Horsley Logistics Park, Lots 201 and 204

SSD-10436
Construction Noise and Vibration Management Plan

Hansen Yuncken

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DOCUMENT CONTROL

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Revision	Description	Reference	Date	Prepared	Checked	Authorised
0	For Information	210182-Horsley Logistics Park Lot 201 & 204 CNVMP-R0.docx	30 April 2021	Ben White	Matt Furlong	Ben White
1	For Information	210182-Horsley Logistics Park Lot 201 & 204 CNVMP-R1.docx	14 May 2021	Ben White	Matt Furlong	Ben White
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1 COMPLIANCE MATRIX

NOISE & VIBRATION COMPLIANCE TABLE		
OUTSTANDING ACTION ITEM	**COMMENTARY**	**REFERENCE IN PLAN**
DPIE (01/06/21) Please note that the development has been approved, it is no longer proposed. Please remove references to the proposed development.	CNVMP has been revised – This item has been actioned and removed (as development is approved).	**Throughout the report – removed.**
DPIE (01/06/21) Section 6.5 discusses a building to be demolished, however, there are no buildings onsite, please update.	CNVMP has been revised – includes indication that there is no major demolition on the site. Within Section 6.6 - additional comments with distances for vibration impacts from ground works and construction activities.	**Section 6.6**
DPIE (01/06/21) The plan must not make recommendations. Construction management plans are active guides for people working on the ground and should include measures that will be undertaken to manage impacts. The range of standard mitigation and management measures needs to be identified, including resources needed (e.g. toolbox talk, induction material, requirement for CNVIS, SWMS etc), when to implement, who is responsible, how the implementation of specific measure would be measured/tracked for auditing purposes.	CNVMP has been revised – Hansen Yuncken Construction & Environmental Management Plan has been appended. Further, please refer to the HY CEMP (Appendix 8.3) whereby detailed Roles & Responsibilities are detailed.	**Appendix D – Supporting Documentation**
DPIE (01/06/21) Please also provide a mitigation decision-making matrix to guide workers on how construction noise could be mitigated and managed during each stage of construction. The decision-making matrix should include risk level for the various types of activities and be linked to the exceedance of construction noise management level.	CNVMP has been revised – please refer to Section 8 whereby an expanded section to the noise impact and recommended mitigations.	**Section 8**
DPIE (01/06/21) Please provide minimum working distances for vibration intensive plant from sensitive receivers.	CNVMP has been revised – please see Section 6.6.	**Section 6.6**
DPIE (01/06/21) Please describe the complaints management system.	CNVMP has been revised – an expanded community engagement and complaints response in section 9 in response to the questions in the attached report.	**Section 9**

DPIE (01/06/21) Please describe the compliance management process, including roles and responsibilities, training, inspection and monitoring, auditing, continuous improvement, and reporting.	CNVMP has been revised – Hansen Yuncken Construction & Environmental Management Plan has been appended.	**Appendix D – Supporting Documentation**
DPIE (01/06/21) Describe the community consultation undertaken to inform strategies for managing high noise generating works.	CNVMP has been revised – Community Consultation Plan has been appended.	**Appendix D – Supporting Documentation**
DPIE (07/06/21) It is unclear why the updated CNVMP refers to Cumberland Hospital. Also, what is meant by project-by-project basis? Please ensure the noise and vibration management plan is written specifically for this site.	CNVMP has been revised – references removed to Sections 8.2.8 & 10.2.	**Section 8.2.8** **Section 10.2**
DPIE (07/06/21) Please clearly identify when measures should be implemented (e.g. prior to construction during toolbox talk, during stage X of construction within XX metres from residential receiver A, during [insert name] activity, etc), who is responsible for implementing said measure and how evidence of implementation will be recorded/tracked	CNVMP has been revised – please refer to Section 9 of the report.	**Section 9**
DPIE (07/06/21) The CNVMP still refers to 'proposed' construction activities. Are these 'proposed' activities in addition to those defined in the Development Consent?	CNVMP has been revised – This item has been actioned and all references to 'Proposed' and removed.	**Throughout the report – removed.**
DPIE (07/06/21) What are the different stages of construction and how noise and vibration impacts should be managed/minimised during each stage?	CNVMP has been revised – Please refer to Section 8.1 (Table 15) where the stages of construction have been delineated and management procedures to be implemented are detailed.	**Section 8.1 – Table 15 (Page 23)**
DPIE (07/06/21) It is not clear how Table 14 would be implemented in practice as NML exceedance is not shown in Section 5 of the CNVMP. Table 5 indicates construction noise would be up to 72 dB(A) generally for site excavations. Does this mean that respite offer (RO) should be applied every day until site excavations are completed?	CNVMP has been revised – Please refer to Section 8.1 - Table 14 and Section 5. Noise Monitoring should be undertaken on-site as recommended in Section 7 – if noise levels exceed their tolerances (as nominated, more than 20dB in Table 14 – Respite Periods are to be considered). As per Table 5, combined plant and machinery is not expected to exceed the 72dB(A) level to surrounding receivers.	**Section 5.5 – Table 5 (Page 14)** **Section 8.1 – Table 14 (Page 22)**

DPIE (07/06/21) Consideration need to be given to Part C of the Consent to ensure the framework for environmental management, reporting an auditing is clearly established in the CNVMP. The CNVMP need to clearly outline how compliance management would be carried out with reference to the CEMP. Please identify the issues that will be addressed in the induction training for employees, contractors, sub-contractors and utility staff working on the site. How will inspection and monitoring be carried out? Will lessons learnt be communicated to relevant personnel in toolbox talks? How will the effectiveness of environmental controls be assessed?	CNVMP has been revised – Please refer to Section 9 whereby measures have been incorporated and reference has been made to the CEMP.	**Section 9**
DPIE (07/06/21) Please provide a flowchart to illustrate the process for community engagement.	CNVMP has been revised – Please refer to Section 10 (Page 30).	**Section 10 – Page 30**
DPIE (07/06/21) Rather than "it is common for construction projects to..." the content of the CNVMP should be written specifically for this site.	CNVMP has been revised – Please refer to Section 10 whereby this reference has been removed.	**Section 10 – Page 29**

2 INTRODUCTION

Pulse White Noise Acoustics has been engaged to undertake the acoustic assessment of the noise and vibration impacts during the construction stage of the Horsley Logistics Park Lots 201 and 204 projects located at 8 and 10 Johnston Crescent, Horsley Park.

The assessment has been undertaken in conjunction with the requirements of Item B10 of the projects *Conditions of Consent* and the EPA's Interim Construction Noise Guideline which is detailed in this report.

This report includes the noise and vibration mitigations and management controls for the operation of construction activities on the site to ensure impacts to surrounding receivers are minimised in accordance with the relevant requirements.

The report has been undertaken in accordance with Item B10 of the *Conditions of Consent* including the summary matrix below:

Condition of Consent Number	Part	Condition Summary	Comments
B10	(a)	Suitably qualified noise expert	Ben White is a director of Pulse White Noise Acoustics with over 20 years of experience. Ben is a member of the Australian Acoustical Society and his membership certificate is included in Appendix B.
	(b)	Report to be approved prior to each stage	Details of the assessment includes both lots 201 and 204 such that approval of construction for both lots can be sort.
	(c)	Recommended noise management in accordance with EPA	Report details required management and mitigations include those recommended in Section 5.4.
	(d)	Manage noise to neighbours	Noise management and community engagement detailed in Section 5.4, 7 and 8.
	(e)	Community engagement	Recommended community engagement included in Section 8.
	(f)	Community Consultation	Recommended community consultation included in Section 8.
	(g)	Complaints Management	Methods of actioning complaints is detailed in section 5.4 and 8.

3 DEVELOPMENT DESCRIPTION

The development includes the construction of a new warehouse development to be located on Lots 201 and 204, 8 and 10 Johnston Crescent, Horsley Park. The required construction of the project will include construction of the new warehouse development.

The surrounding receivers to the site include residential receivers located to the south and west of the site and existing commercial/industrial properties to the north and east.

The site location, in relation to surrounding buildings, is shown in Figure 1 below.

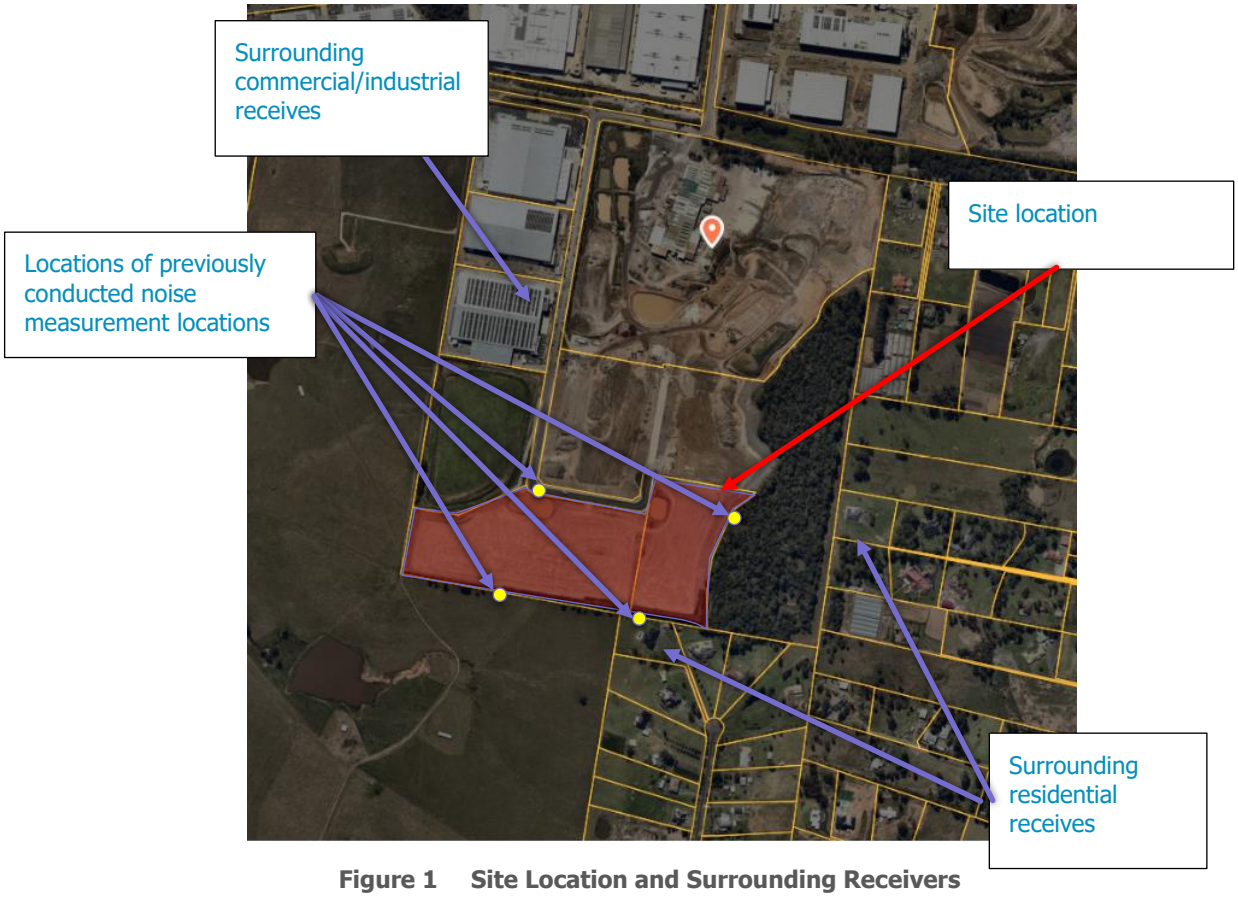


Figure 1 Site Location and Surrounding Receivers

4 CONDITIONS OF CONSENT

The management of noise and vibration assassinated with the required construction works to be undertaken as part of the project will be undertaken in conjunction with the requirements of the DA Conditions of Consent, including Item B10 that requires the construction of the project to comply with NSW Dept of Env & Climate Change *"Interim Construction Noise Guideline"* 2009 and includes the following:

This report has been undertaken in compliance with the items above and details the required management controls to comply with the Conditions of Consent, which includes the following:

Construction Noise and Vibration Management Plan

B10. The Applicant must prepare a Construction Noise and Vibration Management Plan (CNVMP) for the development to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with condition C2 and must:

(a) be prepared by a suitably qualified and experienced noise expert whose appointment is approved by the Planning Secretary;

(b) be approved by the Planning Secretary prior to the commencement of construction of each stage of the development;

(c) describe procedures for achieving the noise management levels in EPA's *Interim Construction Noise Guideline* (DECC, 2009) (as may be updated or replaced from time to time);

(d) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;

(e) include strategies that have been developed with the community for managing high noise generating works;

(f) describe the community consultation undertaken to develop the strategies in condition B57; and

(g) include a complaints management system that would be implemented for the duration of the development.

B11. The Applicant must:

(a) not commence construction of any relevant stage until the CNVMP required by condition B10 is approved by the Planning Secretary; and

(b) implement the most recent version of the CNVMP approved by the Planning Secretary for the duration of construction.

5 EXISTING ACOUSTIC ENVIRONMENT

The Horsley Logistics Park Lots 201 and 204 project is located to the industrial estate at 8 and 10 Johnston Crescent, Horsley Park and includes the SSD-10436. See Figure 1 above.

Existing environmental noise levels at the site are dominated by traffic noise generated predominantly from surrounding roadways and existing environmental noise levels.

As part of the SSD-10436 approval of the site SLR has undertaken a *Noise and Vibration Impact Assessment* of the site which is included in their report dated 17 July 2020 and ref:610.19360-R02-v1.3. As part of the *Noise and Vibration Impact Assessment* a background noise survey of the site has been undertaken, the results of which have been used as the basis of this report.

5.1 Noise Survey Results

The Wilkinson Murray *Noise Impact Assessment* dated 16/7/2019 and ref:19138 Version B includes a noise surcvey of the site, a summary of the noise assessment is included in Table 1 below.

Table 1 Results of Noise Survey at the Site

Measurement Location	Time of Measurement	$L_{Aeq,\ 15min}$ dB(A)	$L_{A90,\ 15min}$ dB(A)	Comments
Location 1 – to the north of the site	Day	66	37	Noise level at the site dominated by vehicle movements on surrounding roadways and natural noise levels
	Evening	42	35	
	Night	50	34	
Location 2 – To the south east of the site	Day	66	35	
	Evening	57	39	
	Night	60	38	
Location 3 – to the south west of the site	Day	63	39	
	Evening	64	39	
	Night	61	38	
Location 4 – To the east of the site	Day	53	39	
	Evening	46	38	
	Night	42	36	

The results of the noise survey previously undertaken at the site (and detailed above) have been used as the basis of this report.

6 CONSTRUCTION NOISE ASSESSMENT

This section of the report details the assessment of noise associated with the construction activities associated with the development. The assessment has been undertaken to assess the potential noise impacts from construction on surrounding receivers to the site.

The construction activities to be undertaken on the site include the ground works and construction of the site. The construction of the project does not include major demolition or excavation on the site.

6.1 Construction Noise

The assessment of construction noise impacts generated from the site has been undertaken in accordance with the requirements of the EAP Interim Construction Noise Guideline.

The EPA's Interim Construction Noise Guideline defines normal day time hours as the following:

2.2 Recommended standard hours

The recommended standard hours for construction work are shown in Table 1; however, they are not mandatory. There are some situations, as described below, where construction work may need to be undertaken outside of these hours. The likely noise impacts and the ability to undertake works during the recommended standard hours should be considered when scheduling work.

Table 1: Recommended standard hours for construction work

Work type	Recommended standard hours of work*
Normal construction	Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or public holidays
Blasting	Monday to Friday 9 am to 5 pm Saturday 9 am to 1 pm No blasting on Sundays or public holidays

* The relevant authority (consent, determining or regulatory) may impose more or less stringent construction hours.

6.1.1 Approved Hours of Work

Works on the site will be undertaken in accordance with the requirements of Items B7 and B8 of the *Consent* which includes the following.

Hours of Work

B7. The Applicant must comply with the hours detailed in Table 3, unless otherwise agreed in writing by the Planning Secretary.

Table 3 *Hours of Work*

Activity	Day	Time
Earthworks and construction	Monday – Friday	7 am to 6 pm
	Saturday	8 am to 1 pm
Operation	Monday – Sunday	24 hours

B8. Works outside of the hours identified in condition B7 may be undertaken in the following circumstances:

(a) works that are inaudible at the nearest sensitive receivers; or

(b) works agreed to in writing by the Planning Secretary; or

(c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or

(d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

6.2 Construction Appliances

The construction appliances which will be used as part of the construction of the project are detailed in the table below.

Table 2 Noise Level from Expected Demotion Appliances

Tasks	Equipment	Sound Power Levels per task dB(A) L_{10}	Aggregate Sound Power Level per Task dB(A) L_{10}
Ground Works	Excavators and bulldozers	115	120
	Materials Movements	105	
	Bulldozers	115	
	Trucks	109	
Construction Works	Piling	115	118
	Welder	101	
	Saw cutter	109	
	Dump truck	109	
	Concrete saw	119	
	Power hand tools	109	
	Cranes	110	

Note: Noise levels of proposed equipment to be used on the site based on the Australian Standard AS2436-2010 and noise level measurements previously undertaken of similar equipment on construction sites.

6.3 Construction Noise Criteria

This section of the report details the relevant construction noise criteria which is applicable to the site including the EPA's *Interim Construction Noise Guideline* (ICNG).

6.3.1 Interim Construction Noise Guideline

Noise criteria for construction activities are discussed in the *Interim Construction Noise Guideline* (ICNG). The ICNG also recommends procedures to address potential impacts of construction noise on residences and other sensitive land uses. The main objectives of the ICNG are summarised as follows:

- Promote a clear understanding of ways to identify and minimise noise from construction works;
- Focus on applying all "feasible" and "reasonable" work practices to minimise construction noise impacts;
- Encourage construction to be undertaken only during the recommended standard hours unless approval is given for works that cannot be undertaken during these hours;
- Streamline the assessment and approval stages and reduce time spent dealing with complaints at the project implementation stage; and
- Provide flexibility in selecting site-specific feasible and reasonable work practices in order to minimise noise impacts.

The ICNG contains a quantitative assessment method which is applicable to this project. Guidance levels are given for airborne noise at residences and other sensitive land uses.

The quantitative assessment method involves predicting noise levels at sensitive receivers and comparing them with the Noise Management Levels (NMLs). The NML affectation categories for receivers have been reproduced from the guideline and are listed in the table below.

Table 3 Noise Management Levels from Construction

Receiver Type	Time of Day	Noise Management Level $L_{Aeq(15minute)}$[1,2]	How to Apply
Residential	During approved working hours detained with the conditions of consent	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured $L_{Aeq(15minute)}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
		Highly noise affected 75 dBA	The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: 1. Times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences. 2. If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
	Outside recommended standard hours	Noise affected RBL + 5 dB	A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5 dB above the noise affected level, the proponent should negotiate with the community.

Table 3 Continued

Receiver Type	Time of Day	Noise Management Level $L_{Aeq(15minute)}$[1,2]	How to Apply
offices, retail outlets: external	When is use	$L_{Aeq\ (15\ min)}$ 70 dB(A)	During construction, the proponent should regularly update the occupants of the commercial and industrial premises regarding noise levels and hours of work.

Note 1 *Noise levels apply at the property boundary that is most exposed to construction noise, and at a height of 1.5 m above ground level. If the property boundary is more than 30 m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30 m of the residence. Noise levels may be higher at upper floors of the noise affected residence.*

Note 2 *The RBL is the overall single-figure background noise level measured in each relevant assessment period (during or outside the recommended standard hours). The term RBL is described in detail in the NSW Industrial Noise Policy (EPA 2000).*

Based on the table above the suitable construction noise management levels for works undertaken on the site is detailed in Table 6 below.

Table 4 Site Construction Noise Management Levels

Noise Source	Time Period	Receiver Type	Construction Noise Management Level[1]	'High Noise Affected' Level[1]
Construction Noise	During period of approved hours of works as detailed within of the DA *Conditions of Consent*	Residential Receivers to the south	49 dB(A) $L_{Aeq\ (15min)}$	75 dB(A) $L_{Aeq\ (15min)}$
		Residential Receivers to the east	49 dB(A) $L_{Aeq\ (15min)}$	75 dB(A) $L_{Aeq\ (15min)}$

Note 1: Construction noise management levels based on the Interim Construction Noise Guideline

6.4 Construction Noise Management – Qualitative Assessment

Based on the assessment conducted of the expected construction noise levels generated from the site, levels are generally expected to require the building contractor to engage in management of activities on the site and engagement with the local community.

Notwithstanding, the following management controls are to be implemented to mitigate construction noise levels on the site:

1. Construction to be undertaken within the approved hours detailed within the projects *Conditions of Consent.*
2. All plant and equipment are to be maintained such that they are in good working order.
3. A register of complaints is to be recorded in the event of complaints being received, including location, time of complaint, nature of the complaint and actions resulting from the complaint.
4. If required a noise level measurement of the offending plant item generating complaints is to be conducted and noise mitigations undertaken to reduce noise levels to within Noise Management levels in the event magnitude of noise levels is found to be above suitable levels.
5. The use of percussive and concrete sawing should be undertaken behind a closed façade when possible.
6. The use of percussive equipment including hydraulic hammering should be limited such that they are not undertaken prior to 7.30am on weekdays and prior to 8.30am on Saturdays.
7. Where possible any excavation to be undertaken on the site is to include ripping of material where possible.

In addition to the mitigations above details of the construction works to be conducted on the site, including type of activities to be conducted as well as the expected duration of activities should be provided to the neighbouring receivers.

In the event noise levels are found to required additional noise reduction then all possible and practical mitigations are required to be included in the construction of the project. Possible acoustic treatments and controls may include the following:

1. Use of alternative appliances to complete the required works which result in reduced noise impacts on surrounding neighbours.
2. Period when noisy appliances are undertaken, such as undertaking noisy works on locations with the greatest distance to residential receivers during morning periods if possible.
3. Construction of acoustic screening to permanently located high noise generating equipment such as pumps and generators.
4. Scheduling of high noise generating works outside of noise sensitive periods if possible.
5. Other site specific treatments and controls which may become possible once works commence.

6.5 Construction Noise Assessment – Quantitative Assessment

A quantitative assessment of the construction noise levels resulting from the works to be undertaken as part of the project on surrounding receivers has been undertaken.

The assessment has been based on the expected noise levels to be generated on the site including those detailed in Section 4.3.1 above. Calculations of the resulting construction noise levels of the receivers within proximity to the site is detailed in the table below.

Table 5 Quantitative Assessment of Construction Noise to Residence

Source Noise	Equipment	Sound Power Levels dB(A) L_{10}	Site Cumulative Sound Power Level dB(A) L_{10}	Calculated Construction Noise Level – Residential Receivers
	Residence to the East			
Site Excavations	Excavators and bulldozers	115	120	Up to 67 dB(A)
	Materials Movements	105		
	Bulldozers	115		
	Trucks	109		
Construction Works	Piling	115	118	Up to 67 dB(A) when items used externally.
	Welder	101		
	Saw cutter	109		
	Dump truck	109		Up to 44 dB(A) once items used internally within the building structure.
	Concrete saw	119		
	Power hand tools	109		
	Cranes	110		
	Residence to the South East			
Site Excavations	Excavators and bulldozers	115	120	Up to 72 dB(A)
	Materials Movements	105		
	Bulldozers	115		
	Trucks	109		
Construction Works	Piling	115	118	Up to 72 dB(A) when items used externally.
	Welder	101		
	Saw cutter	109		
	Dump truck	109		Up to 50 dB(A) once items used internally within the building structure.
	Concrete saw	119		
	Power hand tools	109		
	Cranes	110		

Note 1: Calculated qualitative noise levels are based on the overall Aggregate Sound Power Level for the expected construction works to be undertaken in the site.

Based on the qualitative assessment of construction noise suitable management controls and community notifications are required to be conducted.

The required management of construction noise impacts are included in Section 4.4 above and the Community Consultation included in Section 5 of this report.

7 CONSTRUCTION VIBRATION ASSESSMENT

This section of the report details the assessment of construction vibration impacts on surrounding receivers.

Effects of ground borne vibration on buildings may be segregated into the following three categories:

- Human comfort – vibration in which the occupants or users of the building are inconvenienced or possibly disturbed. Refer to further discussion in Section 5.1.
- Effects on building contents – where vibration can cause damage to fixtures, fittings and other non-building related objects. Refer to further discussion in Section 5.2.
- Effects on building structures – where vibration can compromise the integrity of the building or structure itself. Refer to further discussion in Section 5.3.

7.1 Vibration Criteria – Human Comfort

Vibration effects relating specifically to the human comfort aspects of the project are taken from the guideline titled *"Assessing Vibration – A Technical Guideline"*. (AVTG) This type of impact can be further categorised and assessed using the appropriate criterion as follows:

- Continuous vibration – from uninterrupted sources (refer to Table 6).
- Impulsive vibration – up to three instances of sudden impact e.g. dropping heavy items, per monitoring period (refer to Table 7).
- Intermittent vibration – such as from drilling, compacting or activities that would result in continuous vibration if operated continuously (refer to Table 8).

Table 6 Continuous vibration acceleration criteria (m/s²) 1 Hz-80 Hz

Location	Assessment period	Preferred Values		Maximum Values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
Residences	Daytime	0.010	0.0071	0.020	0.014
	Night-time	0.007	0.005	0.014	0.010
Offices, schools, educational institutions and places of worship	Day or night-time	0.020	0.014	0.040	0.028
		0.04	0.029	0.080	0.058
Workshops	Day or night-time	0.04	0.029	0.080	0.058

Table 7 Impulsive vibration acceleration criteria (m/s²) 1 Hz-80 Hz

Location	Assessment period	Preferred Values		Maximum Values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
Residences	Daytime	0.30	0.21	0.60	0.42
	Night-time	0.10	0.071	0.20	0.14
Offices, schools, educational institutions and places of worship	Day or night-time	0.64	0.46	1.28	0.92
Workshops	Day or night-time	0.64	0.46	1.28	0.92

Table 8 Intermittent vibration impacts criteria (m/s$^{1.75}$) 1 Hz-80 Hz

Location	Daytime		Night-time	
	Preferred Values	Maximum Values	Preferred Values	Maximum Values
Residences	0.20	0.40	0.13	0.26
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

7.2 Vibration Criteria – Building Contents and Structure

The vibration effects on the building itself are assessed against international standards as follows:

- For transient vibration: British Standard BS 7385: Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration" (BSI 1993); and
- For continuous or repetitive vibration: German DIN 4150: Part 3 – 1999 "Effects of Vibration on Structure" (DIN 1999).

7.3 Standard BS 7385 Part 2 - 1993

For transient vibration, as discussed in standard BS 7385 Part 2-1993, the criteria are based on peak particle velocity (mm/s) which is to be measured at the base of the building. These are summarised in

Table 9 and illustrated in the Figure below.

Table 9 Transient vibration criteria as per standard BS 7385 Part 2 - 1993

Line in Error! Reference source not found.	Type of Building	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
		4 Hz to 15 Hz	15 Hz and Above
1	Reinforced or framed structures Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
2	Unreinforced or light framed structures Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

Standard BS 7385 Part 2 – 1993 states that the values in

Table 9 relate to transient vibration which does not cause resonant responses in buildings.

Where the dynamic loading caused by continuous vibration events is such as that results in dynamic magnification due to resonance (especially at the lower frequencies where lower guide values apply), then the values in

Table 9 may need to be reduced by up to 50% (refer to Line 3 in the Figure below).

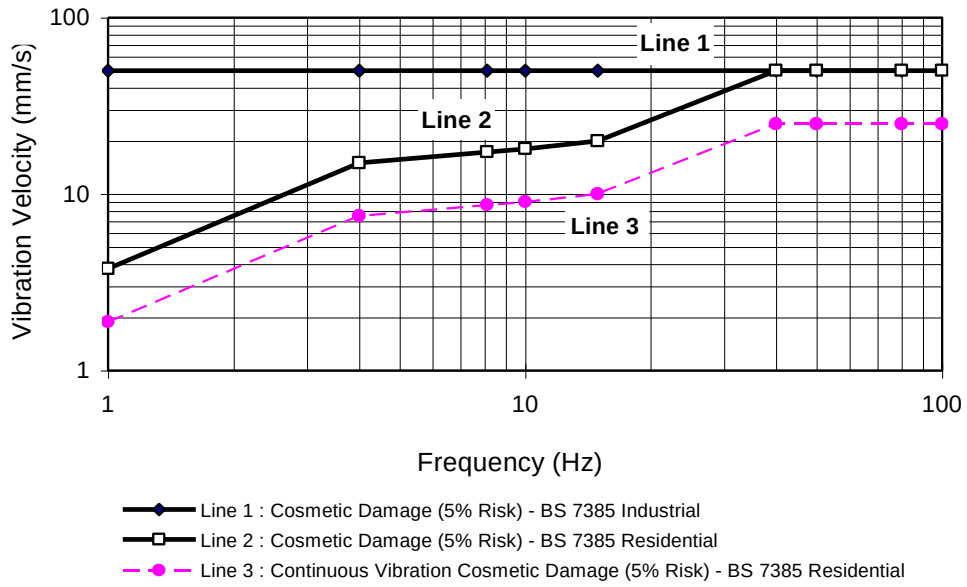


Figure 2 BS 7385 Part 2 – 1993, graph of transient vibration values for cosmetic damage

In the lower frequency region where strains associated with a given vibration velocity magnitude are higher, the recommended values corresponding to Line 2 are reduced. Below a frequency of 4 Hz where a high displacement is associated with the relatively low peak component particle velocity value, a maximum displacement of 0.6 mm (zero to peak) is recommended. This displacement is equivalent to a vibration velocity of 3.7 mm/s at 1 Hz.

The standard also states that minor damage is possible at vibration magnitudes which are greater than twice those given in Table 8, and major damage to a building structure may occur at values greater than four times the tabulated values.

Fatigue considerations are also addressed in the standard and it is concluded that unless calculation indicates that the magnitude and number of load reversals is significant (in respect of the fatigue life of building materials) then the values in Table 8 should not be reduced for fatigue considerations.

7.3.1 Standard DIN 4150 Part 3 - 1999

For continuous or repetitive vibration, standard DIN 4150 Part 3-1999 provides criteria based on values for peak particle velocity (mm/s) measured at the foundation of the building; these are summarised in 10. The criteria are frequency dependent and specific to particular categories of structures.

Table 10 Structural damage criteria as per standard DIN 4150 Part 3 - 1999

Type of Structure	Peak Component Particle Velocity, mm/s			
	Vibration at the foundation at a frequency of			Vibration of horizontal plane of highest floor at all frequencies
	1 Hz to 10 Hz	10 Hz to 50 Hz	50 Hz to 100 Hz[1]	
Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15
Structures that, because of their sensitivity to vibration, do not correspond to those listed in lines 1 and 2 and are of great intrinsic value (e.g. buildings that are under a preservation order)	3	3 to 8	8 to 10	8

Note 1: For frequencies above 100Hz, at least the values specified in this column shall be applied.

7.4 Project Vibration Criteria

Based on the details included in the sections above the project specific vibration criteria to protect the surrounding residential receivers from structural or architectural damage includes the following:

1. Project construction vibration criteria at all surrounding building structures – 7 mm/s

7.5 Construction Vibration Impacts

An assessment of the potential for vibration generated as part of the required construction activities on the project (including ground works and construction) has been undertaken.

As the development does not include any major demolition on the site and the proximity of neighbouring structures to the development site (which include residential receives) vibration levels generated from the construction on the site are expected to comply with all vibration criteria detailed in this report without additional treatments or mitigations.

7.6 Vibration Assessment

In order to maintain compliance with the vibration criteria discussed in this section of the report, the indicative safe distances listed in Table 11 should be maintained. These indicative safe distances should be validated prior to the start of construction works by undertaking measurements of vibration levels generated by construction equipment to be used on site.

Table 11 Indicative safe working distances for vibration intensive plant

Plant	Rating / Description	Safe Working Distances (m)	
		Cosmetic Damage (BS 7385: Part 2 DIN 4150: Part 3)	Human Comfort (AVTG)
Small hydraulic hammer	300 kg, typically 5 – 12 tonnes excavator	2	7
Medium hydraulic hammer	900 kg, typically 12 – 18 tonnes excavator	7	23
Large hydraulic hammer	1600 kg, typically 18 – 34 tonnes excavator	22	73
Jackhammer	Hand held	1	Avoid contact with structure and steel reinforcements

An assessment of the potential for vibration generated as part of the required construction activities on the project (including excavation) has been undertaken based on the expected vibration detailed in the table above.

To ensure the vibration impact criteria detailed in this report are complied with the following safe working mitigations and/or working distances should be implemented as detailed in the table below.

Table 12 Vibration Mitigation Requirements

Construction Phase	Activity	Vibration Mitigation
In ground works	Removal of Rock	Based on the existing distance separation to receiver's compliance with construction vibration criteria is expected to be achieved without additional mitigations based on the required equipment to undertake the limited demolition and in ground works for the project.
Construction	General Construction activities	General construction activities are not expected to exceed project vibration limits detailed in this report.

8 NOISE AND VIBRATION MEASUREMENTS AND MONITORING

As part of the management of noise from the construction activities to be undertaken on the site the following noise and vibration measurements are to be undertaken:

1. Noise – Attended noise level measurements of typical ground works and construction activities should be undertaken at site.

   Attended construction noise surveys of the site and surrounding impacts on neighbours should be undertaken during the following as a minimum:

   a. In response to any ongoing complaints received from neighbours.

2. Vibration – Based on the proximity of the surrounding receivers to the works attended vibration measurements of typical ground works and construction activities are expected to comply with all vibration criteria detailed in this report without additional treatments or mitigations and therefore on going vibration measurements or monitoring is not recommended.

9 NOISE AND VIBRATION MANAGEMENT PLAN

Table 13 below summarises the management procedures for airborne noise and vibration impact. These procedures are further discussed in the report. Hence, where applicable, links to further references are provided in Table 13.

Table 13 Summary of mitigation procedures

Procedure	Abbreviation	Description	Further Reference
General Management Measures	GMM	Introduce best-practice general mitigation measures in the workplace which are aimed at reducing the acoustic impact onto the nearest affected receivers.	Refer to Section 9.2.3 For vibration impact, also refer to section 7.6
Project Notification	PN	Issue project updates to stakeholders, discussing overviews of current and upcoming works. Advanced warning of potential disruptions can be included. Content and length to be determined on a project-by-project basis.	Refer to Section 0
Verification Monitoring	V	Monitoring to comprise attended or unattended acoustic surveys. The purpose of the monitoring is to confirm measured levels are consistent with the predictions in the acoustic assessment, and to verify that the mitigation procedures are appropriate for the affected receivers. If the measured levels are higher than those predicted, then the measures will need to be reviewed and the management plan will need to be amended.	For noise impact, refer to Section 6. For vibration impact, refer to Section 7.6
Complaints Management System	CMS	Implement a management system which includes procedures for receiving and addressing complaints from affected stakeholders	Refer to Section 11.1
Specific Notification	SN	Individual letters or phone calls to notify stakeholders that noise levels are likely to exceed noise objectives. Alternatively, contractor could visit stakeholders individually in order to brief them in regards to the noise impact and the mitigation measures that will be implemented.	Refer to Section 0
Respite Offer	RO	Offer provided to stakeholders subjected to an ongoing impact. The offer could include movie tickets, meal vouchers, gift cards or equivalent measures.	-
Alternative Construction Methodology	AC	Contractor to consider alternative construction options that achieve compliance with relevant criteria. Alternative option to be determined on a case-by-case basis. It is recommended that the selection of the alternative option should also be determined by considering the assessment of on-site measurements (refer to Verification Monitoring above).	-

The application of these procedures is in relation to the exceedances over the relevant criteria. For airborne noise, the criteria are based on NMLs. The allocation of these procedures is discussed in Section 0

The site protocol for response to management of noise and vibration during the construction of the project is detailed in the following table.

When Measure Should be Implemented	Who Is Responsible for Implementing Measure	How Evidence of Implementation Will be Recorded / Tracked
Prior to being Permitted to the Construction Site	**Site Manager / HSE Supervisor / Site Foreman**	**Autodesk BIM360 System – Site Induction Record** The induction will include training of relevant persons in the efficient use of plant and materials to minimise all potential environmental impacts including noise, air pollution, water pollution, waste, contamination, and hours of work.
Prior to Commencement of Construction Works and during Daily Prestart	**Site Manager / HSE Supervisor / Site Foreman**	**Autodesk BIM360 System – Toolbox Talk Record** All Site Personnel are to be tool boxed on acceptable noise levels for construction site.
During Substructure Stage of construction within 21 metres of residential receiver's property boundary (located closest at South-Eastern Corner of Construction Site) *(Refer to Section 5.3 of CEMP)*	**Site Manager / HSE Supervisor / Site Foreman**	**Autodesk BIM360 System – Toolbox Talk Record & Noise Monitoring Record** All Site Personnel involved in this activity are to be tool boxed on acceptable noise levels *(considering the 21m landscape buffer to the closes adjacent residential receiver).*
During General Structure Stage of construction within 21 metres of residential receiver's property boundary (located closest at South-Eastern Corner of Construction Site) *(Refer to Section 5.3 of CEMP)*	**Site Manager / HSE Supervisor / Site Foreman**	**Autodesk BIM360 System – Toolbox Talk Record & Noise Monitoring Record** All Site Personnel involved in this activity are to be tool boxed on acceptable noise levels *(considering the 21m landscape buffer to the closes adjacent residential receiver).*
During External Works stage of construction within 21 metres of residential receiver's property boundary (located closest at South-Eastern Corner of Construction Site). *(Refer to Section 5.3 of CEMP)*	**Site Manager / HSE Supervisor / Site Foreman**	**Autodesk BIM360 System – Toolbox Talk Record & Noise Monitoring Record** All Site Personnel involved in this activity are to be tool boxed on acceptable noise levels *(considering the 21m landscape buffer to the closes adjacent residential receiver).* Works in the southern portion of the project during the final phase of the project will be staged to ensure noise levels do no exceed prescribed levels.

First Warning - Exceedance of Noise Monitor Prescribed dB(A) Levels during Relevant Stage of Construction *(Refer to Section 5.3 of CEMP)*	**Site Manager / HSE Supervisor / Site Foreman**	**Autodesk BIM360 System – Toolbox Talk Record** Recorded via. Toolbox Talk (data from Noise Monitors) and preventative measures to be put in place to prevent re-occurrence prior to recommencing works.
Second Warning - Exceedance of Noise Monitor Prescribed dB(A) Levels during Relevant Stage of Construction *(Refer to Section 5.3 of CEMP)*	**Site Manager / HSE Supervisor / Site Foreman**	**Autodesk BIM360 System – Non-Conformance Issuance** Recorded via. Non-Conformance Issue (data from Noise Monitors). Re-Induction to take place to reinforce Head Contractor's requirements.
Third Warning - Exceedance of Noise Monitor Prescribed dB(A) Levels during Relevant Stage of Construction *(Refer to Section 5.3 of CEMP)*	**Site Manager / HSE Supervisor / Site Foreman**	**Removal of re-occurring offenders from Construction Site**

9.1 Allocation of Noise Management Procedures

For residences, the management procedures have been allocated based on noise level exceedances at the affected properties, which occur over the designated NMLs (refer to section 6.5). The allocation of these procedures is summarised in Table 14 below.

Table 14 Allocation of noise management procedures

Construction Hours	Exceedance over NML (dB)	Management Procedures (see definition above)
Standard Hours Including Approved working hours	0 - 3	GMM
	4 - 10	GMM, PN, V [1], CMS, AC
	> 10	GMM, PN, V, CMS, SN, AC
Mon – Fri: 7:00 am to 8:00 am Sat: 7:00 am to 8:00 am	0 - 10	GMM, AC
	11 - 20	GMM, PN, V [1], CMS, AC
	> 20	GMM, PN, V, CMS, SN, RO, AC

Notes

1. Verification monitoring to be undertaken upon complaints received from affected receivers

Please note the following regarding the allocation of these procedures:

- The exceedances have been estimated as part of the acoustic assessment, and these are summarised in Section 6.
- The allocation of procedures is based on the assumptions used for noise level predictions (refer to Section 6). Consequently, these allocations can be further refined once additional details of the construction program become available.

Based on the prediction of noise levels from the construction activities the management procedures are to be implemented during various stages of the project are included in the following table.

Table 15 Implementation of Noise Management Procedures

Construction Period	Proposed Appliances	Management Procedures to be Implemented
Substructure (in ground works)	General in ground works including: Piling, bulldozers excavation and the like	1. All works to be undertaken within the projects approved DA Working Hours. 2. Ensure best practice working practices and maintained equipment used. 3. Undertake notification when works are to be undertaken in neighbouring stakeholders. 4. Ensure separation of structures and materials being removed using saw cut if within safe work distances. 5. Undertake attended noise and vibration measurements at the commencement of high noise and or vibration generating activities on the site. 6. Implement the required complaints management system detailed in section 9 below. 7. Assess if alterative construction activities can be implemented to mitigate noise levels where possible.
General Structure Works	General construction activities including: Structural Steel, Precast, Cladding Works – Scissors, Mobile Cranes, Boom Lifts, Concrete Boom Pump, Somero Machine, Concrete Agitators, and the like	1. All works to be undertaken within the projects approved DA Working Hours. 2. Ensure best practice working practices and maintained equipment used. 3. Undertake notification when works are to be undertaken in neighbouring stakeholders. 4. Undertake attended noise and vibration measurements at the commencement of high noise and or vibration generating activities on the site. 5. Implement the required complaints management system detailed in section 9 below. 6. Assess if alterative construction activities can be implemented to mitigate noise levels where possible.
Fit Off Works	–General internal fit off works including: Services Fit-off, Office Fit-Out, etc. – Scissors, Boom Lifts, Mechanical Drilling Works (Façade), etc	1. All works to be undertaken within the projects approved DA Working Hours. 2. Ensure best practice working practices and maintained equipment used. 3. Generally internal works undertaken within the completed building will be within Construction Noise Management Levels.

External Works	External Works including: Re-Grading Works, Landscape Works, Concrete Works to Hardstands and footpaths, etc. – Excavator, Concrete Boom Pump, Concrete Agitators, and the like.	1. All works to be undertaken within the projects approved DA Working Hours. 2. Ensure best practice working practices and maintained equipment used. 3. Undertake notification when works are to be undertaken in neighbouring stakeholders. 4. Implement the required complaints management system detailed in section 9 below. 5. Assess if alterative construction activities can be implemented to mitigate noise levels where possible.

9.2 General Comments

The contractor will, where reasonable and feasible, apply best practice noise mitigation measures. These measures shall include the following:

- Maximising the offset distance between plant items and nearby noise sensitive receivers.
- Preventing noisy plant working simultaneously and adjacent to sensitive receivers.
- Minimising consecutive works in the same site area.
- Orienting equipment away from noise sensitive areas.
- Carrying out loading and unloading away from noise sensitive areas.

In order to minimise noise impacts during the works, the contractor will take all reasonable and feasible measures to mitigate noise effects.

The contractor will also take reasonable steps to control noise from all plant and equipment. Examples of appropriate noise control include efficient silencers and low noise mufflers.

The contractor should apply all feasible and reasonable work practices to meet the NMLs and inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels, duration of noise generating construction works, and the contact details for the proposal.

9.2.1 Alternate Equipment or Process

Exceedance of the site's NMLs should result in an investigation as to whether alternate equipment could be used, or a difference process could be undertaken.

In some cases, the investigation may conclude that no possible other equipment can be used, however, a different process could be undertaken.

9.2.2 Acoustic Enclosures/Screening

Typically, on a construction site there are three different types of plant that will be used: mobile plant (i.e., excavators, skid steers, etc.), semi mobile plant (i.e., hand tools generally) or static plant i.e. (diesel generators).

For plant items which are static it is possible to mitigate, in the event exceedances are being measured due to operation of the plant item, an acoustic enclosure/screen is constructed to reduce impacts. These systems can be constructed from Fibre Cement (FC) sheeting or, if airflow is required, acoustic attenuators or louvres.

For semi mobile plant, relocation of plant should be investigated to either be operated in an enclosed space or at locations away from a receiver.

With mobile plant it is generally not possible to treat these sources. However, investigations into the machine itself may result in a reduction of noise (i.e., mufflers/attenuators etc).

9.2.3 General Mitigation Measures (Australia Standard 2436-2010)

As well as the above project specific noise mitigation controls, AS 2436-2010 "*Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites*" sets out numerous practical recommendations to assist in mitigating construction noise emissions. Examples of strategies that could be implemented on the subject project are listed below, including the typical noise reduction achieved, where applicable.

9.2.4 Adoption of Universal Work Practices

- Tool box meetings informing the works force of requirements to mitigate noise and vibration from the construction of the site is required to be included prior to starting works on the site.
- Regular reinforcement (such as at toolbox talks) of the need to minimise noise and vibration.
- Regular identification of noisy activities and adoption of improvement techniques.
- Avoiding the use of portable radios, public address systems or other methods of site communication that may unnecessarily impact upon nearby sensitive receivers.
- Where possible, avoiding the use of equipment that generates impulsive noise.
- Minimising the need for vehicle reversing for example (particularly at night), by arranging for one-way site traffic routes.
- Use of broadband audible alarms on vehicles and elevating work platforms used on site.
- Minimising the movement of materials and plant and unnecessary metal-on-metal contact.
- Minimising truck movements.

9.2.5 Plant and Equipment

The operation of plant and equipment on the site should be undertaken, including the following:

- Choosing quieter plant and equipment based on the optimal power and size to most efficiently perform the required tasks.
- Selecting plant and equipment with low vibration generation characteristics.
- Operating plant and equipment in the quietest and most efficient manner.

9.2.6 Work Scheduling

- Providing respite periods which could include restricting very noisy activities to time periods that least affect the nearby noise sensitive locations, restricting the number of nights that after-hours work is conducted near residences or by determining any specific requirements.
- Scheduling work to coincide with non-sensitive periods.
- Planning deliveries and access to the site to occur quietly and efficiently and organising parking only within designated areas located away from the sensitive receivers.
- Optimising the number of deliveries to the site by amalgamating loads where possible and scheduling arrivals within designated hours.
- Including contract conditions that include penalties for non-compliance with reasonable instructions by the principal to minimise noise or arrange suitable scheduling.

9.2.7 Source Noise Control Strategies

Some ways of controlling noise at the source are:

- Where reasonably practical, noisy plant or processes should be replaced by less noisy alternatives.
- Modify existing equipment: Engines and exhausts are typically the dominant noise sources on mobile plant such as cranes, graders, excavators, trucks, etc. In order to minimise noise emissions, residential grade mufflers should be fitted on all mobile plant utilised on site.
- Siting of equipment: locating noisy equipment behind structures that act as barriers, or at the greatest distance from the noise-sensitive area; or orienting the equipment so that noise emissions are directed away from any sensitive areas, to achieve the maximum attenuation of noise.
- Regular and effective maintenance.

9.2.8 Miscellaneous Comments

Deliveries should be undertaken, where possible, during standard construction hours.

Maximise hammer penetration (and reduce blows) by using sharp hammer tips. Keep stocks of sharp profiles at site and monitor the profiles in use.

It is advised that mobile plant and trucks operating on site for a significant portion of the project are to have reversing alarm noise emissions minimised. This is to be implemented subject to recognising the need to maintain occupational safety standards.

No public address system should be used on site.

Communication with the surrounding receivers should be undertaken such that high noise generating activities can be scheduled outside of any noise sensitive periods resulting from uses on the site.

9.3 Vibration Mitigation Measures

Based on the existing distance separation to receiver's compliance with construction vibration criteria is expected to be achieved without additional mitigations.

10 COMPLIANCE MANAGEMENT PROCESS

As part of the construction of the project Hansen Yuncken will implement a compliance management process.

The Hansen Yuncken organisational chart responsibilities are detailed in Section 8.3 of the *Construction Environmental Management Plan* which is included in supporting documentation attended in Appendix C.

As part of the construction on the site there will be ongoing assessment of the construction being undertaken on the site which will include training, inspections, auditing of the mitigations on the site. The construction of the project will include the ongoing assessment of possible and practical noise and vibration mitigations resulting from activities being undertaken on the site such that improvements in the mitigation of noise will be implement where possible.

The assessment and implementation of the management plans and Hansen Yuncken *Construction Management Plan* (included in Appendix D) will be undertaken by the site foreman, site management, site supervisor as detailed in the Hansen Yuncken CMP, which includes the following Hansen Yuncken team:

Key Personnel - ESR LOT 201 & 204 Horsley Logistics Park					
Company / Group	**Name**	**Roles**	**Authorities and Accountability**	**Report to**	**Contact Numbers**
Hansen Yuncken	**Metin Tokcan**	Construction Manager	Responsible to ensure resources are applied adequately to achieve project objectives.	NSW Industrial State Manager	0448 750 020
Hansen Yuncken	**Elias Joya**	Project Manager	Responsible to the Project for the implementation of the CMP and to ensure resources are available to allow the CMP to be implemented.	Construction Manager	0430 317 671
Hansen Yuncken	**Peter Fay**	WHS Manager	Responsible for developing Project safety system implementation, documentation and reporting during works	Project Manager	0457 412 447
Hansen Yuncken	**Patrick Carnuccio**	NSW QA & Systems Manager	Responsible for developing project Quality and Environmental Systems, controls, and associated documentation, to ensure and verify compliance to statutory and legislative requirements during the works.	Project Manager	0418 463 752
Hansen Yuncken	**George Taylor**	Site Manager	Responsible for planning and coordination of on-site construction activities, implementing HY Safety Management Systems (i.e. reviewing subcontractor SWMS, toolbox talks, etc.) and managing the site team to achieve the best possible outcome for the project	Project Manager	0417 411 029
Hansen Yuncken	**Johnathan Paparoulas**	Project Engineer	Responsible for implementing HY Quality and Safety Management Systems, adhering to contractual and project objectives and day-to-day management of site subcontractors.	Project Manager	0438 389 962
Hansen Yuncken	**Andrew Hauber & Sam Behan**	Site Foremen	Responsible for daily construction activities & the maintaining the site on a day-to-day basis. Managing site subcontractors (supervision & daily toolbox talks, etc.).	Site Manager	0437 882 362 &; 0455 963 148

Action and management of the mitigation of construction activities will also include the following:

- Site Induction Measures – Detailed in Section 4.5.1 of the Construction Environment Management Plan (attached in appendix D).
- Tool Box talks - Detailed in Section 4.5.2 in regards to Toolbox Talks of the Construction Environment Management Plan (attached in appendix D).
- Managed by Site Manager, HSE Supervisor & Site Foremen, including the Hansen Yuncken team detailed in the figure above.

11 COMMUNITY ENGAGEMENT

Active community consultation and the maintenance of positive relations with local residents and businesses would assist in alleviating concerns and thereby minimising complaint. Communty notification and consultation is being undertaken for the site, details are included in the Urbis *Community Consultation Plan* which is included in Appendix D.

This form of notification should provide specific notification of the duration and timing of the construction activities so that residents are informed about the works ahead of time. The letter should also provide the community with a hotline number for a community liaison officer available to adequately respond to all project related enquiries.

Ideally the hotline number should provide concerned locals an opportunity to raise any concerns with the project proponent and provide an opportunity to determine the best method to satisfy all requirements.

Prior to the works onsite being undertaken, community consultation with the neighbouring affected parties be undertaken. Community engagement and consultation should not be limited to the beginning of the onsite works but throughout, providing the community with constant updates on the progress and upcoming works. In our experience these could include:

- Site noticeboard;
- Email notifications; and
- Letterbox drops.

During the construction of the project (including excavation and construction) the building contractor is required to engage in community interaction. The community interaction and notification is required to include the following:

1. Notification of the works to be undertaken on the site and the periods when works will be conducted, including information regarding the programme of works such as excavation activities. This should include the expected period when activities such as hydraulic hammering, rock breaking, concrete or rock sawing is required to be undertaken.

2. Details of the relevant site representative where complaints can be registered.

3. Details of the methodology to respond to complaints raised from the surrounding receivers.

4. A register of complaints, to be kept on site including record of time and nature of the complaint as well as the outcomes and comments regarding investigations resulting from the complaint.

The undertaken community consultation is included in the *ERS Horsley Logistics Park, Community Consultation Plan* which is included in the supporting documentation included in Appendix D.

As a minimum notification of the works to be undertaken is to include all areas included in the figure below.

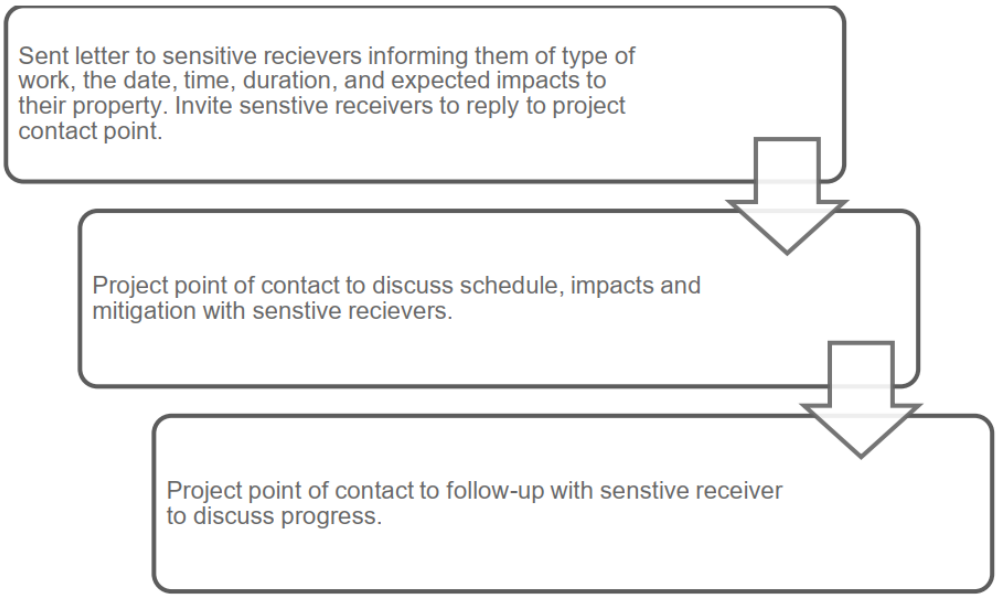
Figure 3 Required Area of Notification

Community consultation will be undertaken in accordance with information included in the plan, which includes the following flow chart for consultation procedure and complaints and disputes resolution procedure.

SENSITIVE RECEIVER CONSULTATION PROCEDURE

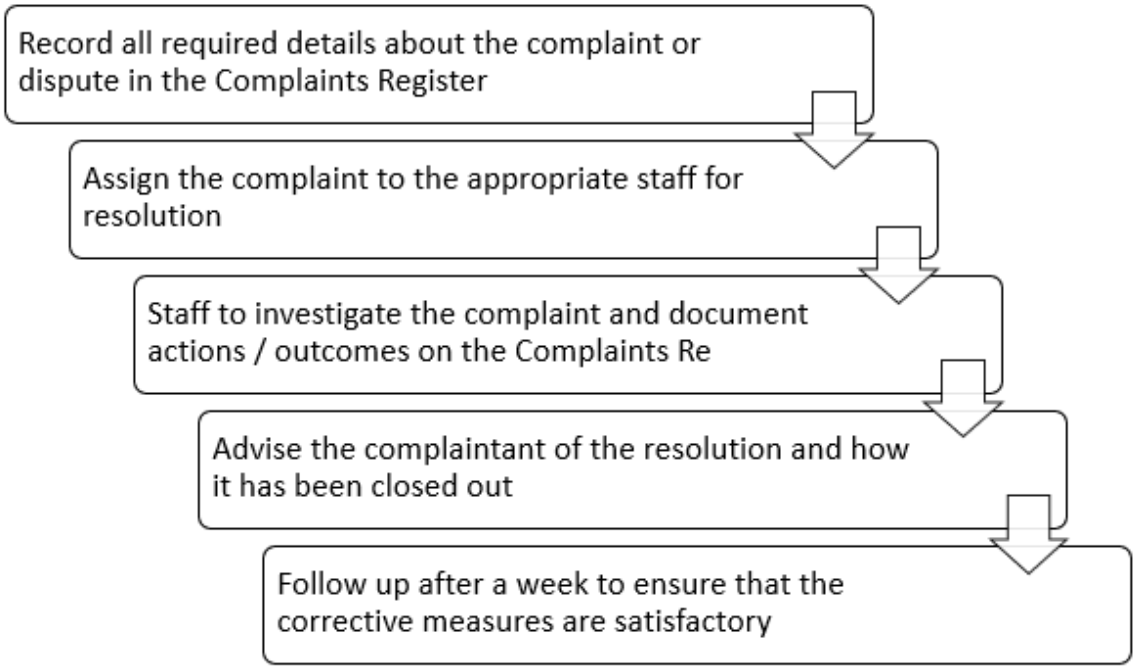
REFER TO URBIS HORSLEY PARK COMMUNITY CONSULTATION PLAN_FINAL (SECTION 5.3)

Figure 3 Sensitive receivers consultation procedure



COMPLAINTS AND DISPUTES RESOLUTION PROCEDURE

REFER TO URBIS HORSLEY PARK COMMNUITY CONSULTATION PLAN_FINAL (SECTION 5.4)



11.1 Complaints Management System

Should complaints arise they must be dealt with in a responsible and uniform manner, therefore, a management system to deal with complaints is detailed below:

Local residents and land owners should be informed by direct mail of a direct 24-hour telephone line where any noise complaints related to the construction will be recorded. The 24-hour telephone line number will be made available on the construction site signage.

All complaints should be investigated by the Contractor in accordance with the procedures outlined in Australia Standard 2436-2010. Consequently, a complaint response procedure should be implemented. Information to be gathered as part of this process should include:

- location of complainant
- time/s of occurrence of alleged noise or vibration impacts
- nature of impact particularly with respect to vibration
- Perceived source
- Prevailing weather conditions and similar details that could be utilised to assist in the investigation of the complaint.

All resident complaints will be responded to in the required timeframe and action taken recorded.

Post receiving a noise and or vibration complaint, the process outlined in the *Contingency Plans* below should be undertaken.

A Noise and Vibration Checklist regarding the process which will be undertaken in the event of a compliant in included in Appendix C.

11.2 Contingency Plans

Contingency plans are required to address noise or vibration problems if excessive levels are measured at surrounding sensitive receivers and/or if justified complaints occur. Such plans include:

- Stop the onsite works.
- Identify the source of the main equipment within specific areas of the site which is producing the most construction noise and vibration at the sensitive receivers; and
- Review the identified equipment and determine if an alternate piece of equipment can be used or the process can be altered.
- In the event an alternate piece of equipment or process can be used, works can re-commence.
- In the event an alternate piece of equipment or process cannot be determined implement a construction assessment to be performed by a suitably qualified acoustic consultant.
- Respite periods to be scheduled during potentially noise sensitive periods of the surrounding receivers.

The Superintendent shall have access to view the Contractor's noise measurement records on request. The Superintendent may undertake noise monitoring if and when required.

12 CONCLUSION

This report details the construction noise and vibration assessment of the construction of the Horsley Logistics Park Lots 201 and 204 warehouse projects, located at 8 and 10 Johnston Crescent, Horsley Park.

An assessment of noise and vibration impacts from the required processes to be undertaken during the construction period of the project (including ground works and construction) has been undertaken and suitable treatments, management controls, perioding measurements and community engagement has been detailed in this report.

Providing the recommendations in this report are included in the construction of the site, compliance with the relevant EPA's Interim Construction Noise Guideline and Item B10 of the SSD-10436 *Consent* will be achieved.

For any additional information please do not hesitate to contact the person below.

Regards

Ben White
Director

Pulse White Noise Acoustics

13 APPENDIX A – GLOSSARY OF TERMS

Ambient Sound The totally encompassing sound in a given situation at a given time, usually composed of sound from all sources near and far.

Audible Range The limits of frequency which are audible or heard as sound. The normal ear in young adults detects sound having frequencies in the region 20 Hz to 20 kHz, although it is possible for some people to detect frequencies outside these limits.

Character, acoustic The total of the qualities making up the individuality of the noise. The pitch or shape of a sound's frequency content (spectrum) dictate a sound's character.

Decibel [dB] The level of noise is measured objectively using a Sound Level Meter. The following are examples of the decibel readings of every day sounds;

0dB	the faintest sound we can hear
30dB	a quiet library or in a quiet location in the country
45dB	typical office space. Ambience in the city at night
60dB	Martin Place at lunch time
70dB	the sound of a car passing on the street
80dB	loud music played at home
90dB	the sound of a truck passing on the street
100dB	the sound of a rock band
115dB	limit of sound permitted in industry
120dB	deafening

dB(A) *A-weighted decibels* The ear is not as effective in hearing low frequency sounds as it is hearing high frequency sounds. That is, low frequency sounds of the same dB level are not heard as loud as high frequency sounds. The sound level meter replicates the human response of the ear by using an electronic filter which is called the "A" filter. A sound level measured with this filter switched on is denoted as dB(A). Practically all noise is measured using the A filter. The sound pressure level in dB(A) gives a close indication of the subjective loudness of the noise.

Frequency Frequency is synonymous to *pitch*. Sounds have a pitch which is peculiar to the nature of the sound generator. For example, the sound of a tiny bell has a high pitch and the sound of a bass drum has a low pitch. Frequency or pitch can be measured on a scale in units of Hertz or Hz.

Loudness A rise of 10 dB in sound level corresponds approximately to a doubling of subjective loudness. That is, a sound of 85 dB is twice as loud as a sound of 75 dB which is twice as loud as a sound of 65 dB and so on

L_{Max} The maximum sound pressure level measured over a given period.

L_{Min} The minimum sound pressure level measured over a given period.

L_1 The sound pressure level that is exceeded for 1% of the time for which the given sound is measured.

L_{10} The sound pressure level that is exceeded for 10% of the time for which the given sound is measured.

L_{90} The level of noise exceeded for 90% of the time. The bottom 10% of the sample is the L_{90} noise level expressed in units of dB(A).

L_{eq} The "equivalent noise level" is the summation of noise events and integrated over a selected period of time.

Background Sound Low The average of the lowest levels of the sound levels measured in an affected area in the absence of noise from occupants and from unwanted, external ambient noise sources. Usually taken to mean the L_{A90} value

Ctr A frequency adaptation term applied in accordance with the procedures described in ISO 717.

dB (A) 'A' Weighted overall sound pressure level

Noise Reduction	The difference in sound pressure level between any two areas. The term "noise reduction" does not specify any grade or performance quality unless accompanied by a specification of the units and conditions under which the units shall apply
NR Noise Rating	Single number evaluation of the background noise level. The NR level is normally around 5 to 6 dB below the "A" weighted noise level. The NR curve describes a spectrum of noise levels and is categorised by the level at 1000 Hz ie the NR 50 curve has a value of 50 dB at 1000 Hz. The NR rating is a tangential system where a noise spectrum is classified by the NR curve that just encompasses the entire noise spectrum consideration.
R_w	Weighted Sound Reduction Index - Laboratory test measurement procedure that provides a single number indication of the acoustic performance of a partition or single element. Calculation procedures for Rw are defined in ISO 140-2:1991 "Measurement of Sound Insulation in Buildings and of Building Elements Part 2: Determination, verification and application of precision data".
R'_w	Field obtained Weighted Sound Reduction Index - this figure is generally up to 3-5 lower than the laboratory test determined level data due to flanked sound transmission and imperfect site construction.
Sound Isolation	A reference to the degree of acoustical separation between any two areas. Sound isolation may refer to sound transmission loss of a partition or to noise reduction from any unwanted noise source. The term "sound isolation" does not specify any grade or performance quality and requires the units to be specified for any contractual condition
Sound Pressure Level, L_P dB	A measurement obtained directly using a microphone and sound level meter. Sound pressure level varies with distance from a source and with changes to the measuring environment. Sound pressure level equals 20 times the logarithm to the base 10 of the ratio of the rms sound pressure to the reference sound pressure of 20 micro Pascals.
Sound Power Level, L_W dB	Sound power level is a measure of the sound energy emitted by a source, does not change with distance, and cannot be directly measured. Sound power level of a machine may vary depending on the actual operating load and is calculated from sound pressure level measurements with appropriate corrections for distance and/or environmental conditions. Sound power levels is equal to 10 times the logarithm to the base 10 of the ratio of the sound power of the source to the reference sound power of 1 picoWatt
Speech Privacy	A non-technical term but one of common usage. Speech privacy and speech intelligibility are opposites and a high level of speech privacy means a low level of speech intelligibility. It should be recognised that acceptable levels of speech privacy do not require that speech from an adjacent room is inaudible.
Transmission Loss	Equivalent to Sound Transmission Loss and to Sound Reduction Index in terminology used in countries other than Australia. A formal test rating of sound transmission properties of any construction, by usually a wall, floor, roof etc. The transmission loss of all materials varies with frequency and may be determined by either laboratory or field tests. Australian Standards apply to test methods for both situations.

14 APPENDIX B – BEN WHITE, AAS MEMBERSHIP CERTIFICATE

AUSTRALIAN ACOUSTICAL SOCIETY

This is to certify that

BENJAMIN WHITE

was admitted to the grade of

MEMBER

of the Australian Acoustical Society

on 27th October 2020

and is entitled to use the letters

M.A.A.S.

issued on 26th November 2020

S. Moore

President

General Secretary

AUSTRALIAN ACOUSTICAL SOCIETY A.C.N. 000 712 658 The Common Seal Of

This certificate remains the property of the Australian Acoustical Society

15 APPENDIX C – NOISE AND VIBRATION INVESTIGATION CHECKLIST

Horsley Logistics Park Lot 201 and 204 – Noise & Vibration Investigation Checklist

210182 -HLP-Noise & Vibration Investigation Checklist-R1.docx

Pulse White Noise Acoustics (PWNA) and Hansen Yuncken Constructions (HY) have prepared the following noise and vibration investigation checklist to assist the onsite construction team in investigation any received noise and vibration complaint or identifying an exceedance over the management levels. This checklist should be completed in conjunction with the *Construction Noise Vibration Management Plan* prepared by PWNA.

Should any noise and vibration complaint be received, HY must complete the following steps:

Exceedance/Complaint Information

Complaint reference number:.....

Date Received: .....

Location of Complaint: .....

Complainant Contact Details:.....

Step	Task	Completed Response
1	Pause onsite works	
2	Identify the main source(s) construction noise and/or vibration within specific areas of the site which is impacting the most at the sensitive receiver.	
3	Review the identified equipment and determine if an alternate piece of equipment can be used or the process can be altered. ***(If no, skip to step 5)***	
4	In the event an alternate piece of equipment or process can be used, works can re-commence incorporating possible and practical mitigation measures.	
5	In the event an alternate piece of equipment or process cannot be determined implement a construction assessment to be performed by a suitably qualified acoustic consultant. This may include additional respite periods.	

PULSE WHITE NOISE ACOUSTICS Level 5, 73 Walker Street, North Sydney NSW 2060
P 1800 4 PULSE (1800 478 573) **E** info@pwna.com.au **pwna.com.au** ABN 95 642 886 306

16 APPENDIX D – SUPPORTING DOCUMENTATION

Construction Environmental Management Plan

ESR HORSLEY LOGISTICS PARK - LOTS 201 & 204

Job No: SC141 & SC140 | Doc No: HY-CEMP-0001-R6

Rev: 6

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Contents

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1 Document Information

1.1 Plan revision status information

Change Information			
Review	**Description**	**Issued by**	**Issue date**
Revision 1	Initial Submission of CEMP	P.Cassimatis	30 April 2021
Revision 2	HY Internal Review Comments & CTMP Appendix Updated	P.Cassimatis	07 May 2021
Revision 3	HSE Plan Added to Appendix. Ready for Issue	P.Cassimatis	10 May 2021
Revision 4	Amended per DPIE & PCA Commentary + Requirements	P.Cassimatis	03 June 2021
Revision 5	Amended with Revised CNVMP & Biodiversity Management Plan	P.Cassimatis	08 June 2021
Revision 6	Amended per DPIE Comments with Updated Appendices	P.Cassimatis	11 June 2021

1.2 Document Control

This CEMP will be issued to the Site Manager and relevant extracts to other parties as controlled copies. A distribution list of documents issued will be maintained by the Project Manager.

Revisions to this CEMP may be required during the project to reflect changing circumstances. Revisions may result from:

- Management review;

- Audit (either internal or external);

- Complaints or non-conformance reports; and

- Changes in legislation.

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1.3 Compliance Matrix

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN COMPLIANCE MATRIX		
OUTSTANDING ACTION ITEM	**COMMENTARY**	**REFERENCE IN PLAN**
DPIE (09/06/21): *The CEMP should be updated to ensure all sub-plans in the appendices are the latest versions.*	*Updated accordingly with new management plans (latest sub-plans)*	*Refer to Appendices of CEMP A8.1 – A8.11*
DPIE (09/06/21): *The CEMP cannot simply rely on the CSR Estate Management Plan without any reference to the ESR development. If any sub-plans do solely rely on the CSR Estate Plan, justification for the applicability of CSR Estate Management Plan should be provided.*	*HY Documentation addresses this item throughout the CEMP & Appendix 8.10*	*CSR Management Plan Removed* *Appendix 8.10* *Refer to Section 5.2*
DPIE (09/06/21): *The Unexpected Finds Protocol and Unexpected Contamination Procedure cannot be for the CSR remediation works. Separate documents prepared exclusively for ESR development should be submitted.*	*HY Documentation addresses this item throughout the CEMP & Appendix 8.10*	*CSR Management Plan Removed* *Appendix 8.10* *Refer to Section 5.2*

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2 Definitions

The following definitions and abbreviations have been used in this Environmental Management Plan. Further definitions and abbreviations are provided in referenced procedures and plans.

BIM360 Field	Cloud based QHSE field management software application designed specifically for the construction industry.
EMP	Environmental Management Plan (this document)
EPA	State Environment Protection Authority
ESD	Ecologically Sustainable Development
HSE	Health, Safety & Environment
HY	Hansen Yuncken Pty Ltd
HYWAY	An information management platform developed by HY utilising Microsoft SharePoint
NC	Non-Conformance
NGER	National Greenhouse and Energy Reporting
NVMP	Noise and Vibration Management Plan
OEH	Office of Environment and Heritage
PLN	HY Plan
PMP	Project Management Plan
POEO	The Protection of the Environment Operations Act
PROJ	Project Management
REO	Regional Environmental Officer
RMS	Roads and Maritime Services
RTA	Roads and Traffic Authority
S/C	Subcontract(s) or Subcontractor(s) as the context requires
SM	Site Manager
SSO	Site Safety Officer
SWMS	Safe Work Method Statement
TMP	Traffic Management Plan

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3 Introduction

3.1 Purpose of the CEMP

The purpose of the site-based CEMP is to provide a structured approach to the management of environmental issues during construction of this project. Implementing this CEMP will ensure that the project meets regulatory and policy requirements, in a systematic manner. In particular, this CEMP:

- Describes the project in detail, including activities to be undertaken and relative timing
- Provides specific mitigation measures and controls that can be applied on site to avoid or minimise negative environmental impacts
- Provides specific mechanisms for compliance with applicable policies, approvals, licences, permits, consultation agreements and legislation
- Describes the environmental management related roles and responsibilities of personnel
- States objectives and targets for issues that are important to the environmental performance of the Project
- Outlines a monitoring regime to check the adequacy of controls as they are implemented during construction

3.2 Project description

These two proposed projects would facilitate the construction of Lots 201 & 204 within the ESR Horsley Park Estate, located at 8 Johnston Crescent, Horsley Park and 10 Johnston Crescent, Horsley Park respectively.

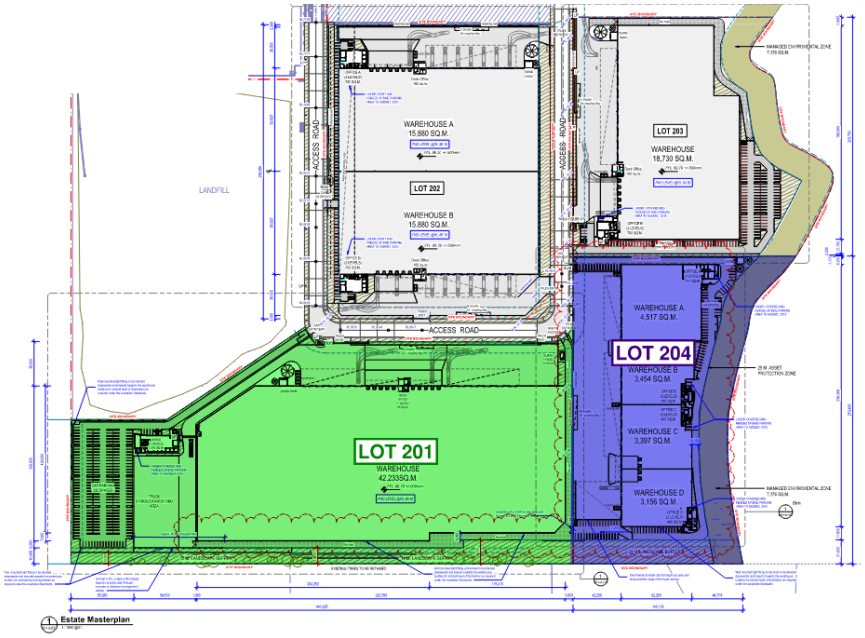

Figure 1 Proposed Site Layout for the ESR Horsley Park Estate, including Lots 201 & 204 (Shaded)

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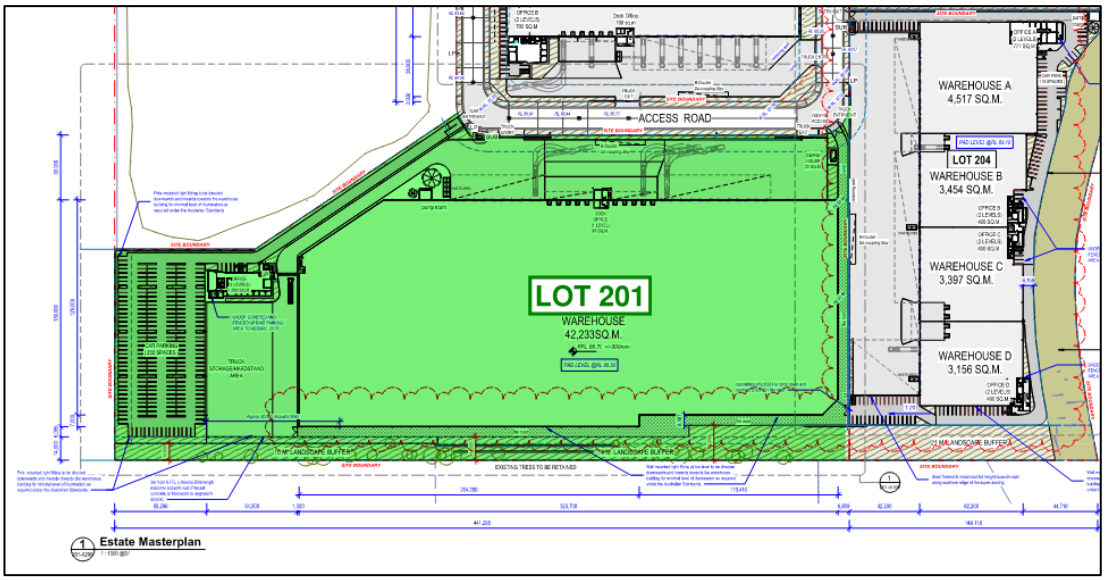
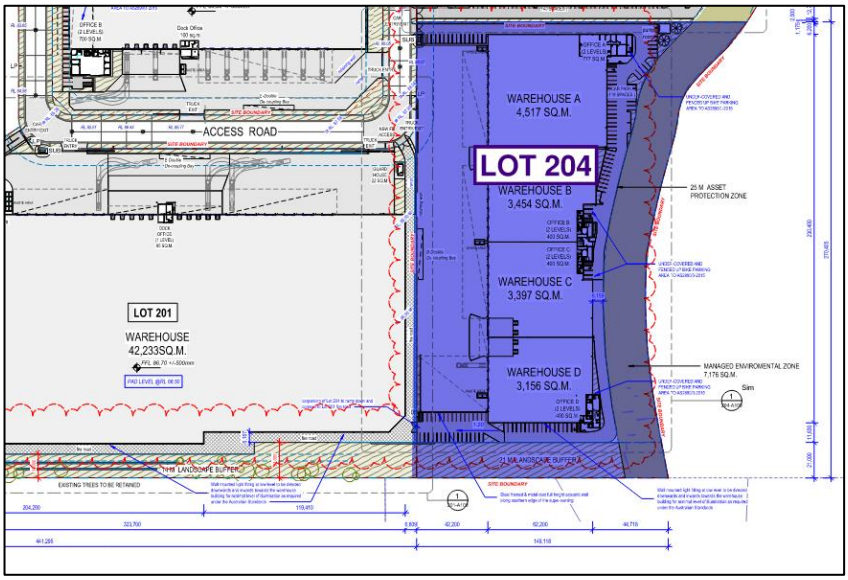


Lot 201 encompasses a 42,233 m2 warehouse facility consisting of a double storey office, flush and recessed docks, amenities, a pump room, a café, and a total of 232 car parking spaces.

Incoming and outgoing truck deliveries / movements will be via. Old Wallgrove Road toward the north of the estate and into the estate's internal access road loop (Johnston Crescent).



Lot 204 includes a 16,531m² facility consists of 4 subdivided tenancies with respective main & dock offices, mezzanines, flush & recessed docks, amenities, and a total of 118 carpark spaces. This lot has the same incoming and outgoing truck deliveries / movements as Lot 201 (via. Old Wallgrove Road / Johnston Crescent).

3.3 Client

The Client is ESR Australia.

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3.4 Project location

Lots 201 & 204 are located at 8 Johnston Crescent, Horsley Park and 10 Johnston Crescent, Horsley Park respectively, with access via. the nearest cross being Old Wallgrove Road, Horsley Park. The site footprint is approximately 117,500m². The proposed warehouse building footprint collectively is approximately 56,060m². The surrounding area is generally located near industrial warehouses. The nearest residents are located to the south-east of the estate (closest to Lot 204), directly adjacent the southern boundary.

3.5 Hours of Work

Construction activities shall be restricted to specified daytime construction hours permitted, as per the approved Development Consent:

- Monday to Friday 7am to 6pm;
- Saturday 8am to 1 pm; and
- No work on Sunday or public holidays.

Works may be considered outside the stipulated hours above under the following circumstances:

a) works that are inaudible at the nearest sensitive receivers; or

b) works agreed to in writing by the Planning Secretary; or

c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or

d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

3.6 Construction Activities

The proposed build of warehouses Lot 201 and Lot 204 comprises of the following scope of works:

- Site preparation; trimming and levelling of pad
- Underground services to commence including the drainage storm water system i.e. rainwater water tanks, electrical underground, water / sewer, and general underground conduit works
- Install of footings, slabs and structural steel for the warehouse and office structure
- Cladding roofs and walls to all buildings
- Enclosed buildings with Install of the roller shutter/rapid doors, PA doors and louvres
- Internal fit outs for the Warehouse building and offices which includes: electrical, plumbing and air-conditioning and internal partitions.
- Install joinery & FFE, tiling to office amenities and floor finishes. Painting the internal walls to office
- Installation of surrounding hardstand, outer building crossovers and driveways.

- Perimeter fencing/gates along boundary to site
- Landscaping to access road frontage boundary

3.7 CEMP Context

The CEMP will identify the project management structure and clearly identify the roles and responsibilities regarding managing and reporting during the construction phase of project.

An Environmental Risk Assessment will be undertaken when developing this CEMP. The risk assessment identifies all aspects of construction that could have an environmental impact and assesses the potential risk and impact of that activity on the environment. Management controls / strategies are then devised to mitigate and/ or minimise those identified impacts.

The assessment would address the potential impacts created during the construction period (e.g. construction dust and noise). Specific environmental issues would be addressed in the CEMP and strategic details on how these would be mitigated and controlled across the project.

3.8 Policy & Objectives

The HY Environmental Policy Statement provides the framework for the development of this Construction Environmental Management Plan (CEMP).

The objective of the CEMP is to:

- Encourage best practice environmental management through planning, commitment and continuous improvement;
- Prevent and minimize adverse impacts on the environment;
- Identify the potential for, and respond to, environmental incidents and emergency situations and take corrective actions;
- Identify and control possible environmental hazards with the works and HY activities;
- Identify and protect any special environmental characteristics of the site including cultural heritage significance;
- Define roles and responsibilities and allocate the necessary resources;
- Ensure environmental training and awareness programmes are provided to employees and subcontractors; and
- Establish mechanisms to monitor, evaluate and report progress.

The HY Environment Policy commits the company to achieve the following goals:

- Develop and promote a culture of environmental leadership, responsibility, and continual improvement across the HY business;
- Audit, monitor and ensure compliance with environmental legislative and regulatory obligations and other environmental commitments;
- Utilise the resources of HY to lead the way in defining and achieving best environmental practice; and
- Advance and disseminate environmental knowledge and applied environmental management through training, research, and engagement with the wider community

A copy of the Environment Policy is contained within the PMP and displayed at the project / site office and induction sheds. HY recognises this implementation will involve effective training of personnel to ensure they fully understand their responsibilities to comply with and monitor the management system. In addition, all site workers are consulted on HY environmental policies & procedures through the following mechanisms: site induction, notice board, site inspections, prestart meetings, subcontractor meetings, team meetings, toolbox talks.

3.9 Project Environmental Targets

Objective: Reduce waste

KPI: Waste minimisation and recycling

Target: Recycle > 60% of construction waste

Objective: Comply with all environmental legislation

KPI: Number of identified breaches of State or Commonwealth Environmental legislation

Target: Nil for duration of project.

Objective: Minimise impacts on the environment

KPI: Number of significant environmental incidents causing serious harm to the environment

Target: Nil for duration of project.

Objective: Conduct environmental site inspections to validate environmental conformance

KPI: Schedule and undertake regular site inspections

Target: > 90% of scheduled HSE inspections

Objective: Minimise and manage environmental complaints

KPI: Consult with impacted neighbours and promptly address all complaints

Target: ≤ 1 complaint per significant construction milestone

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4 Environmental Management.

4.1 Structure, Responsibility and Accountability

Hansen Yuncken is the Principal Contractor with overall control of the project's environment and performance. Therefore, all subcontractors, consultants, suppliers, and other workers are required to comply with this Management Plan, their employer's Environmental Management System and related Safe Work Method Statement(s), the HY HSE Site/Workplace Rules, and relevant legislative requirements.

The Project Manager prepares a site-specific organisational chart to define lines of reporting and key names and positions or roles with Environmental responsibilities specific to the project. The chart is outlined in Appendix 8.3.

The Project Manager is responsible for ensuring that adequate arrangements are established for recording and controlling variations, changes and concession that may be agreed during the project.

Individual roles and responsibility statements are also contained within specific environmental standards and procedures and within the relevant job and position description.

4.2 Organisational Structure

The organisational chart and Construction Management Plan A3 Print-Out (for the site notice board - contained in Appendix 8.3), details the environmental organisational structure and the communication paths. The chart forms part of the overall organisation charts located in the Project Management Plan.

4.3 Environmental Duty of Care

4.3.1 Duties of Hansen Yuncken Management

Hansen Yuncken obligations as a PCBU (person conducting a business or undertaking) varies slightly depending on the Federal/state and, local legislation, but the general principles for environmental management remain and HY Management is committed to the following standards as far as is reasonably practicable:

- Ensure that the project activities are conducted in accordance with the requirements of the CEMP.
- Carry out environmental inspections and coordinate site activities as required by the CEMP.
- Promptly advise the Project Manager of any environmental management action to be taken to maintain compliance with this CEMP and relevant statutory requirements.
- Ensure a copy of the CEMP is displayed in the site office at all times and be updated and amended as works progress.
- Advise the Project Manager & HSE Supervisor immediately if environmental harm or potential harm occurs within or near the construction site.
- Ensure that site activities are conducted in accordance with the requirements of the CEMP.
- Undertake environmental management actions as directed by the Project Manager.

- Ensure that all personnel under their direct control are aware of potential environmental impacts and required minimum environmental control measures before they commence any site works.

4.3.2 Duties of workers:

While at work, a worker must:

- Take reasonable care of the working environment;
- Take reasonable care that his or her acts or omissions do not adversely affect the environment;
- Comply, so far as is reasonably able, with any reasonable instruction that is given by HY;
- Cooperate with any reasonable policy or procedure of HY relating to the environment at the
- workplace that has been communicated to workers

4.3.3 Assessment of Project Risks

The Project Manager in consultation with the HSE Supervisor completes a Project Environmental assessment prior to commencement of the construction stages of the project. The risk assessment must include any environmental aspects and impacts risks that require management in the construction stages of a project. The risk assessment must consider any specific undertakings from any formal environmental impact assessment, relevant development consent conditions, pollution control approvals/licenses/permits and any other statutory and contractual obligations.

4.3.4 Project Manager (Elias Joya)

The Project Manager is responsible for:

- Assisting in preparing and implementing the CEMP;
- Instructing project personnel on how to comply with environmental policy and procedures;
- Ensuring the Site Supervisor is aware of and complies with the environmental obligations as detailed within this CEMP;
- Ensuring that employees, contractors, and sub-contractors are aware of, and comply with, the conditions of approval and requirements of the CEMP relevant to their respective activities;
- Arranging periodic monitoring and inspection by suitably trained personnel;
- Regular site inspections and the active pursuit of opportunities to enhance environmental outcomes;
- Tracking and reporting environmental performance;
- Initiating remedial measures when environmental deficiencies are observed or in response to environmental complaints;
- Restriction of construction activities affected by an environmental deficiency until remedial action has been taken;
- Maintaining environmental performance records; and
- Engaging consultants where required to provide support in relation to implementing the CEMP.

4.3.5 Site Manager (George Taylor) / HSE Supervisor (Andrew Wackwitz)

Site Manager / HSE Supervisor is responsible for:

- Managing employees / contractors and construction activities daily to ensure the appropriate

- Environmental controls are implemented and maintained in accordance with the requirements of the CEMP;
- Ensuring all staff are inducted into the site and undertake daily toolbox talks;
- Undertake daily site inspections of environmental controls and maintain records of environmental actions;
- Reporting any environmental management concerns or incidents immediately to the Project Manager;
- Recommending improvements to the CEMP to the Project Manager; and
- Implementing any corrective actions issued as a result of any site inspections, audits, or meeting.

4.4 Environmental Responsibility Matrix

Please refer Appendix 8.3 for outlined role specific environmental responsibilities within the Construction Management Plan.

4.5 Environmental Awareness and Training

4.5.1 Site Induction

All employees, sub-consultants and sub-contractors must undertake a site induction prior to their commencement of work on site. The induction of employees and contractors is the HSE Supervisor's (Andrew Wackwitz) responsibility.

The site induction will inform employees of their environmental responsibilities on site. It details the most significant environmental aspects and introduces this CEMP as the management tool used to address the controls and mitigation measures required to minimise environmental impact on the Project.

The induction will cover the following:

- Contents of the CEMP;
- Critical environmental protection procedures including spill responses, emergency procedures;
- Hazardous substances and dangerous goods handling, and monitoring of imported fill quality;
- The location of the CEMP during works; and
- General obligations.

All visitors to the Site must undergo a visitor's induction. All visitors must be accompanied by a fully inducted member of staff. Site personnel shall be encouraged to be proactive and report any instances of environmental control measures not operating properly.

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4.5.2 Toolbox Talks

Toolbox talks will be conducted daily by the Site Manager (George Taylor), HSE Supervisor (Andrew Wackwitz) and Site Foremen (Andrew Hauber & Sam Behan) for employees and subcontractors. Toolbox talks will be undertaken in response to evolving issues on the ground, particularly in response to significant environmental and safety incidents and non-conformance issue

This document applies to all HY and S/C employees, environmental awareness is the responsibility of every person working on and associated with the project.

4.5.3 Emergency Contacts

Situation	**Non-Project Emergency Contacts**	
Fire	Fire Brigade	000
	SafeWork NSW	131 050
Liquid chemical spill, into water or soil	EPA Environment Line	131 555
	Fire Brigade	000
	SafeWork NSW	131 050
Uncontrolled release of water	EPA Environment Line	131 555
	Sydney Water	132 090
Flood	SES	132 500
	EPA Environment Line	131 555
Storm	SES	132 500
	EPA Environment Line	131 555
Uncontrolled release of gas	EPA Environment Line	131 555
	Safe Work NSW	131 050
	Fire Brigade	000
	Police, if evacuation required off site	000
Explosion	Fire Brigade	000
	Police	000
	EPA Environment Line	131 555
	WorkCover	121 050
	Utility companies, if utilities damaged	131 388

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Accident causing environmental damage, E.g. vehicular accident on site	Ambulance Service	000
	EPA Environment Line	131 555
	SafeWork NSW	131 050
	Police if required	000
Loss of power endangering health, property, and environment	Police, if required	000
	SafeWork NSW	131 050
	Utility company (Energy Australia)	131 388
(UXO)-Unexploded Ordnance - (Ammunition which has been fired, but has not gone off)	Police	000

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5 Implementation

5.1 Environmental Risk Assessment

Environmental aspects and potential construction stage environmental impacts have been identified based on the general experience on Construction projects as show on Table 5.

The Risk Assessment Matrix in Table 3 has been used to assess the unmitigated risk of each individual environmental aspect relevant to the construction of the Warehouse.

The level of risk assessed from the matrix informs the level of mitigations required for that environmental aspect. These risks are to be mitigated through the application of measures identified in this CEMP.

Table 3 Risk Assessment Matrix

		Probability				
		A	B	C	D	E
Consequence	1	H	H	H	H	M
	2	H	H	H	M	M
	3	H	H	M	M	L
	4	M	M	M	L	L
	5	M	L	L	L	L

Table.4 Risk Assessment Matrix

Probability			**Consequence**		
A	Almost Certain	Expected to occur, quite common	1	Major	Major environmental harm. e.g. major pollution incident causing significant damage or potential to health or the environment
B	Likely	Will probably occur has happened	2	Significant	- Long term or serious environmental damage. - Numerous complaints received. - Potential for prosecution.
C	Possible	Might occur at some time	3	Moderate	- Moderate environmental impact. - Will cause complaints. - Possible fine.
D	Unlikely	Could occur at some time although unlikely	4	Minor	-Minimal environmental harm. - Potential for complaints. - Fine unlikely.
E	Rare	Might occur at some time in exceptional circumstances	5	Insignificant	Little or no environmental harm. - Little potential for fines or complaints.

A.6 Environmental Aspects and Environmental Risk Assessment

Aspect	Potential Construction Stage Impact	Probability	Consequence	Risk Ranking	Controls
Location and Land Use	Unauthorised dumping of waste materials on the site.	**D**	**3**	Low	Refer Section 5.2.1
	Entry of unauthorized persons or vehicles onto the site.	**D**	**4**	Low	
Environmental Complaints	Neighboring properties impacted by construction works due to construction noise and dust.	**D**	**3**	Low	
Sedimentation and Erosion Control and Construction	Erosion of sediments from stockpiles or exposed areas.	**C**	**3**	Medium	Refer Section 5.2.5
	Discharge of sediment laden runoff leading to stormwater system.	**C**	**3**	Medium	
Noise & Vibration	Excessive noise generated by truck and vehicle movements.	**D**	**4**	Low	Refer Section 5.2.2
	Disturbance from construction noise and heavy machinery.	**D**	**4**	Low	
Air Quality and Dust	Generation of dust from soil stockpiles and other exposed areas.	**C**	**3**	Medium	Refer section 5.2.4
	Generation of dust during handling of soil.	**C**	**3**	Medium	
	Generation of dust from vehicle movements.	**C**	**3**	Medium	
	Unacceptable emissions from vehicles / plant.	**D**	**4**	Low	
Hazardous Materials	Leaking or spillage of fuels or chemicals stored or used on the Site leading to potential impacts to soil.	**C**	**5**	Low	Refer Section 5.2.12
	Explosion of fuels or chemicals stored or used on the site.	**D**	**4**	Low	
Waste Management	Inappropriate disposal of waste.	**D**	**4**	Low	Refer Section 5.2.9
	Not minimising generation of waste.	**D**	**4**	Low	
Traffic and Access Management	Traffic causing congestion or damage on local roadways.	**D**	**4**	Low	Refer Section 5.2.3
	Traffic incident / accident.	**D**	**4**	Low	

Terrestrial Flora and Fauna	The removal of fauna during construction works poses minimal risk to landscaped species throughout the area.	**D**	**4**	Low	Refer section 5.2.7
Cultural Heritage	Undisturbed aboriginal artefacts due to the construction zone being in an existing site.	**E**	**4**	Low	Refer section 5.2.7
Site Contamination	There is a risk of unexpected finds being an existing site.	**D**	**4**	Low	Refer Section 5.2.8

5.2 Environmental Management Activities and Mitigation Measures

5.2.1 Location and Land Use

Site Location

The 2 adjacent sites within the Horsley Park Industrial Estate, Lots 201 and 204, are located at 8 Johnston Crescent, Horsley Park and 10 Johnston Crescent, Horsley Park respectively. The nearest cross is Old Wallgrove Road, Horsley Road (which will eventually branch into the future internal access road of the estate). The total site footprint is approximately 117,500m². The proposed warehouse building footprints for Lots 201 and 204 are respectively 39,625m² and 16,435m². The surrounding area is generally industrial warehouses (Nu-Pure and PGH Bricks & Paver Industrial Warehouses within the immediate area). The nearest residents are located to the south-east of the estate (closest to Lot 204), directly adjacent the southern boundary.

Likely Impacts

The construction works would be short term in nature and would not interfere with the current use of the site. All construction activities would be carried out with due diligence, duty of care and best management practices.

Given the location of residential properties is in close proximity to the works area, some impacts associated with construction traffic, noise and dust are likely to affect adjacent residents. These likely impacts will be addressed below.

Mitigation Strategies

- The neighbouring landowners are to be consulted regarding the construction works, predicted program and any access requirements.
- Land disturbance during construction is to be limited to that required to undertake the construction works
- Construction works to be undertaken in consideration of adjacent vegetation
- Areas disturbed during construction to be returned to the pre-construction condition

Monitoring and report

Monitoring	Frequency	Person responsible	Record
Neighbours and nearing residential properties of any complaints as result of construction works due to construction noise and dust.	Fortnightly – expected dates of high construction activities.	Site Manager / HSE Supervisor	HSE Inspection Checklist

5.2.2 Noise & Vibration

Likely Impacts

Construction of the proposed warehouse development will result in short term noise impacts during the 8-month construction period. The nearest residents are located to the south-east of the estate (closest to Lot 204, behind a 21-meter landscaping buffer zone), directly adjacent the southern boundary. Noise would generally result from general construction activities including the movement and operation of heavy vehicles and larger construction plant such as delivery trucks, semi-trailers, concrete trucks, generators, cranes, bobcats, backhoes, water trucks, etc.

Adjacent streets to the construction sites, both Wallgrove and Burley Road and to the South Greenway Place, Horsley Park are generally located amongst open fields and rural residential holdings however the Contractor will ensure construction noise impacts from the site are managed so as to minimise the disturbance to surrounding property owners, in accordance with EPA guidelines. Please refer to the Construction Noise and Vibration Management Plan within Appendix 8.7.

Mitigation Strategies

- Site construction noise will be managed in accordance with the SLR Consulting Australia's "Noise and Vibration Impact Assessment (Rev. 2.1)" as part of the Environmental Impact Statement (EIS), as prepared in support of the development of 327-335 Burley Road, Horsley Park
- Construction activities shall be restricted to the SSD-10436 and EPA specified daytime earthworks and construction hours (i.e. 7am to 6pm Monday to Friday, 8am to 1 pm Saturday, no work on Sunday or public holidays). If it were deemed necessary to undertake work outside these hours, prior approval would be sought from Fairfield City Council.
- Keep the community informed in relation to noise intensive activities in the immediate area.
- Provide consultation with SLR Consulting Australia where prolonged or consecutive periods of noise intensive construction works of are planned.
- Any noise complaint received will be investigated as soon as practicable. Any practicable and feasible measures to minimise noise will be identified and implemented if required.
- All possible steps to be taken to silence construction equipment where possible.
- Optimum siting of work areas, vehicle and plant parking areas, materials stockpiles and equipment storage areas in locations where potential acoustical impacts will be minimised.
- All plant and machinery used for the project shall be well maintained

Monitoring and report

Monitoring	Frequency	Person responsible	Record
Construction noise levels and construction works within DA hours	Following any complaints related to noise.	Site Manager	Toolbox Talk & Noise monitoring record

5.2.3 Traffic & Access

Likely Impacts

Construction of new warehouse facility would occur over an 8-month period with some increase in traffic in the local area expected. Construction vehicles and staff would enter the site via distribution drive. The construction workforce would vary according to the work being carried out, the construction method and contractor's program.

Access to the site for construction vehicles is proposed via Old Wallgrove Road. Trucks are to access the Site from the M7 Motorway to the east, or Lenore Drive and Mamre Road to the west. RMS currently identifies both routes as heavy vehicle routes.

It is anticipated that the number of construction staff on site daily is expected to grow progressively as the work increases in scale and then decrease as the works near completion. It is estimated that during the peak construction period an average of 60 construction workers will be on site per day.

The increased traffic is not predicted to have an impact on local traffic flow and only a minor inconvenience to local road users is expected. Whilst construction works may cause some inconvenience to local residents, any impacts would be minor, localised, and short-term.

Due to the minor nature of the works the additional traffic load is unlikely to impose any significant additional load upon the existing road network within the site. There are no significant construction-related issues or impacts that would not be mitigated by an appropriate Construction Traffic Management Plan. Please refer to Appendix 8.6 for Construction Traffic Management Plan specific to this project.

Mitigation Strategies

- Prepare a Traffic Management Plan (TMP) based on the detailed construction methodology and use of specific heavy vehicles and construction plant. The Traffic Management Plan is to include measures to minimise traffic impacts ensure public safety and is to be prepared in accordance with:
  - Traffic Control at Work Sites Manual (RTA, 2010).
  - Australian Standard 1742.3 - 2002 Traffic Control Devices for Works on Roads.
- The TMP will detail hours of operation, heavy vehicle volumes (numbers) and routes, construction staff parking, loading / unloading areas and site access arrangements, all temporary warning, guidance and information signage, and appropriate traffic control devices;
- Notify surrounding landowners at least one week in advance of the works;
- All vehicles accessing the sites will use the designated access roads. Construction and delivery vehicles would be restricted to using Old Wallgrove Road, Lenore Drive, M7 Motorway and Mamre Road;
- All roads will be kept clean and free of dust and mud. Where material is tracked onto sealed road, it will be removed so that road pavements are kept safe and trafficable;
- All roads, kerbs, gutters, and footpaths damaged as a result of construction are to be restored to their pre-construction condition. A dilapidation report will be carried prior to construction; and
- All traffic shall comply with all applicable traffic laws and regulations including speed limits. All construction vehicles shall comply with the speed limits set for the roads accessing the site.

Monitoring and report

Monitoring	Frequency	Person responsible	Record
Construction traffic, Deliveries in accordance to CTMP – correct entries used.	Weekly	Site Manager / HSE Supervisor	HSE Inspection Checklist

5.2.4 Air Quality & Dust Control

Likely Impacts

The main impact to air quality during construction is expected to arise from the generation of airborne localised dust associated with earthworks. Given the proximity of the southern residential areas and industrial properties in close proximity to the site there is the potential for neighbouring properties to be impacted by dust, particularly during hot, dry, and windy conditions

Mitigation Strategies

- Construction vehicles and equipment to be suitably serviced prior to commencement of construction activities and all necessary maintenance to be undertaken during the construction period to meet EPA air quality requirements.
- Excessive use of vehicles and powered construction equipment will be minimised where possible
- All construction machinery will be turned off when not in use to minimise emissions where possible.
- Construction contractors to monitor dust generation progressively.
- Dust suppression methods including the use of water carts will be adopted where required (i.e. on windy days when earthworks and vehicle movements are generating dust).
- In the event of high wind and extreme heat, contractors will monitor dust suppression measure, if render ineffective, all earthworks will cease with only minor works to
- Any stockpiled spoil/fill will be protected to minimise dust generation to avoid sediment moving offsite.
- Vehicles transporting spoil from the site to be covered where required.
- The burning of waste materials will not be permitted on site

Monitoring and report

Monitoring	Frequency	Person responsible	Record
Visual inspection of site for excessive dust generation, weather conditions, truck load covers, condition of stabilised site access	Daily	Site Manager / HSE Supervisor	HSE Inspection Checklist / Weekly Inspections
Visual inspection of stockpile stability.	Weekly	Site Manager / HSE Supervisor	Weekly Inspections
Toolbox talks to include reminders about reporting excessive dust from either internal or external sources, covering loads, efficient use of plant and equipment.	Weekly	Site Manager / HSE Supervisor	Toolbox Records

5.2.5 Soil, Erosion & Water Quality

Likely Impacts

Minimal earthworks and general ground disturbances associated with site works may result in sediment and other materials leaving the site via wind or water movement. This may have the potential to result in the water pollution such as turbidity and nutrient inputs, should sediment wash into stormwater or natural drainage lines.

Aspects of the site identified as potentially impacting on water quality includes: Excavation for foundations and site levelling; Stockpiling and transportation of excess spoil; and General construction waste entering drainage lines.

Given the relatively flat topography and long distance of the site from nearby creek, appropriate sediment and erosion controls will be implemented to effectively prevent runoff from entering the local stormwater system. All controls shall be in accordance with the Sediment and Erosion Management Plan and the NSW Government “Blue Book” [“Managing Urban Stormwater | Soils and Construction_ Vol.1 (March 2004)”].

The Erosion and Sediment Control Plan (Costin Roe Consulting) designed for this project will be a dynamic plan which will change with the different stages of construction (Refer to Appendix 8.5).

Mitigation Strategies

- Construction is to be undertaken in accordance with the Erosion and Sediment Control Plan. (Appendix 8.5)
- All erosion and sediment control devices shall be properly maintained for the duration of the work. All structures are to be inspected after rain events and sediment to be removed
- Any temporary stockpiles should be stabilised using sediment fencing or similar.

- All fuels and other hazardous liquids shall be stored at designated construction compounds
- All chemicals used for construction shall be stored and used in accordance with the relevant Safety Data Sheets.
- An emergency spill kit shall be kept at the construction compound.
- Workers are to be made aware of the provisions of Section 120 of the POEO Act with regards to water pollution
- Notification to the EPA in accordance with Part 5.7 of the POEO Act is to be undertaken where a pollution incident occurs
- All construction vehicles and equipment are to be maintained in designated areas away from watercourses
- Construction vehicles shall be appropriately cleaned of any soil or mud prior to leaving each works site
- “Clean” stormwater shall be diverted around the site where possible
- All existing stormwater pits and drains subject to HY construction works will be silt protected with geo-fabric and/or granular socks. Drains will be monitored and maintained by HY
- Stockpiles to be established at HY approved locations
- Sediment fences shall be installed at required locations at the perimeter of the site
- Stormwater shall be diverted to retention basins
- The location and details of permanent controls shall be included on the Site Layout Plan
- Erosion and sediment controls shall be inspected as part of the Site HSE Inspection

Monitoring and report

Monitoring	Frequency	Person responsible	Record
Visual inspection of Site ESC controls and bordering street ESC to storm inlets	Weekly – After heavy rainfall events	Site Manager / HSE Supervisor	HSE Inspection Checklist
Visual inspection of stabilised entry and exits – clean out regularly cattle grid	Weekly	Site Manager / HSE Supervisor	HSE Inspection Checklist
Toolbox talks to include reminders about report heavy rainfall	After heavy rainfall events	Site Manager / HSE Supervisor	Toolbox Records

5.2.6 Terrestrial Flora and Fauna

Likely Impacts

The majority of the land clearing was carried out prior to construction works. The site is located within a heavily disturbed and cleared area, consequently, it has been substantially cleared of habitat. Minimal risk of impacted Native fauna will result from these construction works.

Mitigation Strategies

- No vegetation removal or modification is to occur beyond the proposed works areas shown on the plans.
- Fireweed should be removed site prior to commencement of earth works
- Carry out landscaping in accordance with the landscape design
- Any areas of significant flora and fauna value which have been identified on the construction site will remain bunted/ flagged during construction.
- If any additional species are encountered the Site Manager shall arrange for works to be ceased in the area and contact the Superintendent for further directions. monitoring and report

5.2.7 Archaeology & Cultural Heritage

Likely Impacts

Most of the site clearing was carried out by others prior to construction works commencing (Under Development Consent SSD 10436). The site has been cleared of any habitat prior to commencement of bulk earthworks and in-ground services. There may be areas of minor disturbance and re-generation throughout the site.

No works are required outside of these disturbed areas. It is therefore unlikely that the proposed works would disturb any undisturbed Aboriginal objects or sites of historical relics as defined under the Heritage Act 1977.

Mitigation Strategies

- All workers (including contractors) should be made aware that it is illegal to harm an Aboriginal object or historic relics, and if a potential Aboriginal object or historic relic is encountered during activities, then all work at the site will cease and the Heritage NSW will be contacted to advise on the appropriate course of action to allow the record and collect the identified item(s).
- All workers (including contractors) should be inducted concerning Aboriginal cultural heritage values
- In the event that known or suspected Aboriginal skeletal remains are encountered during the activity, the following procedure will be followed:
    a. All work in the immediate vicinity will cease;
    b. The find will be immediately reported to the work supervisor who will immediately advise the environment manager or other nominated senior staff member;
    c. The environment manager or other nominated senior staff member will promptly notify the police and the state coroner (as required for all human remains discoveries);
    d. The environment manager or other nominated senior staff member will contact the OEH for advice on identification of the skeletal material as aboriginal and management of the material;

e. If the skeletal material is of aboriginal ancestral remains, the local aboriginal land council will be contacted, and consultative arrangements will be made to discuss ongoing care of the remains;

f. The project team will take all necessary measures to protect the artefacts from being damaged or destroyed; and

g. Works will not re-commence in the area until a written instruction from the superintendent is received.

5.2.8 Site Contamination

Contaminated Soil Risk Assessment

A risk assessment of contaminated soil shall be conducted at the start of the project in accordance with the following procedure for Contaminated Soil Assessment.

As soon as possible after possession of the site by HY, an assessment of actual or potential soil contamination and its impacts shall be undertaken using the Soil Contamination Assessment on BIM 360 Field.

The purpose of the assessment is to provoke whether HY should have an independent third party to provide recommendations or seek wider advice within the company so that the additional knowledge can reduce the risk profile of contaminated soil.

Projects which have the following criteria should fill in this form:

- Projects with a geotechnical report that nominates fill on bore logs
- Projects which do not have a geotechnical report but have a requirement for material to be exported off the site.

Identification of Contaminated Soil

During construction, it shall be necessary to monitor soil contamination levels (if any), dust levels and water runoff quality, to ensure that health and environmental standards are not compromised. This is especially important as contaminated soil may be excavated and transported around the site.

Upon discovery of contaminated soil, the HY Site Manager shall arrange for works to be ceased immediately in the area and contact the Superintendent for further directions.

Contaminated waste shall be collected, contained, stored, handled and disposed of in accordance with relevant legislation and codes of practice.

Risk of Exposure

It is important to minimise the risk of exposure of construction personnel to soil contaminants by adopting appropriate site controls and industrial hygiene practices. Site controls may include:

- Defining certain areas as contaminated and restricting access to them;
- Appropriate signage;
- Training construction employees in industrial hygiene procedures;
- Keeping non-essential motor vehicles such as personal cars out of contaminated areas;

- Regular medical checks of construction personnel who are exposed to contaminated soils;
- Keeping stockpiles of contaminated material watered down to minimise dust generation in accordance with any water restriction requirements and ensure that runoff is not generated from excessive watering;
- Covering truck loads with tarpaulins and watering material when loading and unloading;
- Wheel washes for trucks and vehicle leaving the contaminated areas;
- Regular road sweeping and cleaning;
- Dust monitoring and adjustment of construction programs to accommodate high risk periods when conditions are windy or very dry; and
- Monitoring of concentrations of volatiles.

Industrial hygiene practices may include:

- Wearing long sleeved shirts and trousers or overalls to minimise dermal exposure;
- Wearing gloves when handling soils;
- Washing hands and faces before eating, drinking or smoking;
- Leaving overalls at site for laundering;
- Showering and washing facilities; and
- Wearing respiratory equipment during times of high dust or volatile emissions.

Release of Contaminants to Soil and Groundwater

Water spraying of stockpiles and of soils being loaded and unloaded from trucks, covering of truck loads with tarpaulins and other measures described in the previous section would minimise the potential for dust to be generated.

If heavily contaminated soil is placed in contact with clean soils, contaminants could be mobilized by rainwater or chemical / physical reactions and affect the clean soils to a limited extent.

Similarly, there is a risk that contaminated soil is not clearly differentiated from clean soil and that mistakes could occur which cause the materials to be mixed or wrongly handled or disposed of.

This shall be overcome by implementing a material tracking system for all contaminated soils and ensuring that construction staff are trained how to use the system.

This shall involve documenting areas containing contaminated soil and putting signage near stockpiles that indicated the type of material present and its contamination status.

It shall also require supervision and documentation of all movements of contaminated materials around the site.

Avoiding contact between stormwater and contaminated soils is difficult to achieve if larger areas of a site are being exposed within a short period, because it does not allow for minimizing the amount of soil that is uncovered or placed in temporary stockpiles.

Therefore, it is necessary to manage stormwater in such a way that it does not mobilize contaminants and transfer them to clean areas.

This may be achieved by:

- Covering stockpiles of contaminated soil;
- Placing stockpiles of contaminated soil on bitumen or other sealed areas;
- Installation of adequate bunding or other approved method to contain runoff;
- Collecting stormwater run-off from stockpile areas; and
- Analytical testing of collected stormwater prior to its release.

Erosion and sediment control procedures in accordance with the relevant Code of Practice may also be applied, but with the additional objective of keeping water that is exposed to contaminated soils separate from water that has only come into contact with clean soils.

Groundwater could potentially be impacted by contaminants mobilized from stockpiled contaminated soil or by buried material.

Minimising runoff from stockpiles, as outlined above would reduce the risk to groundwater.

Land filling of contaminated material which is below the relevant criteria for soil contamination above the water table and capping the landfill area with low permeability material would minimise the risk of groundwater contamination from infiltration of stormwater into buried soils.

Heavy Metal Contamination

Any suspicious industrial wastes encountered will be immediately isolated to enable these assumptions to be confirmed by analytical testing.

Mitigation Strategies

In the event that unexpected conditions are encountered during development work or between sampling locations which may pose a contamination risk, all works should stop and an environmental consultant shall be engaged to inspect the site and address the issue.

5.2.9 Waste Management

Waste Reduction

The main source of waste associated with the construction works would be demolished material (bricks, concrete, steel etc.) resulting from the demolition and refurbishment of existing buildings. It is likely that some excess building materials will be produced due to the construction work such as miscellaneous waste associated with packaging and transport of plant and equipment and various other manufactured items forming part of the augmentation works. Waste generated as a result of construction will be minimised, recycled, reused or recovered, where practical.

HY has accepted the challenge to reduce waste on construction projects, particularly in materials transferred to landfill.

The strategy for reducing the waste on the project will be made up of three strategies as detailed below in order of priority. The prime objective is to keep the amount of materials transferred to landfill from this project to the minimum possible amount.

1. Reduce the amount of waste material produced on the project by ensuring that only enough materials required to perform the works are ordered.
2. Any excess materials from particular work areas are to be retained and incorporated into other work areas where practical.
3. Encourage “just in time” delivery of construction materials (minimum storage on site) to reduce the potential of loss / waste due to damage prior to usage.

Waste Generation – Fill Material

The main source of waste to arise from the construction works would be excess spoil. Currently Lot 201 is cut to fill neutral whereas Lot 204 will generate approximately 2,000m3 of material.

Non-Recyclable Waste

Non-recyclable waste will be disposed of at an EPA approved landfill or transfer station.

Waste Collection & Disposal

Appropriate waste bins are to be provided by HY and made available to all S/C.

All S/C shall be directed to place waste in the bins provided. This shall be included in the Site Induction.

Waste collection points are nominated on the Site Layout Plan.

Waste Reporting

Waste generation is monitored by HY on monthly basis to ensure that the company’s waste reduction objectives are achieved. Waste disposal quantities are monitored monthly by HY to ensure compliance.

The Project Administrator shall record waste disposal data on BIM 360 Field using the waste record checklist.

Waste quantities from the PMR shall be entered into the State HSE Database for analysis and reporting against HY Waste reduction targets.

Concrete Waste & Washout

Concrete trucks and pumps shall be washed out at designated locations as shown on the site layout plan. Washout of concrete pumps and concrete agitators in other areas will not be permitted.

Washout shall be captured using membranes or other suitable means and allowed to set.

Waste shall be placed in bins for disposal with site waste.

Excess concrete shall be returned to the concrete plant for disposal or re-use.

Mitigation Strategies

- Accurate written records are to be kept such as:
  - Who transported the waste (company name, ABN, vehicle registration and driver details, date and time of transport, description of waste)
  - Copies of waste dockets/receipts for the waste facility (date and time of delivery, name and address of the facility, it’s ABN, contact person).
- The construction contractor to ensure that waste generated by the works is transported to a place that can lawfully accept it as per Section 143 of the *Protection of the Environment Operations Act* 1997.

- The removal of any asbestos containing material if found is only to undertaken by an appropriately licenced contractor as per SafeWork NSW requirements and current guidelines.
- All waste, including excess spoil be recycled where practicable
- Trucks transporting spoil off site to be covered.
- The EPA is to be notified immediately of any pollution incidents or harm to the environment (as defined under Part 5.7 of the POEO Act).

Monitoring and report

Monitoring	Frequency	Person responsible	Record
Visual inspection of surface, loads, bins and portable toilets	Weekly	Site Manager / HSE Supervisor	HSE Inspection Checklist

5.2.10 Environmental Complaints

Complaints received regarding HY's Environmental Impacts or performance shall be recorded as Complaint in accordance with the HSE Incident Procedure. Actions to be taken to address the complaint.

All environmental complaints will be registered in BIM360 Field as an Environmental issue, identifying details of:

- Complainant
- Concerns raised
- Mitigation and resolution measures
- Objective evidence (e.g. Photos, documentation, reports, etc)

5.2.11 Fuel & Chemical Spills

Response to major fuel spills shall be implemented in accordance with the fuel spill procedure in the Emergency Response Plan. The requirements for storage of large fuel and chemical quantities are not expected for this project.

A spill kit shall be located adjacent to fuel and chemical storage and dispensing areas.

5.2.12 Hazardous Materials

Hazardous materials shall be controlled in accordance with Hazardous Materials procedure. This will be outlined in 6.4.2 environmental emergencies.

6 Measurement & Evaluation

6.1 Environmental Inspections & Audit

In addition to monitoring identified in this CEMP, the following inspections will also be undertaken:

- On a daily basis, site supervisory staff will inspect the construction site and any issues arising will be noted in the daily diaries and communicated to the Project Manager. The inspections will be conducted visually prior to commencement of each day's work and where appropriate during the working day. A final daily inspection will also be undertaken at the end of the workday to ensure that systems and structures are in place.

- A Fortnightly site inspection will be conducted by the HSE Supervisor (Andrew Wackwitz) or delegate. Checklists will be used to record and report on activities for compliance with this CEMP and specific issues presenting significant environmental risks will be addressed, such as noisy works, sediment erosion controls. Checklists may be edited to reflect changing site conditions. Where necessary, any damage or reduced capacity of environmental control measures will be corrected. If required, environmental control measures may be upgraded

Inspections & audits of the site including environmental controls shall be conducted in accordance with the procedure for Site HSE Inspections. The following inspections will be conducted onsite throughout the time on the project:

- Fortnightly site inspections,
- Monthly task observations,
- 3 monthly internal audits,

Internal audits will be conducted on all project activities as well as company nominated activities to provide a further review process for the effective management of this project and the management systems generally.

6.2 Non-conformance/corrective action report

If criteria within the CEMP are not fulfilled and appropriate and corrective action is not taken a non-conformance may be raised by the environmental manager. Examples of circumstances where this may arise include:

• Receipt of a complaint regarding pollution or other environmental impacts caused by the project

• Departure from approved or agreed procedures

• Non-conformance identified as a consequence of any self-assessment, formal audit or other environmental survey or inspection

Corrective action may include changes to work instructions (frequency of testing, test method etc.), alterations, further staff training etc. Non-conformances should be reviewed by the environmental manager and form part of construction meeting agendas.

In addition, non-conformance/corrective action report can be issued to the contractor by the HY. It is the responsibility of the contractor to immediately initiate corrective actions and, once completed, provide details of the actions undertaken on the non-conformance/corrective action report and return it signed to the within an agreed timeframe. If the non-conformance is considered to breach legislative requirements, the breach should be reported to the appropriate public authority.

6.3 Environmental Incidents & Emergencies

6.3.1 Environmental Incidents

Incidents resulting in potential or actual environmental damage shall be reported and investigated in accordance with the HSE Incident Procedure and recorded on BIM360 using the HSE incident report

6.3.2 Environmental Emergencies

Preparation for and response to the environmental impacts of emergency events shall be conducted in accordance with the project Emergency Response Plan. The environmental impacts controlled in ERP are;

Asbestos Exposure

In the event that during works, personnel become accidentally exposed to asbestos, the following procedures shall be followed:

1. Personnel in the immediate affected area shall cease work and immediately go to the emergency showers on site.
2. All contaminated clothing is to be removed and placed into a thick plastic bag. The plastic bag must then be tightly sealed and labelled as "Asbestos Contaminated Clothing".
3. Personnel are to immediately decontaminate themselves in a shower and a clean set of clothes to be re-issued.
4. Asbestos contaminated clothing is to be industrially cleaned or disposed of appropriately

Water Pollution

An incident involving actual or potential harm to human or environmental health must be reported immediately to the EPA.

Firstly, call 000 if the incident presents an immediate threat to human health or property. Fire and Rescue NSW, the NSW Police and the NSW Ambulance Service are the first responders, as they are responsible for controlling and containing incidents.

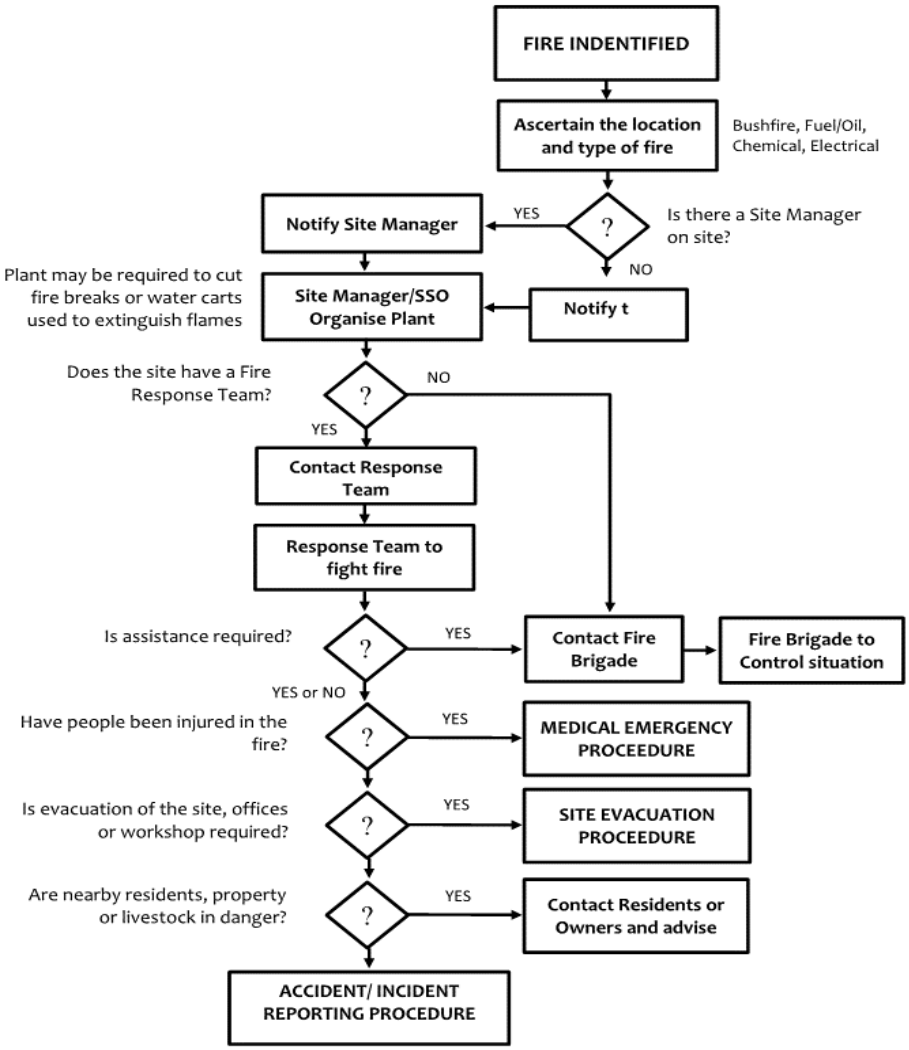
If the incident does not require an initial combat agency, or once the 000 call has been made, notify the HY Site Manager who will notify the relevant authorities in the following order. The 24-hour hotline for each authority is given when available:

EPA Environment Line on 131 555

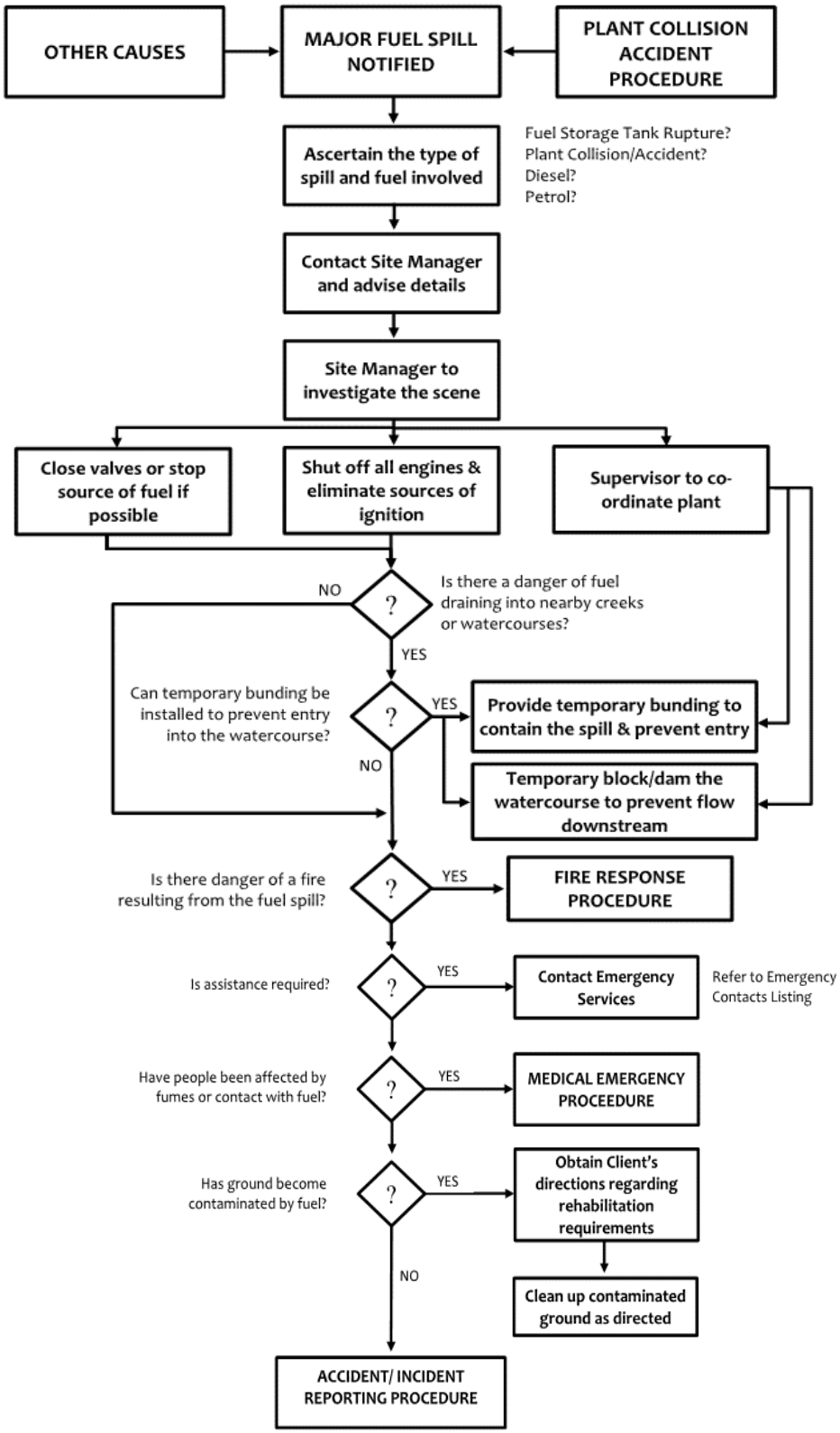
SafeWork NSW Authority – phone 13 10 50 (Where appropriate)

Fairfield City Council Telephone (02) 9725 0222

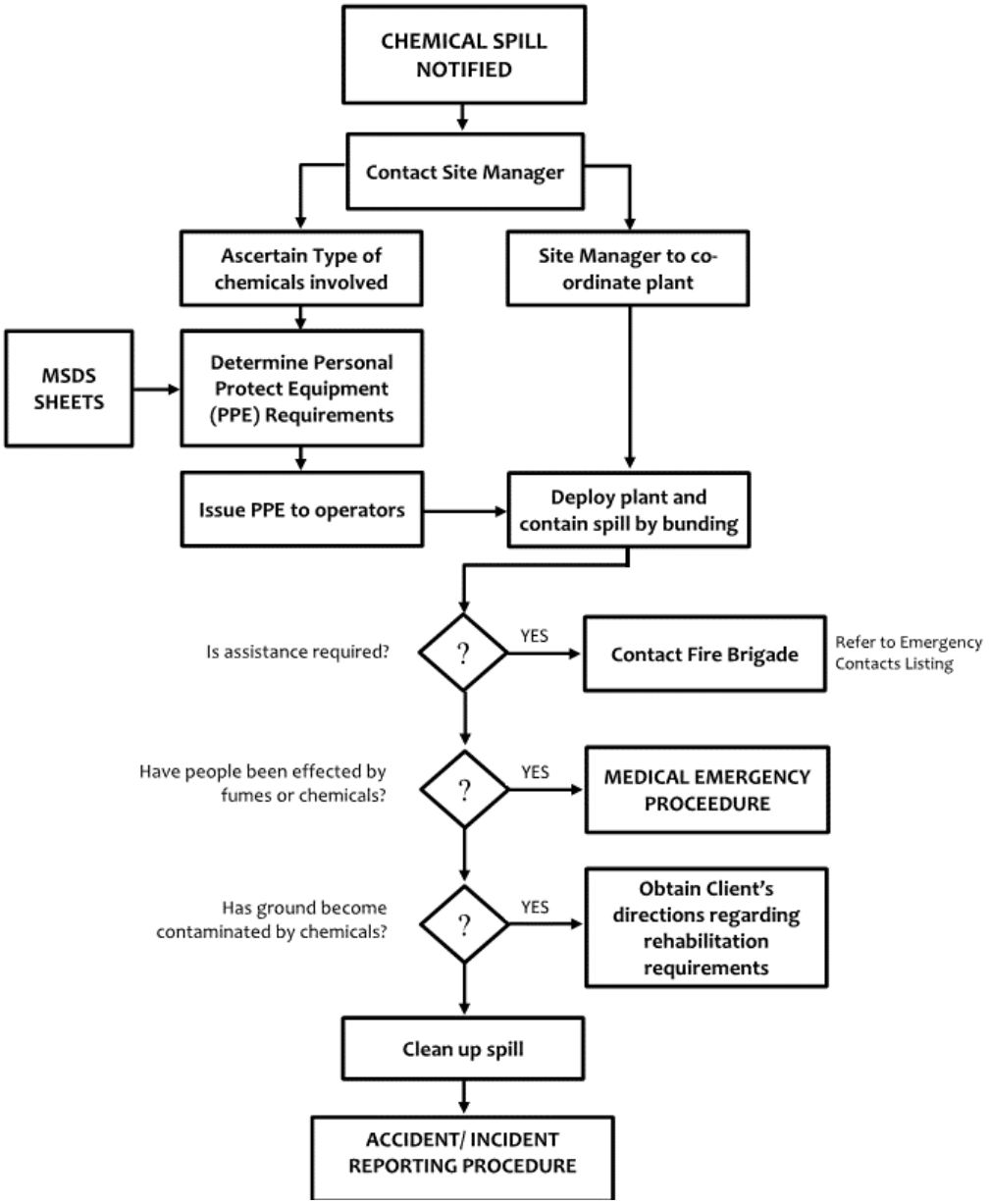
Fire


FIRE INDENTIFIED
Ascertain the location and type of fire
Bushfire, Fuel/Oil, Chemical, Electrical
Is there a Site Manager on site?
YES
NO
Notify Site Manager
Notify t
Site Manager/SSO Organise Plant
Plant may be required to cut fire breaks or water carts used to extinguish flames
Does the site have a Fire Response Team?
NO
YES
Contact Response Team
Response Team to fight fire
Is assistance required?
YES
Contact Fire Brigade
Fire Brigade to Control situation
YES or NO
Have people been injured in the fire?
YES
MEDICAL EMERGENCY PROCEEDURE
Is evacuation of the site, offices or workshop required?
YES
SITE EVACUATION PROCEEDURE
Are nearby residents, property or livestock in danger?
YES
Contact Residents or Owners and advise
ACCIDENT/ INCIDENT REPORTING PROCEDURE

Major Fuel Spill



Chemical Spill



7 References

7.1 Key Environmental Legislation and Regulations.

State/Region	Principal Legislation	Authority
New South Wales	Section 120 of the POEO Act	Environmental Protection Authority
New South Wales	Noxious Weed Act 1993	
New South Wales	Environmental Planning and Assessment Act 1979	NSW Government
New South Wales	Protection of the Environment Operations Act 1997	Environment Protection Authority

8 Appendices

8.1 Hansen Yuncken Environmental Policy Statement

HANSENYUNCKEN

ENVIRONMENT POLICY

Hansen Yuncken Pty Ltd is committed to providing a high quality environment in the building and construction industry, which meets the requirements and expectations of Clients, Statutory Authorities, Employees and Community Groups.

Hansen Yuncken recognises that impacts on the environment in the building and construction industry relate not only to the process of construction but also to the design and subsequent use of the buildings constructed. Hansen Yuncken affirms its commitment to applying sustainable development principles to all facets of the building and construction process and to continually improve our performance in minimising the impact on, and pollution of, the environment during the construction process.

In achieving this Hansen Yuncken is committed to the implementation, maintenance and improvement of a Management System meeting the requirements of Australian and International Standard AS/NZS ISO 14001.

The National Executive Committee shall review Environmental objectives and set performance targets each year. State Managers, through their line management structure, are accountable for ensuring all employees and subcontractors achieve these objectives and targets.

The Company's Environmental performance shall be monitored against established performance targets and the results reported to the Board of Directors on the regular basis.

Hansen Yuncken affirm that they have a legal obligation to comply with relevant Environmental legislation, standards and codes of practice as the minimum level of performance and a professional obligation to acknowledge the views of Environmental and Community Groups.

Hansen Yuncken acknowledges that environmental excellence can only be achieved and maintained by a clear unequivocal direction of all levels of management, stimulating a participative atmosphere and sense of pride in our environmental achievements by all employees and trade contractors, and through recognition by concerned groups in obtaining this.

Peter Salveson
Chief Executive Officer
May 2018

Page 1 of 1

8.2 Environmental Management Accreditation

CERTIFICATE OF REGISTRATION

Hansen Yuncken Pty Ltd

SCP, Building 1, Level 3, 75-85 O'Riordan Street, Alexandria NSW 2015 Australia
Suite 12, 125 Bull Street, Newcastle West NSW 2302 Australia
and transient sites
ABN 38 063 384 056

complies with the requirements of

ISO 9001:2015
Quality Management Systems – Requirements
and
ISO 14001:2015
Environmental Management Systems – Requirements with guidance for use

for the following capability:

This registration covers the Quality and Environmental Management Systems for the provision of project management and the design and construction of commercial, industrial and institutional buildings and civil engineering works.

Registered by:
Quality Control Services (Environmental) Pty Ltd
ABN 85 102 935 195
10 Rosina Street Woodcroft South Australia 5162 Australia

This certificate is subject to the Terms and Conditions for Certification, and relevant program rules. Currency of certification can be validated at www.qcse.com.au/certified-register, and www.jas-anz.org/our-directory/certified-organisations; it remains the property of QCSE Pty Ltd and must be returned upon request.

Certificate Number: 160052022
Issue Date: 26 February 2019

Original Certification: 23 February 2010
Expiry Date: 22 February 2022

CAStone

Cheryl Stone
Certification Manager

QCSE

QMS/EMS Certified Company
Licence Number: Q0160

IAF
QMS 010

Quality Control Services
QCS
ENVIRONMENTAL

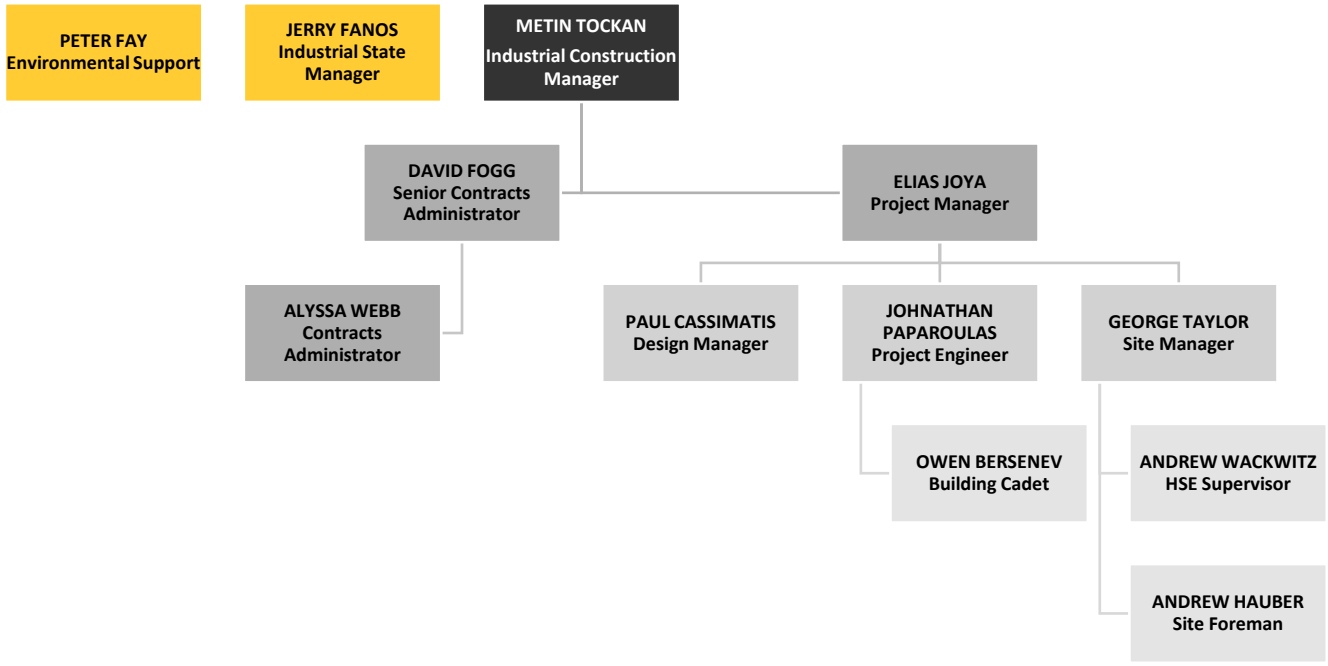
JAS-ANZ

www.jas-anz.org/register

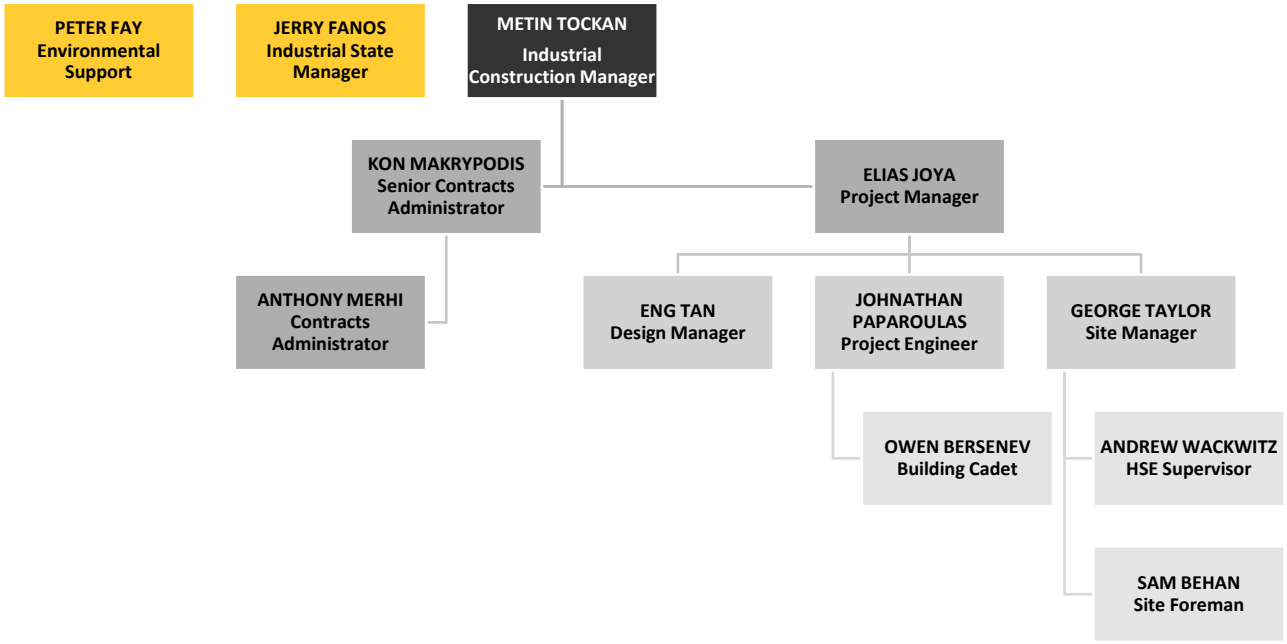
8.3 Site Management Organisational Chart

Arrows Depict usual chain of command and lines of communication

ESR LOT 201



ESR LOT 204



8.4 Detailed Landscape Plans – Lot 201

8.5 Detailed Landscape Plans – Lot 204

8.6 Construction Noise & Vibration Management Plan

8.7 Construction Traffic Management Plan

8.8 Stormwater Management Plan

8.9 Erosion & Sediment Control Plan

8.10 Biodiversity Management Plan

8.11 Unexpected Finds

- *Unexpected Finds Protocol*
- *Unexpected Finds – Asbestos (Contamination Procedure)*
- *Unexpected Finds – Buried Structures*
- *Unexpected Finds – Volatile Contaminants*

8.12 Community Consultation Plan

URBIS

COMMUNITY CONSULTATION PLAN

ESR Horsley Logistics Park

Prepared for
ESR AUSTRALIA
28 April 2021

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

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Project Code	P0033382
Report Number	Final

Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

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TABLES

1. INTRODUCTION

This Community Consultation Plan (the plan) has been prepared in line with the requirements of Development Consent Condition B56 and B57 for ESR Horsley Logistics Park (SSD 10436). This Strategy has been prepared by Urbis Pty Ltd, a consultant engaged by ESR Developments (Australia) Pty Ltd (ESR).

This Plan will be implemented and maintained throughout the development by ESR. This plan covers a period no later than two weeks before the commencement of site preparation works and for the life of the development.

1.1. CROSS-REFERENCE OF CONSENT REQUIREMENTS

Table 1 identifies the reference/s within this Strategy as they relate to the requirements under Development Consent Condition B56 and B57 – Community Consultation Plan.

Table 1 Consent requirements

Consent condition Reference	Consent condition	Report reference
B56	The Applicant must consult with the community regularly throughout the development, including consultation with the nearby sensitive receivers identified on Figure 7, relevant regulatory authorities and other interested stakeholders.	Sections 3 and 5
B57	The Applicant must prepare a Community Consultation Plan for the development, to the satisfaction of the Planning Secretary. The Plan must:	This document
a)	be approved by the Planning Secretary prior to the commencement of site preparation works;	Noted
b)	be implemented for the life of the development, or as otherwise agreed by the Planning Secretary;	Noted
c)	assign a central contact person to keep the nearby sensitive receivers regularly informed throughout the development;	Section 5.2
d)	detail the mechanisms for regularly consulting with the local community throughout the development, such as holding regular meetings to inform the community of the progress of the development and report on environmental monitoring results;	Section 5
e)	detail a procedure for consulting with nearby sensitive receivers to schedule high noise generating works, vibration intensive activities or manage traffic disruptions;	Section 5.3
f)	include contact details for key community groups, relevant regulatory authorities, Registered Aboriginal Parties and other interested stakeholders; and	Section 4
g)	include a complaints procedure for recording, responding to and managing complaints, including:	Section 5.4

Consent condition Reference	Consent condition	Report reference
	email, toll-free telephone number and postal address for receiving complaints; advertising the contact details for complaints prior to and during operation, via the local newspaper and through on-site signage; a complaints register to record the date, time and nature of the complaint, details of the complainant and any actions taken to address the complaint; and procedures to resolve any disputes that may arise during the course of the development.	
B58	The Applicant must: not commence construction until the Community Consultation Plan is approved by the Planning Secretary; and implement the approved Community Consultation Plan for the duration of the development.	Noted

2. PROJECT OVERVIEW

ESR Horsley Logistics Park (the project) involves the construction, fit-out and operation of eight warehouse and distribution tenancies in four buildings with a total gross floor area (GFA) of 112,819m2 including offices, loading docks, hardstand areas, truck and car parking areas, landscaping, associated infrastructure and signage.

2.1. THE SITE

The site is located at 6 Johnston Crescent, Horsley Park (Figure 1, site shown in red). It is 35 kilometres (km) west of the Sydney CBD and 18 km west of the Parramatta CBD. The site is located within the Fairfield City Council (Council) Local Government Area (LGA) and situated within the Western Sydney Employment Area.

Figure 1 Aerial photograph of the site

Source: Urbis

2.2. THE SURROUNDING COMMUNITY

The project is located within the former CSR quarry lands. It sits south of the Sydney Water Pipeline within the western extent of the Western Sydney Employment Area (WSEA). The project is currently undergoing earthworks to support future industrial development. The project is immediately bordered to the north by the remainder of the original CSR quarry site. The remainder of the CSR quarry has been excised from Horsley Logistics Park and subdivided into future Stage 3 as part of DA 893.1/2013. Beyond the immediate vicinity, the surrounding land uses include:

- **North:** The Oakdale Central Business Hub (SSD-6078)
- **East:** Land zoned RU4 – Primary Production which includes a number of rural residential lots
- **South:** Land zoned RU4 – Primary Production and a rural residential subdivision fronting Greenway Place
- **West:** The Horsley Park Warehousing Hub (MP10_0129 and MP10_0130)

3. PEOPLE TO BE CONSULTED DURING THE DEVELOPMENT

The sensitive receivers, relevant regulatory authorities and other interested stakeholders who will be informed and consulted are outlined in Table 2. The table also outlines communication mechanisms and potential stakeholder concerns. Section 5 describes the mechanisms in detail. This table will be reviewed and updated as needed by ESR.

Table 2 Stakeholders, activities, and concerns

People to be consulted (Stakeholders)	**Communication mechanisms (see Section 5)**	**Concerns**
Individual households and businesses within a 500m radius of the project including: - Greenway Place - Old Wallgrove Rd and - Burley Rd, Horsley Park - Jacfin Industrial Estate.	Enquires and feedback response Issues resolution and mediation of disputes Notifications Signage	Traffic management, truck noise and movements View impacts and privacy Vegetation and landscaping Noise management and minimisation Light spill Impacts of construction activities including noise, dust and vibrations 24-hour operation impacts
Sensitive receivers in three identified noise catchment areas (NCAs) outlined in Figure 2. - NCA01 – South - NCA02 – South - NCA03 – East.	Enquires and feedback response Issues resolution and mediation of disputes Sensitive receiver consultation	Traffic management Noise management and minimisation Lighting Impacts of construction activities including noise, dust and vibrations
Regulatory agencies and utilities: - Fairfield City Council - New South Wales Environment Protection Authority - Endeavour Energy - Transport for NSW - Sydney Water - New South Wales Rural Fire Service	Communication is covered by relevant approvals	Traffic management Visual impacts Construction activities Environmental impacts

People to be consulted (Stakeholders)	Communication mechanisms (see Section 5)	Concerns
- Fire and Rescue New South Wales		
Department of Planning, Industry and Environment	Communication is covered by relevant approvals.	Regulatory oversight of Development Consent for SSD-10436

Figure 2 Sensitive receivers

Source: Development Consent SSD-10436

4. STAKEHOLDER CONTACTS

Table 3 Stakeholder contacts

Stakeholder	Contact details
Department of Planning, Industry and Environment	Bruce Zhang Senior Environmental Assessment Officer T +612 9274 6137 E Bruce.Zhang@planning.nsw.gov.au
Department of Planning, Industry and Environment – Biodiversity and Conservation Division	Bronwyn Smith Senior Conservation Planning Officer T +612 9873 8604 E Bronwyn.smith@environment.nsw.gov.au
Penrith City Council	Robert Craig Acting Development Assessment Coordinator T +612 4732 7593 E Robert.Craig@penrith.city
Fairfield City Council	Kerren Ven Strategic Planner T +612 9725 0878
New South Wales Environment Protection Authority	Kyle Browne Operations Officer T +612 9995 6107 E kyle.browne@epa.nsw.gov.au.
Endeavour Energy	Cornelis Duba Development Application Specialist Network Environment & Assessment E property.development@endeavourenergy.com.au E Construction.Works@endeavourenergy.com.au
Heritage NSW	Senior Team Leader Aboriginal Cultural Heritage Regulation - South T +612 6229 7089 E jackie.taylor@environment.nsw.gov.au.
Transport for NSW	Robert Rutledge Principal Transport Planner Land Use Planning and Development E robert.rutledge@transport.nsw.gov.au.
Sydney Water	Growth Planning Team T 13 20 92 E urbangrowth@sydneywater.com.au

Stakeholder	Contact details
WaterNSW	Justine Clarke T +612 9865 2402 E justine.clarke@waternsw.com.au. E Environmental.Assessments@waternsw.com.au
New South Wales Rural Fire Service	Kalpana Varghese Team Leader, Development Assessment & Planning Planning and Environment Services T +612 8741 5555
Resident	30-32 Greenway Place, Horsley Park
Resident	38-40 Greenway Place, Horsley Park
Resident	33-35 Greenway Place, Horsley Park
Resident	41-43 Greenway Place, Horsley Park
Resident	44-46 Greenway Place, Horsley Park
Resident	47-48 Greenway Place, Horsley Park
Resident	49-53 Greenway Place, Horsley Park
Resident	54-56 Greenway Place, Horsley Park
Jacfin Pty Ltd	HWL Ebsworth Lawers on behalf of Jacfin Pty Ltd Paul Lalich T +612 9334 8830 E plalich@hwle.com.au
Registered Aboriginal Parties	There was no requirement for Aboriginal consultation in the project's SEARs and as such no RAPs were identified.

5. MECHANISMS AND PROCEDURES

5.1. CONSULTATION MECHANISMS

Information about the Project will be provided to residents in line with the requirements of Development Consent Condition B56 and B57 through the mechanisms outlined in Table 4 Consultation me

Table 4 Consultation mechanisms

Activity	Description	Stakeholder	Timing
Enquires and feedback response	The community will use a project contact point (See Section 5.2) to provide feedback or make enquiries and complaints. This contact point will also be the central contact person for nearby sensitive receivers. The process for responding is outlined in Sections 5.2, 5.3 and 5.4.	Individual households and businesses within a 500m radius of the project Sensitive receivers in Figure 2	Ongoing
Signage	Signage at the front of the site will include details for providing feedback or making enquires and complaints.	Individual households and businesses within a 500m radius of the project	Ongoing
Notifications	At the start of construction and at key development milestones, ESR will place an ad in the local newspaper and send a letter to neighbours outlining construction timeline, impacts and mitigations, and the project contact point	Individual households and businesses within a 500m radius of the project	No less than 14 days before start of construction
Sensitive receiver consultation procedure	For high noise generating works, vibration intensive activities or potential manage traffic disruptions sensitive receivers will be informed ahead of time. See Section 5.3 for more detail.	Sensitive receivers in Figure 2	No less than 7 days before works planned, or when reasonably practical
Community meetings	Depending on the level of stakeholder interest and feedback in the first three months of construction, ESR will consider the establishment of regular community meetings to inform the community of the progress of the development and report on environmental monitoring results.	Individual households and businesses within a 500m radius of the project	As required

5.2. ENQUIRIES AND FEEDBACK RESPONSE

As outlined in Table 4, a project contact point will be established and maintained for the project.

Table 5 Project contact point

Channel	Details
Point of contact	Grace Macdonald, Senior Planner
Mailing address	Level 29, 20 Bond Street Sydney, NSW 2000
Phone number	+612 9186 4759
Email	developmentAU@esr.com

All feedback and enquires will be answered in accordance with the timeframes below:

Table 6 Response times

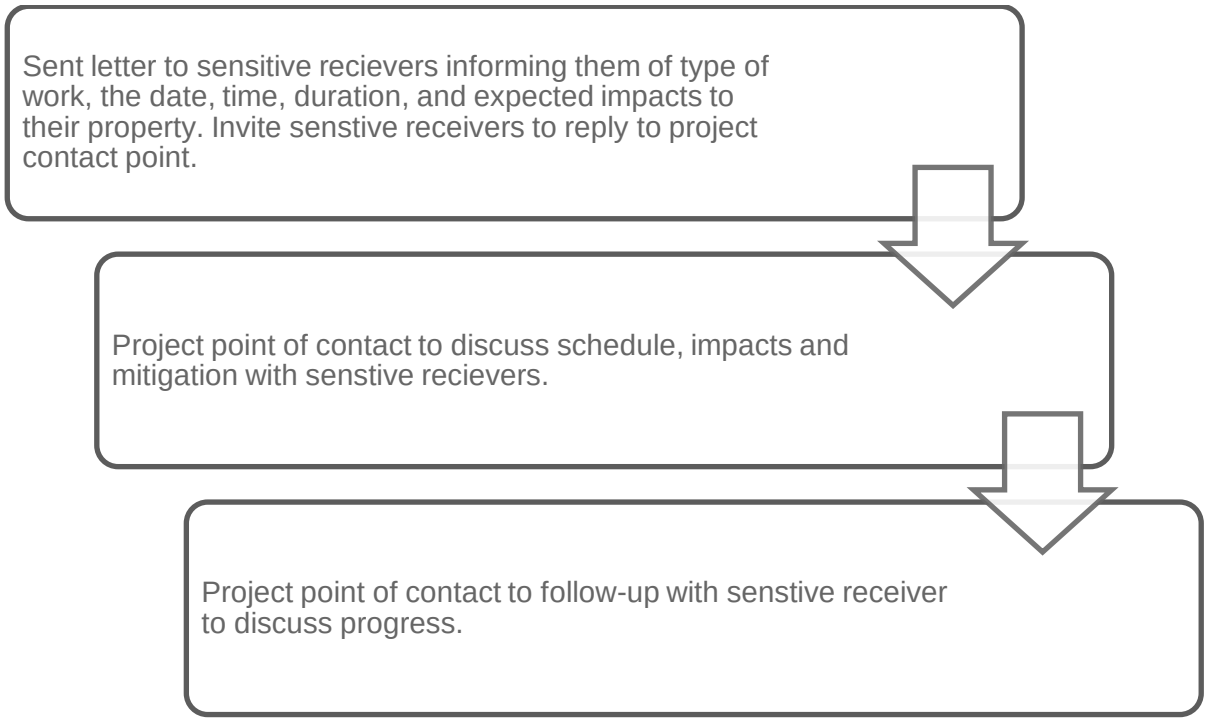
Channel	Response time
Email	Two business days
On-site inquiry or mail	Five business days
Phone	Thirty minutes (during business hours)

5.3. SENSITIVE RECEIVER CONSULTATION PROCEDURE

ESR will consult with nearby sensitive receivers to schedule high noise generating works, vibration intensive activities and management of any potential traffic disruptions. This includes ensuring the community is informed of disruptive works in advance. This mechanism is outlined in

Figure 3 Sensitive receivers consultation procedure.

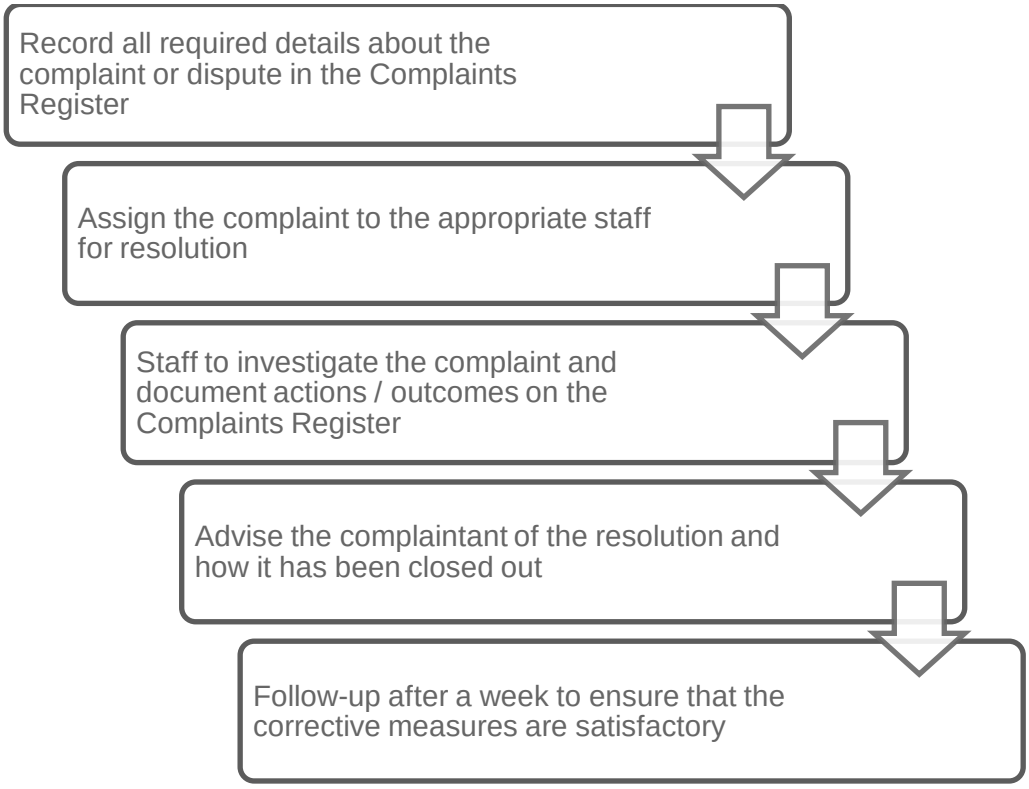
Figure 3 Sensitive receivers consultation procedure



5.4. COMPLAINTS AND DISPUTES RESOLUTION PROCEDURE

The mechanism in Figure 4 Complaints and disputes resolution procedure outlines the procedure for complaints and disputes raised through the project contact point. The required details to be recorded in the complaints register include the date, time and nature of the complaint, details of the complainant and any actions taken to address the complaint.

Figure 4 Complaints and disputes resolution procedure



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