Tritax Symmetry (Hinckley) Limited

HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

The Hinckley National Rail Freight InterchangeDevelopment Consent Order

Project reference TR050007

Noise Note Response to ExA Rule 17 letter

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The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009Regulation 5(2)(q)

Rule 17 Letter Response

Project	**Hinckley Rail Freight Interchange**		
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Rule 17 Letter Response – Noise and Vibration

This technical note has been prepared by BWB Consulting Ltd on behalf of the Applicant to provide a response to the Rule 17 Letter 'Rule 17 - Request for further information from the Applicant, Leicestershire County Council, Blaby District Council, Hinckley and Bosworth Borough Council, Warwickshire County Council & National Highways', provided by PINS on 20 February 2024.

This response relates specifically to questions directed at the Applicant within the PINS letter Under the subheading 'Noise and Vibration' (pages 2 and 3 of the letter). The headings and points are reproduced below, shown in blue, and BWB's response is shown in grey.

a) It has been suggested that the Applicant's Noise Assessment Update Note [REP3-061] mis-states the locations of NSRs 2, 3 and 4 and that they should not have been included in Table 5 to this Update Note. Can the Applicant explain why such NSRs have been included at Table 5.

The receptors included within Table 5 of the Noise Assessment Update Note were included as the existing noise levels at those receptors have been characterised using the noise levels measured at NMP4.

b) Again, with regard to Table 5 to the Noise Assessment Update Note, can the Applicant explain its findings that all NSRs experience at least 50dB of ambient rail noise, given that they appear to fall outside of the rail noise contours depicted in the Update Note.

The analysis that has been undertaken and detailed in the Noise Assessment Update Note does not state that all receptors experience at least 50dB of ambient rail noise. The existing ambient noise levels at NSRs north of the rail line are a combination of both road and rail traffic noise.

The analysis shows that, as distance increases from the rail line, road traffic from surrounding roads becomes more dominant. The purpose of the analysis was to determine if the noise levels measured at NMP4 were representative of NSRs to the north of the rail line.

The analysis suggests that the measured noise levels are representative of NSRs to the north of the rail line, regardless of whether the ambient noise levels are dominated by road or rail traffic. Therefore, the conclusions of the Noise and Vibration ES Chapter are valid, and this is what the update note concludes.

c) At paragraph 10.174 to ES Chapter 10 [REP4-039], the Applicant draws reference to BS4142 insofar as it relates to circumstances where absolute levels may be more relevant than the margin by which the rating level exceeds the background level. This includes circumstances where background sound levels and rating levels are low. Can the Applicant explain why its

methodologies are in line with such advice, given that, in this instance, the background and rating levels are higher than those levels at all NSRs during all time periods.

The paragraph relating to low background and rating levels has been taken verbatim from the guidance document, and was included within the noise and vibration chapter to highlight that the absolute noise level could be considered within the context assessment.

BS4142[1] does not state that the consideration of absolute levels is limited to situations where the background sound levels and rating levels are low. Section 11 of the Standard states:

> *"An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context."*

BS4142 states:

> *"where the initial estimate of the impact needs to modified due to the context, take all pertinent factors into consideration, including the following;*
>
> - *The absolute level of sound;*
> - *The character and level of the residual sound compared to the character and level of specific sound; and*
> - *The sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate measures that secure good internal and/or outdoor acoustic conditions. "*

The absolute level of sound should therefore be considered as part of any contextual assessment. The Applicant has done this and reported the assessment outcome within the Noise and Vibration ES chapter.

Furthermore, the assessment has considered any differences between the character and level of the residual sound compared to the specific sound when applying acoustic penalties (pre and post mitigation scenarios), and the external and internal noise levels as a result of the HRNFI (paragraphs 10.302 and 10.303 Chapter 10 Noise and Vibration 6.1.10A Revision 08), taking into account any façade treatment.

Therefore, the assessment methodology is in line with the requirements of BS4142.

d) In terms of construction noise, can the Applicant clarify the rationale used for predicting the reduction in the significance of effects at NSRs with mitigation in place. In making such reductions, has the Applicant considered factors such as the attitude of site operators, noise characteristics (such as impulsivity), the duration of site operations and existing ambient noise levels?

Yes, the Applicant confirms that these factors have been taken into account when coming to a conclusion on the significance of effects.

The assessment of noise from the construction phase has been undertaken in accordance with BS5228-1[2], which is the British Standard specific to the prediction and assessment of

[1] British Standard (BS) 4142:2014+A1:2019 Methods for rating ad assessing industrial and commercial sound

[2] British Standards Institution. (2014). British Standard (BS) 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites

construction noise, and in providing guidance around noise limits, inherently factors in community attitudes to this type of noise and the potential characteristics of noise from an active construction site.

The assessment criterion has been adopted in accordance with the ABC method as detailed in BS5228-1, which takes into account the duration of site operations.

A range of measures have been proposed to reduce noise at NSRs through the construction phase, and these are set out within the Noise and Vibration Chapter and within the CEMP. The CEMP is the mechanism with which construction noise will be controlled, which is secured by DCO requirement 7.

e) In terms of window attenuation, it would appear that previous proposals for rail freight interchanges (notably East Midlands Gateway and Northampton Gateway) assumed that a partially open window would lead to a 12dB reduction of the sounds projected to be caused by the Proposed Development. Can the Applicant explain why this has not been applied in this instance?

The Applicant believes a 12 dB reduction to be overly conservative given the body of evidence for a 15 dB reduction. The reduction through a partially open window is set out within p64 of BS8233[3], which states a reduction in noise levels of 15dB from outside to inside.

Further research has been undertaken by The Building Performance Centre at Napier University, which was submitted to Defra (NANR116: *Open/closed window research 'sound insulation through ventilated domestic windows* April 2007)[4]. A number of laboratory tests have been undertaken to measure the sound insulation provided by a number of window units, when open and closed. **Table 1** of NANR116, reproduced below, summarises the results for three different types of openings.

Table 1: Statistically derived Dn,e insulation ratings for window openings (dB)

Opening Size	Octave Band Centre Frequency (Hz)							$D_{n,e,w}$ ($C;C_{tr}$)
	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	
50K (mm^2)	23	17	19	20	16	21	23	19(0;-1)
100K (mm^2)	22	16	17	18	15	19	21	18(-1;-1)
200K (mm^2)	20	14	14	16	14	17	19	16(0; -1)

The above indicates that, although noise break-in varies with the size of the window openings, a partially open window typically provides a reduction greater than 15dB and therefore using a reduction of 15dB provides a defendable estimate. It is worth noting that the element of the assessment around the reduction through an open window is agreed with the Local Authorities through the SoCG.

[3] British Standard (BS) 8233:2014 Guidance on sound insulation and noise reduction for buildings
[4] Napier University NANR116: Open/closed window research' Sound insulation through ventilated domestic windows (April 2007)