

Environmental Noise Assessment P2023/0265

Pontardawe SA8 4ET

R10279

Bluefield Land Ltd

Cardiff CF3 2EJ

May 2024



Industrial Noise & Vibration Centre Ltd

889 Plymouth Road, Slough, Berkshire, SL1 4LP, UK
Tel : 01753 698800 | Email : consult@invc.co.uk | Web : www.invc.co.uk

Client Details

Client Bluefield Land Ltd

Address Ty-To-Maen Farm, Newton Road, Rumney, Cardiff, CF3 2EJ

Contact Gareth Hawke

Email gareth@bluefieldland.co.uk

Document Details

Report Number R10279

Title Environmental Noise Assessment. P2023/0265. Pontardawe. SA8 4ET

Author Steve Ellis

Document Control

Revision	Date	Revision History	Prepared	Authorised
0	23/05/2024	First report	SE	

INVC IN CONFIDENCE

This is a document prepared for the client by INVC. Recipients may not pass this document to any persons 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 2024

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 without the written permission of the Industrial Noise & Vibration Centre Limited, 889 Plymouth Road, Slough, Berkshire, SL1 4LP.
Registered in England No 1981938

R10279: Environmental Noise Assessment Pontardawe SA8 4ET

1.0 Introduction

The Industrial Noise & Vibration Centre (INVC) was requested by Bluefield Land Ltd to undertake an environmental noise assessment for three industrial units located at Old Foundry Road, Pontardawe SA8 4ET and having regard to planning condition 16 contained in Planning Application P2023/0265.

This report makes recommendation on the type of construction required to ensure that the nearest residents of the nearest residential properties are not disturbed by reasonable activities within the units.

Regard has been given to BS4142:2014 Method for Rating and Assessing Industrial and Commercial Sound.

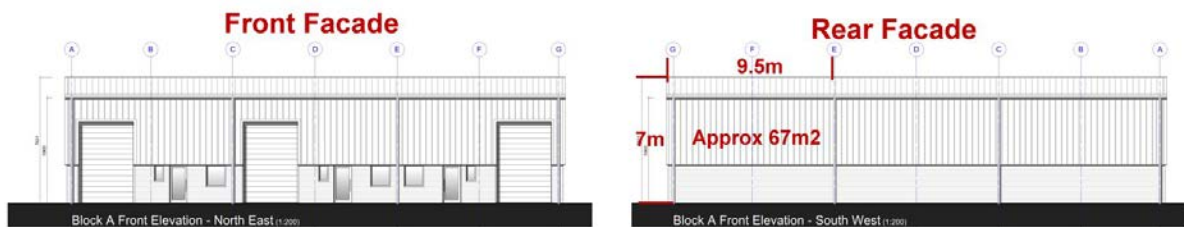
2.0 Assumptions and Planning Condition

- (I) The noise levels within the unit will not exceed 85 dB(A) at the ear of operators within the unit which effectively means that at a distance of 2m within the unit the level will be 59 dB LAeq.
- (II) Notwithstanding (I) above concern has been expressed that the use of a Pneumatic Wrench would be above the 85 dB(A) level and that this should be accounted for in the assessment. INVC has made reference to its database and the typical level is in the region of 95 dB(A) at 0.3m which at a distance of 2m in a reverberant space is 79 dB(A). This is considered worst case and has been used in this assessment.
- (III) The external wall and roof of the unit will be constructed of double skin galvanised steel Cladding with mineral fibre infill which gives a Weighted sound reduction index R_w 38 dB ref BS 8233:2014 Table 8
- (IV) External extraction units, heat pumps etc will be located at the front of the units
- (V) Given the proximity of the units to the houses the following formulae has be used $L_2 = L_1 - SRI - 6dB$ L_2 = level at nearest property, L_1 =internal level, SRI =sound reduction of wall. This formula has been used due to the very close proximity of the units to the housing Ref: *Acoustics Noise and Buildings P.H. Parkin H.R Humphreys and J.R Cowell*
- (VI) The background and ambient noise levels in the area are based on the noise measurements undertaken by Acoustic Consultants in June 2023. The background level is 45 dB LA90 and the ambient level is 50 dB LAeq. Reference report 10286/BL
- (VII) **Planning Condition 16 States:** *Prior to the occupation of Units 1-3, an updated Noise Assessment shall be undertaken, the methodology for which shall be first submitted to and approved in writing by the Local Authority prior to construction of these units and which measures the noise output from the intended business occupier(s). The assessment shall include details of how the units can be constructed/adapted so as to provide sound insulation against internally generated noise to protect the residential amenity of neighbouring properties. The noise levels shall be determined at the nearest noise sensitive premises or at another location deemed suitable by the Local Planning Authority. Measurements and assessments shall be made in accordance with BS4142:2014 method for rating and assessing industrial and commercial sound. The sound insulation and attenuation works shall be completed as approved before the use of the building begins and thereafter retained as such in perpetuity.*

Reason: To ensure that the amenities of occupiers of residential properties in the vicinity are protected, and to ensure compliance with Policies SP16, EN8 and BE1 of the Neath Port Talbot Local Development Plan.

3.0 Background Information

The following figures show the location of the units to the nearest residential properties and also the front and rear elevations.



Front and Rear Elevations

It should be noted when calculating the external noise at the nearest facade and with a distance closer than $D/3$ then the formulae to use is that given in the assumptions (V) above. D is the largest dimension of the surface area $D=9.5\text{ m}$ hence if the distance is less than 3.16 m it is appropriate to use the formula given in (V) above which has been used in this assessment.

4.0 Calculations

The calculated noise at the nearest house is as follows

$$L2=L1-SRI-6dB$$

$$L1=79 \text{ dB(A)} , SRI=38 \text{ dB}$$

$$L2= 35 \text{ dB(A) at nearest house}$$

4.1 BS4142:2014+A2019 assessment

BS4142:2014 + A1:2019 provides a methodology for rating and assessing industrial and commercial sound. It is often used and requested by local authorities and environmental regulators to assess the environmental noise impact of industrial or commercial premises, or to assess the effect of changes made to sites.

The procedure involves determining the 'rating noise level' by measuring or calculating the noise contribution of the source, referred to as the 'specific noise level', and applying any necessary character corrections. The character corrections are used to account for the increase in noise impact caused by acoustic characteristics and can be applied for tonality, impulsivity, intermittency and other readily distinctive characteristics.

To assess the noise impact, the 'background noise level' (i.e. the level at the noise sensitive receptor with the source turned off) is subtracted from the 'rating noise level'. The following is an extract from BS4142:2014 + A1:2019 regarding the assessment of impacts:

"The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. 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.

Obtain an initial estimate of the impact of the specific sound by subtracting the measured background sound level (see Clause 8) from the rating level (see Clause 9).

NOTE 1 More than one assessment might be appropriate.

- a) Typically, the greater this difference, the greater the magnitude of the impact.*
- b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.*
- c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.*

d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context."

The details of the background and ambient levels are given in section 2.0 above

Table 1 – BS4142 assessment at nearest Residential property

Results	Location: No 53	Relevant clause	Commentary
Measured ambient sound level	50 dB L_{Aeq}	7.1	Lowest daytime up to 18:00 hrs $L_{Aeq,1hr}$ measurement during assessment period. Assessment carried out during daytime.
		7.3.1	
		7.3.9	
Residual sound level	50 dB L_{Aeq}	7.3.2	Industrial Units not present
Reference time interval	1 hr	7.2	Daytime assessment interval = 1hr
Specific sound level	35 dB L_{Aeq}	7.3.14	Calculated noise at nearest house
Acoustic feature correction	3 dB	9	+ 3 dB impulsivity correction. Worst case
Rating level	38 dB $L_{Ar,Tr}$	9	Specific level + acoustic feature correction.
Background sound level	45 dB L_{A90}	8	As measured by Acoustic Consultants
Excess of rating over background sound level	-7 dB	11	Rating level – background level.
This assessment indicates that use of the industrial units will not have an adverse impact on local residents given the assumptions used.		11	The rating level is 7 dB below the existing background level given the assumptions used
Uncertainty of assessment		10.2	The assumptions used in this assessment are considered worst case with internal noise levels being 95dB(A) at the ear of an operator which is 79 dB(A) at 2m within the space. Uncertainty will not influence the assessment outcome

The results of the BS4142 assessment above indicate that noise from the proposed units using the proposed construction in this report will not have an adverse impact on the residents of the nearest houses. External extract units will be located at the front faced of the units and appropriate noise attenuation will be used should this be required in the unlikely event of complaints.

4.2 Context

As a general note in the assessment of noise impact, it is necessary to consider the wider context beyond the level and character of the noise.

The context described in this assessment has regard to the industrial nature of the area.:

4.2.1.1.1.1 Expectation of noise

The site is located on an industrial estate alongside other noise generating industrial and commercial sites. Receptors in surrounding areas to an industrial estate should expect periods of noise typical of an industrial or commercial nature.

4.3 Uncertainty

Due to the close proximity between the source and receptor, combined with the significance between the background noise level and rating noise level, the uncertainty associated with the assessment is unlikely to significantly affect the outcome.

5.0 Conclusions

An environmental noise assessment has been carried out using the assumptions in section 2.0 of this report. The results of the BS4142 assessment and the calculations assuming a method of construction for the unit's external wall which consists of a **double-skin galvanized steel cladding with mineral wool and has a sound reduction index (SRI) of 38 dB Rw** the residents will not be adversely affected by the occupants of the three units shown in section 3.0. Clearly other methods of construction can be used, say blockwork etc but the SRI must be at or better than 38 dB Rw.