

3 September 2024

SLR Ref No.: 610.06077-R22-v1.0 20240903 .docx

Attention: Sasha Vuckovic
BlueScope Steel Ltd
25-55 Templar Road
Erskine Park NSW 2759

SLR Project No.: 610.06077.01103

**RE: BlueScope Steel Western Sydney Service Centre - Erskine Park
OOHW-Construction Noise and Vibration Assessment**

1.0 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been engaged by BlueScope Steel Limited (BlueScope) to prepare an assessment of out-of-hours-works (OOHW) proposed as part of construction works for the Metal Coating Line Number 7 (MCL7) at its Western Sydney Service Centre (WSSC) located at 55 Templar Road, Erskine Park. This assessment has been undertaken with consideration to the Interim Construction Noise Guideline (ICNG) NSW Environment Protection Authority (EPA) 2009.

Noise criteria have been established for the day time OOHW periods on Saturday afternoon and Sunday based on noise monitoring at the nearest noise sensitive residential receivers.

Prediction of potential construction noise impacts has been undertaken using a 3D noise model prepared in the SoundPLAN modelling software package with OOHW construction works scenarios including:

- External construction works
- Internal fit-out activities
- On-site vehicles movements.

1.1 Nearest Sensitive Receivers

The nearest sensitive receiver to the proposed construction works is the Emmaus Retirement Village (residential) located at 85 Bakers Lane, Kemps Creek. The village is located around 720 m to the south of the WSSC construction works site and is shown in **Figure 1**.



Data Source: Nearmap Imagery July 2024



0 75 150
m

Coordinate System: GDA 1994 MGA Zone 56

Scale: 1:6,000 at A4

Project Number: 610.06077

Date Drawn: 30-Aug-2024

Drawn by: CP

LEGEND

- WSSC Site Boundary
- Sensitive Receiver
- Noise Monitoring Location
- Rooftop Warehouse Construction Area
- Ground Construction Area
- Contractor Light Vehicle Traffic

BLUESCOPE WSSC



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FIGURE 1

2.0 Construction Noise Management Levels

Conditions for construction of the MCL7 are included in the development consent SSD-45510464 dated 15 September 2023 noise limits for construction are detailed in condition B26 reproduced below:

The development must be constructed to achieve the construction noise management levels detailed in Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time). All feasible reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures in Appendix 2.

Unattended noise monitoring was conducted from 24 July to 7 August 2024 at the Emmaus Retirement Village as part of a construction noise monitoring program for the MCL7 works. The measured noise levels were used to quantify the existing noise environment and establish noise criteria during the proposed OOHV construction periods, which are scheduled for Saturdays from 1:00pm to 3:00pm and Sundays from 8:00am to 3:00pm.

Results of the construction noise monitoring program are detailed in SLR report *Western Sydney Service Centre – Erskin Park MCL 7 Construction Noise Monitoring* report reference # 610.06077-R21-v1.0-20240814.

The results are summarised in **Table 1**. Unattended monitoring graphs of the measured daily noise levels are provided in **Appendix A**.

Table 1 Summary of Unattended Noise Monitoring Results

Date	Location	Measured Noise Levels (dBA)	
		Background Noise (RBL)	Average Noise (LAeq(period))
		Daytime OOHV	Daytime OOHV
Saturday 27/07/2024	Emmaus Retirement Village	38	45
Sunday 28/07/2024		41	52
Saturday 03/08/2024		36	45
Sunday 04/08/2024		36	47

An RBL of 36 dBA has been adopted as a conservative estimate of background noise levels based on the quieter of the two weekends of noise monitoring. The construction noise management levels (NMLs) for OOHV construction periods are presented in **Table 2** below.

Table 2 Construction NML LAeq(15minute) dBA

Sensitive Receiver	Period	OOHV (RBL+ 5 dB) ¹
Emmaus Retirement Village	OOHV Day	41

Note 1: Management levels for noise set in the *Interim Construction Noise Guideline (DECC, 2009) (ICNG)*.



3.0 Work Description

The proposed OOHW construction periods are Saturdays from 1:00 PM to 3:00 PM and Sundays from 8:00 AM to 3:00 PM. The proposed OOHW would be limited to formwork, reo-fixing, roofing and cladding and internal fit-out activities.

No deliveries will be made to the site during proposed OOHW construction periods on Saturday or on Sunday, with all materials required for use to be delivered during already approved construction hours. This means that no heavy delivery vehicles will be arriving or departing the construction site after 1:00pm on Saturdays or at all on Sundays. The only vehicles accessing the site after 1:00pm on Saturdays or on Sundays will be those used by the tradespeople carrying out the proposed work.

The construction site is shown **Figure 1**.

3.1 Construction Scenarios

A number of distinct construction scenarios during the proposed OOHW construction periods have been assessed as follows:

- External construction works at Ground Level
- External construction works at Rooftop or elevated levels of the Warehouse
- Internal fit out works
- Workers arriving on site.

The locations of the construction scenarios are shown in **Figure 1**.

The equipment that will be used and the corresponding sound power levels for each scenario are provided in **Table 3**.

Table 3 Construction Noise Sources

Noise Source	Sound Power Level (dBA)	Estimated utilisation in Worst-case 15-minute period (%)	Quantities per Scenario		
			W.001 Ground	W.002 Elevated	W.003
			External construction works		Internal Fit out Works
Total LAeq Sound Power Level ¹ (dBA)			106	107	109
Rattle Guns (handheld) ²	104	30%	2	2	2
Grinder ²	105	30%	1	1	1
Hammering (hand tools)	105	30%	-	-	2
Electric Hand tools	102	50%	2	2	2
Elevated Work Platform - Scissor Lift	98	100%	-	2	2

Note 1: Total sound power levels consider the LAeq sound power levels of individual items, quantities of each item, the estimated utilisation of each item in the assessment period and any other penalties that may apply to individual items.

Note 2: These sources include a 5 dB penalty for annoyance as detailed in the ICNG.



3.2 Additional Traffic

On-site traffic during the proposed OOHW construction periods have been assessed using traffic volumes given in **Table 4**.

Table 4 Vehicle Traffic Data

Vehicle Type	Sound Power Level (dBA) ¹	Vehicle Speed	Number of vehicles in Worst-case 15-minute period
Light vehicles	90 ¹	10	37

Note 1: Sound power level based on SLR measurement data.

4.0 Noise Modelling

A noise model of the study area has been used to predict noise impacts during the proposed OOHW construction periods for the scenarios outlined in **Table 3** at nearby sensitive receivers listed in **Section 1.1**. The ISO 9613-2 calculation method was adopted using SoundPLAN software. Local terrain, receiver buildings and structures were digitised in the noise model to develop a three-dimensional representation of the construction sites and surrounding areas.

The noise model assumes that the total noise energy is occurring at any point within the site work areas shown in **Figure 1**, which results in a conservative prediction of impacts. Modelling have assumed 50% hard ground and applied the simplified approach to ground attenuation as described in ISO 9613-2.

The predicted L_{Aeq} noise levels for each scenario at retirement village during the proposed OOHW periods are detailed in **Table 5**. These results represent a conservative estimate of the noise levels which could occur during construction.

Table 5 OOHW- Predicted Noise Impacts per Scenario

Sensitive Receiver	Land Use	OOHW NML	Predicted L _{Aeq} (15-minute) Noise Levels (dBA)			
			W.001	W.002	W.003	W.004
			External construction works		Internal Fitout Work	Workers Arriving Site ³
Emmaus Retirement Village	Residential	41	38	38	37	<20

The assessment of construction noise levels presented in **Table 5** indicates compliance with the OOHW NMLs at the Emmaus Retirement Village.

A noise contour of the W.002 scenario is included in **Appendix B**.



5.0 Conclusion

An assessment has been undertaken for proposed external construction works, internal fitout activities, and on-site construction traffic at the Western Sydney Service Centre, 55 Templar Road, Erskine Park, for activities proposed during the out-of-hours work (OOHW) construction periods for the MCL7 project.

Noise criteria have been established for the day time OOHW periods on Saturday afternoon and Sunday day time period based on noise monitoring at the nearest noise sensitive residential receiver.

A conservative prediction of noise impacts indicates that noise levels will be below the adopted noise management level.

Please do not hesitate to contact the undersigned.

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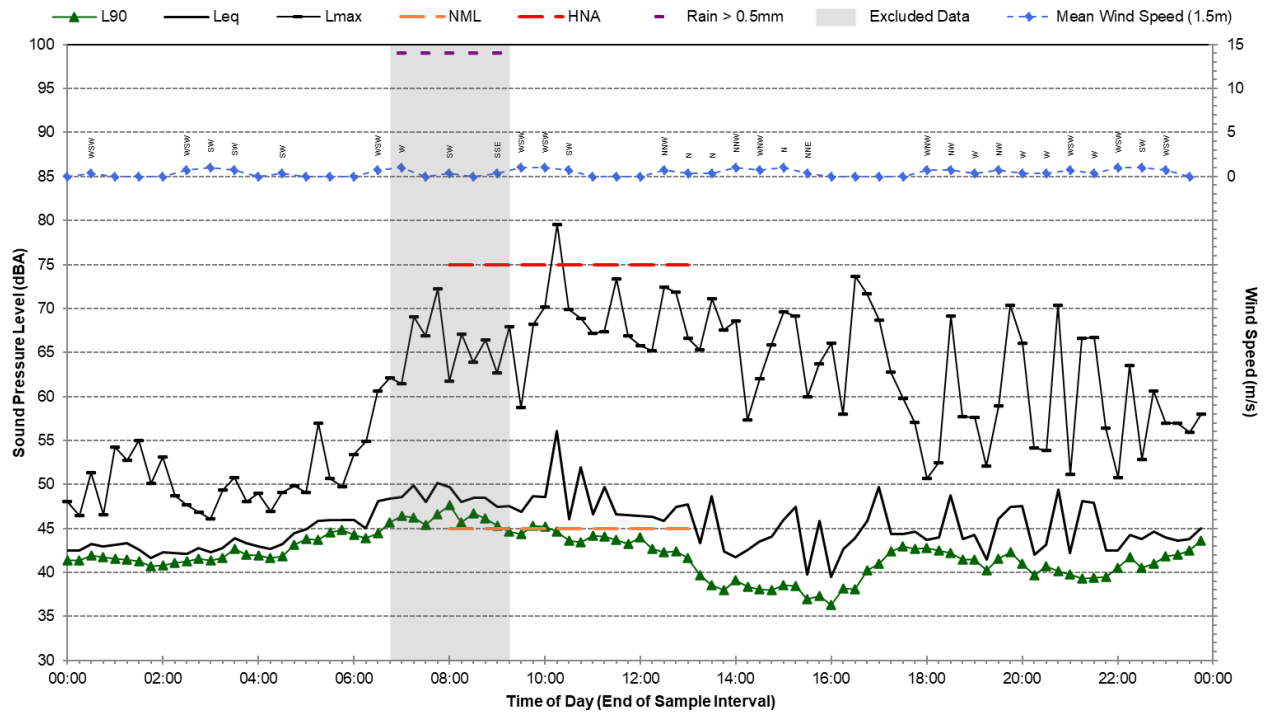
Appendix A Statistical Ambient Noise Level Charts

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3 September 2024

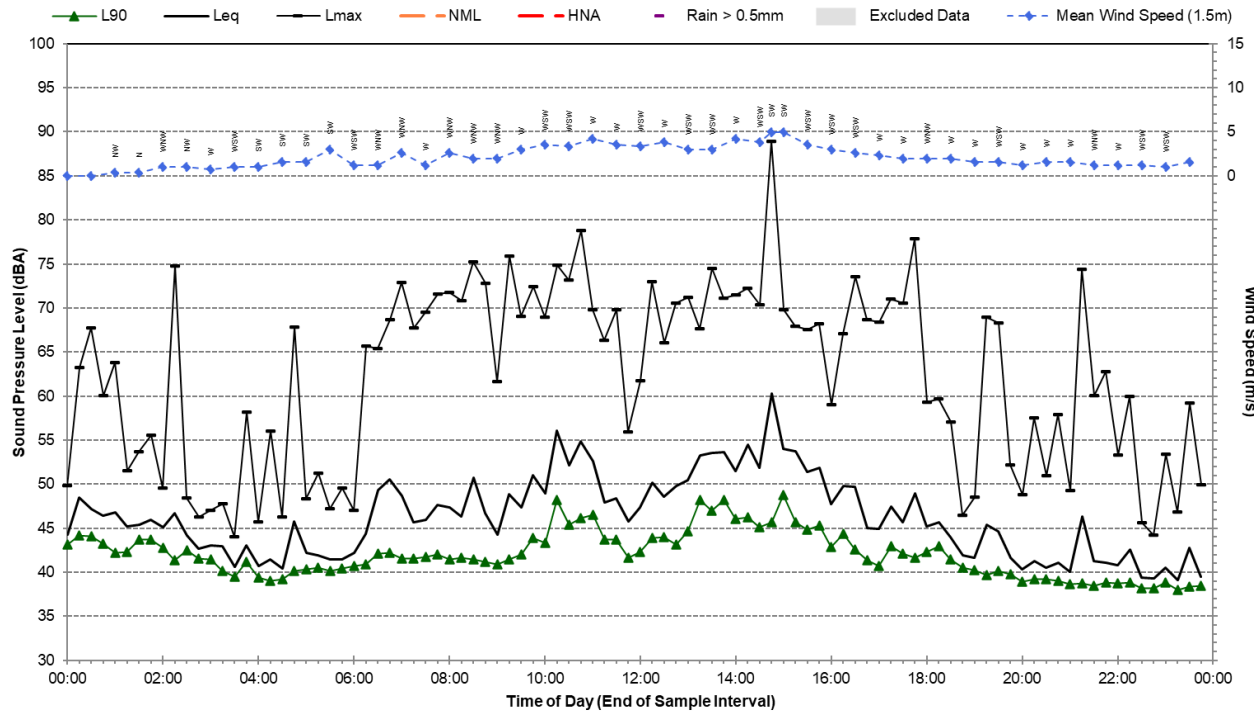
Statistical Ambient Noise Levels

R02 - Emmaus Retirement Village - Saturday, 27 July 2024



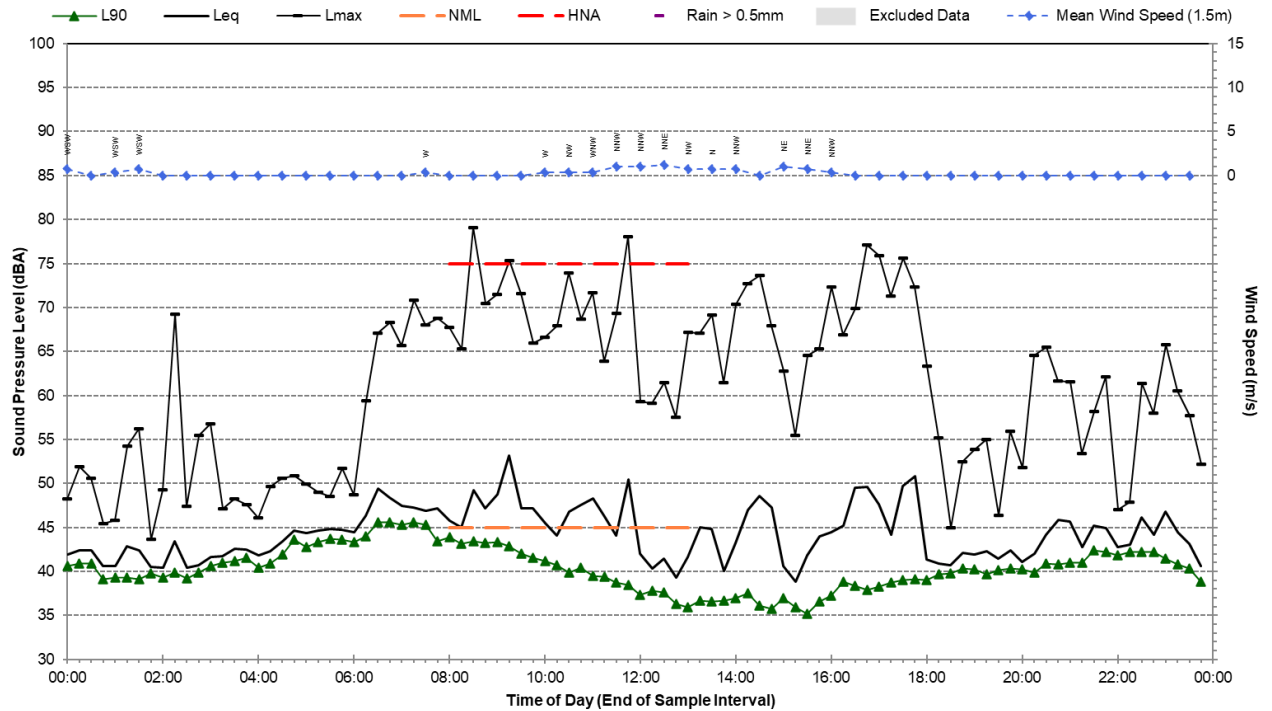
Statistical Ambient Noise Levels

R02 - Emmaus Retirement Village - Sunday, 28 July 2024



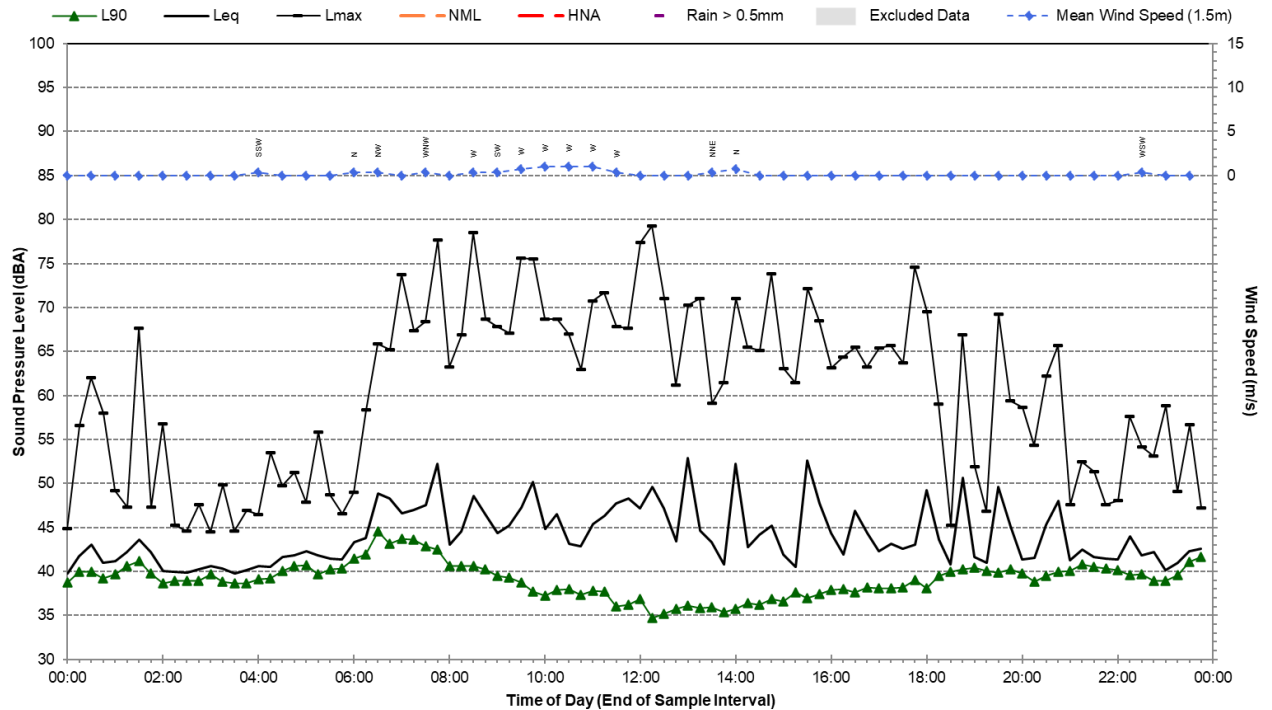
Statistical Ambient Noise Levels

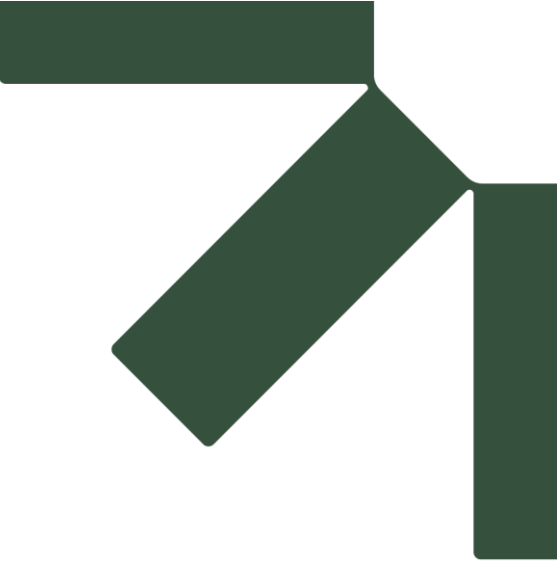
R02 - Emmaus Retirement Village - Saturday, 3 August 2024



Statistical Ambient Noise Levels

R02 - Emmaus Retirement Village - Sunday, 4 August 2024





Appendix B Noise Contours

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0100200
m

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CP

LEGEND

 Rooftop Warehouse Construction Area

 Indicative Building Location

Predicted Noise Level (dBA)

 40-45

 45-50

 50-55

 55-60

 60-65

 65-70

BLUESCOPE WSSC

NOISE CONTOURS
SCENARIO W.002
ELEVATED WORKS



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