

Email to : Mrs Laura Powell
 Planning Co-ordinator
 Taylor Wimpey

Email address : LauraAnne.Powell@taylorwimpey.com

Copy to : PJWilliams@savills.com

From : Steve Ellis

Date : 13 October 2014

Subject : Noise assessment on existing housing due to new development increasing local traffic

Report No : 7538A

Introduction

The **Industrial Noise & Vibration Centre Limited (INVC)** was requested by Taylor Wimpey to assess the noise impact of extra traffic generated by the new development on existing housing on Porthkerry Road. This was following a request by the planning offer dealing with the scheme in the Vale of Glamorgan.

This report details the results of the assessment and comments having regard to normally accepted criteria.

Traffic flow information and noise calculations

Traffic flows were supplied by Waterman Infrastructure and Environment Ltd in the form of peak hour flows and are shown on the following diagrams.

NO DEVELOPMENT Porthkerry Road

am peak	685
pm peak	763

Diagram 1

WITH DEVELOPMENT Porthkerry Road

am peak	1062
pm peak	1071

New road	
am peak	465
pm peak	291

Diagram 2

INVC IN CONFIDENCE

This is a document prepared for the client by **INVC**. Recipients may not pass this document to any person outside the client's business without written consent from the **INVC**. Neither **INVC**, nor any person acting on its behalf, makes any warranty, express or implied with respect to the use of any information, method or process disclosed in this document or that such use may not infringe the rights of any third party or assumes any liabilities with respect to the use of, or for damages resulting in any way from the use of any information, apparatus, method or process disclosed in the document.

© INVC 2014

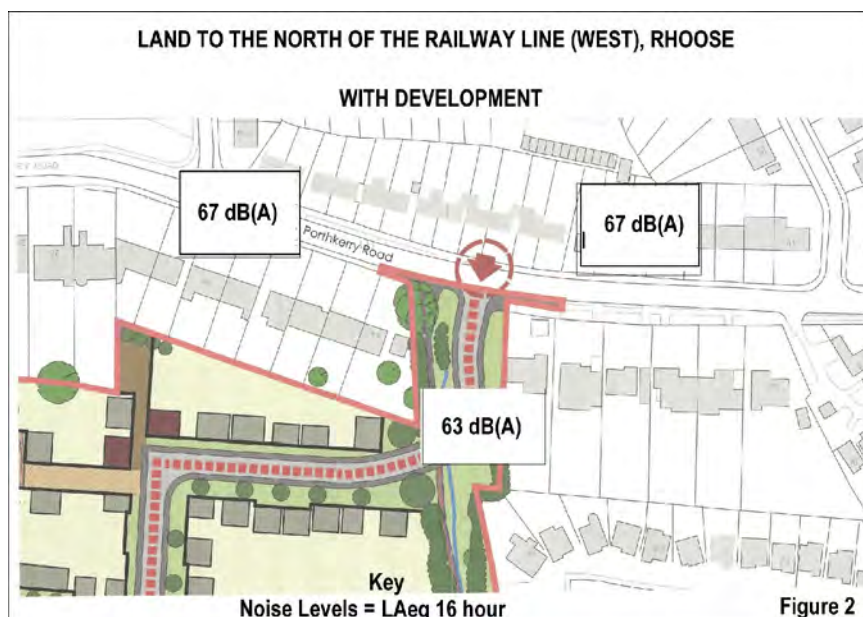
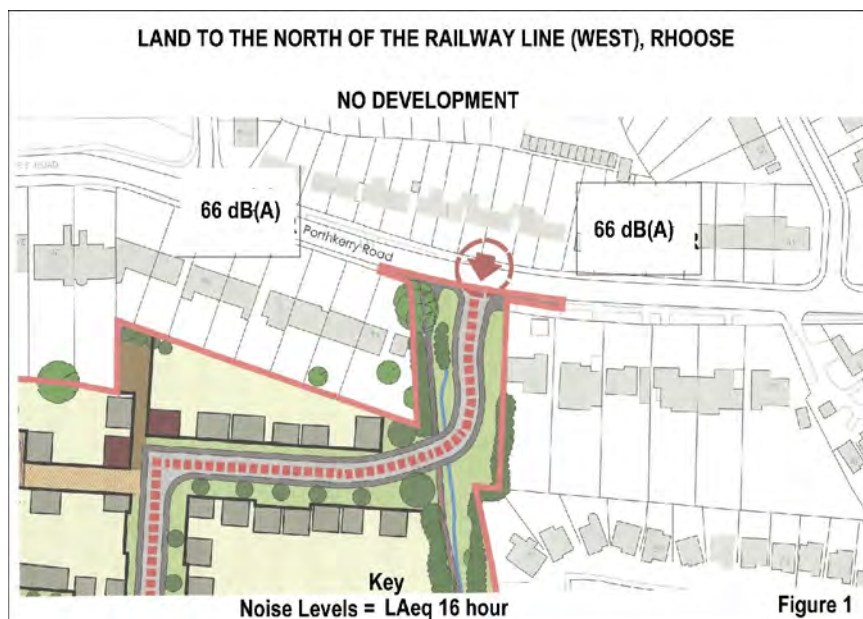
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means electronic, mechanical, photocopying, recording or otherwise outside the client's business without the written permission of the Industrial Noise & Vibration Centre Limited, 889 Plymouth Road, Slough, Berkshire, SL1 4LP. (Registered in England No. 1981938)

In order to compare the situation with and without the development taking place, I have calculated the basic 16 hour noise level at a nominal distance of 10m for properties on Porthkerry Road using the methodology contained in Calculation of Road Traffic Noise. To convert the hourly figure into 18 hour traffic flows the hourly flows are averaged and then multiplied by 9.28. In addition I have used the following:

Speed	=	50 kph
Heavy goods vehicles	=	10%

Figures 1 and 2 show the predicted 16 hour L_{Aeq} noise levels with and without the development in place, noting that to convert an 18 hour basic L_{A10} noise level to 16 hour L_{Aeq} the following has been used (ref TAN 11 Noise):

$$L_{A10 \text{ 18 hour}} - 2 \approx L_{Aeq \text{ 16 hour}}$$



Figures 3 and 4 show the properties either side of the new access road.



The gardens of these properties will benefit from a 1.8m high close boarded fence on either side. The noise level on the west side will be 53 dB $L_{Aeq\ 16\ hour}$, given the good quality close boarded fence will reduce noise levels by 8 dB(A) and the extra distance to the middle of the garden, a further 2 dB(A).

On the east side, the noise level in the garden is predicted to be 53 dB(A) with the close boarded fence attenuating by -8.5 dB(A) and the extra distance, a further 1.4 dB(A).

Giving consideration to first floor noise levels at the rear of the properties, on the east side the property is a bungalow and hence is not a consideration. The property on the west side has a predicted noise level of 54 dB(A) from the new access road.

The Vale of Glamorgan Council set the following conditions for traffic noise:

“Traffic Noise

Prior to commencement a scheme shall be submitted and approved in writing by the Local Planning Authority to provide that all habitable rooms exposed to external daily noise in excess of 63 dB(A) $L_{eq\ 16\ hour}$ (free field) during the day (07:00 to 23.00 ours) or 57 dB(A) $L_{eq\ 8\ hour}$ (free field at night (23.00 to 07.00 hours) shall be subject to sound insulation measures to ensure that all such rooms achieve an internal noise level of 40 dB(A) $L_{eq\ 16\ hour}$ during the day and 35 dB(A) $L_{eq\ 8\ hour}$ at night. The submitted scheme shall ensure that habitable rooms subject to sound insulation measures shall be provided with acoustically treated active ventilation units. Each ventilation unit (with air filter in position), but itself or with an integral air supply duct and cowl (or grille), shall be capable of giving variable ventilation ranges ranging from —

- (1) an upper rate of not less than 37 litres per second against a back pressure of 10 newtons per square metre and not less than 31 litres per second against a back pressure of 30 newtons per square metre, to*
- (2) a lower rate of between 10 and 17 litres per second against zero back pressure.*

No habitable room shall be occupied until the approved sound insulation and ventilation measures have been installed in that room. Gardens shall be designed to provide an area which is at least 50% of the garden area for sitting out where the maximum day time noise level does not exceed 55 dB(A) $L_{eq\ 16\ hour}$ (free field).

Reason : ***To ensure that the amenities of future occupiers are protected.***

(Note to Officer: Development of any part of the site, subject to noise levels in excess of 74 dB(A) $L_{eq\ 8\ hour}$ [free field] at night would not be supported. You must also be satisfied that the garden criteria can be met).

Given the above, both the internal and external noise levels will be satisfactory and comply with the noise conditions typically set. The noise levels at Porthkerry Road will not perceptibly change, given that the increase is only 1 dB(A).

Conclusions

It is normally accepted that a less than 3 dB(A) increase in traffic noise levels is not perceptible and hence residents on Porthkerry Road will not perceive any increase in noise with the development. Traffic on the proposed access road will produce noise levels which are significantly below the criteria set by the Vale of Glamorgan Council and hence should not cause any concern to existing residents. The noise levels in the gardens of the adjacent properties to the east and west can be satisfactorily protected with the provision of a 1.8m close boarded good quality fence.

Author



S ELLIS

report