



Gravesham Borough Council

Air Quality Assessment Peer Review

Mixed-Use Development at Northfleet Harbourside

July 2023

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Document Control Sheet

Identification	
Client	Gravesham Borough Council
Document Title	Air Quality Assessment Peer Review – Mixed-Use Development at Northfleet Harbourside
Bureau Veritas Project No.	19455029

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Configuration				
Version	Date	Author	Reason for Issue/Summary of Changes	Status
1	18/07/2023	A Dale	Issued to Client	Draft

	Name	Job Title	Signature
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1 Introduction

Bureau Veritas has been appointed by Gravesham Borough Council (The Council) to peer review the air quality assessment in support of the full planning application for the proposed mixed-use development at Northfleet Harbourside Land Surrounding Ebbsfleet United Football Club, Stonebridge Road, Northfleet ('the Proposed Development').

The proposed development is formally described as follows:

"Outline planning permission for a mixed-use residential-led scheme consisting of up to 3,500 residential units as well as a hotel, a new football stadium with associated business and leisure facilities, a range of commercial, business and services uses including retail and food and beverage and community uses. In addition, the Proposed Development will provide associated public realm and hard and soft landscaping, highways works, car parking, access and servicing arrangements, infrastructure and ancillary works and associated works."

The application (Ref. 20221064/PP-11573046), which was submitted on 4th October 2022, included a supporting Air Quality Assessment which considers, the impact of the Proposed Development on sensitive receptors, the impact of the construction phase on sensitive receptors and the suitability of the site for the proposed end use.

The primary purpose of this report is to ensure that the air quality assessment submitted by the applicant follows an appropriate methodology and makes reference to, and utilises as far as possible, the custom and practice guidance that is available locally and nationally for such an assessment.

The air quality assessment has thus been peer reviewed in order to inform the Council around issues that may constitute the need for:

- any further clarification: namely those issues for which further detail would provide for additional transparency and/or a clearer understanding on;

or

- an omission: those issues deemed within the peer review to be lacking within the assessment, which may prevent the planning authority from making an informed decision related to the impacts of the proposed development.

In the case of the latter, an omission within the assessment may result in the planning authority requesting a Regulation 19 (under the Environmental Impact Assessment Regulations 1999) response from the applicant, which may result in further detailed work needing to be submitted.

This review is based on the following documents as they relate to impact of the development with regards to air quality:

- Northfleet Harbourside Volume 1: Environmental Statement Main Report Chapter 8: Air Quality
- Volume 3: Technical Appendix – Air Quality

2 Methodology

A number of methodologies can be applied to the peer review of air quality assessments. In brief, the assessment should comply with:

- the need to clearly set the defined existing conditions at the Site;
- the extent to which the development is likely to impact on the environment; and
- an assessment of the significance of such impacts as benchmarked against relevant and available criteria.

The whole assessment should be made against prevailing planning policies set by Government, local and regional bodies.

The methodology applied for the current peer review is to benchmark the air quality assessment against the following criteria, considering, where relevant, both the construction and operational phases:

- Identification and quantification of relevant pollutant emissions to air;
- Justification for 'scoping out' of certain pollutants/impacts;
- Identification and recognition of different types of impact (e.g. health or nuisance, chronic or acute, local, regional or global, direct or secondary, adverse or beneficial, combined);
- use of best practice in quantifying the baseline air quality, over the correct timescales/averaging periods, and correct forecasts for future years;
- reference to the correct and up-to-date air quality standards, objectives and guidelines for the protection of both human health and vegetation;
- adherence to current best practice in assessment methodology;
- identification of sensitive receptors and the appropriate banding/categorisation;
- correct predictions of impacts, with and without proposed mitigation;
- effects of proposed mitigation measures;
- correct quantification of effects of mitigation measures;
- consultation with the correct statutory and non-statutory bodies;
- justification of conclusions; and
- discussion of gaps in knowledge/uncertainties in the results and/or conclusions, and the reasons for these.

This peer review followed the following structure for the conclusions of the critique:

- Are the findings of assessment robust, appropriate and defensible?
- Are there any deficiencies, errors or areas of improvement?
- Potential changes in the results or conclusions

3 Peer Review Findings

3.1 Are the findings of the assessment robust, appropriate and defensible?

The air quality assessment relating to the proposed mixed-use development along at Northfleet Harbourside was submitted in October 2022. The air quality assessment provides for a reasonable analysis of the air quality impacts in relation to the impact of the proposed development on existing sensitive receptors situated close to the development site. In addition, the assessment has clearly evaluated the construction phase impacts. There are, however, several areas where further explanation or clarification is required to justify the decisions that have been made.

3.1.1 Legislative and Policy Context

This chapter covers all the prevailing legislation and relevant policy context in sufficient detail. It discusses the air quality legislation prescribed at the European level and how this legislation is carried through into UK law via the Air Quality Standards (Amendment) Regulations (2016) and Environmental Act (2021). The chapter correctly identifies the pollutants that need to be focused on. Namely: nitrogen dioxide (NO₂) and particulates (PM₁₀ and PM_{2.5} fractions). Reference is made to the necessary statutory drivers and legislation which gives rise to the focus on these pollutants and need for the air quality assessment overall. In addition, there is an appropriate level of information provided on the role of Local Authorities as required under Section 82 of the Environment Act (1995). In regards to planning policy, the National Planning Policy Framework and the National Planning Practice Guidance are correctly referenced and the local planning policies specific to the Council have also been referenced.

3.1.2 Baseline Conditions

The focus of the assessment has been clearly defined as the likely emissions arising from road traffic as a consequence of the proposed development. This is appropriate given the potential for additional traffic to be generated by the scheme. Consideration is made to the Northfleet Industrial Area Air Quality Management Area (AQMA), which was declared due to exceedances of the 24-hour PM₁₀ objective, as the development is located within this area. Additionally, the development is partially located within the neighbouring Dartford AQMA No.2, in relation to exceedances of the annual mean NO₂ Air Quality Objective (AQO) along the A226.

Consideration is also made to the AQMA in Thurrock, approximately 2.1km of the development, however due to the distance and the location outside of the Study Area, consideration has been made to the nearest AQMA where impacts will be greatest.

The baseline year has been defined as 2019 and all baseline air quality data has been correctly derived from 2019. Background concentrations are defined through reference to the Defra 1km x 1km estimated background maps, which uses national modelling to estimate background concentrations across the UK. However, there was no comparison against monitored background concentrations undertaken in the surrounding area. There are a couple of background monitoring sites within a reasonable distance to the proposed development site that could be compared against the estimated background mapped concentrations. These include Site GR19a, GR19b and GR19c, an air quality monitoring station in Northfleet. Providing this additional analysis will provide a robust basis over the decisions made regarding the background concentrations to be used in the assessment.

In addition to the above, further clarity is required in order to understand what data processing has been undertaken to estimate the background concentrations at the proposed development site and verification locations. The background concentrations reported within the assessment could not be replicated by looking up the grid co-ordinates, as these were not provided in the report for the baseline or future year scenarios. The report instead mentions that a range of values were presented due to the study area covering multiple grid squares.

Nearby air quality monitoring sites have been considered within the assessment within the jurisdictions of both Gravesham Borough Council (GBC) and Dartford Borough Council (DBC). Annual mean NO₂ concentration data provided for 2016, 2017, 2018, 2019 and 2020. The 12 monitoring sites listed are considered to be the most relevant for the air quality assessment. A summary of the PM₁₀ monitoring undertaken at the ZG3 Industrial Background Site for 2016 to 2020 is also provided.

3.1.3 Assessment Methodology

For construction impacts, a risk-based approach has been taken which deploys the methods set out in industry guidance through the Institute of Air Quality Management (IAQM) entitled: "Guidance on the assessment of dust from demolition and construction" (2016). The approach is based on the scale and type of construction activity and also the sensitivity of the areas likely to be impacted. The assessment provides a sufficient level of detail regarding the extent of demolition, earthworks, construction and trackout activities. Construction traffic has also been considered based on EPUK/IAQM guidance criteria. Appropriate mitigation has been recommended and the assessment has recognised that a dust management plan should be developed and may be integrated in the detailed CEMP, which will be secured by way of planning condition. As a consequence, the approach to construction related impacts is robust, appropriate and defensible.

For the operational impacts, the methodology is clearly set out and transparent in respect of the parameterisation of the model (for impact assessment). Use of latest available tools, including the Emissions Factors Toolkit (EFT) and NO_x to NO₂ conversion tool are all appropriately utilised in the assessment. The impact assessment has been undertaken using a commercially available dispersion modelling package, which is widely used to support the assessment of air pollution levels by local authorities and consultants (ADMS-Roads).

The years of assessment are identified as 2019 (existing) and future "with" and "without" development in 2024 and 2026. It has also been assumed that the traffic generated by the Proposed Development when it is fully operational and complete (anticipated to be 2031) is generated in 2026, to be conservative. The assessment takes committed developments (i.e. cumulative impacts) into account, as these schemes would affect flows on the roads included in the assessment. As such, the assessment is considered sufficiently robust.

According to LAQM.TG22 it is recommended that the year of data used for the baseline scenario should be the same for the monitoring data, background estimates, traffic data and meteorological data. This appears to be correct as stated within the report.

The assessment states that emission factors were calculated using Version 11.0 of the EFT which is the latest publicly released EFT version, as stated on the Local Air Quality Management (LAQM).

The key road links to be modelled has been determined largely by the traffic data which was provided by the transport consultant appointed to the project. The assessment provides a detailed summary of all road links modelled in both graphical and tabulated formats. This is a robust approach to fully understand the extent of the modelling undertaken.

The assessment correctly scopes in the need to evaluate ecological receptors, as there are two present within 50m of the proposed development. Sensitive human receptors are included at 21 existing locations within close proximity to the proposed development site. An additional nine receptor

located have been identified within the Proposed Development which will be exposed to existing and proposed sources. The EPUK and IAQM Planning for Air Quality guidance have been referenced as appropriate.

A model verification process is provided whereby initial modelled predictions are compared with monitored data to determine whether acceptable agreement between the two are achieved. Model adjustments are made through the determination of model adjustment factors, the results of which has been provided within Appendix: Air Quality (Annex 6). However, it is not stated whether any verification sites were removed from the verification process. Additionally, whilst graphs are provided, further clarification is required as to which specific verification sites these refer to. A table of modelled road NO_x results comparing the unadjusted concentrations and the adjusted concentrations would have provided clarity and the added benefit to determine whether further improvements to the model set up should be carried out.

The Root Mean Square Error (RMSE) for the verification process has been included.

3.1.4 Results and Impact Assessment

Notwithstanding the comments raised above, the results of the assessment show that the impact of the scheme is negligible and insignificant. The framework for determining significance is consistent with available guidance made through the IAQM.

3.2 Are there any deficiencies, errors or areas of improvement?

There are a number of deficiencies in the assessment currently that should be taken into consideration.

- Further clarity is required in regards to the derivation of the background concentrations used within the assessment. It is understood that the Defra background maps were used however details surrounding the data processing of these concentrations is unclear.
- There are a couple of background monitoring sites within a reasonable distance to the proposed development site that could be compared against the estimated background mapped concentrations. Confirmation as to the justification behind not using these sites is recommended.
- The provision of the unadjusted and adjusted modelled road NO_x results for each verification site used in the verification process will provide further confirmation surrounding the accuracy of the model.

3.3 Potential Changes in the Results or Conclusions

Depending on the outcome of the background concentration review, there may be a slight shift in the overall concentrations and impact reported. However, due to the low concentrations currently being predicted, it is unlikely to significantly change the outcomes of the assessment.

4 Conclusions and Recommendations

The report is well written and structured and follows appropriate guidance and methodology throughout.

While there are some areas of note which could provide additional detail and greater confidence in the findings, overall the results of the assessment have shown that potential exposure to poor air quality on future occupants and changes in pollutant levels within Gravesham Borough Council are likely to be insignificant.

There is not considered to be any further detail required or reason for refusal on the basis of the air quality information submitted with the application.