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/M02-1**
Date:	**15 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 we 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 Ventilation

3.1.1 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

T1 Recommended ventilation losses

- 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.

3.1.2 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).

3.1.3 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.

3.2 Acoustic Garden Barriers

3.2.1 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.

3.2.2 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

Appendix B

Subject: **Acoustically rated alternative means of ventilation**
Project: **Dearne Hall Road, Barnsley**
Date: **June 2013**

B1 Introduction

This appendix sets out products and suppliers of acoustically treated means of ventilation alternative to open windows for residential applications. Products are grouped to achieve low, medium or high levels of passive acoustic attenuation, with additional details for mechanical ventilation systems. Supplier contact details are provided in the final section B6.

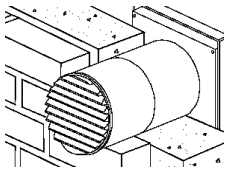
The $D_{n,e,w}$ value specifies the acoustic reduction of a vent, based on its area, standardised to an absorption area of $10m^2$. Therefore the figure is higher than the actual insertion loss that will be provided by the ventilator, as it is dependent on the area of the vent. The $D_{n,e,w}$ figure is only therefore useful in specifying the product against a given $D_{n,e,w}$ requirement. The acoustician should review the selected products, based on the test data provided by the manufacturer, to make sure the required performance will be achieved. Laboratory tests to conform with BS EN 140-10, 1992, ISO 140-10, 1991 – Laboratory measurement of airborne sound insulation of small building elements, and then rated in accordance with EN 717-1.

The data supplied here is based on manufacturer data, and will need to be confirmed by accredited laboratory test reports. These suggestions are intended to provide an indication of the type of products available, and it is recommended to be used on only as a guide, where similar products by other manufacturers may offer equivalent alternatives.

B2 Low Attenuation

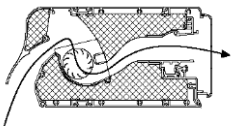
The following products are suitable for low attenuation requirements ($D_{n,e,w}$ up to 40dB).

B2.1 **Rytons, 125mm Acoustic High Rise Aircore, AAH5HM**



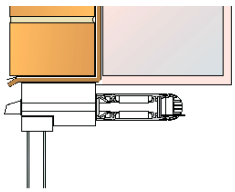
- $D_{n,e,w}$ 38dB
- Equivalent 3248 mm^2 free area

B2.2 **Renson, Sonovent V**



- $D_{n,e,w}$ 38 - 43dB
- Hybrid system using a forced ventilation of 220 $m^3/h/m$

B2.3 **Passivent, TVALdB, 450/40**



- $D_{n,e,w}$ 40dB
- Equivalent 4200 mm^2 free area

B3 Medium Attenuation

The following products are suitable for medium attenuation requirements ($D_{n,e,w}$ 41 – 49dB).

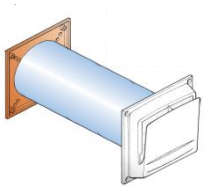
B3.1 **Rytons, 125mm Acoustic High Rise Aircore, AAC5**

- $D_{n,e,w}$ 41dB
- Equivalent 3970 mm^2 free area

B3.2 **Passivent, 800/42**

- $D_{n,e,w}$ 42dB
- Equivalent 4200 mm^2 free area

B3.3 **Passivent, Fresh TLF-dB**



- $D_{n,e,w}$ 44dB
- Equivalent 5000 mm^2 free area

B3.4 **Passivent, Fresh 90dB**

- $D_{n,e,w}$ 45dB
- Equivalent 6000 mm^2 free area

B3.5 **Greenwood Airvac, AAF**

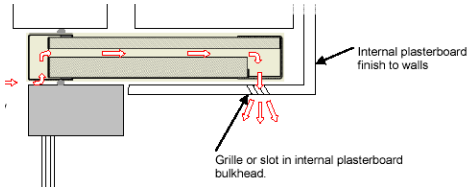
- $D_{n,e,w}$ 43dB

B4 High Attenuation

The following products are suitable for high attenuation requirements ($D_{n,e,w}$ up to 60dB).

B4.1 **CAICE, Acoustic Ventilator**

- $D_{n,e,w}$ 50dB
- Equivalent 6000 mm^2 free area



B4.2 **Renson : Sonovent or Invisivent, AK49**

- $D_{n,e,w}$ 40 - 56dB available
- E.g. Sonovent = $D_{n,e,w}$ 56dB in open position for an (X-Large); 10 mm air slot and air volume up to 42 m^3/h/m

B4.3 **Passivent, Fresh 80dB**

- $D_{n,e,w}$ 50dB
- Equivalent 4000 mm^2 free area

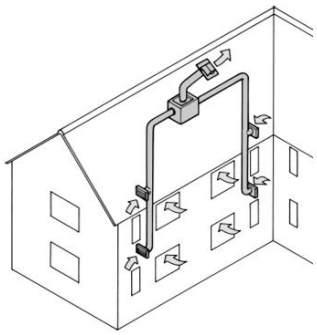
B4.4 **Greenwood Airvac, MA3051**

- $D_{n,e,w}$ 55dB
- Equivalent 2500 mm^2 free area

B5 Mechanical System

B5.1 **Passivent AV+**

- This is an example of a whole house type ventilation system, with a centralised extract fan.
- Such a system would typically utilise passive vents in the building façade, such as Passivent Fresh 80 vents set out above.



B6 Supplier Contact Details

B6.1 **Rytons Building Products**

- Telephone +44 (0) 1536 511874
- www.vents.co.uk

B6.2 **Renson Ltd**

- Telephone +32 (0)56 627111 (Belgium)
- www.renson.net

B6.3 **Passivent Ltd**

- Telephone +44 (0) 161 9627113
- www.passivent.com

B6.4 **Greenwood Air Management Ltd**

- Telephone +44 (0) 1903 771021
- www.greenwood.co.uk

B6.5 **Caice UK Ltd**

- Telephone +44 (0)844 8475370
- www.caice.co.uk

End of Section

Specification 14/0561/SPC1

Project: **Dearne Hall Road, Barnsley – Barratt Homes and DWH**
Subject: **Acoustic Barrier**
Date: **15 December 2014**

1 General

1.1 This specification defines the applicable requirements for an acoustic barrier, in addition to the applicable requirements for mineral fibre lining to the acoustic barrier. The suppliers of the materials shall provide the necessary information and data to verify the required performance.

1.2 The supplier shall be responsible for ensuring that all the performance criteria set out herein are met by the product being offered.

2 Barrier Specification

2.1 Barrier height shall be 2m above local ground level.

2.2 Barrier alignments shall be within ± 1.0m of that as shown on figure 14/0561/F1.

2.3 Minimum extents of the barrier shall be as shown on attached figure 14/0561/F1.

2.4 Barriers shall achieve a minimum of 10 kg/m^2 uniform mass per unit area over the full area of the barrier and for the duration of its design life.

2.5 Barriers shall be of imperforate construction over their full areas and remain so for the design life of the barrier. It is essential, especially for barriers with butting or overlapping components, that the joints are well sealed to prevent leakage. This should be achieved without compromising the overall density requirement. Gravel boards of equivalent density are to be used to prevent gaps between screen structure and ground if necessary).

2.6 The barrier structure is to be suitably designed and engineered with appropriate consideration for wind loading and aerodynamic forces.

2.7 No major maintenance should be required for the barriers for 20 years and each barrier should remain serviceable for at least 40 years.

3 Acoustic Barrier Suppliers

3.1 **Buffalo Fence Limited**

- Address
  Church Lane
  Ipsden
  Wallingford
  Oxon
  OX10 6BS
- Telephone 01491 838368
- Fax 01491 825418
- www.buffalo-fence.co.uk

3.2 **Jacksons Fencing**

- Address
  Stowting Common
  Ashford
  Kent
  TN25 6BN
- Telephone 0800 408 2234
- Fax 01233 750403
- http://www.jacksons-fencing.co.uk/

3.3 **Newton and Frost Fencing Ltd**

- Address
  Downsview Yard
  North Corner
  Horam
  East Sussex
  TN21 9HJ
- Telephone 01435 813 535
- Fax 01435 813 687
- http://www.nffltd.co.uk

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