

VALE OF GLAMORGAN COUNCIL  
**ADDITIONAL DRAWINGS**

2014/00995/FUL  
5/2/15

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29<sup>th</sup> January 2015

Dear David,

**RE: 2014/00995/FUL – Hunter Acoustics Response to Environmental Health Comments**

Following receipt of comments made by the Vale of Glamorgan Council's Environmental Health department in their memorandum dated 29/10/14, we would advise the following;

- The boundary with the road puts a small part of the development into NEC C of TAN11 however it is not uncommon for development to be permitted on NEC C sites providing suitable sound insulation measures are installed. Noisemaps 3309/NM1-2 of our report 3309/ENS1 dated 06/02/2014 show the majority of the site (in its undeveloped state) falls under NEC A/B of TAN11.
- Garden and boundary fences proposed at 1.8m high are not unusual for modern housing schemes, regardless of noise.
- Plots 40-45 and 46-47 (flats on eastern boundary) are apartments and therefore do not have private gardens/outdoor living spaces.
- The majority of the plots fall below the trigger level (NEC B/C threshold) with the exception of two plots (1 & 64). The remaining plots identified require up-rated glazing and mechanical ventilators to **first floor bedroom windows only**. This is to protect against  $L_{Amax}$  events during the night-time period (car pass-bys / train pass-bys) in line with best practice. Since the report was issued, BS8233:1999 has been superseded by BS8233:2014. The latest standard has clarified  $L_{Amax}$  levels should be controlled from "scheduled events" such as trains.  $L_{Amax}$  events from road traffic would not generally be described as "scheduled" and therefore treatment to bedrooms overlooking the road could be omitted (except for plots 1 & 64). According to BSRIA, a survey of new housing in 2011 confirmed that 69.5% of new housing included either MEV or MVHR mechanical ventilation anyway.
- Plots 1 & 64 located either side of the main site entrance are more exposed to road traffic noise however they are at the lower end of the NEC C TAN11 noise category. With the mitigation measures detailed in our report, internal noise levels are indicated to meet the reasonable internal noise criteria detailed in BS 8233:1999 and outdoor noise levels are indicated to be

around 50-55dB(A) in 50% of the garden area. We therefore see no reason why these plots should not be included.

### Observation Responses

- *bedrooms would have windows that could not be opened, and would thereby require mechanical ventilation. The mitigation measures make no mention of sealed window units. The mechanical ventilation provides required flow rates without the need to open the window, however the occupier has the choice as window units remain open-able. The mitigation measures are proposed to control L<sub>max</sub> events during the night (with the exception of plots 1 & 64).*
- *some bedrooms could experience noise levels of 35dB(A), 5dB(A) above the 30dB(A) level advocated by the World Health Organisation. Mitigation measures specified were to control L<sub>Amax</sub> events during the night. Internal L<sub>Aeq</sub> levels are indicated to meet the 30dB L<sub>Aeq,8hr</sub> night-time criterion with standard thermal double glazing and trickle ventilation.*
- *dwelling rooms would experience noise levels of 40dB(A), 5dB(A) above the 35dB(A) level advocated by the World Health Organisation. Mitigation measures specified were to control L<sub>Amax</sub> events during the night. Internal L<sub>Aeq</sub> levels are indicated to meet the 35dB L<sub>Aeq,16hr</sub> daytime criterion with standard thermal double glazing and trickle ventilation.*

We would however refer the reader to the following from the latest BS 8233:2014;

#### BS 8233:2014 - Internal Ambient Noise Level Criteria for Habitable Rooms

Location	Desired		Reasonable *	
	07:00 to 23:00	23:00 to 07:00	07:00 to 23:00	23:00 to 07:00
Living room	35 dB L <sub>Aeq,16hr</sub>	-	40 dB L <sub>Aeq,16hr</sub>	-
Dining room/area	40 dB L <sub>Aeq,16hr</sub>	-	45 dB L <sub>Aeq,16hr</sub>	-
Bedroom	35 dB L <sub>Aeq,16hr</sub>	30 dB L <sub>Aeq,8hr</sub>	40 dB L <sub>Aeq,16hr</sub>	35 dB L <sub>Aeq,8hr</sub>

\* NOTE 7 states "Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5dB and reasonable internal conditions still achieved."

- *only 50% of the garden area of homes would have some level of protection so that noise levels would not exceed 55dB(A), i.e. could be at 54dB(A). A level of 55dB(A) is advocated as causing serious annoyance and a level of 50dB(A) moderate annoyance by the World Health Organisation.*

**When assessing the application of an outdoor design aim of 55dB(A) Leq, which is derived from World Health Organisation guidance, it is important to take into account the feasibility of achieving such a level. A review of 'Health effect based noise assessment methods: A review and feasibility study' (NPL Report CMAN 16 1998 advised;**

*"Perhaps the main weaknesses of the WHO-inspired documents is that they fail to consider the practicality of actually being able to achieve any of the stated guideline values ... We know from the most recent national survey of noise exposure carried out in England and Wales (Sargent 93) that around 56% of the population are exposed to daytime noise levels exceeding 55dB(A) Leq and that around 65% are exposed to night time noise levels exceeding 45dB(A) Leq (as measured outside the house in each case)..."*

*The percentages exposed above the WHO guideline values could not be significantly reduced without drastic action to virtually eliminate road traffic noise and other forms of transportation noise (including public transport) from the vicinity of houses. The social and economic consequences of such action would be likely to be far greater than any environmental advantages of reducing the proportion of the population annoyed by noise. In addition there is no evidence that anything other than a small minority of the population exposed at such noise levels find them to be particularly onerous in the context of their daily lives."*

### **To be Conditioned**

- *All the attenuation measures required in terms of acoustic fencing, external fabric and partial and whole house ventilation should be implemented and maintained in place. **The proposed condition is considered to be acceptable in principle, subject to agreeing precise wording.***
- *Whether development should be granted for the two residential units to either side of the entrance in light of the degree of acoustic works that would be required to be installed and maintained. **Mechanical ventilation such as MEV or MVHR is commonly used on new housing schemes for reasons other than noise (69.5% of new homes according to BSRIA – see above). The acoustic double glazing proposed is not excessive for residential development. There is considered to be no justification to not allow development in this part of the site.***
- *Clarification should be sought with regard to the two premises, that are possibly flats, one of which borders the railway line to the east of the site and its neighbour are not subject to fencing although the one premise is on the boundary of a predicted 50-55dB(A) zone. **These plots are apartment blocks with no private outdoor living space/garden.***

- *In all dwellings an internal noise level of 35 dBA Leq 16 hour during the day and 30 dBA Leq 8 hour at night should be achieved. **The proposed condition is considered to be acceptable in principle subject to paying due regard to BS8233:2014 and agreeing precise wording.***
- *A minimum of 50% of the garden/ outdoor amenity space should achieve a level of below 50dBA Leq. **We see this as an unreasonable criterion bearing in mind guidance in the latest BS 8233:2014 and NPL reports discussed above. 50dB(A) could not be achieved with any reasonable screening system along the boundary with the road.***
- *Finally as all post development levels stated with in the Report are predicted, post construction testing should be carried out so to ensure that the above levels, internally and externally, are achieved. **The proposed condition is considered to be acceptable in principle subject to agreeing precise wording.***

I trust the above is clear, however if you wish to discuss in more detail, please do not hesitate to contact me.

Best regards,



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BSc(Hons) MIOA  
**Hunter Acoustics**