are unlikely to be significant at the Proposed Development and the concentrations are dominated by the wider environment, the Proposed Development location is therefore considered to be appropriate.
- 13.14. While these AQLs (derived from the WHO guidelines) are not statutory thresholds, as there are acknowledged non threshold effects of the pollutants at any level, there is a small potential risk of adverse health effects due to exposure of future users of the Proposed Development, and it may be prudent to explore any easy and practical opportunities to improve air quality for the future users of the Proposed Development, although this Proposed Development is not a high risk site. Examples include locating sensitive receptors away from local roads and ensuring any mechanical ventilation inlets are also located away from local emission sources (e.g. high up and away from roads and discrete emission sources such as chimneys), these approaches have been implemented in the Proposed Development. On this basis the Proposed Development site location is considered to be reasonable in relation to the risk to health impacts and better than much of London.

I4. Significance of the impacts of sources in the local area on sensitive human health exposure at the Proposed Development

- I4.1. The assessment has demonstrated that the future users of the Proposed Development will not be exposed to any exceedances of the AQOs or LVs.
- 14.2. The air quality for the future users of the Proposed Development, in relation to compliance with the regulatory thresholds and in the context of the planning regime, is judged to be 'not significant'. This professional judgment is made in accordance with the methodology and assessment criteria set out earlier in this document.
- I4.3. This judgment, without mitigation, takes account of the assessment that:
 - the predicted concentrations of NO₂, PM₁₀ and PM_{2.5} concentrations at relevant receptors within the Proposed Development are below the AQOs and LVs in 2025.

I5. Summary

- I5.1. The air quality at the Proposed Development has been considered for the year of 2025.
- 15.2. The predicted concentrations of NO₂, PM₁₀ and PM_{2.5} within the Proposed Development all achieve the AQOs and are below the LVs in the assessment year. Consideration has been given to the PM_{2.5} targets however, there is no requirement to achieve these targets in the assessment year.

www.airpollutionservices.co.uk Air Pollution Services is trading name of KALACO Group Limited, companies house registration number: 11808160



Achievement of the AMCT is a national government obligation and the Proposed Development is unlikely to be a significant contributor to delaying any achievement of this a target.

- 15.3. Concentrations of NO₂ at all receptors at the Proposed Development are predicted to be below the AQL 3 (WHO IT 2) of 30 μg/m³ in 2025. Concentrations of PM₁₀ at all receptor locations at the Proposed Development are predicted to be below the AQL 2 (WHO IT 4) of 20 μg/m³. Concentrations of PM_{2.5} at all receptor locations at the Proposed Development are predicted to be below AQL 3 (WHO IT 3) of 15 µg/m³. While these AQLs are not statutory thresholds, it is widely acknowledged that there is no threshold for these pollutants below which there is no adverse effect of exposure. Therefore, there is a small potential risk of adverse health effects due to exposure of future users of the Proposed Development. It may, therefore, be prudent to explore any easy and practical opportunities to improve air quality for the future users of the Proposed Development, such as locating sensitive uses and mechanical ventilation inlets away from local sources of pollution, which have been implemented on the Proposed Development However, the location of the Proposed Development is considered to be reasonable in relation to the risk to health impacts and better than much of London.
- 15.4. Overall, the air quality impacts of local emissions sources on the Proposed Development will be 'not significant' in terms of compliance with AQOs and LVs although there is a potential risk of some adverse health effects due to exposure of future users of the Proposed Development.
- 15.5. The predicted concentrations resulting from a sensitivity test, which takes account of LBC's concerns over projected Defra background concentrations and projected emissions factors from Defra's Emission Factor Toolkit, outlined in a Technical Note (ref: P1150A_B1-2) still comply with the AQOs and LVs and therefore do not change the conclusions in this assessment.

I6. Glossary

APS	Air Pollution Services
AQG	Air Quality Guideline
AQMA	Ai Quality Management Area
AQO	Air Quality Objective
EPUK	Environmental Protection UK
HDV	Heavy Duty Vehicle (which comprise of heavy goods vehicles, buses, and coaches)
IAQM	Institute of Air Quality Management
IAQM.TG22	Institute of Air Quality Management Technical Guidance
ІТ	Interim Target
LBC	London Borough of Camden
LV	Limit Value
LAQM	Local Air Quality Management
NO ₂	Nitrogen dioxide



PM ₁₀	Small airborne particles, more specifically particulate matter less than 10 micrometres in aerodynamic diameter
PM _{2.5}	Small airborne particles, more specifically particulate matter less than 2.5 micrometres in aerodynamic diameter
WHO	World Health Organization
μg/m³	Microgrammes per cubic metre

I7. References

- Defra. (2020). *Background Maps*. Retrieved from Department of Environment, Food & Rural Affairs: https://laqm.defra.gov.uk/air-quality/air-quality-assessment/background-maps/
- Defra. (2022). Local Air Quality Management Technical Guidance (TG22). Retrieved from https://laqm.defra.gov.uk/technical-guidance/
- Defra. (2022). Update on the progress of Environment Act Targets. Statement made on 28 October 2022. Retrieved from https://questions-statements.parliament.uk/writtenstatements/detail/2022-10-28/hcws347
- EPUK/IAQM. (2017). Land-Use Planning & Development Control: Planning For Air Quality.
- HM Government. (2023). Environmental Improvement Plan 2023: First Revision of the 25 Year Environment Plan.
- London Borough of Camden. (2023). *Air quality assessments in planning applications*. Retrieved from https://www.camden.gov.uk/air-quality-assessment
- World Health Organization. (2006). Air Quality Guidelines Global Update 2005: particulate matter, ozone, nitrogen dioxide, and sulfur dioxide.
- World Health Organization. (2021). WHO Global Air Quality Guidelines: particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide. Retrieved from https://apps.who.int/iris/handle/10665/345329



Chapel House, Barton Manor, Bristol, BS2 ORL

Air Quality Neutral Assessment: Highgate Studios, Camden

Client	Kentish Tov Office Prop	vn UK Reference: co Ltd	P1150A_K1-3	Date Published	18 April 2023
Rev.	Date	Description	Prepared	Reviewed	Authorised
01	01/03/2023	Draft	тw	KL	KL
02	23/03/2023	Issued	тw	KL	KL
03	18/04/2023	Minor Text Changes	тw	KL	KL

This document has been prepared by Air Pollution Services on behalf of the Client, taking account of the agreed scope of works. Unless otherwise agreed, this document and all other associated Intellectual Property Rights remain the property of Air Pollution Services. In preparing this document, Air Pollution Services has exercised all reasonable skill and care, taking account of the objectives and the agreed scope of works. Air Pollution Services does not accept any liability in negligence for any matters arising outside of the agreed scope of works. Air Pollution Services shall not be liable for the use of or reliance on any information, advice, recommendations, and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only if Air Pollution Services and the third party have executed a reliance agreement or collateral warranty. Information, advice, recommendations, and opinions in the context of the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment. Air Pollution Services does not accept any responsibility for any unauthorised changes made by others.

K1. Introduction

- K1.1. Air Pollution Services (APS) has been commissioned to assess the compliance with the air quality neutral (AQN) benchmarks in relation to Highgate Studios, Camden (herein the 'Proposed Development') in the London Borough of Camden (LBC). This technical note sets out the AQN assessment.
- K1.2. Irrespective of the significance of operational air quality effects of an individual scheme, a small incremental change can cumulatively with other developments worsen air quality and AQN assessments are designed to reduce the risk of cumulative impacts across Greater London. 'Air Quality Neutral' is a term for developments that do not contribute to air pollution beyond allowable benchmarks.
- K1.3. AQN assessments are required by the Greater London Authority (GLA) for development within the GLA boundary.

K2. Methodology

Guidance Documents

K2.1. The London Plan (GLA, 2021) sets out a requirement for major developments to be at least AQN (Policy SI 1 B2)a) of the Mayor's London Plan). The GLA officially adopted AQN Guidance (GLA, 2023) on 8th February 2023 on how to assess AQN for developments.

GLA London Plan Guidance: Air Quality Neutral

K2.2. The GLA have adopted a guidance document for AQN (GLA, 2023) in February 2023. The guidance has been prepared by the GLA to support the implementation of the London Plan Policy SI 1 B2)a).

P1150A_K1-3



The guidance sets out the assessment methodology and benchmark values. The adopted guidance considers the emissions of NOx and $PM_{2.5}$.

Approach Overview

- K2.3. The methodology follows the approach set out in the GLA's air quality neutral guidance. The assessment involves comparing emissions associated with the Proposed Development against emission benchmarks for properties and development of a similar nature within Greater London.
- K2.4. There are two sets of benchmarks, which cover the two main sources of air pollution from new developments:
 - Building Emissions Benchmark (BEB) emissions from equipment used to supply heat and energy to the buildings.
 - Transport Emissions Benchmark (TEB) emissions from private vehicles travelling to and from the development.
- K2.5. A development must meet both benchmarks separately in order to be AQN. If one or both benchmarks are not met, appropriate mitigation or offsetting will be required.
- K2.6. The guidance provides approaches for detailed calculations of emissions from the Proposed Development ('Full procedure') for comparison to the benchmarks but also provides a simplified approach.
- K2.7. The guidance also provides examples of development where there is no need for an AQN assessment.

K3. Proposed Development Emission Sources

- K3.1. The proposed development comprises over 36,000 m² of commercial (office, retail, nursery and café) floorspace and therefore is classified as a major development as defined in the London Plan.
- K3.2. The energy strategy for the Proposed Development is electrical utilising mains electric supplemented with photovoltaic panels.
- K3.3. The AQN Guidance sets out that developments that are considered to be 'car-free' should not provide car parking spaces with the exception of disabled persons parking (GLA, 2023). The Proposed Development does not include the provision of car parking (besides four disabled spaces) and is thus considered as car-free.

K4. Generators

- K4.1. The guidance explains that "Backup plant installed for emergency and life safety power supply, such as diesel generators, may be excluded from the calculation of predicted building emissions." This is based on the assumption that the use of these generators for anything other than an emergency and operational testing (less than 50 hours per year) would be prevented by planning condition.
- K4.2. The emissions from generators used for purposes other than an emergency, such as selling power into the national grid, must be included in AQN calculations.



K5. Excluded Development

- K5.1. Developments, including major developments which do not include additional emissions sources are assumed to be AQN and do not need an AQN assessment.
- K5.2. This would include, for example, developments that:
 - have no additional motor vehicle parking;
 - do not lead to an increase in motor vehicle movements;
 - and do not include new combustion plant such as gas-fired boilers.

K6. Building Emissions

- K6.1. The Proposed Development can be excluded from the requirement to carry out an AQN assessment of building emissions as it will include no on-site combustion plant as part of its energy strategy.
- K6.2. The Proposed Development will utilise an uninterrupted power supply with no combustion plant for its life safety systems and can therefore be excluded from consideration in relation to building emissions.

K7. Transport Emissions

K7.1. An AQN assessment of transport emissions has been included as there is an increase in motor vehicle movements as a result of the operation of the Proposed Development.

Simplified approach

- K7.2. The guidance states that "Where minor developments include new parking, they can be assumed to meet the TEB if the maximum parking standards set out in policies T6 and T6.1 to T6.5 of the London Plan are not exceeded." For land uses where maximum parking standards are not defined, a full calculation against the benchmarks is required.
- K7.3. The guidance goes on to state that "Where major developments meet the definition of 'car-free', they can be assumed to meet the TEB."
- K7.4. Developments that are defined as 'car-free' may include provision for disabled persons parking. The standards for disabled persons parking are outlined in the London Plan parking policies (T6 and T6.1 to T6.5) and supporting text.
- K7.5. The Proposed Development is a major development and is considered car-free, therefore the traffic generated by it will be minimal and can be assumed to meet the TEB.

K8. Mitigation and Off-setting

K8.1. The Proposed Development does not require any mitigation or off-setting measures as it is compliant in regard to both building and transport-related emissions.



K9. Summary

K9.1. The Proposed Development is compliant with the requirements of the AQN guidance and is therefore considered to be AQN in terms of both building and transport related emissions.

K10. Glossary

APS	Air Pollution Services
AQN	Air Quality Neutral
BEB	Building Emission Benchmark
GLA	Greater London Authority
LBC	London Borough of Camden
mg/kWh	Milligrams per kilowatt hour
mg/Nm ³	Milligrams per normalised metre cubed
NOx	Nitrogen oxides
TEB	Transport Emission Benchmark

K11. References

- GLA. (2014). Sustainable design and construction supplementary planning guidance.
- GLA. (2021). The London Plan. London: GLA.
- GLA. (2023). London Planning Guidance Air Quality Neutral. London: GLA.



Chapel House, Barton Manor, Bristol, BS2 ORL Tel: 01179 112434. Email: contact@airpollutionservices.co.uk

AQ Technical Note – Sensitivity Test: Highgate Studios, Camden

Client:	Kentish Town UK	Reference:	P1150A_B1-2	Date Published:	18 April 2023
	Office Propco Ltd				

Rev.	Date	Description	Prepared	Reviewed	Authorised
01	06/04/2023	Issued	TW	KL	KL
02	18/04/2023	Client Name Change	TW	KL	KL

This document has been prepared by Air Pollution Services on behalf of the Client, taking account of the agreed scope of works. Unless otherwise agreed, this document and all other associated Intellectual Property Rights remain the property of Air Pollution Services. In preparing this note, Air Pollution Services has exercised all reasonable skill and care, taking account of the objectives and the agreed scope of works. Air Pollution Services does not accept any liability in negligence for any matters arising outside of the agreed scope of works. Air Pollution Services shall not be liable for the use of or reliance on any information, advice, recommendations, and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only if Air Pollution Services and the third party have executed a reliance agreement or collateral warranty. Information, advice, recommendations, and opinions in the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment. Air Pollution Services does not accept any responsibility for any unauthorised changes made by others.

Contents

B1.	Introduction	.1
B2.	Sensitivity Test Methodology	.1
B3.	Sensitivity Test Predicted Concentrations	.2
B4.	Summary	.3
B5.	Glossary, References and Appendices	.4

B1. Introduction

- B1.1. Air Pollution Services (APS) has been commissioned to assess the air quality impacts associated with the proposed development at Highgate Studios, Camden (herein the 'Proposed Development'). The Proposed Development is located within the administrative area of the London Borough of Camden (LBC).
- B1.2. LBC has a requirement for a sensitivity test to be applied to air quality modelling predictions. This is due to LBC's concerns over how Defra's background concentrations and the emissions factors in Defra's Emissions Factors Toolkit (EFT) are projected into the future. This technical note outlines the modelling approach taken to comply with this policy and how the resulting concentrations compare with APS's typical approach for predicted pollutant concentrations.
- B1.3. This document should be read in conjunction with the Air Quality Report (ref: P1150A_A1-4) and the supporting Air Quality Technical Notes.

B2. Sensitivity Test Methodology

B2.1. The full dispersion modelling approach used to predict pollutant concentrations at the Proposed Development is outlined in the Air Quality Dispersion Modelling Study (ref: P1150A_E1-3). This includes the dispersion modelling software used, the location of the modelled sensitive receptors,

P1150A B1-2



the traffic data used, railway emissions rates used, meteorological data and surface parameters used, post processing of results and uncertainties and limitations. The sensitivity test utilised the same approach as that outlined in the above document except for two changes. The first change was to add 2022 Defra background concentrations to the model outputs rather than 2025 Defra background concentrations are higher than 2025 background concentrations and therefore utilising them is consistent with a more conservative approach. 2022 background concentrations can also be compared with existing data from background monitoring sites to verify its validity.

- B2.2. The 2022 Defra background NO₂ concentration for the background square at background monitor BL0 is 35.5 μg/m³, whereas the measured concentration is 26.0 μg/m³ (see the Air Quality Baseline Note, Ref: P1150A_D1-3, see section D4.11 for further information). This suggests the Defra background NO₂ concentration at the application site in 2022 is likely to be conservative and therefore appropriate to use for this sensitivity test.
- B2.3. The second change was to use 2022 emission factors derived from the EFT rather than a 2025 emission factors. This is a conservative approach.

B3. Sensitivity Test Predicted Concentrations

B3.1. Table 1 shows the modelled annual mean concentrations for NO₂, PM₁₀ and PM_{2.5} at modelled onsite receptors for the year of 2025. Background concentration of pollutants and road traffic and railway locomotive contributions have been considered. Receptors shaded in grey in the table are only relevant for comparison with the short-term exposure and not the annual mean exposure.

Receptor	NO ₂	PM ₁₀	PM _{2.5}
P1	31.6	18.8	12.0
P2	31.5	18.8	12.0
P3	31.4	18.8	12.0
P4	31.4	18.8	12.0
Р5	31.4	18.8	12.0
P6	31.3	18.8	12.0
Р7	31.3	18.8	12.0
P8	31.3	18.8	12.0
Р9	31.7	18.8	12.0
P10	31.6	18.8	12.0
P11	32.0	18.8	12.1
P12	31.8	18.8	12.1
P13	32.0	18.8	12.1
P14	31.8	18.8	12.1
P15	31.1	18.7	12.0
P16	31.0	18.7	12.0
P17	31.2	18.7	12.0

Table 1: Predicted Annual Mean Concentrations at the Proposed Development in 2025 (µg/m³) ^a



Table 1: Predicted Annual Mean Concentrations at the Proposed Development in 2025 (µg/m³) a					
NO ₂	PM ₁₀	PM _{2.5}			
31.1	18.7	12.0			
31.1	18.7	12.0			
31.3	18.8	12.0			
31.2	18.8	12.0			
31.1	18.7	12.0			
31.3	18.8	12.0			
31.2	18.7	12.0			
40	40	25 ^b			
40	40	20			
	NO2 31.1 31.1 31.1 31.2 31.1 31.2 31.1 31.2 31.2 40 40	NO2 PM10 31.1 18.7 31.1 18.7 31.1 18.7 31.1 18.7 31.3 18.8 31.1 18.7 31.2 18.8 31.1 18.7 31.2 18.7 31.3 18.8 31.2 40 40 40			

Table notes

a. Receptor locations only relevant for comparison with the short term AQOs are shaded in grey.

b. Reporting of LV exceedances is only carried out based on approved reference monitoring and at relevant reporting locations. Therefore, while the value is included, the monitoring presented is unlikely to comply with the requirements for LV reporting and assessment.

B4. Summary

Compliance with regulatory thresholds and statutory standards

Air Quality Objectives

- B4.1. Concentrations are predicted to be below the AQOs at all receptors relevant for the annual mean objective (Receptors P11 to P24).
- B4.2. The predicted short term NO₂ and PM₁₀ AQOs are also likely to be achieved (at all receptors) as the predicted concentrations are well below the proxy annual mean equivalents for these AQOs of 60 μ g/m₃ for 1-hour NO₂ and 32 μ g/m³ for 24-hour mean PM₁₀.

Limit Values

- B4.3. The application site boundary is over 4 m from the kerb of the local major roads e.g. Fortress Road and Kentish Town Road (i.e. location used for LV compliance reporting) and therefore reporting of LVs at the application site is not required. Highgate Road is not included by Defra as a road relevant for LV compliance reporting.
- B4.4. However, in recognition that LVs apply anywhere members of the public can access, concentrations at the Proposed Development have been considered. The maximum predicted concentrations within the Proposed Development in 2025 are all well below the LVs. There is thus unlikely to be a breach of the LVs within the Proposed Development.

Overall Significance

B4.5. Although the predicted NO₂, PM₁₀ and PM_{2.5} concentrations at sensitive receptors within the Proposed Development are higher than those predicted in the Site Suitability Assessment (ref: P1150A_I1-4), they still all achieve the AQOs and LVs in the assessment year.

P1150A B1-2



B4.6. Therefore, the predictions with the sensitivity test applied do not change the conclusions in the site suitability assessment that air quality impacts of local emissions sources on the Proposed Development will be 'not significant'.

B5. Glossary, References and Appendices

Glossary

APS	Air Pollution Services
EFT	Emissions Factors Toolkit
LBC	London Borough of Camden