



Gravesham Borough Council

Peer Review

Northfleet Harbourside – ES Noise & Vibration Chapter

June 2023

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Document Control Sheet

Identification	
Client	Gravesham Borough Council
Document Title	Peer Review – Northfleet Harbourside – ES Noise & Vibration Chapter
Bureau Veritas Project No.	19345342-01/N&V/R1

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Configuration				
Version	Date	Author	Reason for Issue/Summary of Changes	Status
00	27/06/2023	R Cope	Draft for comments	Live

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1 Introduction

Bureau Veritas (BV) has been appointed by Gravesham Borough Council (the Council) to peer review the Noise and Vibration Chapter of the Environmental Statement (ES) and the Appendix: Noise and Vibration for the proposed Northfleet Harbourside Development.

The proposed development is mixed-use with residential units (Use Class C3), commercial business and service (Use Class E), new multi-use stadium of up to 8,000 seats (Use Class Sui Generis), local community use (Use Class F2), and hotel use (Use Class C1), associated with 2600 vehicle parking spaces and 2500 cycle spaces.

The proposed development is anticipated to take approximately eight years to build out. With Phase 1 including Plots 1, 8, 15-19 and Phase 2 Plots 9-14 coming forward once Phase 1 and all the required infrastructure and highways are completed.

The primary purpose of this report is to ensure that the noise and vibration 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.

2 Methodology

A number of methodologies can be applied to the peer review of noise and vibration assessments. In brief, the assessment, or proposals for such, 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 following primary documents have been reviewed:

- Northfleet Harbourside Volume 1: Environmental Statement Main Report – Chapter 9: Noise and Vibration (Document Ref. 20221064-Supplementary Information-04102022)
- Northfleet Harbourside Environmental Statement Volume 3: Technical Appendices – Appendix: Noise and Vibration

Primary Regulations, standards and best practice guidance referred to in this review include:

- Noise Policy Statement for England, 2010 [NPSE]
- Professional Practice Guidance on Planning and Noise, 2017 [ProPG]
- The Design Manual for Roads and Bridges, LA111, 2020 'Noise and vibration' [DMRB]
- British Standard 4142-1:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound' [BS4142]
- British Standard 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise [BS5228-1]
- British Standard 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration [BS5228-2]

- British Standard 6472-1: Guide to Evaluation of Human Exposure to Vibration in Buildings. Part 1: Vibration Sources other than Blasting [BS6472-1]
- IEMA Guidelines for Environmental Noise Impact Assessment, 2014
- British Standard 8233:2014 Guidance on sound insulation and noise reduction for buildings [BS8233]

The noise and vibration 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 such as assessment methods, assumptions, data, etc;

or

- an omission: those issues deemed within the peer review to be lacking within the Environmental Statement (ES), and therefore may prevent the planning authority from making an informed decision related to the impacts of the proposed development.

3 Peer Review Findings

3.1 ES Noise & Vibration Chapter

3.1.1 Assessment Methodology – Defining the Baseline

The nearest existing noise sensitive receptors (NSRs) have been considered (Figure 9.5) and the monitoring locations selected (N1-N5 and V1-V2) are representative for the NSRs (Figure 9.4).

It would have been beneficial to include a monitoring location close to the waterside of the River Thames, because in Phase 2, there will be future NSRs (Plot 11 and Plot 12) facing the River Thames. According to the indicative 3D massing model in the supplement document, *Initial Comments: Northfleet Harbourside Development (Document ref: 20221064 Initial Comments Northfleet Harbourside GBC)*, there would be elevated residential buildings facing the River Thames. The monitoring results will be used for demonstration of site suitability for the future NSRs, considering the sound sources from the activities along the river and across the river at the Port of Tilbury.

Additional information on the activities along the river and the Port of Tilbury obtained by site observation and other resources would help the Council to understand the sound climate better.

3.1.2 Assessment Methodology – Impact Assessment Methodology

Bureau Veritas agree with the types of noise considered in the impact assessment as listed in Paragraph 9.26, which cover the impacts of noise associated with the development on the existing receptors and the impacts of existing noise on the proposed development.

Still, as mentioned above, regarding the site suitability, consideration should be also given to the activities along the river and the Port of Tilbury.

The stadium is proposed to be multi-use, therefore, the noise breakout from the stadium would include amplified music from events etc. The constraints for the operation time, duration and frequency of the events should be suggested based on existing baseline data and predicted noise levels with 3D modelling of proposed development, especially for the existing and future receptors in the elevated buildings.

3.1.3 Assessment Methodology – Methodology for Defining Effects

The methodology for effects defining is generally agreed by Bureau Veritas.

In the Section *Completed Development – Building Services and Commercial Noise*, it is suggested that magnitude of impact can be based on the assessment criteria in BS4142 assessment, i.e., rating noise levels against the background sound level, if there is no specific policy in the Local Plan, rather than defined by Increase in Noise Level in Table 9.5.

The assessment should consider both the existing and proposed receptors.

3.1.4 Potential Effects

For the demolition and construction phase, on-site construction noise, off-site construction traffic noise, and construction vibration have been assessed. Both existing receptors and the proposed receptors have been included in the on-site construction noise and construction vibration assessment.

Table 9.25 and Table 9.26 share the same table caption. It is suggested to add Year 2026 and Year 2029 in the table captions.

The assessment concludes that significant adverse impacts would occur at Plot 5, 8, 15 and 16 (timeslice 5), and moderate adverse (significant) at residents on Taunton Road/Robinson Way (timeslice 2), Black Eagle Drive (timeslices 1, 2 and 3) and Plot 7 (timeslice 5), based on the predicted vibration magnitude and duration of works.

For the completed development phase, road traffic noise, building services plant and commercial noise, stadium noise and football pedestrian noise have been considered.

It is suggested to add Year 2031 to the table caption of Table 9.27.

Table 9.28 defines the noise limits which are 10 dB lower than background sound level, which is reasonable. As mentioned above, in the Section of Defining Effects, Table 9.5 should be changed to be more in accordance with Table 9.28.

As mentioned above, besides football matches, potential noise effects of other events in the stadium should be also assessed in this section.

3.1.5 Mitigation, monitoring and residual effects

Mitigation of demolition and construction noise, construction traffic noise, construction vibration, building services plant and commercial noise, operational traffic noise, stadium noise and football pedestrian noise has been discussed. Bureau Veritas agree with the mitigation measures in general and no comments.

3.1.6 Site Suitability

In the BS4142 assessment, it is suggested to clarify the height of the receptors in the noise prediction results, given the multi-story buildings in the plots. The higher receptors may have higher noise risk in certain circumstances. It is agreed that with appropriate glazing specifications and appropriate ventilation strategy, the proposed development can meet the indoor ambient noise level criteria recommended in BS 8233:2014.

For the outdoor amenity, most of the plots fall in medium to high risk, therefore, it is suggested to create high-quality tranquil community outdoor spaces in the quiet sides of buildings or introduce desired soundscape to off-set the negative effects of high noise levels.

Again, the potential noise impacts of the stadium events and noise from the River Thames and beyond should be also assessed here.

3.2 Appendix: Noise and Vibration

In Annex 4, Construction Plant Assumptions, the assumption of the construction plants have been tabled, however, there has been no construction traffic data and existing local road traffic data. It is suggested to include the data to support the construction traffic noise assessment in the ES.

It is also suggested to include the traffic data of Do-nothing and Do-something in the years of completion of the development to support the operation road traffic noise assessment.

Regarding the site suitability, the noise source data of the industrial and commercial sites and the contours of their noise modelling should be also included in the appendix for a better judgement of the Council.

4 Conclusions and Recommendations

Based on the information presented within the ES and Appendix, Bureau Veritas are led to conclude that the assessment, has followed the appropriate technical guidance methodologies. The ES is in a good structure.

However, it has not included all the types of noise in the assessment. More assessment assumptions should be provided in the associated Appendices.

It is therefore recommended that, should the application be consented, a suitable condition, or conditions, be included that further detail is provided at the Reserved Matters application(s) stage. This should include demonstration that, through design, noise from the following sources will not have an adverse impact on existing and future sensitive receptors:

- River traffic;
- Port of Tilbury operations;
- Mechanical and electrical (M&E) plant operation associated with new commercial (retail/hotel) units (demonstration of compliance with proposed noise limits (ES Table 9.28));
- Live/amplified music events at the new stadium; and
- Crowds departing the new stadium at the end of evening events.

ES Paragraph 9.200 acknowledges the requirement for appropriate acoustic design of new residential properties to achieve acceptable internal amenity. Where external amenity is also proposed, such as private gardens, private balconies, or Public Open Space (POS), it should also be demonstrated that noise levels at these facilities are appropriate in accordance with National Policy and guidance.

With regard to possible live/amplified music events at the new stadium, clearly defined parameter should be given in terms of the number of events per year, as well as noise limits at receptors. This should be explicit in a Noise Management Plan which includes, amongst other details, a noise monitoring plan to demonstrate that limits are being adhered to.