

Ms Rosie Roome
Planning Issues Ltd
Churchill House
Parkside
Ringwood
Hampshire
BH24 3SG

Date: 20 August 2026
Reference: R9433-1 Rev 0

Dear Rosie,

**RE: 133 WINDMILL ROAD, GRAVESEND-
ASSESSMENT OF NOISE IMPACT FROM PROPOSED SUBSTATION**

I am pleased to confirm our assessment of noise associated with the proposed substation at the retirement living development at your Windmill Road, Gravesend site.

It is conventional to locate substations in close proximity to residential properties and 24 Acoustics is not aware of any cases of complaints or nuisance associated with operational noise from modern substations. Since the risk of disturbance has been raised by Environmental Health at Gravesham Borough Council, however, a formal assessment has been undertaken to accompany the planning application (ref 2016205).

The proposed substation is to comprise a Schneider Electric 500 kVA unit supplied by Power On Ltd. The substation is to be installed on a concrete base and housed in a GRP enclosure 3.1 m by 3.1 m in width/depth and 2.3 m in height. Ventilation louvres will be installed on both sides and the rear façade of the building.

The location of the proposed substation is shown in Figure 1 below and will be in the region of 13 m from the proposed development and 17 m from the nearest existing residential property (7b Zion Place).



Figure 1: Proposed Substation Location

Source noise data for the substation has been provided by the vendor and is reproduced overleaf. A guaranteed sound power level of 50 dB L_{AW} is quoted. This data, together with the material properties of the substation building, have been used to calculate the likely operational noise level at the receptor properties. Table 1 below summarises the findings.

Receptor	Substation Operational Noise Level
Proposed Retirement Living Building- Closed Façade	17 dB $L_{Aeq,T}$
7b Zion Place- Front Façade	7 dB $L_{Aeq,T}$

Table 1: Calculated Operational Substation Noise Levels

Noise from commercial and industrial noise sources should be assessed using British Standard 4142:2014+A1:2019 'Methods for rating industrial and commercial sound'. This provides a method for rating the effects of industrial and commercial sound on residential areas.

The standard advocates a comparison between the typical measured L_{A90} background noise level and L_{Aeq} noise level from the source being considered. For rating purposes if the noise source is tonal, intermittent or otherwise distinctive in character, a rating correction should be applied.

The standard states that a difference between the rating level and the background level of around +10 dBA is an indication of a significant adverse impact, depending on the context and a difference of around +5 dBA is likely to be an indication of an adverse impact, also depending on the context. Where the rating level does not exceed the background noise level, this is an indication of the specific sound source having a low impact (depending upon the context).

In this case background noise levels have not been recorded but a semi urban environment such as Windmill Road can expect background noise levels to be in the region of 40- 50 dB $L_{A90, 1 \text{ hour}}$ during the day and 30- 40 dB $L_{A90, 15 \text{ min}}$ at night. The predicted operational substation noise levels of 17 and 7 dB $L_{Aeq,T}$ respectively fall significantly below these levels and would therefore generate a noise impact substantially below 'low' as defined in the standard.

It is 24 Acoustics' experience that noise from modern substations is rarely audible at the outside of the enclosure and we suspect this likely to be the case here.

I trust you will find the above acceptable but should you have any queries please do not hesitate to contact me.

Yours Sincerely,
For 24 Acoustics Ltd

Reuben Peckham BEng MPhil CEng MIOA
Director

Test Certificate

N°: 1760103-01



Type : MINERA	Determination of Sound Level	Page Nr. : 1 of 1 pages
Customer :	Fb Nr : 760103 Mach. Nr : 760103-01	
WPD		
Power (kVA) : 500	Voltage (kV) : 11 / 0.433	Standard IEC 60076-10

Measurement method :

Sound pressure ☒

Sound intensity ☐

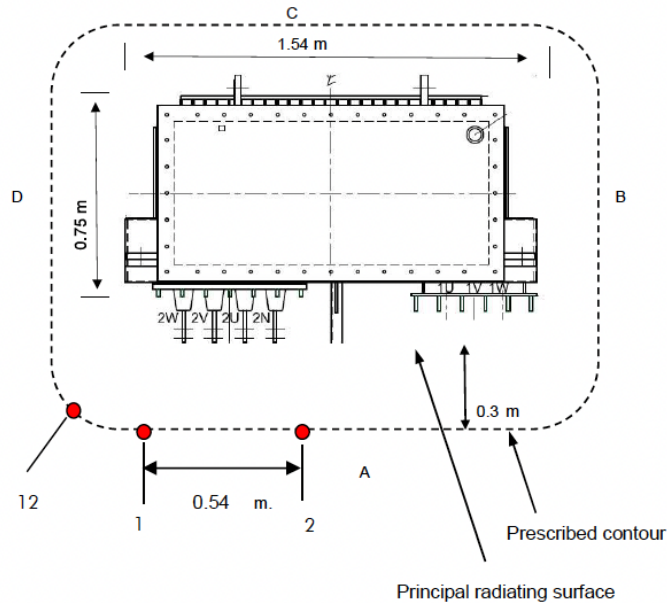
Trf. Coolers with ☐ without ☐

Fans switch on ☐ off ☐

Test conditions :

Test laboratory	MPT
Ambient temperature	29.4(±2) °C
Height of mic. above grd. 1/2 h	0.80 m
Excitation voltage	0.433 kV
Frequency	50 Hz
Tap position	3
Measurement distance	0.3 m
Length of prescribed cont.	6.5 m
Height of test object, h	1.60 m
Area of meas. surface (S)	12.3 m ²
10lg(S/So)	10.9

Plan of test object :



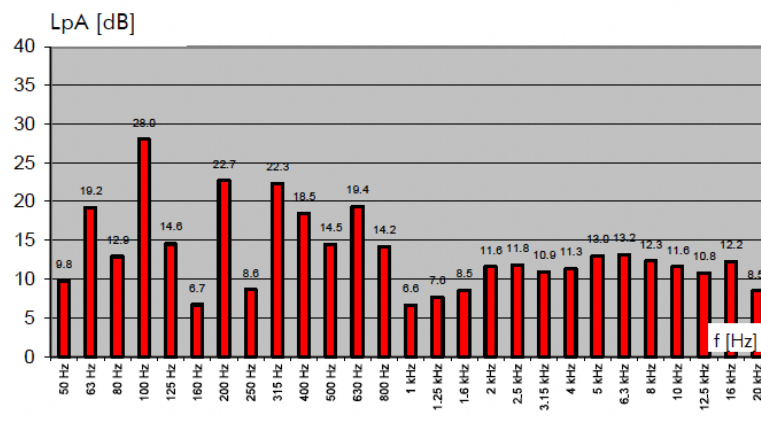
A-weighted sound pressure levels of the background noise :

Pos.	At start of test	At end of test
A	25.5	25.2
B	26.1	25.9
C	25.3	24.8
D	25.2	25.0
L _{bg}	25.5	25.3 (A)

A-weighted sound pressure levels L_{pAi}

Pos.	1/2 h	-	-	-
1	27.8			
2	34.3			
3	29.4			
4	30.8			
5	30.1			
6	28.9			
7	31.3			
8	30.4			
9	32.4			
10	34.2			
11	33.3			
12	31.2			

Average 1/3 Octaveband Analyse :

L_{pA0} 31.6 dB(A)

L _{pA0} - maximum	L _{bgA}	31.6	-	25.5	=	6.1 dB(A)
Correction for sound reflections by factor	K	=	0.0	dB		
Correction for steady-state background noise		=	1.1	dB		
Corrected average A-weighted sound pressure level	L _{pA}	=	30.5	dB(A)		
Calculated A-weighted sound power level	L _{WA}	=	41.4	dB(A)		

L _{pA} : Guaranteed	-	dB(A)	Result : -
L _{WA} : Guaranteed	50	dB(A)	Result : Passed

Measuring instrument :

Manuf. : 01dB-Metravib Meter type : NETdB
 Serial number : LCF026330-262
 Microphone type : MCE 212
 Serial number : 101069
 Power Analyser: Yokogawa WT 3000
 Serial number : 91KB11116

Tested by : E,ORFA	Checked by : H,SEVIL	Customer or Representative :	Revision No -
Test Engineer 	Test Team Leader 		
Date : 27.08.2021	Date : 27.08.2021	Date :	