

Memorandum

To: Steve McBurney; Mark Jones
From: Matthew Heyes
Project: Dearne Hall Road, Low Barugh
Subject: Additional Note on Internal Criteria and Mitigation
Reference: 14/0561/M02-2
Date: 22 February, 2016

1 Introduction

- 1.1 Outline planning permission has been granted for residential development on the site adjacent to Dearne Hall Road in Barnsley. As part of the outline application submission, a full noise mitigation strategy for the proposed development was carefully developed and submitted after detailed liaison with the Environmental Health department of Barnsley Council. Full details of the agreed noise criteria and mitigation measures are provided in our Planning Noise Assessment report ref 13/0190/R1-6.
- 1.2 For the reserved matters application, the Council have requested further details of how the proposed noise criteria and mitigation measures will protect people from industrial noise along with how the specified mitigation performance for the ventilation systems and barrier can be achieved on site. This memo provides additional information on the internal noise criteria and mitigation measures as requested by the council.

2 Internal Criteria

- 2.1 The noise criteria within habitable rooms during the day and night have been set as absolute noise levels based on relevant guidance, these limits have been agreed with Barnsley Metropolitan borough Council . These agreed absolute noise limits will ensure that internal noise levels within habitable rooms are suitable even if the external industrial noise is not masked by road traffic.
- 2.2 Industrial noise sources generally include a significant number of irregular and impulsive noise sources which can add a specific character to the noise source. In order to control this at Dearne Hall Road, short duration maximum noise limits (L_{Amax}) have been set within bedrooms at night. These limits will provide suitable protection for people within the houses even if the industrial noise is not masked by existing road traffic noise.
- 2.3 The night time noise limits within habitable rooms have been set as 30 $L_{Aeq, 8h}$ and 45 dB L_{Amax} and as discussed above, meeting these limits at night will ensure that the acoustic environment



within habitable rooms is suitable even if the industrial noise is dominant. The mitigation measures proposed to be installed would ensure that the noise levels within bedrooms will be significantly below the noise criteria with ambient noise levels of 21 dB $L_{Aeq, 8h}$ and maximum levels of 34 dB L_{Amax} . The fact that the calculated internal noise levels will be so far below the noise criteria should provide a significant level of additional comfort that industrial noise should not be considered as an issue.

3 Mitigation

3.1 Glazing

- 3.1.1 In order to achieve the internal noise limits the required sound reduction for the glazing has been specified. The required acoustic performance of the glazing is shown below:

Glazing Type	Sound Reduction Index at Octave Band Centre Frequency (Hz)				
	125	250	500	1k	2k
Glazing Type 1 (Typical of 6/16/4mm glazing)	22	22	28	39	39
Glazing Type 2* (Typical of R_w 45 glazing)	24	22	28	39	39

T1 Recommended standard and higher performance glazing insertion losses

***In addition** to the octave band requirements shown in the table the manufacturer/supplier must demonstrate that the system as a whole achieves a minimum sound reduction of 24 dB at 100 Hz 1/3 octave band centre frequency.

- Glazing Type 1 is to be installed within all facades which have line of sight screening of the substation. This screening is to be provided by other houses within the development.
- Glazing Type 2 is to be installed within all facades which have an unscreened view of the substation.

- 3.1.2 The acoustic performance for Glazing Type 1 is achievable using standard thermal double glazing. The performance for Glazing Type 2 is achievable using Pilkington Insulight R_w 45.



3.2 Ventilation

3.2.1 In order to achieve the internal noise limits acoustic trickle vents have been specified. The required acoustic performance of the vents are shown below:

Ventilation Type	$D_{n,e}$ at					
	Octave Band Centre Frequency (Hz)	125	250	500	1k	2k
Ventilation Type A* (Passivent Fresh 100 dB)		40	38	39	41	50
Ventilation Type B (Typical of $D_{n,e,w}$ 31 dB vents)		19	22	25	33	41

T2 Recommended ventilation losses

*In addition to the octave band requirements shown in the table the manufacturer/supplier must demonstrate that the system as a whole achieves a minimum sound reduction of 30 dB at 100 Hz 1/3 octave band centre frequency.

- Ventilation Type A is to be installed to ventilate rooms which are unscreened from either the industrial area on the eastern boundary of the site or the electrical substation.
- Ventilation Type B is to be installed to ventilate all other rooms.

3.2.2 Ventilation Type A can be provided by a number of acoustic ventilators including Passivent Fresh 100 dB and Greenwood MA3051 ventilator. More details about these products can be found on the manufactures websites... <http://www.passivent.com/passivent-fresh-wall-ventilators/p/17> and <http://www.greenwood.co.uk/uploads/docs/224.PDF>, other manufactures which can provide products meeting the same performance are shown within the attached Appendix B from our original noise report (attached).

3.2.3 Ventilation type B can be provided using standard non-acoustic trickle vents, all the manufactures detailed within attached Appendix B will be able to provide products which exceed this requirements.

3.3 Acoustic Garden Barriers

3.3.1 To protect gardens from noise from the substation an acoustic fence have been specified where screening would not inherently be provided by the proposed houses. The required performance specification for the barriers is attached to this memo. The overall requirement is that the fence must achieve a minimum uniform mass of 10 kg/m² for the full area of the barrier.

3.3.2 The fence specification is relatively standard and should be easily achievable by reputable manufacturers/suppliers. Specialist fencing contractors such as Jacksons Fencing and Newton



and Frost Fencing Ltd which are listed in the specification can provide a product to meet the requirements.

■ End of Section