Appendix 12.9

Operational Traffic Noise Impact in Hickleton

VANGUARDIA

A BURO HAPPOLD COMPANY

Land South of Dearne Valley Parkway

Operational Road Traffic Noise Impact in Hickleton

0052805-VAN-RP-YA-0001-P01

0052805

30 November 2023

Revision P01

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Revision	Description	Issued by	Date	Checked
P01	First issue	CG	30/11/2023	AT

https://burohappold.sharepoint.com/sites/Vanguardia1/Vanguardia Live Projects/BH-52001-53000/P052805-0820-0 Barnsley Road Goldthorpe/05 Docs/01 Reports and Notes/03 ES Chapter/03 ES Chapter revised issue v2/Appendix 12.9 Operational Traffic Noise Impact in Hickleton.docx

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1 Introduction

This report considers the potential road traffic noise impacts in the village of Hickleton from operation of the proposed B2/B8[1] class use development located on land south of Dearne Valley Parkway, to the west of the village of Goldthorpe. The Development Site lies around 3.5 km to the west of Hickleton. A proportion of the vehicles serving the Proposed Development are predicted to use the A635 to access the A1(M), which is routed directly through Hickleton. Further information on traffic routing can be found in the Transport Chapter of the Environmental Statement (ES).

The planning application for the Proposed Development is supported by an Environmental Impact Assessment (EIA). This report forms an appendix to the Noise and Vibration Chapter of the associated ES, and should be read in conjunction with it and any other Chapters of the ES where these are referenced.

It should be noted that the Proposed Development Site falls within the boundary of Barnsley Metropolitan Borough Council (BMBC) who are therefore the relevant planning authority, while Hickleton is within the boundary of City of Doncaster Council (CDC).

The scope of the Noise and Vibration Chapter was based on the contents of an EIA Scoping Report produced in October 2022. This was submitted to BMBC who returned a scoping opinion in November 2022 which made no comments on the proposed scope relating to noise. The Noise and Vibration Chapter is based on this scope and focuses on the potential impacts at sensitive receptors in the area around the Site.

However, a later Pre-App response from BMBC dated 22nd February 2023 stated the following under the Pollution Control section:

> *'Pollution Control have reviewed the submitted documents and considered that, without mitigation, this development has the potential to have an adverse impact on health and the quality of life of those living and/or working in the locality.*
>
> *Noise from road traffic through Hickleton is an issue as increased HGVs, particularly throughout the night, will be a further cause for concern. A noise assessment will need to consider this with a view to possible mitigation such as triple glazing and mechanical ventilation. This will need to be balanced with the fact that Hickleton is a Conservation area.*
>
> *Mitigation would be required to address issues such as times of construction or demolition works, the submission of a noise impact assessment, and that any development in accordance with a Construction Environment Management Plan (CEMP).'*

This assessment has been produced in response to the comments from BMBC relating to noise from operational road traffic associated with the Proposed Development in Hickleton, as well as similar concerns expressed by CDC.

It should be noted that, due to the high existing volume of road traffic travelling along this section of the A635, sensitive receptors in Hickleton are already exposed to significant levels of road traffic noise, i.e., in the absence of the Proposed Development.

[1] Class B2: General Industrial, Class B8: Storage and Distribution

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2 Policy Context

This assessment is based on the same national and local policy as has been referenced in the Noise and Vibration Chapter of the ES. These are listed as follows:

- National Planning Policy Framework (NPPF), 2023;
- Noise Policy Statement for England (NPSE), 2010;
- Planning Practice Guidance for Noise (PPG:N), 2019; and
- Barnsley Metropolitan Borough Council Local Plan, 2019.

Further details of this policy framework and how it applies to the assessment can be found in the Noise and Vibration Chapter of the ES. However, it is important to define the two main noise effect levels described to in the NPSE and PPG:N as these are referred to in this assessment:

- **LOAEL – Lowest Observed Adverse Effect Level**

  This is the level above which adverse effects on health and quality of life can be detected.

- **SOAEL – Significant Observed Adverse Effect Level**

  This is the level above which significant adverse effects on health and quality of life occur.

In addition, the following CDC local policy documents have been reviewed:

- Doncaster Local Plan 2015-2035, 2021; and
- Technical & Developer Requirements Supplementary Planning Document, 2023.

The relevant content of these documents (e.g., Policy 54 from the Doncaster Local Plan) is consistent with the national and local policy listed above which has been used as a basis for this assessment.

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3 Assessment Methodology

3.1 Noise Sensitive Receptor Locations

To provide an overview of the predicted impacts of operational road traffic noise from the Proposed Development, a sample of noise sensitive receptors most exposed to the A635 as it passes through Hickleton have been selected. Details of these receptors are provided in Table 3—1 and Figure 3—1 below.

Table 3—1 List of sample noise sensitive receptors in Hickleton (road traffic noise)

Receptor ID	Receptor
H01	1 Fir Tree Close
H02	60-66 Doncaster Road
H03	6 The Mews, Castle Hill Fold (west)
H04	11-12 Doncaster Road
H05	9 Doncaster Road
H06	19 Doncaster Road
H07	John O Gaunts (west)

Figure 3—1 Sample noise sensitive receptor locations in Hickleton (road traffic noise)

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The receptors are all residential dwellings. Daytime noise effects have been assessed based on a height of 1.5 m above the ground; during the night, an assessment height of 4.5 m has been used to represent first floor (bedroom) windows.

3.2 Operational Road Traffic Noise

The potential effects of road traffic noise due to operation of the Proposed Development at the sample noise sensitive receptors in Hickleton have been assessed using the same methodology as detailed in the Noise and Vibration Chapter of the ES. This is summarised as follows.

Changes in road traffic noise due to operational traffic on the roads in the vicinity of the Site have been assessed by predicting the noise from scenarios both with and without the traffic associated with operation of the Proposed Development at the relevant noise sensitive receptors, using data provided by the Applicant's transport consultant (see Chapter 13 of the ES) and comparing the results. Predictions have been undertaken based on the method described in the technical memorandum Calculation of Road Traffic Noise[2] (CRTN) for the following traffic flow scenarios, which take account of all relevant committed developments:

- Baseline year (2022) without Development, for reference;
- First year of full operation of Development (2026) without operational traffic (referred to as the do-minimum or DM scenario); and
- First year of full operation of Development (2026) including operational traffic (referred to as the do-something or DS scenario).

The annual average weekday traffic (AAWT) has been assessed for both the 16 hour daytime period of 07:00 to 23:00 hours, and the 8 hour night-time period of 23:00 to 07:00 hours. Further details of the information used in the prediction of operational traffic noise, including the traffic flow data for each scenario, is provided in Appendix 12.4 of the ES.

The potential significance of any increases in road traffic noise due to traffic associated with operation of the Proposed Development have been assessed based on a comparison of the predicted noise level for the DS scenario to the SOAEL threshold for day and night, in combination with the magnitude of change in noise levels (impact) between the results for the DM and DS scenarios. The LOAEL and SOAEL thresholds for road traffic noise are presented in Table 3—2 as follows:

Table 3—2 Thresholds of potential effects of operational road traffic noise at residential receptors

Time period, T	Effect level	Threshold value (dB $L_{Aeq,T}$)[a]
Day (07:00-23:00)	LOAEL	50[b]
	SOAEL	63[c]
Night (23.00-07.00)	LOAEL	40
	SOAEL	55

Notes:
[a] Values are for annual average weekday road traffic noise at a position one metre from a residential building façade containing a window, ignoring the effect of an acoustic reflection from that façade.
[b] Equivalent to 55 dB $L_{A10,18hr}$ façade
[c] Equivalent to 68 dB $L_{A10,18hr}$ façade

[2] Department of Transport Welsh Office (1988), Calculation of Road Traffic Noise

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If the DS scenario predicted road traffic noise level exceeds the LOAEL, the change between the DM and DS scenario results has been calculated for the day/night-time period and compared to the magnitude of impact categories presented in Table 3—3 and Table 3—4 for the day and night-time, respectively.

Where the DS scenario exceeds the SOAEL and the magnitude of impact is minor or greater, then a significant effect is identified (this is indicated by the shaded boxes with bold text in the tables below).

Table 3—3 Impact magnitude and significance categories for change in road traffic noise during the day

Magnitude of impact	Change in road traffic noise exposure (DAY)	
	If DS scenario result is between LOAEL and SOAEL	**If DS scenario result is equal to or greater than SOAEL**
No Change	0	0
Negligible	Up to 2.9 dB	Up to 0.9 dB
Minor	3.0 – 4.9 dB	**1.0 – 2.9 dB**
Moderate	5.0 – 9.9 dB	**3.0 – 4.9 dB**
Major	10.0 dB and over	**5.0 dB and over**
Identification of effect significance: *Where predicted road traffic noise level for DS scenario ≥ SOAEL and there is a minor impact or greater (as indicated by the shaded boxes with bold text).*		

Table 3—4 Impact magnitude and significance categories for change in road traffic noise during the night

Magnitude of impact	Change in road traffic noise exposure (NIGHT)	
	If DS scenario result is between LOAEL and SOAEL	**If DS scenario result is equal to or greater than SOAEL**
No Change	0	0
Negligible	Up to 0.9 dB(A)	Up to 0.9 dB
Minor	1 – 2.9 dB(A)	**1.0 – 2.9 dB**
Moderate	3.0 – 4.9 dB(A)	**3.0 – 4.9 dB**
Major	5.0 dB(A) and over	**5.0 dB and over**
Identification of effect significance: *Where predicted road traffic noise level for DS scenario ≥ SOAEL and there is a minor impact or greater (as indicated by the shaded boxes with bold text).*		

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4 Assessment Results

The predicted operational road traffic noise levels at the noise sensitive receptors are presented in Appendix A of this report.

The results indicate that, during the daytime, the predicted road traffic noise levels for the DS scenario exceed the SOAEL at most of the receptors, but the change in noise level due to the additional vehicles serving the Proposed Development has a negligible magnitude of impact at all receptors. Therefore, no significant adverse effects are predicted due to the changes in road traffic noise during the day.

During the night-time, the predicted road traffic noise levels for the DS scenario exceed the SOAEL at all the receptors. Furthermore, the change in noise level due to the additional vehicles serving the Proposed Development increases the road traffic noise level by up to 1.2 dB when compared with the results for the DM scenario. This is classified as a minor adverse impact, although it should be noted that it is at the lower end of the category for this (defined as a change of between 1.0 and 2.9 dB in Table 3—4) and the change is unlikely to be perceptible. Nevertheless, significant adverse effects are predicted due to the changes in road traffic noise during the night at all of the receptors considered.

For context, it should be noted that in all instances of the DS scenario predicted noise level exceeding the SOAEL, the SOAEL is also exceeded by the predictions for the baseline and DM scenarios. This indicates that, as stated in the introduction above, sensitive receptors in Hickleton are already exposed to significant levels of road traffic noise regardless of the operation of the Proposed Development.

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5 Mitigation and Residual Effects

Following the assessment, the Applicant recognised that, to comply with Government policy, the predicted significant adverse effects resulting from operational road traffic noise associated with the Development needed to be avoided and various options were considered.

Having examined the situation carefully, the most appropriate practical measure that could be applied to the affected properties in Hickleton would involve seeking to improve, where necessary, the sound insulation provided by the façades of the properties with exposure to the A635. On this basis, a scheme of mitigation was devised and discussed with officers from both BMBC and CDC in September and October 2023.

Appendix B of this report presents a figure that shows those facades where the threshold for a significant adverse effect is exceeded (i.e., eligible properties), excluding those which clearly do not contain windows (note that, for this analysis, every property in Hickleton has been assessed).

An outline of the proposed sound insulation mitigation scheme is set out below. It will be secured through the Section 106 agreement.

- Produce a plan of Hickleton showing eligible properties. The only facades shown will be those with windows, facades with no windows will be excluded as there would be no significant adverse effect (see Appendix B of this report).
- No action will occur until the Site approaches a level where HGV activity will trigger the threshold of a significant adverse effect (approx. 100,000 sqm of occupancy).
- Upon commencement of construction of the unit that will take the occupied floorspace over that threshold, a letter will be sent to the occupants of eligible properties. This will:
    - Explain the situation and ask them to confirm whether the windows in the relevant facade are to habitable rooms (i.e., living rooms or bedrooms, not kitchens or bathrooms).
    - Ask if they wish to receive a sum of money to enable them to improve the sound insulation of the eligible façade. A response will be requested within a period of 6 months.
- If the occupier gives positive response, they will receive a sum of money based on the number of windows to habitable rooms in the eligible façade(s). The sum of money will be based on the cost of implementing the Government's Noise Insulation Regulations mitigation which apply to new or improved highways. An additional sum will be made available for listed buildings to cover the additional cost of an application for securing, if necessary, Listed Building Consent.
- The sum of money will enable the occupiers to make arrangements to implement improvements to the sound insulation of their eligible façade(s).
- If no response has been received from a particular property, a further letter will be sent one month before the end of the 6 month period. If no response is received after the 6 month period ends, any obligation to pay for noise insulation will have ceased.
- Contact details will be provided to assist occupiers in securing the funding.
- If occupiers have any queries about the process, these will be addressed on case-by-case basis.

Improving the sound insulation provided by the eligible facades will not only address the increase in noise arising from the Development during the night, but will also reduce the existing road traffic noise impact.

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Consequently, the Government's noise policy will be met not only by avoiding significant adverse effects, but also by contributing to an improvement in health and quality of life of the residents compared with the current situation.

Following implementation of the mitigation scheme, only negligible impacts are expected at sensitive receptors in Hickleton due to changes in road traffic noise associated with operation of the Proposed Development.

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6 Summary

An assessment has been carried out to identify the potential road traffic noise impacts in the village of Hickleton from operation of the proposed B2/B8 class use development located on land south of Dearne Valley Parkway, to the west of the village of Goldthorpe, primarily in response to comments received by BMBC.

The report forms an appendix to the Noise and Vibration Chapter of the associated Environmental Statement (ES) supporting the planning application for the Proposed Development, and should be read in conjunction with it.

Due to the high existing volume of road traffic travelling along this section of the A635, sensitive receptors in Hickleton are already exposed to significant levels of road traffic noise, i.e., in the absence of the Proposed Development.

Predictions of road traffic noise have been undertaken at a sample of noise sensitive receptors most exposed to road traffic noise from the A635 in Hickleton.

The results indicate that, during the day, the increase in road traffic noise due to the additional traffic associated with operation of the Proposed Development would result in negligible impacts. However, during the night, the increase just exceeds the category for minor adverse impacts, and therefore significant adverse effects are predicted.

A mitigation scheme for those properties in Hickleton expected to experience a significant adverse effect at night has been proposed, which will also reduce the existing road traffic noise impact. This is to be secured through a Section 106 agreement.

Following implementation of the mitigation scheme, only negligible impacts are expected at sensitive receptors in Hickleton due to changes in road traffic noise associated with operation of the Proposed Development.

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Appendix A Predicted Road Traffic Noise Levels

Operational Traffic Noise Prediction Results for Sample Receptors in Hickleton - DAY

Receptor ID	Receptor	Predicted road traffic noise level, DAY, dB $L_{Aeq,16hr}$* freefield			DS effect level	Change, dB (DM to DS)	Magnitude of impact	Significant effect indicated?
		Baseline scenario[1]	DM scenario[2]	DS scenario[3]				
H01	1 Fir Tree Close	57.8	57.9	58.6	Between LOAEL and SOAEL	+0.7	Negligible	NO
H02	60-66 Doncaster Road	67.9	68.1	68.7	≥SOAEL	+0.6	Negligible	NO
H03	6 The Mews, Castle Hill Fold (west)	70.7	70.9	71.5	≥SOAEL	+0.6	Negligible	NO
H04	11-12 Doncaster Road	66.2	66.4	67.0	≥SOAEL	+0.6	Negligible	NO
H05	9 Doncaster Road	71.7	71.8	72.5	≥SOAEL	+0.7	Negligible	NO
H06	19 Doncaster Road	71.3	71.4	72.1	≥SOAEL	+0.7	Negligible	NO
H07	John O Gaunts (west)	68.4	68.6	69.2	≥SOAEL	+0.6	Negligible	NO

* $L_{Aeq,16hr}$ (07:00-23:00) value calculated by subtracting 2 dB from the $L_{Aeq,18hr}$ value (06:00-00:00) as initially predicted

[1] Baseline scenario, 2022 (for reference only)

[2] Do-minimum scenario, 2026, i.e., future baseline traffic flows not including traffic associated with the Development

[3] Do-something scenario, 2026, i.e., future baseline traffic flows plus operational traffic associated with the Development for first year of full site operation

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Operational Traffic Noise Prediction Results for Sample Receptors in Hickleton - NIGHT

Receptor ID	Receptor	Predicted road traffic noise level, NIGHT, dB $L_{Aeq,8hr}$ freefield			DS effect level	Change, dB (DM to DS)	Magnitude of impact	Significant effect indicated?
		Baseline scenario[1]	DM scenario[2]	DS scenario[3]				
H01	1 Fir Tree Close	59.3	59.5	60.5	≥SOAEL	+1.0	Minor Adverse	YES
H02	60-66 Doncaster Road	64.8	64.8	66.0	≥SOAEL	+1.2	Minor Adverse	YES
H03	6 The Mews, Castle Hill Fold (west)	66.2	66.2	67.4	≥SOAEL	+1.2	Minor Adverse	YES
H04	11-12 Doncaster Road	64.1	64.1	65.3	≥SOAEL	+1.2	Minor Adverse	YES
H05	9 Doncaster Road	67.7	67.7	68.9	≥SOAEL	+1.2	Minor Adverse	YES
H06	19 Doncaster Road	67.5	67.5	68.7	≥SOAEL	+1.2	Minor Adverse	YES
H07	John O Gaunts (west)	64.6	64.6	65.8	≥SOAEL	+1.2	Minor Adverse	YES

[1] Baseline scenario, 2022 (for reference only)

[2] Do-minimum scenario, 2026, i.e., future baseline traffic flows not including traffic associated with the Development

[3] Do-something scenario, 2026, i.e., future baseline traffic flows plus operational traffic associated with the Development for first year of full site operation

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Appendix B Hickleton Road Traffic Noise Significant Effect Façade Markup

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