

ICL YARRAVILLE

Proposed additional Clinker Storage and Milling Facility

Prepared for:
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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Steel Cement Pty. Ltd. (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
640.30487-R01-v1.0	15 September 2022	David Lindsey	Dianne Williams	David Lindsey

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1 Introduction

Steel Cement Ltd. currently operate a milling and bulk despatch facility in Yarraville, Victoria and have done so since 2015. The operations involve the grinding of Granulated Blast Furnace Slag to be used in the construction and stabilisation industries. The site dispatches a range of cementitious and supplementary products to a range of suppliers.

To expand their business and localise their production methods Steel Cement Ltd. are proposing to expand their existing facility to include additional milling capacity and access to locally ground Cement through a larger out-loading facility.

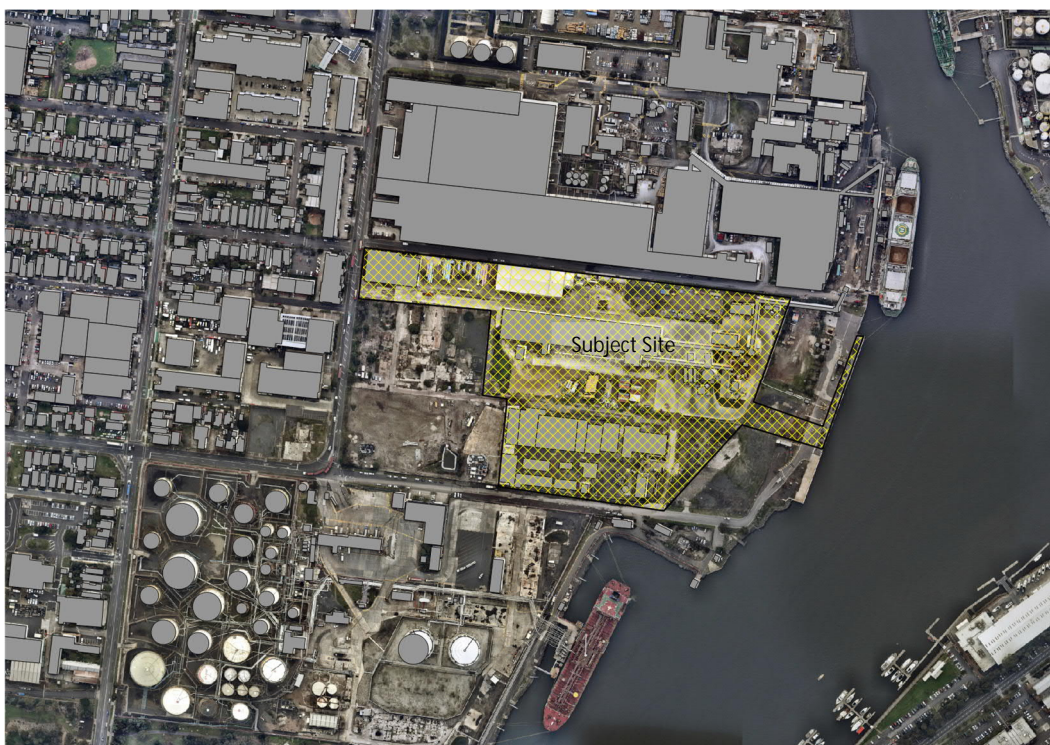
SLR Consulting Australia Pty Ltd (SLR Consulting) was commissioned by Steel Cement Pty. Ltd. (Steel Cement) to conduct a noise assessment of a new Slag and Clinker milling and storage facility to be added to the existing operations at 295 Whitehall Street, Yarraville. This acoustic report assesses the combined noise from the proposed and existing facilities to nearby residential receivers.

Previous environmental noise assessments of the existing facility including the recently approved bagging plant have been carried out by SLR. Previously established noise limits have also been used.

2 Site description

The subject site is part of an irregularly shaped parcel of land which is located on the east side of Whitehall Street between Lyell Street and Francis Street. The parcel of land has a frontage to Whitehall Street of approximately 250 metres and side frontages to Lyell Street and Francis Street of 488 metres and 180 metres respectively. An area map of the entire site is shown in Figure 1

Figure 1 Area Map



2.1 Site Operations

SLR has been advised that the facility will eventually operate on a continuous 24/7 basis, though individual plant items have reduced operating times. Trucks will be used to receive raw materials and transport the finished product from site.

The layout of the entire site is detailed in Figure 2, with the new planned being highlighted.

Figure 3 presents a more detailed image of the new works, including cross sections.

Figure 2 Positioning of the new clinker storage and milling layout



Figure 3 Cross sections and new clinker storage and milling layout



3 Background Noise Survey

Background noise monitoring was undertaken to assist in the determination of noise limits, and was undertaken between the 2nd September to 7th September 2022 to update the previously relied upon 2013 baseline noise surveys. The measured baseline noise levels are used to determine the existing noise environment which feeds into determining the noise criteria, used to assess the potential impacts from the Project.

The monitoring equipment was positioned to measure existing noise levels that are representative of the residential areas potentially most affected by the Project. It was noted that there a small group of residential buildings in Francis Street, between Docklands Highway and Hyde Street. Observations made outside the properties indicated that the ambient noise was significantly higher due to prevailing traffic and surrounding industry, and monitoring at this location would not b representative of the wider residential community.

The noise monitoring equipment continuously measured existing noise levels in 60-minute periods during the daytime, evening and night-time. The monitoring locations are shown in Figure 4 and the results of the background noise summarised in Table 1.

Figure 4 Noise monitoring locations



Table 1 Summary of key ambient noise indices

Monitoring location	Background noise level (day)	Background noise level (evening)	Background noise level (night)
7A York Street, Yarraville	44	43	41
11 Frederick Street, Yarraville	50	49	47

The background noise levels are considered to be appropriate of the noise environment, given the surrounding land use and transportation/industry density.

4 Victorian EPA Regulations

4.1 General environmental duty

The general environmental duty (GED) is at the centre of the EP Act, and it applies to all Victorians. GED states that a person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste must minimise those risks, so far as reasonably practicable.

The concept of minimising risks of harm to human health and the environment, so far as reasonably practicable, requires the person:

- to eliminate risks of harm to human health and the environment so far as reasonably practicable; and
- if it is not reasonably practicable to eliminate risks of harm to human health and the environment, to reduce those risks so far as reasonably practicable.

Under the Act, harm, in relation to human health or the environment, means an adverse effect on human health or the environment (of whatever degree or duration) and includes:

- an adverse effect on the amenity of a place or premises that unreasonably interferes with or is likely to unreasonably interfere with enjoyment of the place or premises; or
- a change to the condition of the environment so as to make it offensive to the senses of human beings; or
- anything prescribed to be harm for the purposes of the Act or the regulations.

Harm may arise as a result of the cumulative effect of harm arising from an activity combined with harm arising from other activities or factors.

To determine what is (or was at a particular time) reasonably practicable in relation to the minimisation of risks of harm to human health and the environment, regard must be had to the following matters:

- the likelihood of those risks eventuating,
- the degree of harm that would result if those risks eventuated,
- what the person concerned knows, or ought reasonably to know, about the harm or risks of harm and any ways of eliminating or reducing those risks,
- the availability and suitability of ways to eliminate or reduce those risks,
- the cost of eliminating or reducing those risks.

In the assessment of noise impacts with reference to GED, consideration must first be given to eliminating risks so far as reasonably practicable, and then to reducing those risks so far as reasonably practicable.

4.2 Regulated noise criteria

Certain types of noise within Victoria are regulated. The following sections provide an overview of how regulated noise is assessed in Victoria.

4.2.1 EP Act 2017

In Victoria, the EP Act prescribes that a person must not, from a place or premises that are not residential premises—

- emit an unreasonable noise; or
- permit an unreasonable noise to be emitted

Unreasonable noise means noise that—

- is unreasonable having regard to the following—
 - its volume, intensity, or duration
 - its character
 - the time, place, and other circumstances in which it is emitted
 - how often it is emitted
 - any prescribed factors, or
- is prescribed to be unreasonable noise

For the purposes of the above definition, 'frequency spectrum' is a prescribed factor.

The EP Act prescribes that, noise emitted from commercial, industrial and trade premises is prescribed to be aggravated noise if:

- in the case of noise emitted during the day period, the effective noise level exceeds the lower of the following:
 - 75 dBA
 - the noise limit plus 15 dB, and
- in the case of noise emitted during the evening period, the effective noise level exceeds the lower of the following:
 - 70 dBA
 - the noise limit plus 15 dB, and
- in the case of noise emitted during the night period, the effective noise level exceeds the lower of the following—
 - 65 dBA
 - the noise limit plus 15 dB.

4.2.2 EP Regulations and Noise Protocol 2021

The Environmental Protection Regulations 2021 (Regulations) support the EP Act by providing clarity and further detail for duty holders on how to fulfil their obligations. Regulations are used to deal with matters in detail and may contain their own penalties for breaches.

In Victoria, noise emissions from commercial, industrial and trade premises are not permitted to be unreasonable or aggravated, and are subject to the provisions of the Regulations, and the “*Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues*”, EPA Publication 1826.4 (the Noise Protocol).

The Noise Protocol presents the methodology for determining the noise limit (maximum allowable level of noise emitted from a premise) when measured in a noise sensitive area. Noise sensitive areas are defined in the Regulations as that part of the land within the boundary of a parcel of land that is within 10 m of the outside of the external walls of a place where people generally sleep (homes, dormitories, hotels, hospitals, correctional facilities etc.), schools (including childcare centres) and tourist establishments in rural areas (campgrounds, caravan parks, etc.).

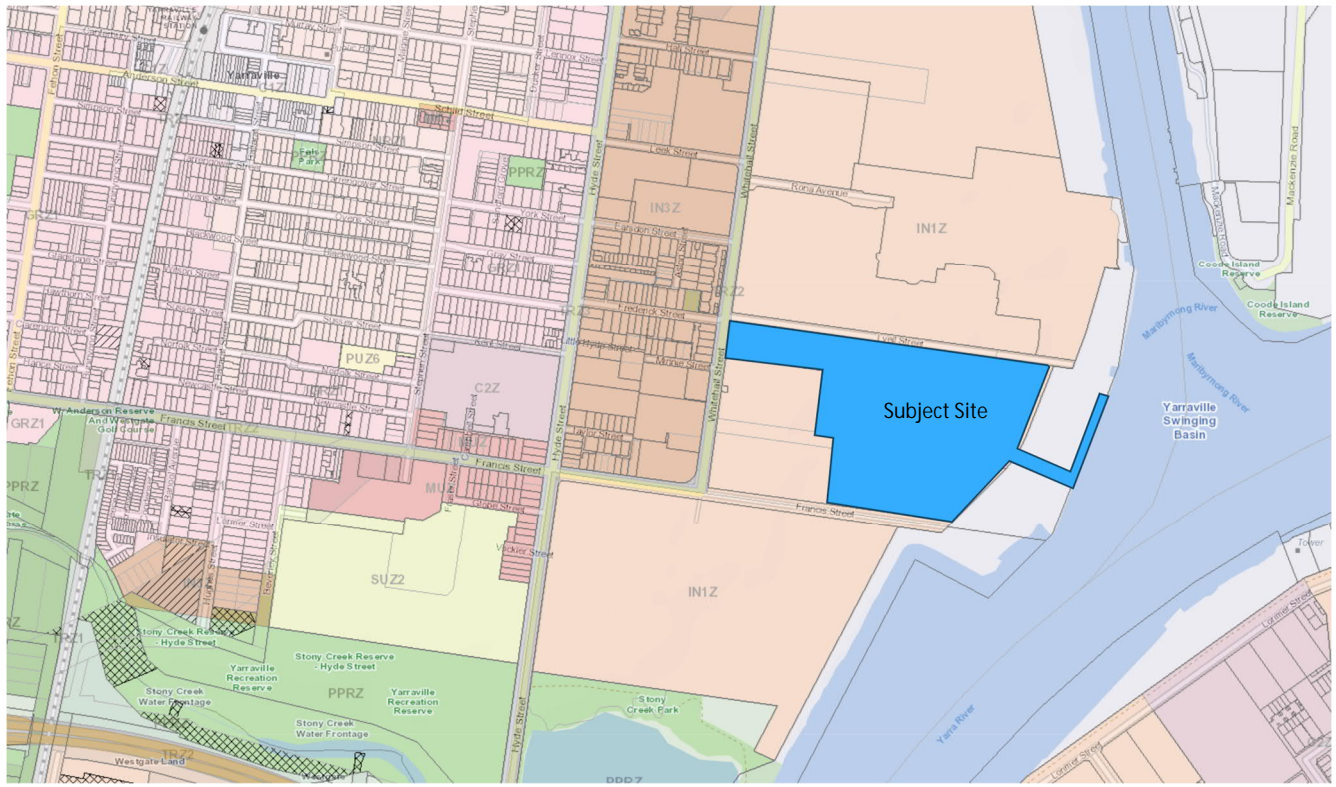
Table 2 presents the assessment periods prescribed by the Regulations.

Table 2 Definitions of day, evening, and night (Environmental Protection Regulations 2021)

Period	Day	Time
Day	Monday to Saturday (except public holidays)	7 am – 6 pm
Evening	Monday to Saturday Sunday and public holidays	6 pm – 10 pm 7 am – 10 pm
Night	Monday to Sunday	10 pm to 7 am

The Noise Protocol noise limits take into consideration both influence of the Zoning Level as well as the existing background levels. Figure 5 presents the zoning map of the wider area surrounding the site

Figure 5 Zoning Map



Noise limits have been calculated for two locations where baseline monitoring was conducted, as outlined in Section 3, being representative of the most potentially affected by the subject site.

The assessment locations are shown in Figure 4, Appendix B to Appendix C present the detailed zoning calculations for each receptor, a summary of which is presented in Table 3.

These residential locations were chosen having consideration of:

- 11 Frederick Street is close to the facility.
- 7A York Street is surrounded by a residential zone, which consequently has a reduced zoning level.

With multiple industries contributing to the received noise at the receptor, the noise limit for each industry should allow for the cumulative total noise emissions. This would likely apply to the noise limit of the subject site at the nearest residential areas which are influenced by noise from other industry in the vicinity of the site. Consequently, a -3 dBA allowance has been applied (which acts to lower the noise criteria) to cater for cumulative noise emissions from other nearby industries.

Table 3 Noise Protocol Part I Noise Limits (night-time)

Location	EPA Noise limit (dBA) ^{Note 1}	Project Noise limit (dBA) ^{Note 1}
11 Frederick Street	49	46
7A York Street	42	39

Note 1: LAeq(30 min)

4.3 Non-regulated noise criteria

Other sources of noise that are not regulated under the EP Act still require evaluation once the principles of GED have been applied. The following sections provide an overview of how non-regulated noise is assessed in Victoria.

4.3.1 Environmental Reference Standard

The Environmental Reference Standard (ERS) is a new tool made under the EP Act. The ERS:

- identifies environmental values that the Victorian community want to achieve and maintain
- provides a way to assess those environmental values in locations across Victoria.

The ERS is made up of four main components in relation to ambient sound:

- **Environmental values:** These are the central parts of the ERS. An environmental value is a statement about a desired outcome for human health and the environment. For example, an ambient sound environment that supports child development and learning. Environmental values are the uses, attributes, or functions of the environment that the Victorian community wants to achieve and maintain.
- **Areas of application:** The ERS defines the area or areas to which the environmental values, or specific indicators and objectives, apply. For example, most ambient sound indicators and objectives relate to specified land use planning zones.
- **Indicators:** These are usually defined in relation to each environmental value. The indicators are the parameters or markers used to assess whether environmental values are being achieved or maintained, or if they are threatened. For example 'outdoor LAeq' ('outdoor LAeq,16h from 6 am to 10 pm' or 'outdoor LAeq,8h from 10 pm to 6 am'), which is a key indicator used for ambient sound (ERS Table 3.3).
- **Objectives:** These are the assessment benchmarks. An objective is the character, level, load, concentration or amount of an indicator used to assess whether an environmental value (or several environmental values) is being achieved, maintained or threatened. Most objectives are scientifically derived quantitative assessment levels or a prescribed scientific basis for assessment. For example, the ambient sound objective for 'natural areas' is 'a sound quality that is conducive to human tranquillity and enjoyment having regard to the ambient natural soundscape' (ERS Table 3.3).

Table 4 presents the ERS environmental values relating to the ambient sound environment.

Table 4 ERS environmental values relating to the ambient sound environment

Environmental value	Description of environmental value
Sleep during the night	An ambient sound environment that supports sleep at night
Domestic and recreational activities	An ambient sound environment that supports recreational and domestic activities in a residential setting
Normal conversation	An ambient sound environment that allows for a normal conversation indoors without the need to raise voices
Child learning and development	An ambient sound environment that supports cognitive development and learning in children

Environmental value	Description of environmental value
Human tranquillity and enjoyment outdoors in natural areas	An ambient sound environment that allows for the appreciation and enjoyment of the environment for its natural condition and the restorative benefits of tranquil soundscapes in natural areas
Musical entertainment	An ambient sound environment that recognises the community's demand for a wide range of musical entertainment

For the purposes of 'areas of application' the ERS outlines a framework for assessing the ambient sound environment over a period of time based on the land use category of the area of assessment. Table 5 presents the land use categories relating to the ambient sound environment.

Table 5 Land use categories for the ambient sound environment

Land use category	General description	Planning zones
Category I	An urban form with distinctive features or characteristics of taller buildings, high commercial and residential intensity, and high site coverage.	Industrial Zone 1 (IN1Z) Industrial Zone 2 (IN2Z) Port Zone (PZ) Road 1 Zone (RDZ1) Capital City Zone (CCZ) Docklands Zone (DZ)
Category II	Medium rise building form with a strong urban or commercial character. Typically contains mixed land uses including activity centres and larger consolidated sites, and an active public realm.	Industrial Zone 3 (IN3Z) Commercial 1 Zone (C1Z) Commercial 2 Zone (C2Z) Commercial 3 Zone (C3Z) Activity Centre Zone (ACZ) Mixed Use Zone (MUZ) Road 2 Zone (RDZ2)
Category III	Lower rise building form including lower density residential development and detached housing typical of suburban residential settings or in towns of district or regional significance.	Residential Growth Zone (RGZ) General Residential Zone (GRZ) Neighbourhood Residential Zone (NRZ) Urban Floodway Zone (UFZ) Public Park and Recreation Zone (PPRZ) Urban Growth Zone (UGZ)
Category IV	Lower density or sparse populations with settlements that include smaller hamlets, villages and small towns that are generally unsuited for further expansion. Land uses include primary industry and farming.	Low Density Residential Zone (LDRZ) Township Zone (TZ) Rural Living Zone (RLZ) Green Wedge A Zone (GWAZ) Rural Conservation Zone (RCZ) Public Conservation and Resource Zone (PCRZ) Green Wedge Zone (GWZ) Farming Zone (FZ) Rural Activity Zone (RAZ)

Land use category	General description	Planning zones
Category V	Unique combinations of landscape, biodiversity, and geodiversity. These natural areas typically provide undisturbed species habitat and enable people to see and interact with native vegetation and wildlife	Natural areas are classified as land within Category V irrespective of the planning zones that apply to that land.
Category I, II, III or IV depending on surrounding land uses and the intent of the specific planning zone (which may have a diversity of uses) as specified in a schedule to the planning zone		Comprehensive Development Zone (CDZ) Priority Development Zone (PDZ) Special Use Zone (SUZ) Public Use Zone (PUZ)

For the ambient sound environment, for each land use category, the ERS sets out indicators and objectives. The objectives for each land use category are typical ambient sound level values and are neither noise limits nor noise design criteria. Table 6 presents the indicators and objectives relating to the ambient sound environment.

Table 6 Indicators and objectives for the ambient sound environment

Land use category	Indicators	Objectives
Category I	Outdoor LAeq,8h from 10pm to 6am	55 dBA
	Outdoor LAeq,16h from 6am to 10pm	60 dBA
Category II	Outdoor LAeq,8h from 10pm to 6am	50 dBA
	Outdoor LAeq,16h from 6am to 10pm	55 dBA
Category III	Outdoor LAeq,8h from 10pm to 6am	40 dBA
	Outdoor LAeq,16h from 6am to 10pm	50 dBA
Category IV	Outdoor LAeq,8h from 10pm to 6am	35 dBA
	Outdoor LAeq,16h from 6am to 10pm	40 dBA
Category V	Qualitative	A sound quality that is conducive to human tranquillity and enjoyment having regard to the ambient natural soundscape

Where non-regulated noise is generated as part of the Project, it will be evaluated against the ERS in accordance with the guidance provided in EPA Publication 1992: "Guide to the Environmental Reference Standard".

5 Noise Emission Assessment

To calculate the noise emission levels at the various noise sensitive receiver locations from mechanical and mobile equipment associated with the project, a SoundPLAN (Version 8.2) environmental computer model was developed. SoundPLAN is a software package which enables compilation of a sophisticated computer model comprising a digitised ground map (containing ground contours), the location and acoustic sound power levels of significant noise sources on site and the location of receivers for assessment purposes.

The computer noise model generates noise emission levels considering such factors as the source sound power levels and locations, distance attenuation, ground absorption, air absorption and shielding attenuation, as well as meteorological conditions, including wind effects.

The ISO 9613 prediction methodology was utilised within SoundPLAN 3-d modelling software. The prediction method incorporates the influence on noise propagation of distance, topography, ground and air absorption, and atmospheric conditions.

5.1 Modelled Sound Power Levels

Sound power levels used in the SoundPLAN model were based on previous assessments conducted by SLR at the current facility and from client supplied data.

The sound power levels associated with the existing and proposed facility are presented in Table 7.

It is expected that there will be approximately 150 trucks entering the site per day. Modelling of the truck noise assumes 12 movements per hour, based on the hourly average of 6 per hour and a weighting factor of two, to consider possible bunching. On site, the trucks are modelled as travelling at 30 km/h.

Table 7 Sound power levels of significant noise sources, dB

Source	Height above ground (m)	Sound Power Level - Octave band Centre Frequency (Hz)							Total Sound Power Level (dBA)
		63	125	250	500	1000	2000	4000	
Bagging Plant									
Truck mobile	2	108	109	105	100	98	97	96	105
Truck Idling	2	94	96	91	86	84	83	82	91
Forklift Truck	2	101	87	89	86	89	85	96	98
Bagging Building (internal SPL)	15	80	74	73	71	76	71	70	80
Bucket Elevator	38	99	97	96	91	88	86	84	94
Bagging Air Blower	1	93	86	104	86	85	83	80	96
Bagging Dust Collector Outlet	40	92	93	94	91	87	89	84	95
Bagging Dryer	2	91	89	89	88	86	83	81	91
Bagging Dryer Dust Collector	2	92	90	90	88	85	85	84	92
Bagging Burner	2	93	95	91	92	90	84	82	94

Source	Height above ground (m)	Sound Power Level - Octave band Centre Frequency (Hz)							Total Sound Power Level (dBA)
		63	125	250	500	1000	2000	4000	
Bagging Front End Loader	2	66	71	70	74	74	72	66	78
Existing Plant									
Slag Mill	3	103	103	102	98	96	93	89	101
Conveyor above mill	20	105	103	105	98	95	93	89	101
Silo Blower	1	88	85	88	85	81	80	83	89
Silo Vibrator	3	84	82	85	91	101	104	97	107
Bucket Elevator	1	99	97	96	91	88	86	84	94
Slag Feed Conveyor	2	91	90	89	85	84	81	81	89
Gypsum Feed Conveyor	2	89	90	88	84	81	77	73	86
Hot Gas Furnace	2	99	96	97	91	86	83	77	93
Oil Pump	1	97	97	94	93	93	93	89	98
Gear Reduction Oil Unit	0	97	95	100	93	91	89	89	97
Compressors	0	95	95	94	92	92	88	83	96
Crusher (Within a shed)	2	112	116	115	116	112	103	98	116
Stack Outlet (To include discharge silencer = 104 dBA SWL)	36	125	124	123	121	120	118	110	124
Dust Fan	2	101	102	103	100	96	98	93	103
Truck mobile	1.8	108	109	105	100	98	97	96	105
Truck Idling	1.8	88	90	85	80	78	77	76	85
Airbrakes	1.8	-	-	-	76	78	82	80	87
Unload Conveyor ¹	3	91	90	89	85	84	81	81	89
Unload Conveyor ¹	5	91	90	89	85	84	81	81	89
Unload Conveyor ¹	8	91	90	89	85	84	81	81	89
Unload Conveyor ¹	10	91	90	89	85	84	81	81	89
Unload Bucket Elevator	1	91	90	89	85	84	81	81	89
Ship Engine exhaust	18	101	104	98	89	88	82	74	94
Ship engine room vent	16	103	99	101	97	95	89	84	99
Ship crane 1	15	93	96	107	102	99	94	85	104
Ship crane 2	15	93	96	107	102	99	94	85	104
Slag Silo									
Bucket Elevator	19	99	97	96	91	88	86	84	94
New plant									
Wheel loader	2	112	116	109	102	102	99	94	108
Belt conveyer	19	91	90	89	85	84	81	81	89

Source	Height above ground (m)	Sound Power Level - Octave band Centre Frequency (Hz)							Total Sound Power Level (dBA)
		63	125	250	500	1000	2000	4000	
Conveyer drive	19	97	96	97	99	98	93	87	101
Apron feeder, needle gate	7				101				101
Filter (body and dusting)	45	88	85	88	85	81	80	83	89
Filter (flow to atmosphere)	45	88	85	88	85	81	80	83	89
Mill	4	110	110	109	105	103	100	96	108
Classifier housing	4	101	101	100	96	94	91	87	99
Stack	48	97	96	99	96	92	90	93	100
Main filter (housing)	12	102	99	102	99	95	94	97	103
Main filter (air slide)	12	92	89	92	89	85	83	86	93
Main filter (cleaning)	12	68	73	78	85	88	86	83	92
Bucket elevator	20	99	97	96	91	88	86	84	94
Two-way distribution gate	8	86	95	101	103	104	102	97	108
Hot gas generator	4	99	96	97	91	86	83	77	93
Process fan	5	93	94	95	92	88	90	85	96
Sealed air fan	18	93	94	95	92	88	90	85	96
Airside fan	18	93	94	95	92	88	90	85	96
Finished product silo (cleaning)	47	68	73	78	85	88	86	83	92
Finished product silo (flow to atmosphere)	47	92	89	92	89	85	83	86	93

Note 1: Unload conveyor = Post feed conveyor

5.2 Effects of Meteorology on Noise Levels

To be conservative in the assessment, modelling has been undertaken under weather conditions favourable for noise propagation from the industry noise source to each of the noise sensitive receivers.

6 Noise mitigation

Noise mitigation measures will be required to be considered during the detailed design phase of the works to ensure the emissions from individual plant items do not exceed the modelled levels, and to fulfil the GED obligations, which required noise to be reduced as much as reasonably practicable (irrespective of whether or not the emissions from the site comply with the noise protocol levels).

Noise measures that may be considered reasonable to implement include:

- Enclosures around conveyer drives (particularly the elevated drives).
- Silencers on all major fans.
- The two-way distribution gate should not be allowed to generate an impact noise when it changes the direction of the product flow.
- Low (or super low) noise idlers should be used on the conveyer system.
- Within the facility, air brakes on trucks should not be used.
- Noise from the impulse cleaning of the filters, should be minimised as much as possible, while remaining fit-for -purpose.

7 Noise prediction results

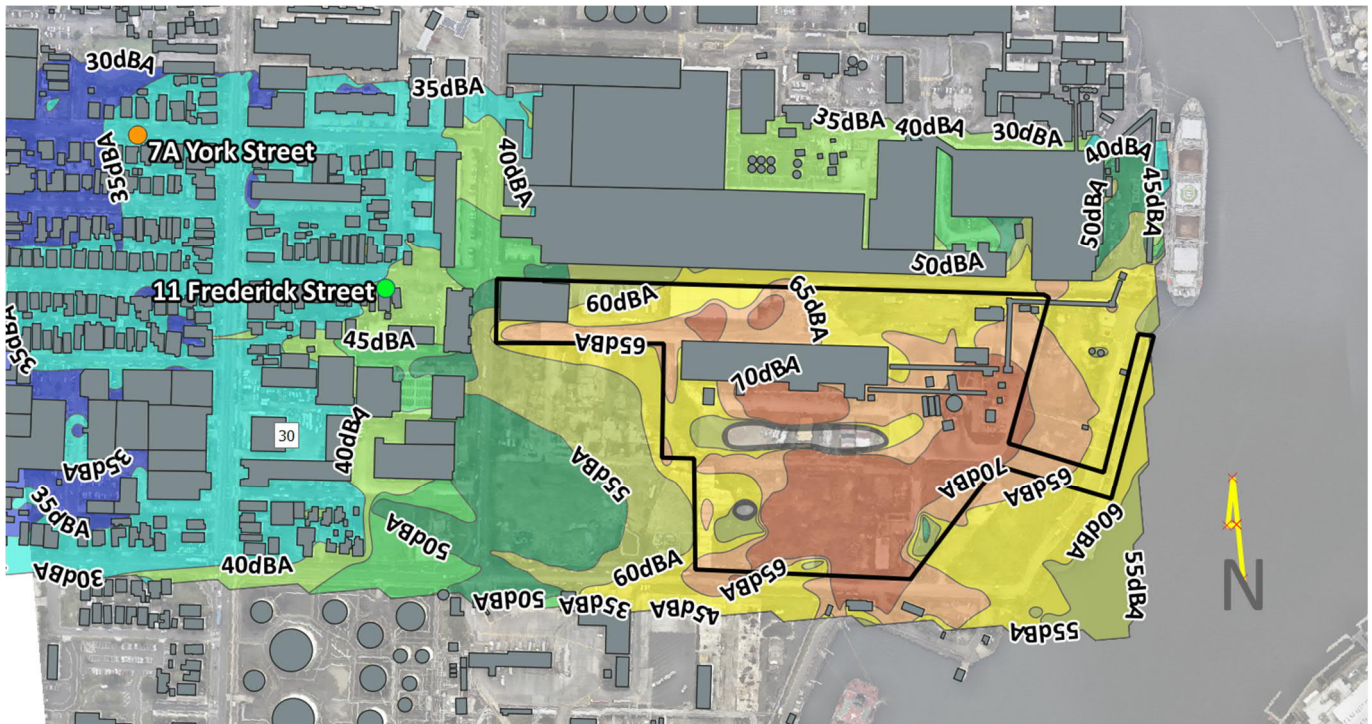
The results of the noise prediction model at each of the three residential areas are given in Table 8 and show that:

- The noise emission levels comply with the Noise Protocol limits.
- The emissions from the site do not fall under the 'aggravated noise' limits
- The levels do not exceed the objective level for Category I or Category II land use categories, appropriate for Frederick Street, and Category III and use categories for York Street.
- During the detailed design phase, mitigation options will be considered on individual plant items to meet the requirements of the General Environmental Duty. Notwithstanding compliance with the emission targets, the GED states that a person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste must minimise those risks, so far as reasonably practicable. This may mean providing additional noise mitigation, to potentially identifiable elements of the facility.

Table 8 Noise prediction results

Receptor	Noise Protocol Limit, Night, dBA - (Including - 3 dB for multiple industries)	Predicted Noise Level, Leq dBA	Compliance
11 Frederick St	46	42	Yes
7A York Street	39	38	Yes

Figure 6 Operational noise contours (LAeq(30minute))



8 Discussion

The predicted noise levels comply with the EPA Protocol noise limits for the quieter weekend night time periods for the modelled operating scenario at the nearest residential dwellings to the site. Noise emission levels will also meet evening and day time noise limits as these noise limits will be higher and the operation of the facility will essentially be unchanged in terms of noise emissions.

A draft Works Approval notice requires that the predicted noise emissions at the 142 Stephen Street location meets the night time design objective of 41 dBA. The predicted noise emission level at this location is 38 dBA readily complying with this requirement.

The predicted noise level emissions have been made under favourable weather conditions for the propagation of sound and have used neutral background noise levels. These provisions are therefore considered to provide a conservative outcome to the predicted noise level results.


9 Closure

The noise emissions from the existing and proposed Steel Cement facility at Yarraville have been modelled and predicted by SLR.

The results indicate that the total noise emission levels from the Steel Cement facility will comply with the various EPA noise limits at the most affected residential dwellings, though consideration of noise mitigation will need to continue through the design process, such that where feasible to further reduce noise levels, such measures will be considered.

APPENDIX A

Zoning level calculation for 11 Frederick Street



SLR

Noise Protocol Limit Calculations

Project Name: ICL Steel Cement Yarraville **Project No.:** Project 640.30487
Location: 11 Frederick Street **Date:** 14-Sep-22

140 m Diameter Circle

Type 2 Area	Type 3 Area
15393	0
100%	0%

400 m Diameter Circle

Type 2 Area	Type 3 Area
88042	30496
70%	24%

Partial Influencing factor (140m)	0.2500
Partial Influencing factor (400m)	0.2965
Total Influencing factor	0.5465

Multiple Industrial sources

Zoning Level Calculation

Time of Day	Range of LA90 levels to achieve neutral condition	Time of Day (EPA classification)	Zoning Level
Day (weekday)	48 dBA to 54 dBA	Day	60
Sat 0700-1800	48 dBA to 54 dBA	Day	60
Sun 0700-2200	44 dBA to 50 dBA	Evening	53
Evening (weekday)	44 dBA to 50 dBA	Evening	53
Night (all nights)	39 dBA to 45 dBA	Night	48


Measured Background Level LA90 dBA					
Monday to Friday (0700 to 1800)	Saturday (0700 to 1800)	Sunday (0700-2200)	Monday to Friday (1800 to 2200)	Monday to Friday (2200 to 0700)	Saturday / Sunday (2200 to 0700)
50	48	47	49	47	46

Resultant Noise Limits

Time of Day	Background Condition	Background Level Description	Noise Limit	Project Noise Limit
Monday to Friday (0700 to 1800)	High, If (B/G Level + 6dB) > Zoning Level Low, If Zoning Level >(B/G Level +13dB) Neutral, If otherwise	Neutral	60	57
Monday to Friday (1800 to 2200)	High, If (B/G Level + 3dB) > Zoning Level Low, If Zoning Level >(B/G Level +10dB) Neutral, If otherwise	Neutral	53	50
Monday to Friday (2200 to 0700)	High, If (B/G Level + 3dB) > Zoning Level Low, If Zoning Level >(B/G Level +10dB) Neutral, If otherwise	High	50	47
Saturday (0700 to 1800)	High, If (B/G Level + 6dB) > Zoning Level Low, If Zoning Level >(B/G Level +13dB) Neutral, If otherwise	Neutral	60	57
Sunday (0700-2200)	High, If (B/G Level + 3dB) > Zoning Level Low, If Zoning Level >(B/G Level +10dB) Neutral, If otherwise	Neutral	53	50
Saturday / Sunday (2200 to 0700)	High, If (B/G Level + 3dB) > Zoning Level Low, If Zoning Level >(B/G Level +10dB) Neutral, If otherwise	High	49	46
Minimum Noise Limits				46

APPENDIX B

Zoning level calculation for 7A York Street



Noise Protocol Limit Calculations

Project Name: ICL Steel Cement Yarraville **Project No.:** Project 640.30487
Location: 7A York Street **Date:** 15-Sep-22

140 m Diameter Circle

Type 2 Area	Type 3 Area
0	0
0%	0%

400 m Diameter Circle

Type 2 Area	Type 3 Area
24919	9349
20%	7%

Influencing Factors	
Partial Influencing factor (140m)	0.0000
Partial Influencing factor (400m)	0.0868
Total Influencing factor	0.0868

Multiple Industrial sources 100%

Zoning Level Calculation

Time of Day	Range of LA90 levels to achieve neutral condition	Time of Day (EPA classification)	Zoning Level
Day (weekday)	40 dBA to 46 dBA	Day	52
Sat 0700-1800	40 dBA to 46 dBA	Day	52
Sun 0700-2200	36 dBA to 42 dBA	Evening	45
Evening (weekday)	36 dBA to 42 dBA	Evening	45
Night (all nights)	31 dBA to 37 dBA	Night	40

Measured Background Level LA90 dBA					
Monday to Friday (0700 to 1800)	Saturday (0700 to 1800)	Sunday (0700-2200)	Monday to Friday (1800 to 2200)	Monday to Friday (2200 to 0700)	Saturday / Sunday (2200 to 0700)
46	43	42	45	44	39

Resultant Noise Limits

Time of Day	Background Condition	Background Level Description	Noise Limit	Project Noise Limit
Monday to Friday (0700 to 1800)	High, If (B/G Level + 6dB) > Zoning Level Low, If Zoning Level >(B/G Level +13dB) Neutral, If otherwise	Neutral	52	49
Monday to Friday (1800 to 2200)	High, If (B/G Level + 3dB) > Zoning Level Low, If Zoning Level >(B/G Level +10dB) Neutral, If otherwise	High	48	45
Monday to Friday (2200 to 0700)	High, If (B/G Level + 3dB) > Zoning Level Low, If Zoning Level >(B/G Level +10dB) Neutral, If otherwise	High	47	44
Saturday (0700 to 1800)	High, If (B/G Level + 6dB) > Zoning Level Low, If Zoning Level >(B/G Level +13dB) Neutral, If otherwise	Neutral	52	49
Sunday (0700-2200)	High, If (B/G Level + 3dB) > Zoning Level Low, If Zoning Level >(B/G Level +10dB) Neutral, If otherwise	Neutral	45	42
Saturday / Sunday (2200 to 0700)	High, If (B/G Level + 3dB) > Zoning Level Low, If Zoning Level >(B/G Level +10dB) Neutral, If otherwise	High	42	39
Minimum Noise Limits				39

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