



Air Quality Note:
75-81 George Street,
Richmond upon Thames

December 2019



Experts in air quality
management & assessment

Document Control

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1 Introduction

- 1.1 This note addresses the comments raised by the London Borough of Richmond upon Thames (LBRuT) regarding the air quality assessment prepared by Air Quality Consultants Ltd for the proposed commercial development at 75-81 George Street in Richmond upon Thames in July 2019 (Report No. J3768A/1/F3). The Council's comments, received via email on 19th November 2019, are presented in italics and bold type, in each case followed by AQC's response.

2 Response to Comments

Air Quality Assessment

“The AQA gives no mention of emissions for heating/cooling of the building, it mentions additional traffic - “The development will lead to changes in vehicle flows on local roads, which may impact on air quality at existing residential properties” – how so? – Further details are required for this.”

- 2.1 As stated in paragraph 7.2 of the air quality assessment, Colliers International has advised that the proposed development will not include any centralised boiler or Combined Heat and Power (CHP) plant and there will thus be no significant emissions from the proposed building. The office floors will be provided with heating and hot water by air source heat pumps and the retail units will use either heat pumps or Variable Refrigerant Volume (VRV) systems. There will therefore be no emissions due to the provision of heating and hot water.
- 2.2 The quote provided by LBRuT is taken from the introduction to the air quality assessment; the approach to the assessment of road traffic emissions is described in paragraph 3.5, and the impact of changes in vehicle flows on local roads is discussed in paragraph 6.1 of the air quality assessment. The number of vehicle trips generated by the proposed development will be well below the published screening criteria (published in guidance from Environmental Protection UK and the Institute of Air Quality Management), therefore any impacts on air quality will be insignificant. The assessment is worst-case, in that it has not considered the net change from the current scenario, but has instead considered the total traffic generated by the proposed development once operational.

“It sights [sic] data from LBRuT’s annual status report to DEFRA that levels in George Street for NO2 are between 82 – 96 ug/m3 in each of the last 6 years but does not use this to inform any action or mitigation for receptors either during the construction phase or once occupied.”

- 2.3 A Construction Management Statement and Construction Logistics Plan have been prepared for the proposed development. It is proposed that construction vehicles will be routed along strategic roads

wherever possible, with the existing loading bay to be used by construction traffic as much as possible. Mitigation measures to address impacts during the construction phase are detailed in Appendix A6 of the air quality assessment; these measures are based on the identified level of risk. The assessment of risk was carried out in line with guidance issued by the GLA (as discussed in paragraphs 2.18, 2.28, 2.30, 3.4 and 8.3 of the air quality assessment). With these measures in place, the residual effects are judged to be 'not significant' (paragraph 9.1).

- 2.4 The diffusion tube monitoring sites in the vicinity of the proposed development are described as kerbside; kerbside sites are defined in Table 7.7 of Defra's LAQM.TG16 'guidance as being "*within one metre of the kerb of a busy road*". LAQM.TG16 goes on to state that "*Concentrations fall-off rapidly on moving away from the source*". Once the building is occupied, the retail units will be ventilated via air intakes located in the rear courtyard, 35 m from George Street and 10 m from King Street. In this location, and at the upper storeys, NO₂ concentrations are expected to be significantly lower than at the kerbside monitoring sites, and closer to background levels. No exceedances of the short term objective are therefore expected in these locations, and users of the proposed development are expected to be exposed to air of an acceptable quality.

"The AQA does not assess NO₂ for any receptors. Particularly when NO₂ is at such a high level any increase is relevant. PM during construction is "high" for many receptors. Strict mitigation will be required."

- 2.5 As stated above, the retail units will be ventilated via air intakes located in the rear courtyard, away from the road, where NO₂ concentrations are expected to be close to background level. No exceedances of the short term objective are expected in these locations, therefore users of the proposed development will not be exposed to exceedances of the objective. In terms of any increase in pollution caused by the proposed development, the number of vehicle trips generated will be well below the published screening criteria (published in guidance from Environmental Protection UK and the Institute of Air Quality Management), therefore any impacts on air quality will be insignificant as discussed in paragraph 6.1 of the air quality assessment.
- 2.6 The balconies are only accessible from the office element of the proposed development; they will not be accessible to members of the public. The air quality objectives only apply at locations where members of the public are likely to be regularly present and are likely to be exposed over the averaging period of the objective; they do not apply at workplaces. As the balconies are not accessible to members of the public, the objectives do not apply in those locations. Furthermore, the balconies are located at second floor level and above in the rear courtyard and at fourth floor level

¹ Defra (2018) *Review & Assessment: Technical Guidance LAQM.TG16 February 2018 Version*, Available: <https://laqm.defra.gov.uk/documents/LAQM-TG16-February-18-v1.pdf>.

only on the remaining facades of the building. These locations are sufficiently distant from the roads that no exceedances of the short term objective are expected.

- 2.7 The impacts of construction on concentrations of particulate matter (PM) are considered in Section 5 of the air quality assessment. Table 8 of the air quality assessment shows that the risk of impacts during construction are negligible to low for dust soiling, and negligible for human health. Mitigation measures appropriate to this level of risk are detailed in Appendix A6 of the air quality assessment. With the identified measures in place, the residual effects of the construction phase are judged to be 'not significant' (paragraph 9.1).

Rooftop open terrace/balcony

“If any open balcony is to be permitted anywhere at this location, levels of NO₂ will have to be agreed in writing between the developer and LBRuT. Garden rooms would be recommended. Any negotiated open space will need to be conditioned. “

- 2.8 As stated above, the balconies are only accessible from the office element of the proposed development and will not be accessible to members of the public. The air quality objectives therefore do not apply to the balconies. As the balconies are located at second floor level and above in the rear courtyard and at fourth floor level only on the remaining facades of the building, it is expected that there will be no exceedances of the short term objective in these locations.

“Defra’s LAQM TG(16) outlines the EU limit value for NO₂ for “any outdoor locations where members of the public might reasonably expect to spend an hour or longer” is the 1-hour mean of 60ug/m³. The developer should have agreed sites with LBRUT and measured NO₂ at roof top façade locations for at least 6 months prior to this application. I have done some distance correction calculations using Defra’s TG(16) guidance with our George Street NO₂ tube and it would appear that levels do not reduce to 60ug/m³ (the minimum required) until approx. 6m back from the façade. Levels of NO₂ do vary annually, so this would be a minimum – perhaps taking an average of the last 6 years, would be reasonable. No public access to open space will be allowed above this limit. We need to ensure additional NO₂ from all sources, including heating/cooling of the site is kept to a minimum (which I believe is the intention). This is to protect the health and wellbeing of both existing residents/businesses and future occupants, some of whom may be vulnerable with asthma or similar breathing or heart conditions.”

- 2.9 Defra’s LAQM.TG16 describes in Box 1.1 where the objectives apply; it also describes where the objectives do not apply. Box 1.1 states, for the annual mean objectives, that the objectives apply at “All locations where members of the public might be regularly exposed.” It also states that the objectives do not apply at “Building façades of offices or other places of work where members of the public do not have regular access.” For the 1-hour mean objectives, Box 1.1 explains that the objective applies at “All locations where the annual mean and.... Any outdoor locations where

members of the public might reasonably be expected to spend one hour or longer.” There are no outdoor locations at the proposed development where members of the public are expected to spend an hour or longer. The balconies are only accessible from the office element of the proposed development and will not be accessible to members of the public. The balcony on the George Street façade is located on the fourth floor, more than 16 m above street level. At this distance from the road, NO₂ levels are expected to have reduced below 60 µg/m³.

- 2.10 Members of the public may spend more than an hour in the retail units, however these will be ventilated via air intakes located in the rear courtyard, away from the road, where NO₂ concentrations will be closer to background level. Users of the proposed development will therefore not be exposed to exceedances of the 1-hour mean objective.

Additional office level

“This area is already a canyon with fairly narrow pavements and tall buildings where dispersion of pollutants can be slow and difficult. An extra storey will inhibit dispersion further.”

- 2.11 Pollutant concentrations rapidly decrease with vertical distance from the road within a street canyon. Furthermore, the retail units on the lower storeys will be ventilated via air intakes located in the rear courtyard, and the increased building height will provide an increased barrier to dispersion of pollutants between the road and the ventilation intakes. The upper storeys of the development will be occupied by office units only, at which the air quality objectives do not apply. It is therefore considered that adding an extra storey will not lead to any additional exposure to exceedances of the objectives.
- 2.12 In terms of impacts on existing receptors, the number of vehicle trips generated by the proposed development will be well below the published screening criteria (published in guidance from Environmental Protection UK and the Institute of Air Quality Management), therefore any impacts on air quality will be insignificant as discussed in paragraph 6.1 of the air quality assessment.

“The AQA quotes LBRuT’s NO₂ readings but does not go on to propose any mitigation.”

- 2.13 The retail units will be ventilated via air intakes located in the rear courtyard, away from the road, where NO₂ concentrations will be closer to background level. No exceedances of the short term objective are expected in these locations, therefore users of the proposed development are not expected to be exposed to exceedances of the objective. The balconies are only accessible from the office element of the proposed development and will not be accessible to members of the public. The air quality objectives therefore do not apply to the balconies and no mitigation is required at either the balconies or the offices.
- 2.14 The proposed development itself will not generate significant additional emissions (from traffic or energy plant), and therefore no additional measures, beyond those already designed into the

development (see Section 8 of the air quality assessment) are judged necessary for the operational phase of the proposed development. Appropriate mitigation is described for implementation during the construction phase, consistent with the requirements of the GLA's own guidance.

“The AQA quotes Defra background maps. For sites in London the latest 2016 LAEI figures are generally considered more accurate. For example they show exceedances of PM10 at Richmond Circus, which the quoted Defra background maps do not.”

- 2.15 The total concentration of a pollutant comprises the contribution from local sources such as roads and flues/stacks, and a contribution from more distant sources that disperses into the area from further away. The background concentration is what remains after the contribution from local sources has been removed. The 2016 LAEI data includes local road sources and is therefore not representative of background concentrations.

3 Summary

- 3.1 The assessment of construction and operational impacts has been undertaken following the published guidance. Mitigation measures to be implemented during the construction phase have been identified as appropriate to the level of risk. With these measures in place, it is expected that any residual effects will be insignificant. The operational impacts arising from the additional traffic on local roads, due to the development, have been assessed by comparison against published screening criteria and shown to be insignificant. There will be no centralised boiler or CHP plant on the site and there will thus be no significant emissions from combustion sources.