

ATTACHMENT 8 - APPLICANT ACOUSTIC ASSESSMENT REPORT

ACOUSTIC ASSESSMENT

HOLCIM WELSHPOOL REDEVELOPMENT

FOR

HOLCIM (AUSTRALIA) PTY LTD

JUNE 2025

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ACOUSTIC ASSESSMENT

HOLCIM WELSHPOOL REDEVELOPMENT

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FOR

HOLCIM (AUSTRALIA) PTY LTD

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EXECUTIVE SUMMARY

Holcim (Australia) Pty Ltd engaged Herring Storer Acoustics to conduct an updated acoustic assessment for the redevelopment of its Briggs Street batching plant site in Welshpool, Western Australia. This updated study was prompted by design changes to the original plant layout, which had previously received JDAP approval (DAP/21/0/01939) in May 2021 based on an earlier acoustic assessment.

The revised acoustic assessment evaluates two operational scenarios: (A) daytime batching operations and (B) night-time operations under specific management practices. Noise modelling was conducted using the SoundPlan software. Additionally, field measurements were taken during Holcim's shutdown periods, providing accurate background levels. The focus of the assessment is compliance with the *Environmental Protection (Noise) Regulations 1997*, particularly in relation to the nearby residential receptors on Cohn Street.

The most significant impact to the noise emissions for the redesigned plant is the introduction of a wet batching plant. Whilst this reduces noise levels associated with the mixing (batch equipment) the flow on effects with the truck noise emissions have the greatest impact on noise. As the concrete is delivered wet to the agitator trucks, the slumping of the concrete can be reduced in both time, and the speed at which the agitator bowl spins. Studies into this show that truck noise can be reduced by around 5 dB per truck (50% speed reduction in motor revolutions) and trucks do not need to sit in "slumping stand" for more than a couple of minutes.

Other key updates to the plant layout have improved noise attenuation opportunities. This includes strategic separation of truck and light vehicle traffic and the addition of substantial noise barriers — notably, an 8m acoustic wall between the mixer and Cohn Street residences, as well as walls ranging from 2m to 7m to other perimeters.

Noise emissions from key equipment, such as the front-end loader and mixing building, were assessed. While the diesel loader use may exceed night-time limits, an electric loader is recommended for night operations. The mixer building and slump stand areas include sound-reducing materials and construction methods to contain operational noise.

The assessment concludes that, with the proposed wet plant, acoustic treatments and an updated Noise Management Plan, the redeveloped Holcim Welshpool facility can operate in compliance with regulatory noise limits for both day and night scenarios.

1.0 INTRODUCTION

Holcim (Australia) Pty Ltd commissioned Herring Storer Acoustics to carry out an acoustic assessment of noise emissions for a redevelopment of the Holcim Briggs Street site in Welshpool.

The redevelopment has been previously granted approval via the JDAP process (DAP/21/0/01939) on the 17th May 2021. This approval was based on the supporting acoustic assessment *reference 26462-4-20220* carried out by Herring Storer Acoustics.

Due to design changes in the plant layout, and the introduction of a wet mixing plant, a revised acoustic assessment (this report) has been undertaken to provide supporting information for the updated plant design. It should be noted that within these design changes, the noise emissions from the operations are better placed to be attenuated to the surrounding neighbouring receptors. This is predominantly due to the wet plant, separation of the light vehicle access area and the truck parking on the Cohn Street side of the redevelopment.

The existing site is within an Industrial Area, with residences on the northern side of Cohn Street. The proposed redeveloped batching plant is to incorporate noise mitigation and design to facilitate operation during the regulation Night-time period as some concrete pours are required during the early morning period. The measures to mitigate noise emissions to noise sensitive receptors include heavy vehicle access via Briggs Street (within the industrial area), and acoustic barriers to effectively attenuate noise towards receptors.

Operating Scenarios under consideration are:

- A Day operation of the Batching Plant; and
- B Night operation (under night operation management practices).

The neighbouring noise sensitive premises and batch plant location are shown on Figure 1.1.

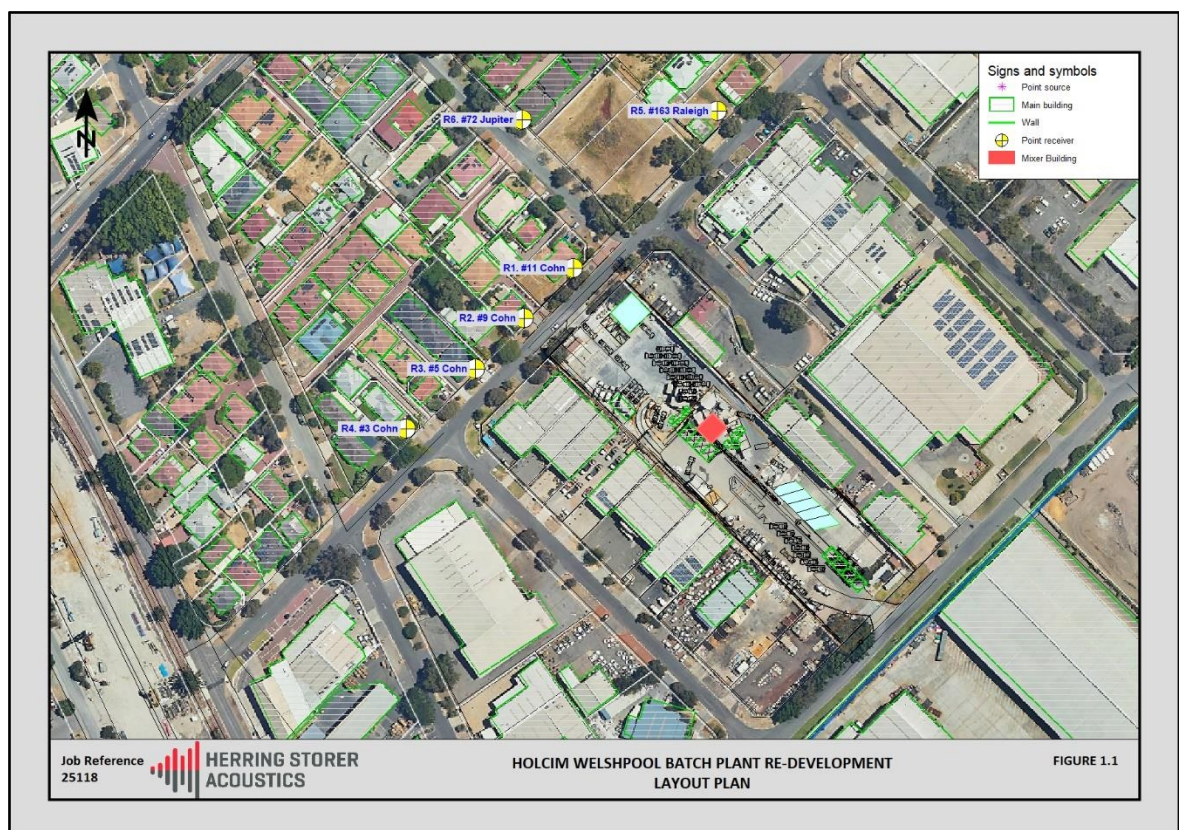


FIGURE 1.1 – AERIAL VIEW OF SITE AND NOISE SENSITIVE RECEPTORS

The report considers noise received at the neighbouring premises from the proposed re-development for compliance with the requirements of the *Environmental Protection (Noise) Regulations 1997*.

2.0 AMBIENT NOISE LEVELS

Assessment of baseline noise for this site is dependent on being able to locate noise monitoring equipment near key receptor locations. It is made more complex for this project in that Holcim currently operate the existing batching plant, and baseline noise by definition, is the background noise associated with operations other than the site being assessed.

Baseline noise measurements were conducted over the period Saturday 5th – Monday 7th December, 2020. Over this period the Holcim site was not batching concrete, however some internal auxiliary equipment such as ventilation equipment may have been operating. The statistical noise monitor was located on top of a building just inside the Cohn Street boundary.

Additional baseline monitoring was able to be conducted over the Christmas / New Year period, when Holcim operations were shut down. Statistical monitors were able to be located within verge trees, better representing the baseline noise at receptor locations. A report on this monitoring is attached, Appendix C.

The key receptor locations are those residential premises on Cohn Street opposite the Holcim site.

Monitoring 5 – 7 December 2020

Noise monitoring has been undertaken by positioning a statistical noise monitor just inside the Holcim Cohn Street barrier wall, with microphone elevated to be just above the wall level. The Holcim plant does not operate at all times, therefore extraction of noise data over a weekend has been undertaken to try and determine the baseline noise.

The measured background noise is shown on the attached graph. The graph includes a period during Saturday when Holcim operations were occurring. Refer Figure 2.1.

The acoustic parameters of interest include the statistical L_{A90} and L_{A10} levels. The subscript 90 refers to the 10th percentile for the 15 minute measurement period, essentially the noise level in dB(A) which is not exceeded for 90 seconds within that 15 minute measurement period (nearly the lowest noise level). The L_{A90} noise levels are of interest in baseline noise monitoring because this represents the period where plant noise levels could be most audible at residential receptor locations.

The baseline monitoring shows that at the monitoring location the minimum background noise did not drop below 53 dB(A) over Saturday, and reduced slightly to 51 dB(A) for the early morning period on the Sunday. It is likely that even though Holcim operations were not active, that some residual equipment (ventilation fans etc) may have contributed to this measured background noise. The noise level at the Cohn Street residences is expected to be lower, as the Cohn Street acoustic 4m barrier wall is an effective barrier between plant noise sources and the residences.

Observations at Cohn Street residences near the Holcim site are that there are a number of premises within the industrial area that emit both steady state and intermittent noise. These include some fans that operate only during the day period, and some fans and equipment that appear to operate both day and night. It is noted however, that these premises are not immediately adjacent the Holcim site, therefore have a reduced noise emission to the Cohn Street residences that are potentially most affected by Holcim operational noise emissions.

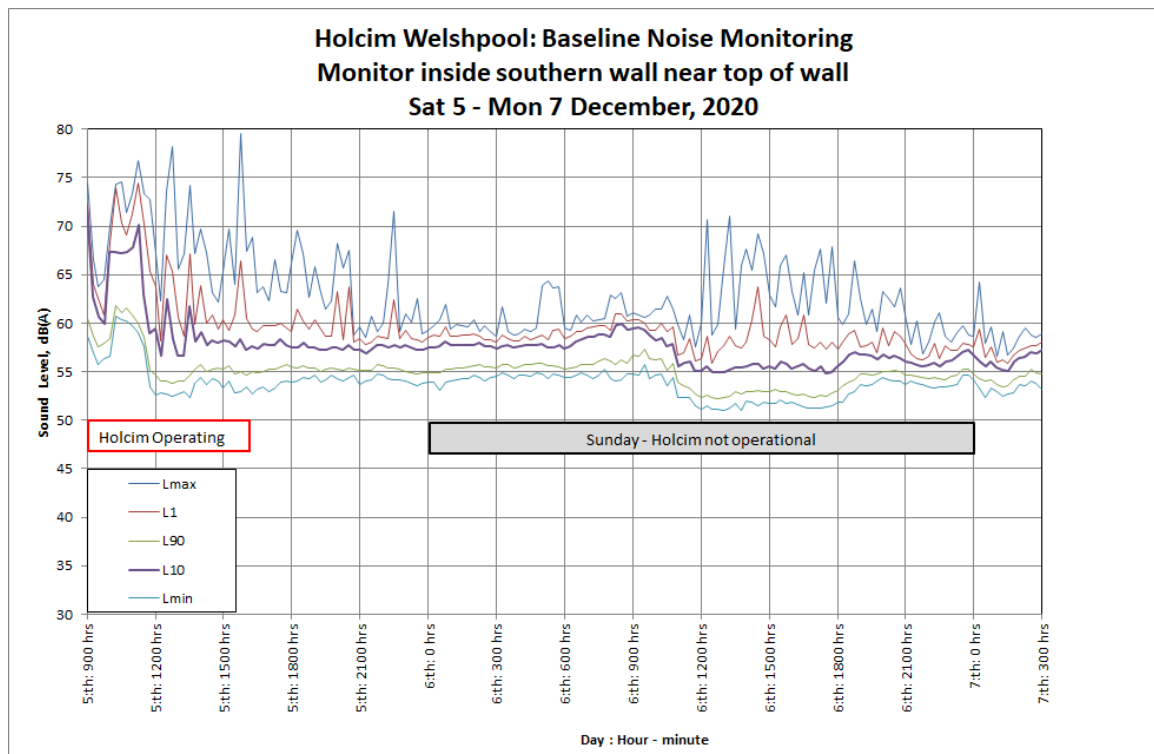


FIGURE 2.1 – BACKGROUND NOISE MONITORING INSIDE HOLCIM COHN STREET WALL

27 December – 3 January Baseline Monitoring

The baseline monitoring shows that at the monitoring location the L_{A90} background noise consistently ranged between 47 – 50 dB(A) opposite the Holcim gate, and 47 – 53 dB(A) opposite Savill Place. The L_{A90} statistical parameter reflects the noise level present at all times, and therefore the quietest background that noise emissions could potentially be audible over.

The relatively unchanging L_{A90} noise level over both day and night periods is a reflection that some premises in the vicinity (albeit residential air conditioners/evap coolers or industrial equipment operating continuously) generate a constant noise emission. It is possible that some of these noise emissions may reduce when there are changes in occupancy and operations in the area.

The L_{A10} statistical parameter ranged between 48 – 72 dB(A). The L_{A10} noise level is affected by short duration events, such as passing vehicles, bird call and miscellaneous noise events, however the L_{A90} is considered to represent the baseline noise that is present at all times.

Baseline Noise Impact

The night-time ‘assigned level’ for residences on Cohn Street has previously been determined to be an L_{A10} of 44 dB(A). The acoustic design for the proposed plant includes an allowance for noise characteristic, with design emission levels at night of an L_{A10} of 39 dB(A) or lower.

The baseline noise provides potential acoustic masking of noise emission characteristics from the proposed Holcim Welshpool redevelopment, and as the proposed emission levels are at least 5 dB(A) below (9 dB(A) based on the baseline measurements, any potential increase in background noise would be minimal.

Thus, existing background noise is expected to mask noise characteristic from Holcim operations, which at a design level of 39 dB(A) for night operations is significantly less than the L_{A90} baseline noise of 47 dB(A).

However, as the baseline noise is above the night-time 'assigned level' at some locations, clause (2) Regulation 7 will apply (significantly contributing), and the Holcim noise emissions will be required to be 5 dB(A) less than the night-time 'assigned level'. As the design emission for Holcim night operation is 39 dB(A), this is 5 dB(A) less than the 'assigned level' of 44 dB(A) and satisfies the 'significantly contributing' requirement of the regulations.

Should the background noise in the area decrease in the future, the Holcim design level will also comply following adjustment for 'tonal characteristic', which could be measurable if baseline background noise reduces to below 40 dB(A).

It is concluded that the design emission level of an L_{A10} of 39 dB(A) will achieve compliance in conjunction with existing baseline background noise at nearby receptors, and also if future change in the area causes baseline background noise to reduce significantly.

3.0 ACOUSTIC CRITERIA

The allowable noise level at the surrounding locales is prescribed by the *Environmental Protection (Noise) Regulations 1997*. Regulations 7 & 8 stipulate maximum allowable external noise levels. For residential premises, this is determined by the calculation of an influencing factor, which is then added to the base levels shown below. The influencing factor is calculated for the usage of land within two circles, having radii of 100m and 450m from the premises of concern.

TABLE 3.1 - BASELINE ASSIGNED OUTDOOR NOISE LEVEL

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise sensitive premises: highly sensitive area	0700 - 1900 hours Monday to Saturday	45 + IF	55 + IF	65 + IF
	0900 - 1900 hours Sunday and Public Holidays	40 + IF	50 + IF	65 + IF
	1900 - 2200 hours all days	40 + IF	50 + IF	55 + IF
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	35 + IF	45 + IF	55 + IF
Industrial boundary	All times	65	80	90

Note: L_{A10} is the noise level exceeded for 10% of the time.

L_{A1} is the noise level exceeded for 1% of the time.

L_{Amax} is the maximum noise level.

IF is the influencing factor.

It is a requirement that received noise be free of annoying characteristics (tonality, modulation and impulsiveness), defined below as per Regulation 9.

"impulsiveness" means a variation in the emission of a noise where the difference between L_{Apeak} and $L_{AmaxSlow}$ is more than 15 dB when determined for a single representative event;

“modulation” means a variation in the emission of noise that –

- (a) is more than 3 dB $L_{A \text{ Fast}}$ or is more than 3 dB $L_{A \text{ Fast}}$ in any one-third octave band;
- (b) is present for more at least 10% of the representative assessment period; and
- (c) is regular, cyclic and audible;

“tonality” means the presence in the noise emission of tonal characteristics where the difference between –

- (a) the A-weighted sound pressure level in any one-third octave band; and
- (b) the arithmetic average of the A-weighted sound pressure levels in the 2 adjacent one-third octave bands,

is greater than 3dB when the sound pressure levels are determined as $L_{Aeq,T}$ levels where the time period T is greater than 10% of the representative assessment period, or greater than 8dB at any time when the sound pressure levels are determined as $L_{A \text{ Slow}}$ levels.

Where the noise emission is not music, if the above characteristics exist and cannot be practicably removed, then any measured level is adjusted according to Table 4.2 below.

TABLE 3.2 - ADJUSTMENTS TO MEASURED LEVELS

Where tonality is present	Where modulation is present	Where impulsiveness is present
+5 dB(A)	+5 dB(A)	+10 dB(A)

Note: These adjustments are cumulative to a maximum of 15 dB.

The influencing factor has been calculated based on the 100m and 450m radii concentric circles and has been calculated at +9 dB for the Cohn Street residences. The influencing factor includes significant areas of industrial land use including the rail station and a small area of commercial land use. The assigned noise levels for the receptors on Cohn Street and those behind (ie: R5 and R6) are listed in Tables 3.3.

**TABLE 3.3 – ASSIGNED OUTDOOR NOISE LEVELS
COHN STREET RESIDENCES**

Type of premises receiving noise	Time of day	Assigned level (dB)		
		L_{A10}	L_{A1}	$L_{A \text{ max}}$
Noise sensitive premises: highly sensitive area (i.e within 15m of a dwelling) R1 to R6	0700 to 1900 hours Monday to Saturday	54	64	74
	0900 to 1900 hours Sunday and public holidays	49	59	74
	1900 to 2200 hours all days	49	59	64
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	44	54	64

Note: The L_{A10} noise level is the noise that is exceeded for 10% of the time.
The L_{A1} noise level is the noise that is exceeded for 1% of the time.
The $L_{A \text{ max}}$ noise level is the maximum noise level recorded.

It is the L_{A10} parameter which applies to majority of the activities on the Holcim site, including loading and slumping. The nature of batch plant operation is that there will be periods of full operational activity (usually in the morning) but there are often periods of low activity. The mixing (during the loading phase) and slumping can generate tonal noise emissions.

To be compliant during the night-time period under the regulations, noise emissions from the proposed Holcim operations should not exceed an L_{A10} of 39 dB(A) at the nearest residential receptors on Cohn Street, after allowance for tonal characteristic, or significant contribution.

4.0 METHODOLOGY

Noise levels were predicted using the acoustic software “SoundPlan” for worst case wind conditions as per the DER ‘Draft Guideline on Environmental Noise for Prescribed Premises (May 2016)’ for the operations.

It is noted that ‘worst case’ wind conditions refer to conditions where there is a temperature inversion in conjunction with light winds in the direction from noise source to receiver, resulting in effective sound propagation to receiver locations.

The sound power levels used in the acoustic modelling are shown in Table 4.1. These sound power levels have been determined based on acoustic measurement and verification of Holcim operations at a number of sites including existing Welshpool and East Perth operations.

TABLE 4.1 – EQUIPMENT SOUND POWER LEVELS

Equipment	Sound Power Level, dB(A)
Agitator Truck Slow Travel	104
Agitator Truck Idle	98
Agitator Truck Slumping Dry Plant (100%)	110
Agitator Truck Slumping Wet Plant (100%)	105
Agitator Truck Loading in Mixer	105
Agitator Truck Washing	105
Conveyors	75/m ²
Material Delivery Truck	102
Loader (FEL)	105
Batch Plant – Materials Loader Hopper (Internal)	98
Batch Plant – Vibrating Screen (Internal)	105
Batch Plant – Conveyors (Internal)	75/m ²
Batch Plant – General Upper Level (Internal)	92

The site layout provided by Holcim was used as a basis for the acoustic modelling and is shown in Appendix A for reference.

The acoustic modelling has been carried out for full production scenario(s), as a major pour commencing prior to 7am would be assessed as occurring during the regulation night-time period.

Noise emissions have been predicted for two operational scenarios, these being:

Scenario 1 - Night Operations

The night operating conditions allow for the following equipment noise emissions.

TABLE 4.2 – NIGHT OPERATING SCENARIO NOISE SOURCES

Equipment	Quantity
-----------	----------

Agitator Truck Slow Travel	2
Agitator Truck Idle	1
Conveyors	4
Agitator Truck Slumping	3
Agitator Truck Loading in Mixer	1
Agitator Truck Washing	1
Batch Plant Mixer / Loading	1

The location of the noise sources are as per the layout plan in Figure 4.1.

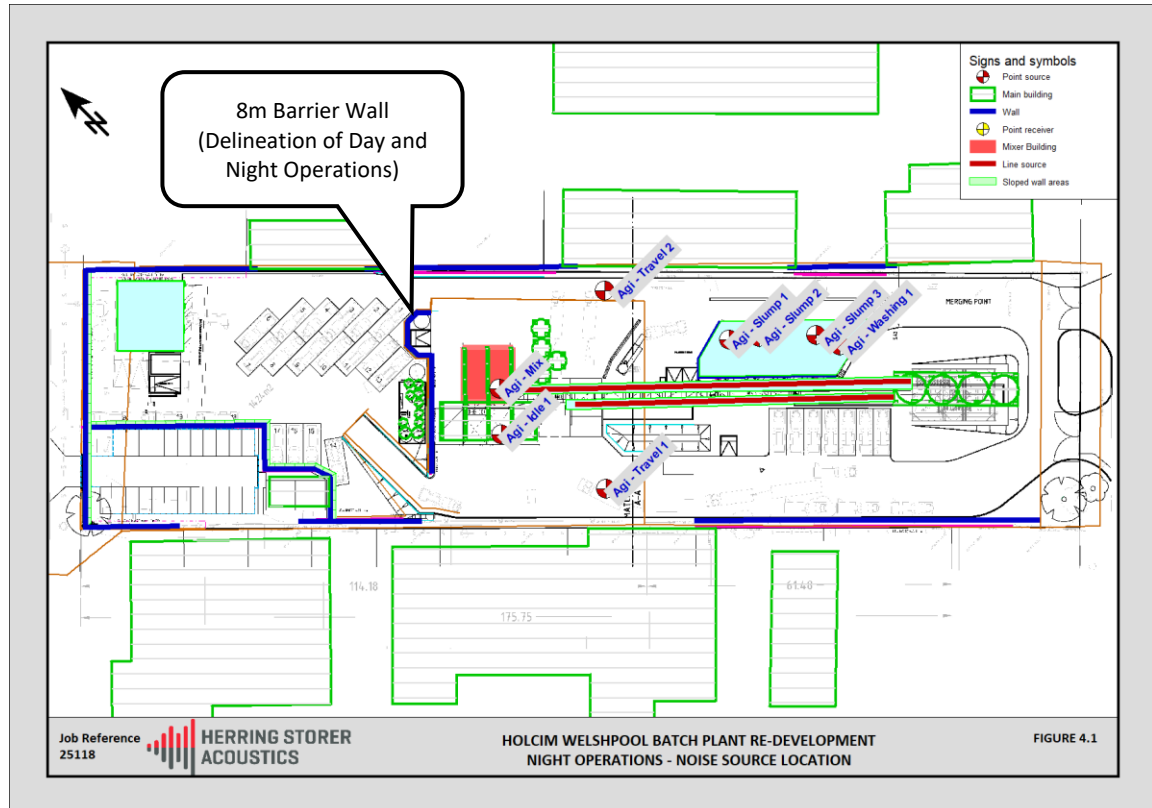


FIGURE 4.1 – NIGHT OPERATING SCENARIO NOISE SOURCES

Noise management measures (NMP) will include planned park up of required agitators at southern materials area during the afternoon prior, and all heavy vehicle operations to be south of the 8m barrier wall during the night-time period. The most southern slump stand will include provision for use as a wash-stand for night-time operations.

Scenario 2 – Day Operations

The day operating conditions allow for the following equipment noise emissions.

TABLE 4.3 – DAY OPERATING SCENARIO NOISE SOURCES

Equipment	Quantity
Agitator Truck Slow Travel	4
Agitator Truck Idle	4
Conveyors	4
Agitator Truck Slumping	4
Agitator Truck Loading in Mixer	1
Agitator Truck Washing	2
Batch Plant Mixer / Loading	1
Material Delivery Truck	1
Loader	1

The location of the noise sources are as per the layout plan in Figure 4.2.

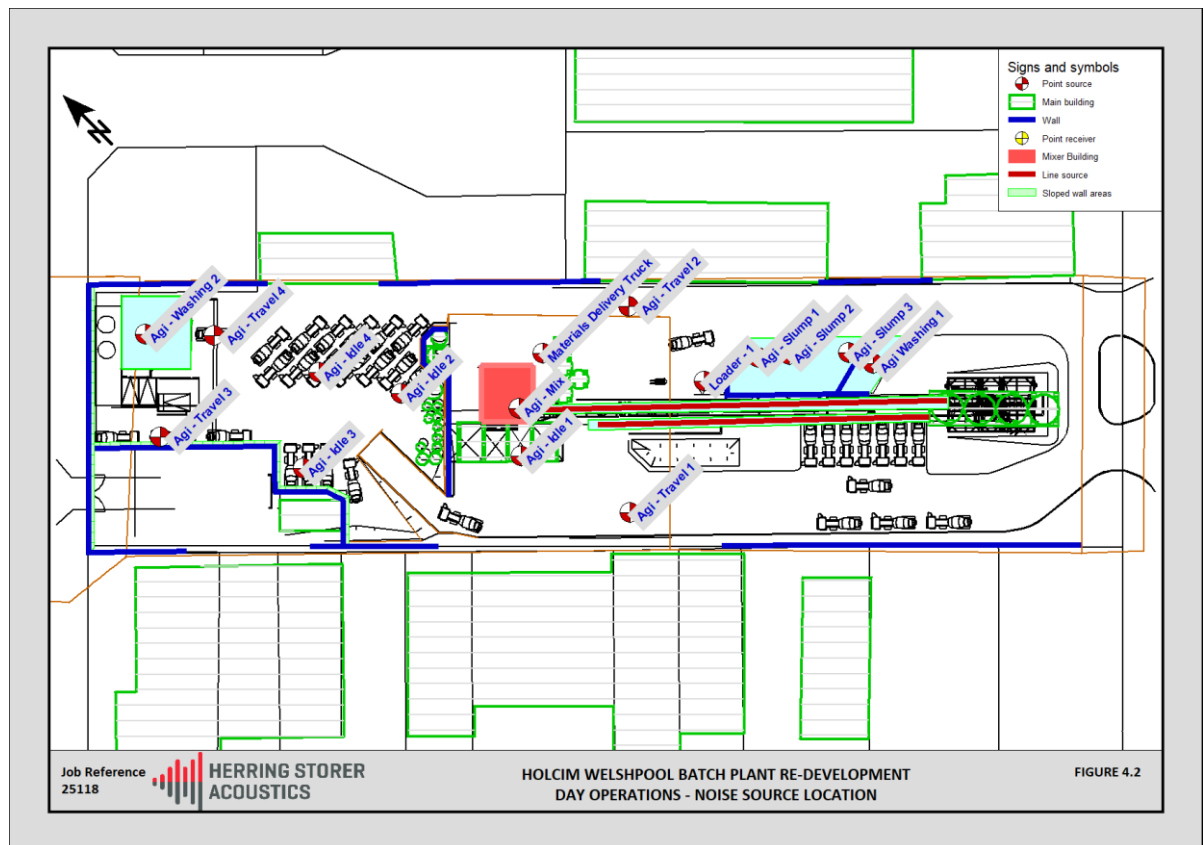


FIGURE 4.2 – DAY OPERATING SCENARIO NOISE SOURCES

Notes:

1. Heavy vehicles will enter and depart from the site via Briggs Street, within the industrial area.
2. The design incorporates acoustic mitigation measures, in the form of acoustic barriers / roofing, discussed further in Section 7.
3. Night Operations do not include the Loader as a noise source.

5.0 NOISE CONTROL / RECOMMENDATIONS

Significant investigation and analysis of the required noise control options have been undertaken in close consultation with Holcim. This was based on previous plans and expanded to include the current Welshpool Batch Plan layout.

The main individual items which make up the noise control have been detailed in the following section.

5.1 NOISE WALLS

A 3D model view of the proposal showing acoustic barrier walls is shown in Figure 5.1. The 3D model was extracted using the acoustic modelling SoundPlan software hence is based on the predictive noise model scenarios. The image is oriented with Cohn Street to the left, Briggs Street on the right side. The significant acoustic barriers include an 8m high barrier between the mixing plant and Cohn Street residences. The 8m barrier wall

includes openings on each side for passage of agitator trucks and is also noted to be the delineation between the day and night operating scenarios.

Other acoustic barrier on the side walls varying between 2m – 7m high, with the rear (Cohn Street) end detailed in Appendix B as to the light vehicle area. It is noted that the turn back for the top of the noise wall for the Cohn Street boundary are facing inwards, and are only for the noise wall, not the operable gate.

For the Holcim side of the 4m noise wall on the boundary (opposite the slump stands), it is preferred that for this wall contains absorption panels, as slumping noise is one of the major noise sources on site and sound absorption on this wall will reduce potential acoustic reflection of this noise.

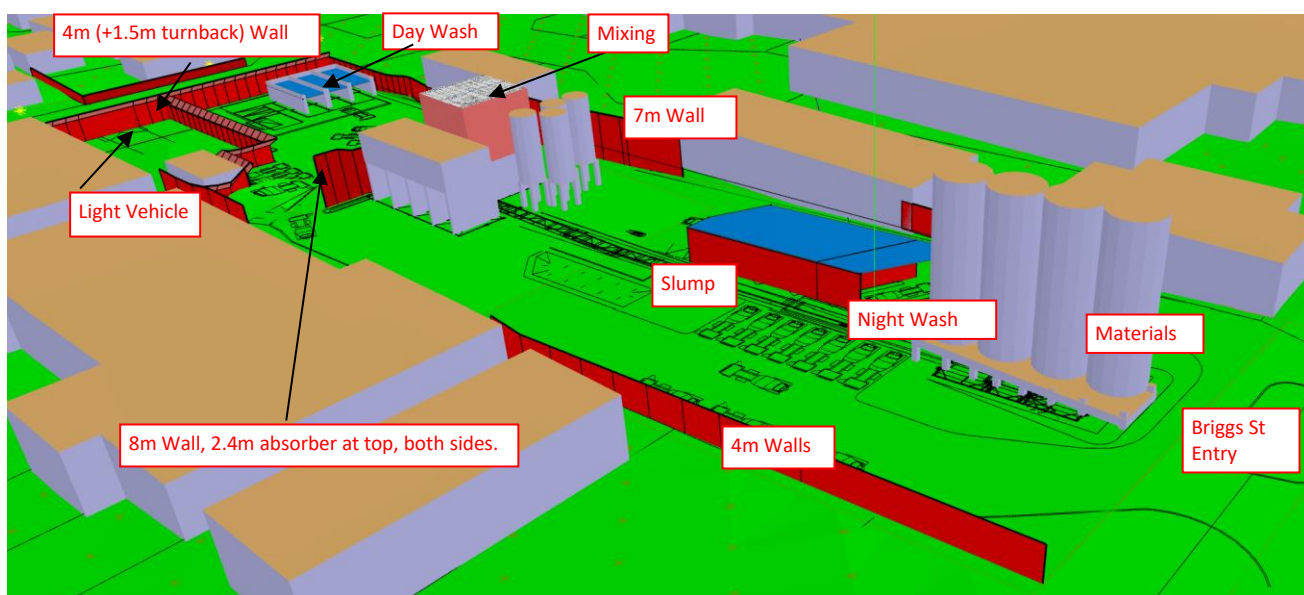


FIGURE 5.1 – 3D IMAGE OF PROPOSAL SHOWING ACOUSTIC BARRIERS

The wall construction has been based on tilt up concrete paneling (approx. 150mm). Alternative construction is possible; however the required transmission loss value would be around an R_w 45 dB.

It is noted that given the existing neighbouring buildings (approx. 6m high) act as an acoustic barrier, the wall have been designed to incorporate these buildings, i.e the walls fill the gaps and are not required where there is a concrete neighbouring building.

5.2 FRONT END LOADER

A standard diesel front end loader with a sound power of 105 dB(A) has been included in the assessment. Modelling shows that compliance is achieved for the operations of this unit during the day scenario.

For the night scenario, i.e. prior to 7am, the diesel loader could possibly exceed the regulatory criteria.

The material handling system is based on a direct feed, with the loading of the storage silos occurring directly from the material delivery trucks. Hence there is no requirement for the loader in the mixing operations for concrete batching.

However, if there is a requirement for the loader during the night period, it is recommended an electric unit is investigated. Generally, these are more prevalent in this type of industry and have the capacity to maintain charge for a full shift.

5.3 BATCH PLANT MIXING BUILDING

Noise modelling is based on an industrial building, which uses internal noise sources, and the transmission loss the building provides for external noise emissions. The internal noise sources have been based on noise level measurement of the individual components at the Holcim East Perth batch Plant Facility.

The proposed mixer building has been based on the following:

Walls R_w 24 dB – Steel frame, clad with colorbond (steel metal deck), internal lining (Anticon or similar).

Roof R_w 26 dB - Steel frame, clad with colorbond (steel metal deck). Roofing should be lined on the underside with an effective acoustic absorber material, such as 75mm fiberglass insulation with perforated foil facing, or 50mm Stratocell on 25mm or 50mm batons (25 mm airspace behind).

Floor – Assumed to be concrete slab.

For the above, doors and other penetrations need to remain closed. External doors to be solid core and windows to be 6mm toughened glazing, and minimal surface area.

For information, the 3D layout of the mixer building is shown in Figure 5.2.

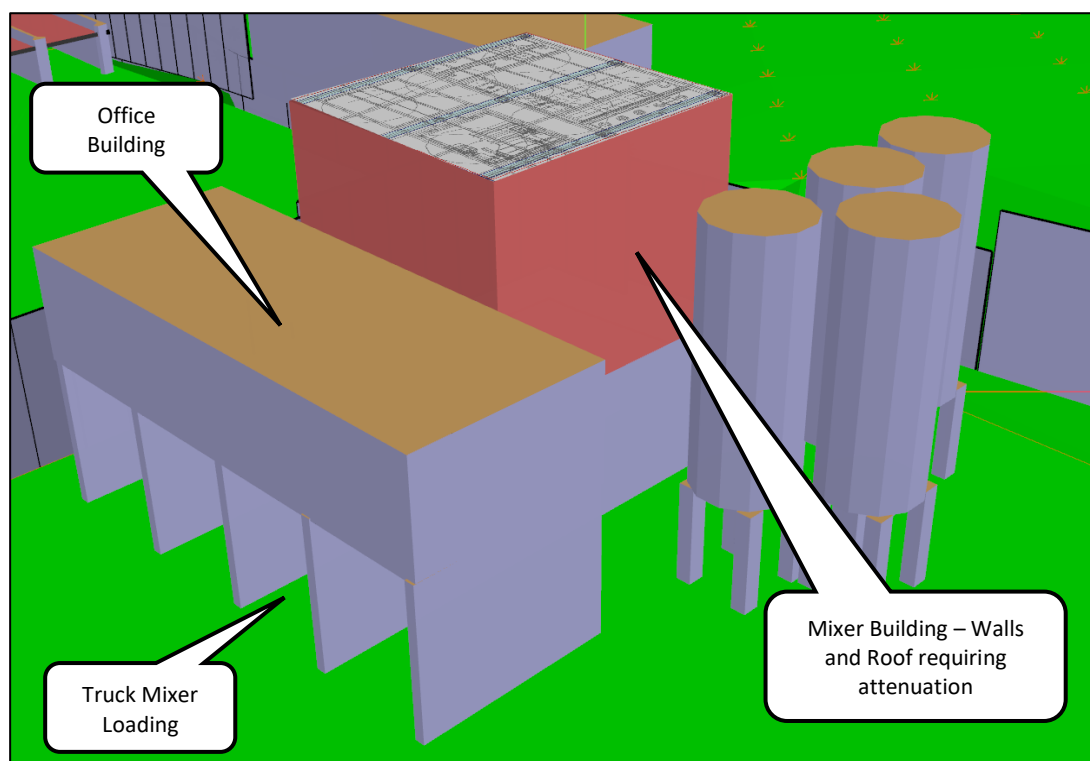


FIGURE 5.2 – 3D IMAGE OF MIXER BUILDING

5.4 SLUMPING BAYS

Walls close to agitators are assumed to be tilt up concrete or similar to at least 3-4m (based on truck clearance), with sheet metal above to be at least 0.6mm BMT (bare metal thickness).

In particular, the wash stand and slump stand roofing, require a minimum of 75mm effective acoustic absorption on the roof underside.

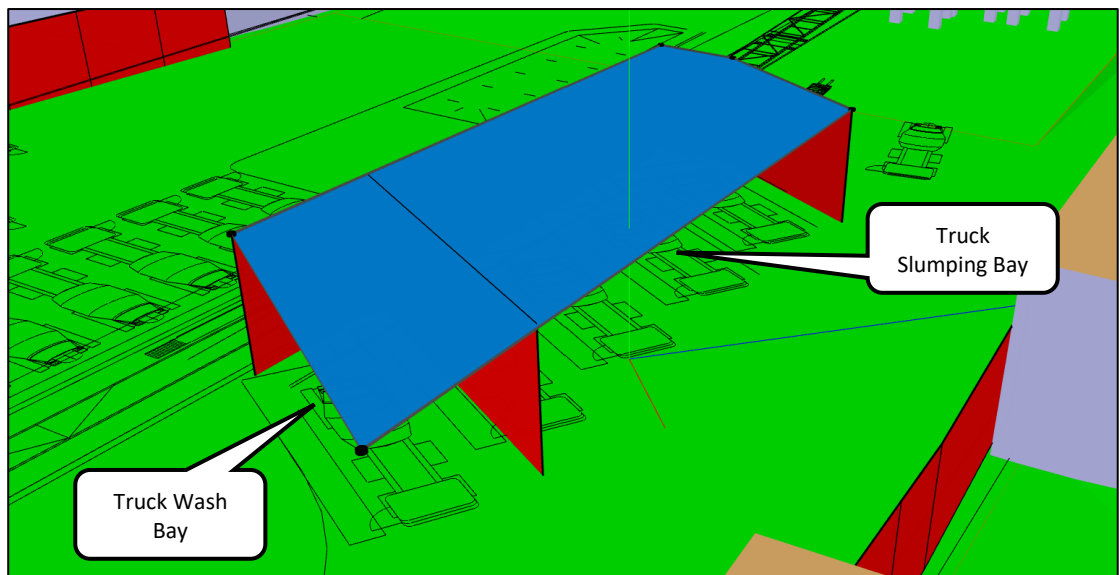


FIGURE 5.3 – 3D IMAGE OF SLUMP STAND AREA

5.5 NOISE MANAGEMENT PLAN

The current noise management Plan (NMP) requires updating to incorporate the proposed operations, including such things as truck placement for night operations, heavy vehicle access points, materials delivery and loader operations.

Expectations are that this will be carried out prior to the commissioning of the redeveloped plant.

6.0 RESULTS / ASSESSMENT

A summary of the assessable residential receiver noise levels are shown in Table 6.1 for the 'worst case' wind scenario with the plant at full capacity.

TABLE 6.1 – ASSESSABLE NOISE LEVELS

Receiver Location	Night-Time Assigned Level L _{A10} dB(A)	Predicted Night-time L _{A10} Noise Emission, dB(A)	Day- Time/Sunday Assigned Level L _{A10} dB(A)	Predicted Day- time L _{A10} Noise Emission, dB(A)	Status
R1. #11 Cohn	44	36(41)	49	44(49)	Complies
R2. #9 Cohn	44	38(43)	49	44(49)	Complies
R3. #5 Cohn	44	37(42)	49	44(49)	Complies
R4. #3 Cohn	44	37(42)	49	41(46)	Complies
R5. #163 Raleigh	44	35(40)	49	39(44)	Complies
R6. #72 Jupiter	44	34(39)	49	41(46)	Complies

Note: (##) indicates the sound level for -time compliance after adjustment of +5 dB(A) for 'tonal characteristic' at the receptor.

An Operational Noise Management plan will be prepared for the site, incorporating the requirements for day-time and night-time operations and the normal procedural undertakings such as complaint response processes.

The proposed Holcim Welshpool batching plant with noise mitigation walls and roofing incorporated is capable of complying with the requirements of the *Environmental Protection (Noise) Regulations 1997* at all times.

7.0 CONCLUSION

Herring Storer Acoustics (HSA) was commissioned by Holcim Pty Ltd to complete a noise impact assessment and noise management plan for redevelopment of the concrete batching plant at the existing Holcim Briggs Street site in Welshpool.

The proposal includes design elements to reduce environmental noise impacts from the plant to facilitate early morning operations at full capacity.

The acoustic modelling has been carried out for a full production scenario, as a major pour commencing prior to 7am would be assessed as occurring during the regulation night-time period.

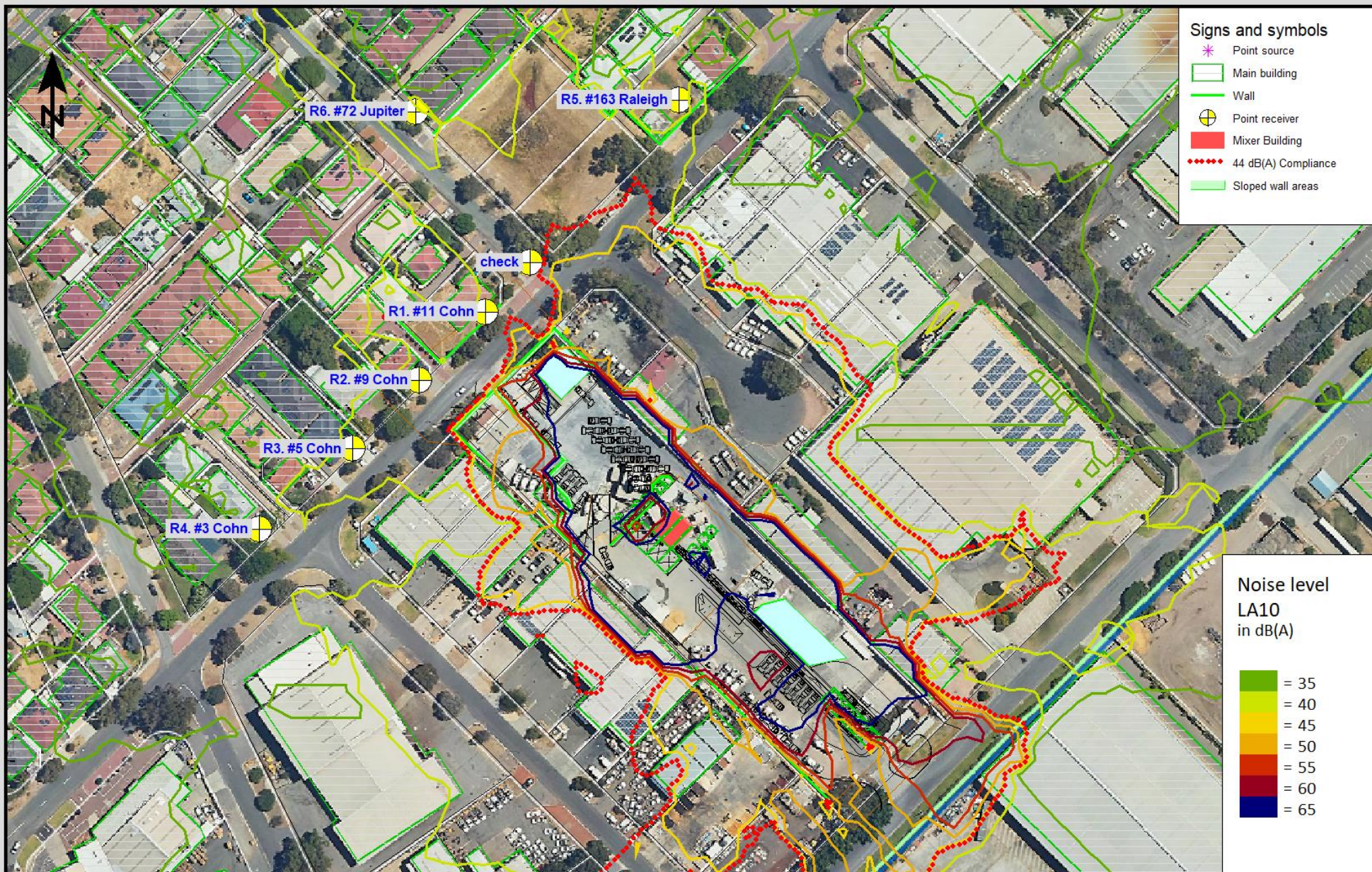
The design incorporates acoustic mitigation measures, in the form of acoustic barriers / roofing. These are detailed within the report and on the noise mitigation wall / roof plan in Appendix B.

An Operational Noise Management plan will be prepared for the site, incorporating the requirements for day-time vs night-time operations and the normal procedural undertakings such as complaint response processes.

The proposed Holcim Welshpool batching plant with noise mitigation walls and roofing incorporated is capable of complying with the requirements of the *Environmental Protection (Noise) Regulations 1997* at all times.

APPENDIX A

NOISE CONTOUR PLOTS

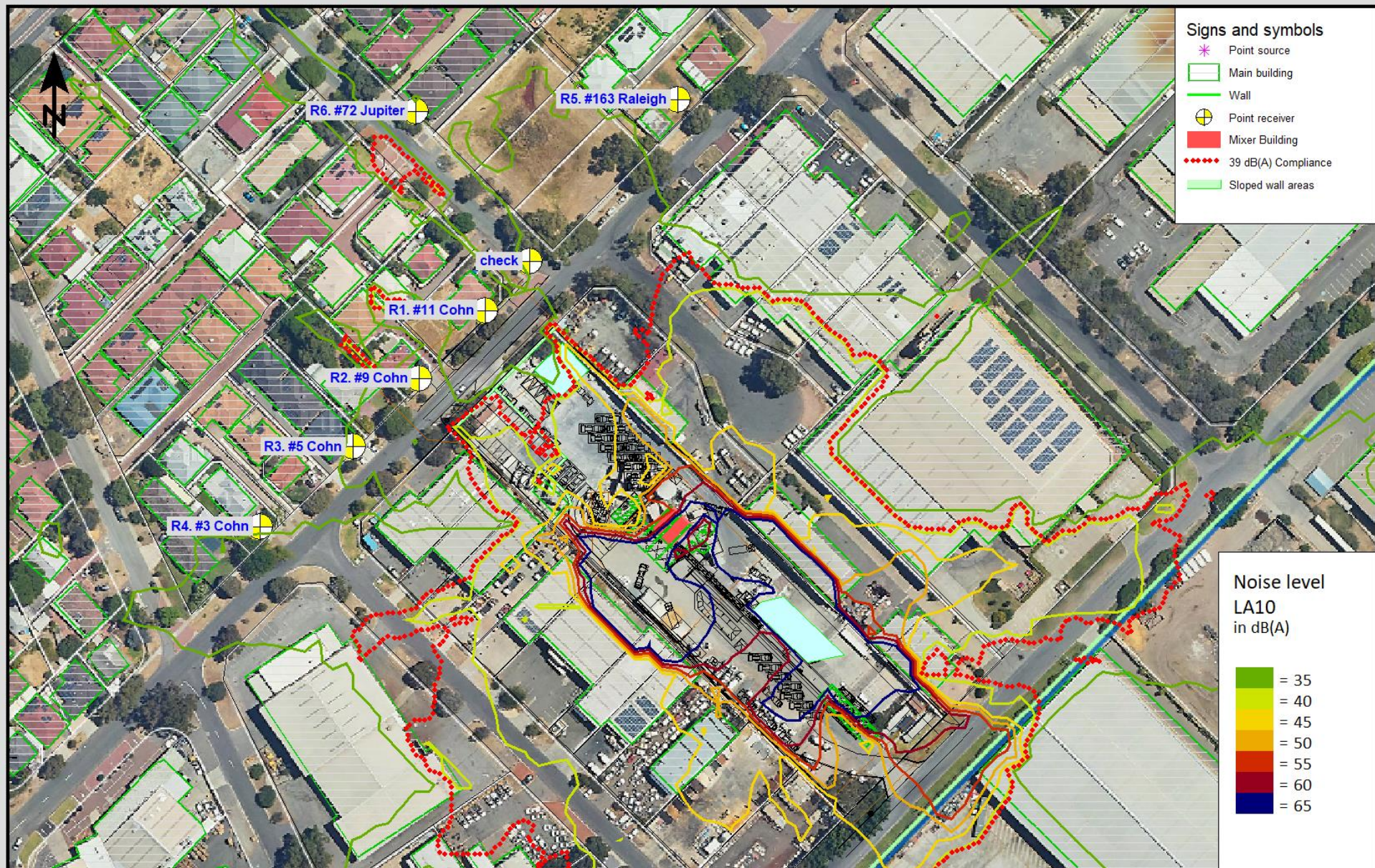


Job Reference
25118

**HERRING STORER
ACOUSTICS**

**HOLCIM WELSHPOOL BATCH PLANT RE-DEVELOPMENT
DAY OPERATIONS - NOISE CONTOUR PLOT**

FIGURE A1



Job Reference
25118



**HERRING STORER
ACOUSTICS**

**HOLCIM WELSHPOOL BATCH PLANT RE-DEVELOPMENT
NIGHT OPERATIONS - NOISE CONTOUR PLOT**

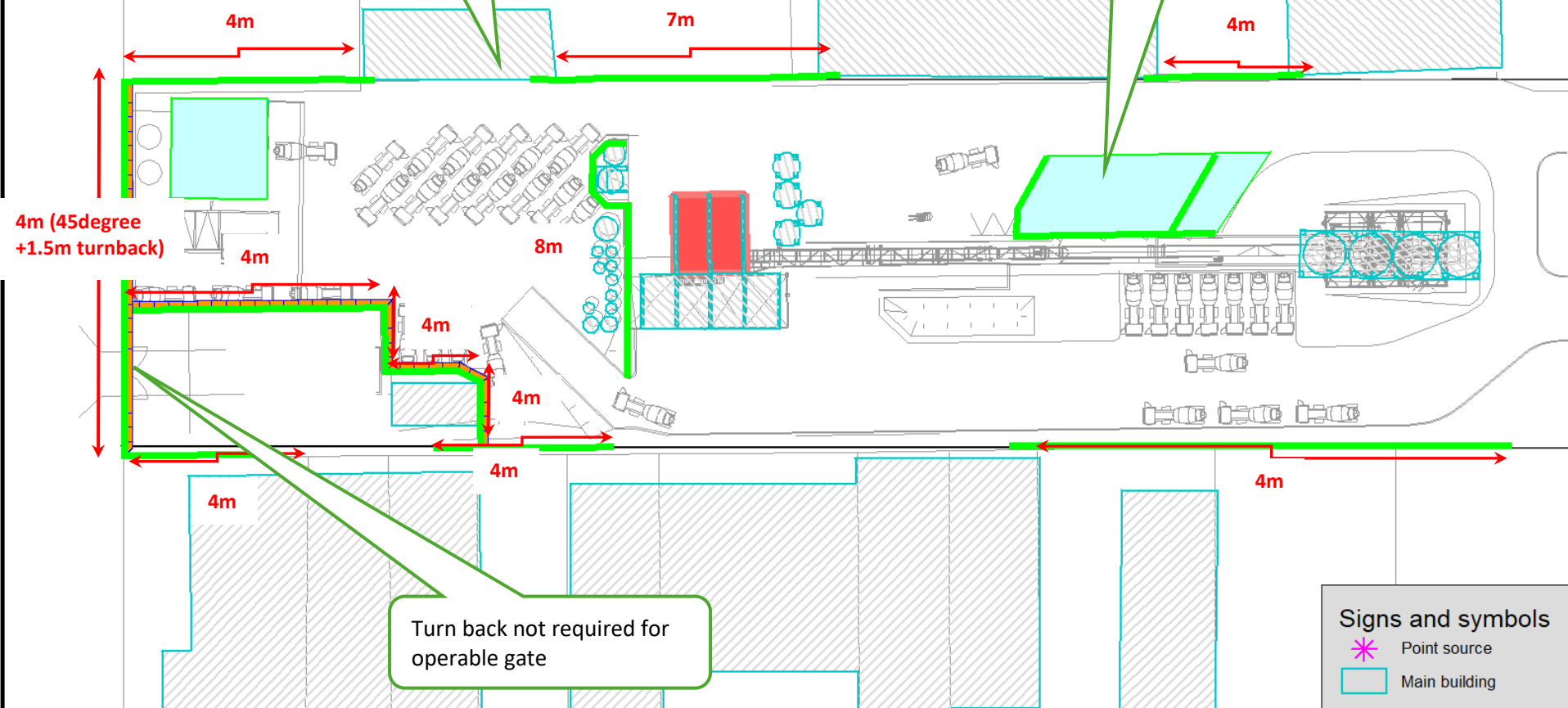
FIGURE A2

APPENDIX B

NOISE WALL LAYOUT

Walls not required where there are existing concrete buildings

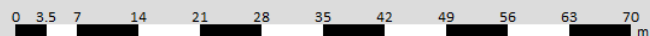
Slump Stand Enclosure approx. 3.5m high (or to suit clearance of trucks)



Turn back not required for operable gate

Holcim Welshpool
Proposed Noise Mitigation Walls and Roofing

Scale 1:810



Signs and symbols

- Point source
- Main building
- Wall
- Roof area
- Roof as source
- Sloped wall areas

APPENDIX C

BASELINE NOISE MONITORING

27 DECEMBER 2020 – 3 JANUARY 2021

Holcim Cohn Street Baseline Noise Monitoring **27 Dec 2020 - 3 Jan 2021 : 15 minute noise levels**

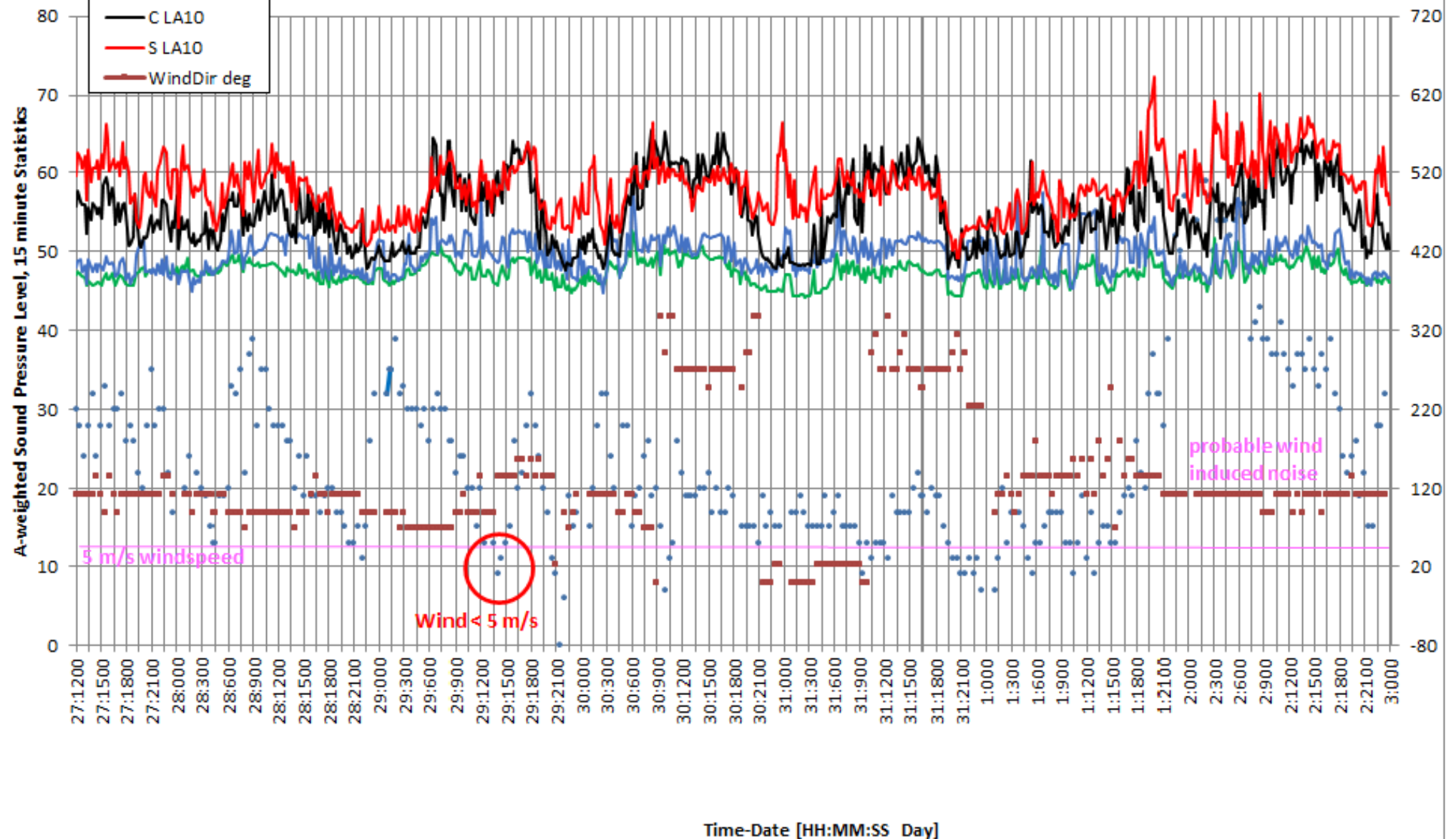


FIGURE 2 – BACKGROUND NOISE MONITORING – STATISTICAL NOISE LEVELS

Holcim Cohn Street Baseline Noise Monitoring

27 Dec 2020 - 3 Jan 2021 : L_{A90} 15 minute noise levels

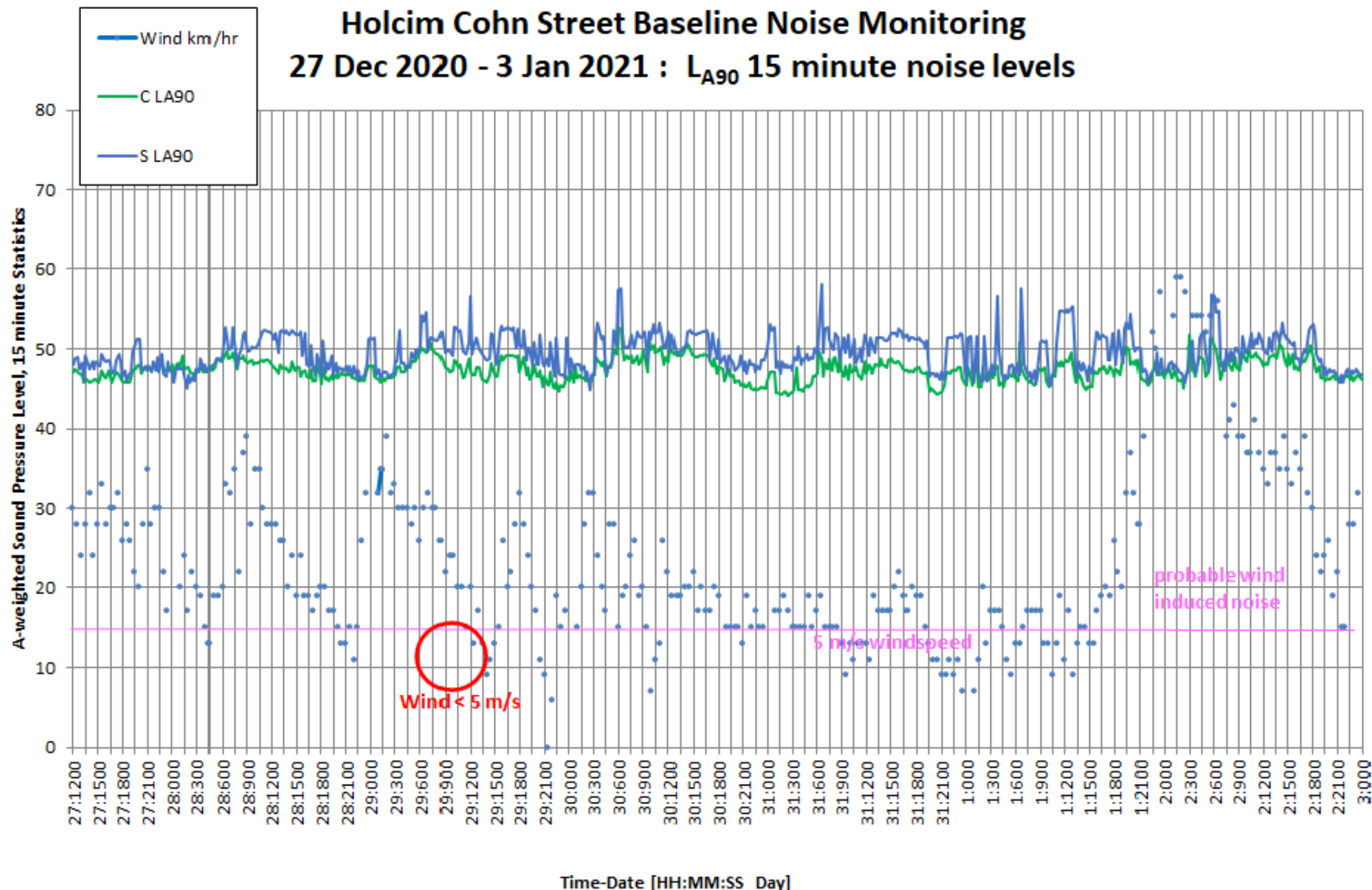


FIGURE 3 – BACKGROUND NOISE MONITORING – L_{A90} NOISE LEVELS