

# **Air Quality Responses**

## Planning Application Number: 2020/5473/P

Air Quality Consultants Ltd (AQC) was commissioned to undertake an air quality assessment (dated 4<sup>th</sup> November 2020, report reference J4247A/1/F2) for 17-37 William Road in Camden. The proposals are for a 15 storey (plus basement) building for use as student accommodation with affordable workspace.

Since submission, comments have been received from Katherine Frost, Senior Sustainability Officer (Planning); this note responds to these comments. References to paragraphs within this note correspond to the original air quality assessment.

## **Responses to Comments and Issues**

**Issue 1:** It is not clear if any emergency generators are proposed for the development and if so what is the proposed capacity. Further it is not clear from the Energy Strategy if back up gas boilers are proposed. ACTION: Further information required

#### AQC Response

No emergency generators or gas boilers are proposed. Life safety power supply will be either by separate power connection or by uninterruptable power supply (a battery).

**Issue 2**: The 'calibration' to create estimated background concentrations which do not align with the DEFRA background levels for the relevant grid square for 2019 is not accepted. DEFRA background levels should be used for the baseline for the modelling. As such the figures in Tables 7 and 12 for NO<sub>2</sub> are not accepted. ACTION: Updated background and modelling required.

## AQC Response

AQC's report referenced a study<sup>1</sup> in which Defra's mapped background annual mean nitrogen dioxide concentrations for 2019 were compared to measured concentrations at automatic monitoring sites in Inner London. This study demonstrated that the background maps over-predicted the background concentration at every site in Inner London, with an average over-prediction of 18.4%. The background maps have, therefore, been demonstrated to represent an unrealistic over-prediction of background concentrations in Inner London.

<sup>&</sup>lt;sup>1</sup> AQC (2020) Calibrating Defra's 2018-based Background NOx and NO2 Maps against 2019 Measurements, Available: https://www.aqconsultants.co.uk/CMSPages/GetFile.aspx?guid=dc9e282eb47e-4674-8fb9-9a68a1729ad4.



The maps are, at best, a predictive tool, and it is far more robust to rely upon actual measured data. AQC originally intended to use the measured background concentration in 2019 at the London Bloomsbury (BL0) automatic monitor ( $32.0 \ \mu g/m^3$ ) as the background for the assessment, but, as is stated in Paragraph 4.4 of AQC's report, the adjusted mapped background concentration ( $33.4 \ \mu g/m^3$ ) was higher and thus resulted in higher predicted concentrations at the proposed development than using the measured background concentration, thus providing a worst-case assessment.

The London Bloomsbury automatic monitor is located 1.1 km to the southeast of the proposed development and can be expected to reasonably accurately reflect background conditions in the vicinity of the proposed development. However, it is located only 27 m from the busy A4200, thus it is likely to be influenced by emissions from vehicles using this road, and may therefore over-state the local background concentrations to some extent.

In conclusion, there is no evidence to suggest that using an annual mean background nitrogen dioxide concentration of  $39.6 \ \mu g/m^3$ , as suggested by Defra's background maps, would be realistic or justified. Evidence has been presented that demonstrates that these maps over-predict concentrations in Inner London in 2019, and monitoring data from the nearest automatic monitoring site supports this, suggesting that the background may well be lower than that used by AQC. The background concentrations used by AQC are scientifically robust, while still being worst-case in comparison to local measured backgrounds. If the nitrogen dioxide concentrations in Tables 7 and 12 were updated to reflect local background monitoring carried out by Camden, then the results would be lower and thus not alter the conclusions of the assessment, therefore this information is not necessary to determine the application.

**Issue 3**: The AQA should take into account the WHO Standards for Particulate Matter and consider design solutions and make provision to address local problems of air quality. ACTION: The AQA should be revised to take the London Plan 2021 into account and propose appropriate solutions.

The 2021 London Plan had not been published at the time of writing of AQC's report, thus its requirements with regard to the WHO  $PM_{2.5}$  guideline were not taken into account in the assessment. The WHO  $PM_{2.5}$  guideline is currently exceeded throughout most of London and, according to Defra's background maps, was exceeded throughout the entire Borough of Camden in 2019. According to Defra's background maps, annual mean  $PM_{2.5}$  concentrations will remain close to 12 µg/m<sup>3</sup> in the Euston area in 2030, well above the guideline of 10 µg/m<sup>3</sup>, and only a very small area in the north of Camden will actually achieve the guideline.

The proposed development is in a location where air quality conditions for future residents will be close to background levels, as demonstrated by modelled concentrations in AQC's report being only slightly above background. If mitigation were required for this development, then it would be required for every development throughout the entirety of Camden. The only viable mitigation would be whole-house mechanical ventilation with PM<sub>2.5</sub> filtration, which would increase energy demand, and thus affect the sustainability of development throughout Camden. The development cannot be reconfigured to reduce exposure to poor air quality, as it is already in a background location and only has residential units at first-floor level and above.



Much of London exceeds the WHO  $PM_{2.5}$  guideline and no clear guidance has been issued by the GLA as to expectations for mitigation where the WHO  $PM_{2.5}$  guideline is exceeded. Bearing in mind the acknowledgement that the WHO  $PM_{2.5}$  guideline is unlikely to be met before 2030<sup>2</sup>, it is considered unlikely that the intention of the GLA in adopting Policy SI1 was to require extensive, expensive and unsustainable mitigation for most developments in London. Instead, it is assumed that their intention was to seek to improve the design of developments to ensure that they account for air quality conditions; the proposed development has effectively already done all that it can to minimise exposure to poor air quality. It is therefore not necessary to update the AQA.

It should be noted that the documents submitted in support of the planning application have been reviewed by the GLA, and no concerns were raised with regard to air quality, indicating that the GLA does not expect mitigation to be implemented to address exceedances of the WHO PM<sub>2.5</sub> guideline.

**Issue 4:** The assessment states that demolition will be of potentially dusty material (concrete) over 20m above ground. As such this should have been assessed as 'Large' magnitude. There is an identified 'High' sensitivity to dust and therefore the dust soiling risk without mitigation would be 'high'. Earthworks are also of a potentially dusty material and therefore should be considered a 'medium' risk not 'small'. The list in Appendix A9 does not include all of the measures which are highly desirable for 'high risk sites' from Appendix 7 of the GLA Dust and Emissions SPG July 2014. In addition mitigation should clearly note the requirement from the CPG Air Quality which states that high risk sites should include at least four real time dust monitors and that monitors should be in place at least 3 months before commencement. ACTION: Further consideration of the risk and therefore appropriate mitigation required. It is expected that this should include all highly desirable measures for high risk sites as a minimum. The AQA should be revised to take this into account. In addition a Condition is recommended.

#### **Construction related impacts - Mitigation**

Informative: Mitigation measures to control construction-related air quality impacts should be secured within the Construction Management Plan as per the standard CMP Pro-Forma. The applicant will be required to complete the checklist and demonstrate that all mitigation measures relevant to the level of identified risk are being included.

## **Construction related impacts - Monitoring**

Air quality monitoring should be implemented on site. No development shall take place until

a. prior to installing at least 4 monitors, full details of the air quality monitors have been submitted to and approved by the local planning authority in writing. Such details shall include the location, number and specification of the monitors, including evidence of the fact that they will be installed in line with guidance outlined in the GLA's Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance;

<sup>&</sup>lt;sup>2</sup> GLA (2019) PM2.5 in London: Roadmap to meeting World Health Organization guidelines by 2030. Available: https://www.london.gov.uk/sites/default/files/pm2.5\_in\_london\_october19.pdf



b. prior to commencement, evidence has been submitted demonstrating that the monitors have been in place for at least 3 months prior to the proposed implementation date.

The monitors shall be retained and maintained on site for the duration of the development in accordance with the details thus approved.

Reason: To safeguard the amenity of adjoining premises and the area generally in accordance with the requirements of policies A1 and CC4 of the London Borough of Camden Local Plan Policies.

## AQC Response

The determination of the dust emission class is subject to professional judgement and there are no defined criteria, only example scenarios. While the demolition works will involve potentially dusty materials and take place up to 22 m in height, the building volume to be demolished is small at 6,500 m<sup>2</sup> (the 'large' example in the guidance suggests a building volume over 50,000m<sup>2</sup>). Professional judgement has been applied and, considering this relatively small building volume, a 'medium' dust emission magnitude is still considered most appropriate. Similarly, despite handling potentially dusty material, the earthworks required on the site are very limited, thus a 'small' dust emission magnitude is still considered most appropriate.

However, considering the site to be 'high risk' does not dramatically alter the mitigation measures required, thus it is recommended that the measures set out in the table below should be included in the Construction Management Plan sought by planning condition, which are commensurate with a 'high risk' site.

Measure	Desirable	Highly Recommended	
Site Management			
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site		1	
Develop a Dust Management Plan (DMP)		✓	
Display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary		1	
Display the head or regional office contact information		✓	
Record and respond to all dust and air quality pollutant emissions complaints		1	
Make a complaints log available to the local authority when asked		✓	
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		4	
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 are being carried out and during prolonged dry or windy conditions		1	



Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and ensure that the action taken to resolve the situation is recorded in the log book		√		
Hold regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes		~		
Preparing and Maintaining the S	Site			
Plan the site layout so that machinery and dust-causing activities are located away from receptors, as far as is possible		*		
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site		~		
Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period		~		
Install green walls, screens or other green infrastructure to minimise the impact of dust and pollution	✓			
Avoid site runoff of water or mud		✓		
Keep site fencing, barriers and scaffolding clean using wet methods		✓		
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		√		
Cover, seed, or fence stockpiles to prevent wind whipping		*		
Carry out regular dust soiling checks of buildings within 100 m of site boundary and provide cleaning if necessary		*		
Provide showers and ensure a change of shoes and clothes are required before going off-site to reduce transport of dust	✓			
Put in place real-time dust and air quality pollutant monitors across the site and ensure they are checked regularly		✓		
Agree monitoring locations with the Local Authority		✓		
Where possible, commence baseline monitoring at least three months before work begins		~		
Operating Vehicle/Machinery and Sustainable Travel				
Ensure all on-road vehicles comply with the requirements of the London LEZ (and ULEZ)		✓		
Ensure all Non-road Mobile Machinery (NRMM) comply with London's NRMM emission standards. Currently, NRMM used on any site within Greater London are required to meet Stage IIIB of EU Directive 97/68/EC (The European Parliament and the Council of the European Union, 1997) and its subsequent amendments as a minimum, while NRMM used on any site within the Central Activity Zone, Canary Wharf or one of London's Opportunity Areas are required to meet Stage IV of the Directive as a minimum. The proposed development <u>is</u> within an area where this stricter requirement applies. From January 2025, NRMM used anywhere in London will be required to meet stage IV, while from January		*		



2030 the stage V standard will apply. From January 2040 only zero emission machinery will be allowed.				
Ensure all vehicles switch off engines when stationary – no idling vehicles		✓		
Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery-powered equipment where practicable		✓		
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials		✓		
Implement a Travel Plan that supports and encourages sustainable staff travel (public transport, cycling, walking, and car-sharing)		✓		
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		~		
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate		✓		
Use enclosed chutes, conveyors and covered skips		✓		
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate		~		
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				
Reuse and recycle waste to reduce dust from waste materials		✓		
Avoid bonfires and burning of waste materials		✓		
Measures Specific to Demolitie	on			
Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust)		✓		
Ensure water suppression is used during demolition operations.		✓		
Avoid explosive blasting, using appropriate manual or mechanical alternatives		✓		
Bag and remove any biological debris or damp down such material before demolition		✓		
Measures Specific to Earthworks				
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable		✓		
Use Hessian, mulches or trackifiers where it is not possible to revegetate or cover with topsoil, as soon as practicable		✓		
Only remove the cover from small areas during work, not all at once		~		



Measures Specific to Construction				
Avoid scabbling (roughening of concrete surfaces), if possible		*		
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		*		
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		1		
For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust	4			
Measures Specific to Trackout				
Regularly use a water-assisted dust sweeper on the access and local roads, as necessary, to remove any material tracked out of the site		✓		
Avoid dry sweeping of large areas		✓		
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport		~		

Regarding dust monitoring, contrary to the assertion that 4 monitors <u>should</u> be used for a High Risk site, it is noted that the Camden SPD actually states that "*Medium risk schemes usually require a minimum of two real time monitors, while high risk schemes usually require four.*" The Mayor's SPG specifies a minimum of two monitors for high risk sites during construction. Bearing in mind the relatively small size of the site, half of which is being refurbished rather than replaced, along with it being bordered by existing buildings on two sides, there is limited availability in terms of suitable locations for the installation of monitors; it is unlikely to be practicable to install as many as four monitors. It is, therefore, not considered necessary or reasonable to require the installation of more than two monitors on such a small site.

The IAQM Guidance on Construction Dust Monitoring (which the Mayor's SPG references) does not require baseline monitoring and makes clear that, "*In most situations, baseline monitoring may not be required, e.g. in some urban areas where there is a large existing body of monitoring data (and where these sites are expected to continue to operate throughout the duration of the construction works*)."

There are also practical barriers to baseline monitoring prior to commencement of works on site (including lack of secure monitoring locations, safe means of access and power supply), which means that it would not be possible to carry out this monitoring on land in control of the applicant. This means that baseline monitoring locations need to be different to those during on-site works, resulting in a lack of consistency between the baseline and during construction results and thus the baseline data is of limited value. On this basis, part b of the recommended condition for monitoring is neither necessary or reasonable.

Where the proposed planning condition states "the monitors shall be retained and maintained on site for the duration of the development in accordance with the details thus approved", it is assumed that this should read "for the during of demolition and construction works", rather than "for the duration of the development".