

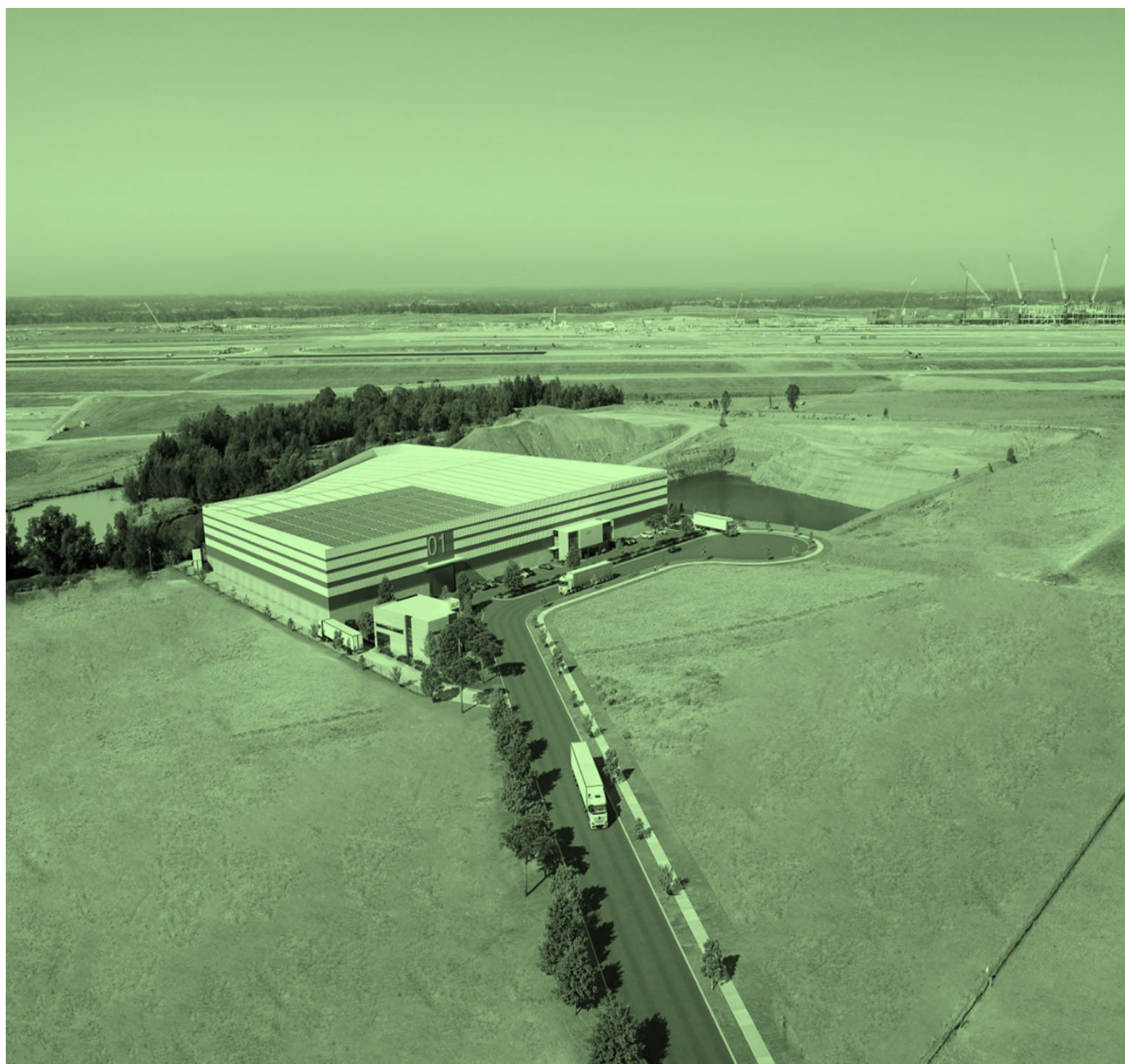


Luddenham Advanced Resource Recovery Centre (Lot 3 DP 623799) | SSD 10446

CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN

Prepared for Coombes Property Group | 10 March 2025







Luddenham Advanced Resource Recovery Centre (Lot 3 DP 623799)

SSD 10446 | CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN

Prepared for Coombes Property Group
14 March 2025

PR

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DOCUMENT CONTROL

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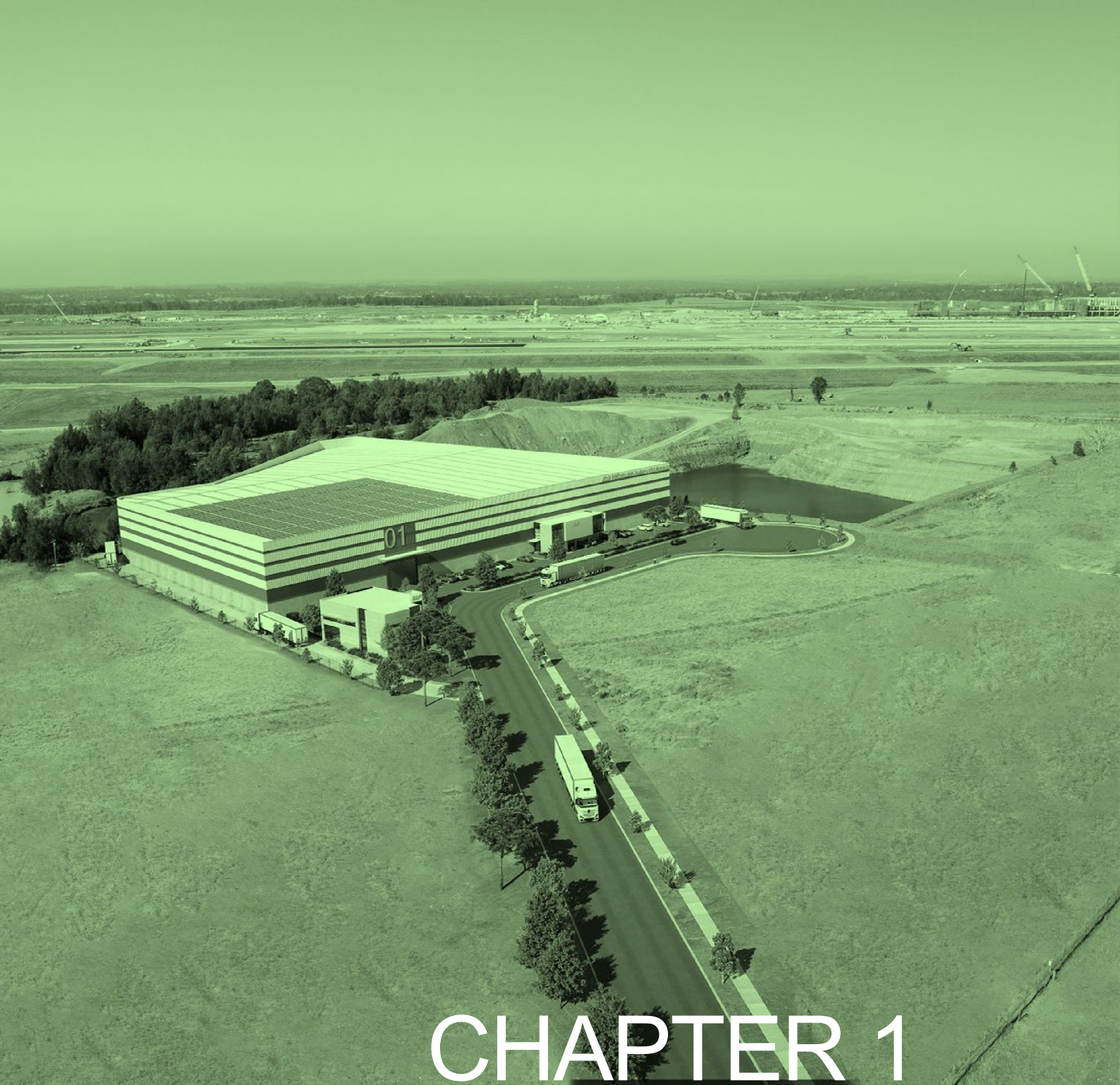
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CHAPTER 1

INTRODUCTION

1 INTRODUCTION

The site is located at 275 Adams Road, Luddenham NSW (Lot 3 in DP 623799, 'the site') within the Liverpool Local Government Area. The Advanced Resource Recovery Centre (ARRC) is approved by State significant development (SSD) consent SDD 10446 (the DA).

The adjoining existing shale/clay quarry is approved under consent DA 315-7-2003, issued by the NSW Minister for Planning under the NSW Environmental Planning and Assessment Act 1979 (EP&A Act).

The site is owned by CFT No 13 Pty Ltd, a member of the Coombes Property Group (CPG).

1.1 Project description

The broader site at 275 Adams Road is approximately nineteen (19) hectares (ha). The approved development footprint for ARRC is approx. eight (8) hectares of the total site area. Immediately to the south of the proposed ARRC, there is an existing operational shale and clay quarry on the site which occupies approximately six (6) ha of the total site area.

The project involves the development of the ARRC.

The following will be built as part of the project:

- Sealed site access via Adams Road.
- Internal sealed roads.
- Hard surfacing for the warehouse floor and external areas.
- A 13,230 m² metal clad fully enclosed warehouse, with a maximum elevation of 16 m.
- Two site offices with the larger office (400 m²) located in the outside parking area and the smaller office (140 m²) located over the car parking area on the western side of the ARRC warehouse.
- Surface water drainage system.

It will also include the installation of:

- Marked traffic and pedestrian areas.
- Approximately 47 parking spaces for staff and customers located to the west and north-west of the ARRC warehouse.
- Two weighbridges: an inbound and an outbound weighbridge.
- Two ticket booths, one for incoming and one for outgoing vehicles.
- A wheel wash for outbound vehicles.
- Awnings attached to the warehouse at each warehouse entry/exit point.
- Separate underground tanks for firewater supply and containment, and a fire suppression system.
- A stormwater management system, including rainwater tanks and an onsite detention basin.
- An on-site surface water management system consisting of a water treatment plant, onsite leachate and water detention areas.
- An on-site wastewater management system comprising of a septic tank.
- Connection to services.
- Fencing and signage at the front of the site.
- Landscaping.

The construction phase outlined above is expected to take around 18 months.

Once fully operational, the ARRC will process up to 600,000 tonnes of waste per annum (tpa) for recycling. It will dispatch up to about 540,000 tpa of recycled product.

The ARRC will accept general solid waste (non-putrescible), including building and demolition waste as well as selected commercial and industrial waste, such as wood waste, glass, plastic, rubber, plasterboard, ceramics, bricks, concrete, metal, paper, cardboard, asphalt waste, cured concrete, soils, and excavated natural material. The ARRC will not receive any putrescible vegetative waste, garden waste, restricted solid waste, hazardous waste, special waste or asbestos waste.

Approximately 80–90% of materials will be recovered, with the remaining 10–20% of non-recyclable residues disposed of at an offsite licensed facility.

The regional context is shown in Figure 1.1 and ARRC layout in Figure 1.2.

1.2 Purpose

The Construction Noise and Vibration Management Plan (CNVMP) has been developed to manage and mitigate noise and vibration impacts associated with the construction activities on the ARRC site and surrounding road upgrades. This plan is based on findings from the Noise and Vibration Impact Assessment (NVIA) presented in the project's Environmental Impact Statement (EIS).

In compliance with Condition B29(a), which requires that the CNVMP be “prepared by a suitably qualified and experienced noise expert,” this document was prepared by an experienced planning and environmental consultant at Element Environment. Additionally, Dale Redwood, Lead Acoustic Consultant from Muller Acoustic Consulting Pty Ltd, conducted a technical review to ensure the plan's accuracy and effectiveness in addressing potential noise and vibration issues.

1.3 Relevant standards and guidelines

The requirements of the following documents have also been considered when preparing this document:

- Approved Methods for the measurement and analysis of environmental noise in NSW (EPA, 2022)
- NSW DEC – Interim Construction Noise Guideline (ICNG, 2009)
- NSW DEC – Environmental Noise Management – Assessing Vibration: a Technical Guideline (the NSW Vibration Guideline), February 2006
- NSW EPA – Noise Policy for Industry (NPI), October 2017
- Transport for NSW (TfNSW) Construction Noise and Vibration Guideline (CNVG), July 2023
- Standards Australia AS 2436–2010™ (AS2436) – Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites
- Standards Australia AS1055–1997™ (AS1055) – Description and Measurement of Environmental Noise
- DIN 4150-3 (1992-02) Structural vibration – Effects of vibration on structures (German Institute for Standardization, 1999), and
- British Standard BS7385: Part 2-1993 (BS 7385) - Evaluation and Measurement for Vibration in Buildings — Part 2 – Guide to Damage Levels from Ground-borne Vibration, dated 1993.
- Generic Vibration Criteria for Vibration- Sensitive Equipment (Gordon, 1999)

1.4 Conditions of consent

This plan has been prepared as required by the conditions of consent (CoC) summarised in Table 1.1 including sections of the plan where they are addressed.

Table 1.1 Noise CoCs

Condition		CNVMP reference
NOISE		
Hours of work		
B26	The Applicant must comply with the hours, unless the Planning Secretary has otherwise agreed to the carrying out of 24-hour operation on the site (see condition A13 – Conditions of Consent). Hours of Work Earthworks and construction: Monday – Friday 7am - 6pm Saturday – 8am – 1pm	Section 2.3
B27	Works outside of the hours identified in condition B26 may be undertaken in the following circumstances:	Section 5.1
B27(a)	Works that are inaudible at the nearest sensitive receivers.	
B27(b)	For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or	
B27(c)	Where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.	
Construction Noise limits		
B28	The Development must be constructed to achieve the construction noise management levels detailed in the Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures in the Appendix 2.	Section 3.1 Section 3.2 Section 3.3 Section 5.1
Construction Noise and Vibration Management Plan		
B29	The Applicant must prepare a Construction Noise and Vibration Management Plan 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:	This Plan
B29(a)	Be prepared by a suitably qualified and experienced noise expert.	Section 1.2
B29(b)	Be approved by the Planning Secretary prior to the commencement of construction of each stage of the Development.	Section 1.4
B29(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).	Section 5.1
B29(d)	Describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers.	Section 5.2
B29(e)	Include strategies that have been developed with the community for managing high noise generating works.	Section 5.2 Section 7
B29(f)	Describe the community consultation undertaken to develop the strategies in condition B29(e); and	Section 7
B29(g)	Include a complaints management system that would be implemented for the duration of the Development.	Section 6.5
B30(a)	The Application must: not commence construction of any relevant stage of the Development until the Construction Noise and Vibration Management Plan required by condition B29 is approved by the Planning Secretary; and	Section 1.4
B30(b)	implement the most recent version of the Construction Noise and Vibration Management Plan approved by the Planning Secretary for the duration of construction.	Section 1.4
Road Traffic Noise		
B40	Prior to the commencement of construction of the Development, the Applicant must prepare a Driver Code of Conduct and induction training for the Development to minimise road traffic noise. The Applicant must	Appendix A of Construction

Condition		CNVMP reference
	update the Driver Code of Conduct and induction training for construction and operation and must implement the Code of Conduct for the life of the Development.	Traffic Management Plan
VIBRATION		
Vibration Criteria		
B43	Vibration caused by construction and operation at any residence or structure immediately outside the site (including the Western Sydney Airport aviation fuel farm) must be limited to:	Section 3.4 Section 4.3
B43(a)	For structural damage, the latest version of DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures (German Institute for Standardisation, 1999).	Section 3.4.1 Section 4.3.1
B43(b)	For human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: a technical guideline (DEC, 2006) (as may be updated or replaced from time to time; and	Section 3.4.2 Section 4.3.2
B43(c)	For vibration sensitive equipment, the generic vibration criterion (VC) curves set out in Generic Vibration Criteria for Vibration-Sensitive Equipment (Gordon, 1999).	Section 3.4.3 Section 4.3.3
B44	Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in condition B43.	Section 3.4.4 Section 4.3
ENVIRONMENTAL MANAGEMENT		
Management Plan Requirements		
C1	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	
C1(a)	Detailed baseline data	
C1(b)	(b) details of: (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) any relevant limits or performance measures and criteria; and (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the Development or any management measures;	Section 2 Section 3.2
C1(c)	a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria	Section 3
C1(d)	a program to monitor and report on the: (i) impacts and environmental performance of the Development; and (ii) effectiveness of the management measures set out pursuant to paragraph (c) above;	Section 3.2 CEMP
C1(e)	a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible.	Appendix A
C1(f)	a program to investigate and implement ways to improve the environmental performance of the Development over time.	Section 6 CEMP Section 7 CEMP
C1(g)	a protocol for managing and reporting any: (i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); (ii) complaint; (iii) failure to comply with statutory requirements; and	Section 6.5 CEMP
C1(h)	a protocol for periodic review of the plan.	Section 7 CEMP

1.5 Approval of this plan

Per Condition B29(b), construction will not commence until this Construction Noise and Vibration Management Plan (CNVMP) has been approved by the Planning Secretary.

Figure 1.1
Regional context

Luddenham Advanced Resource Recovery Centre
CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN

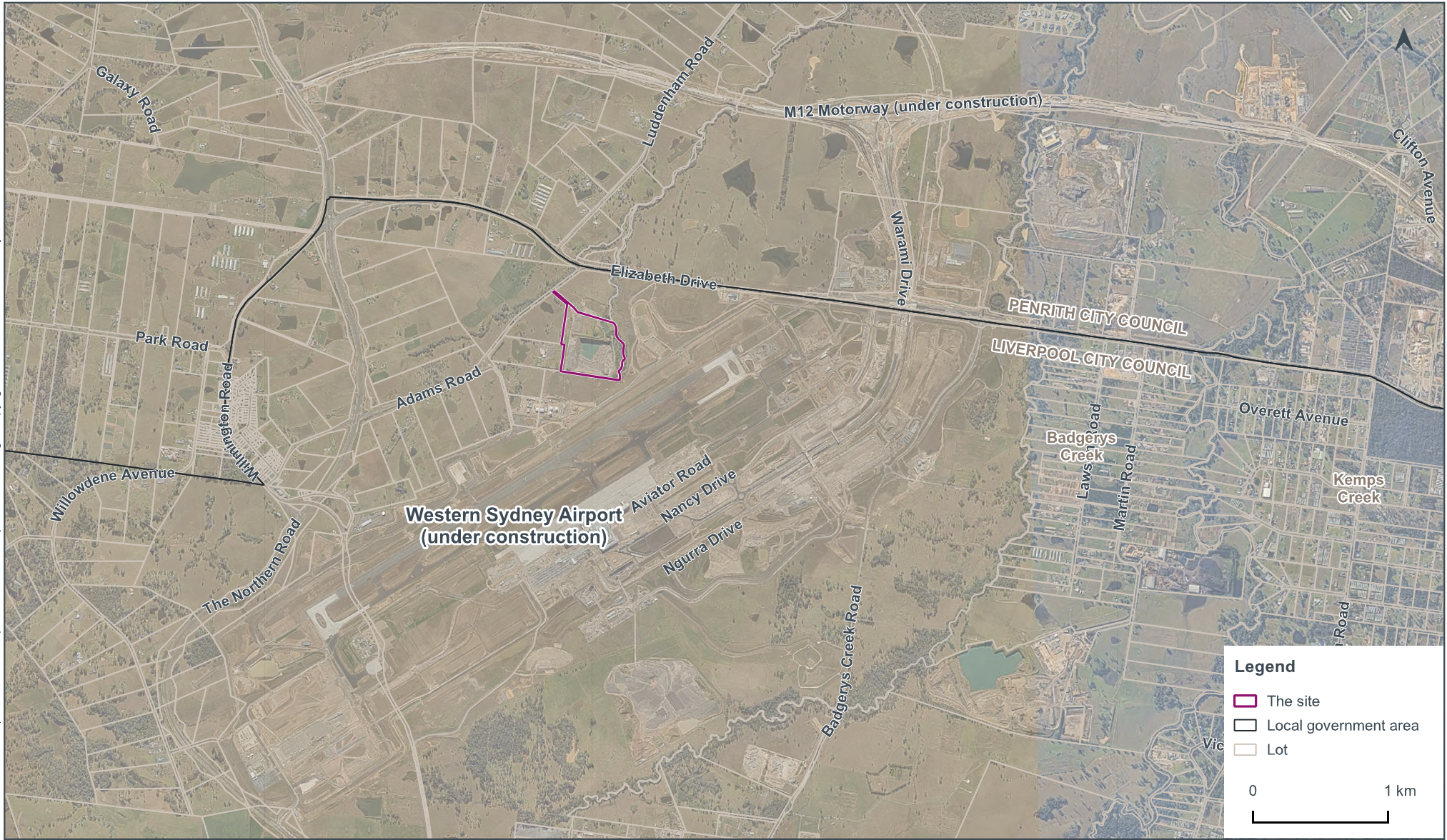
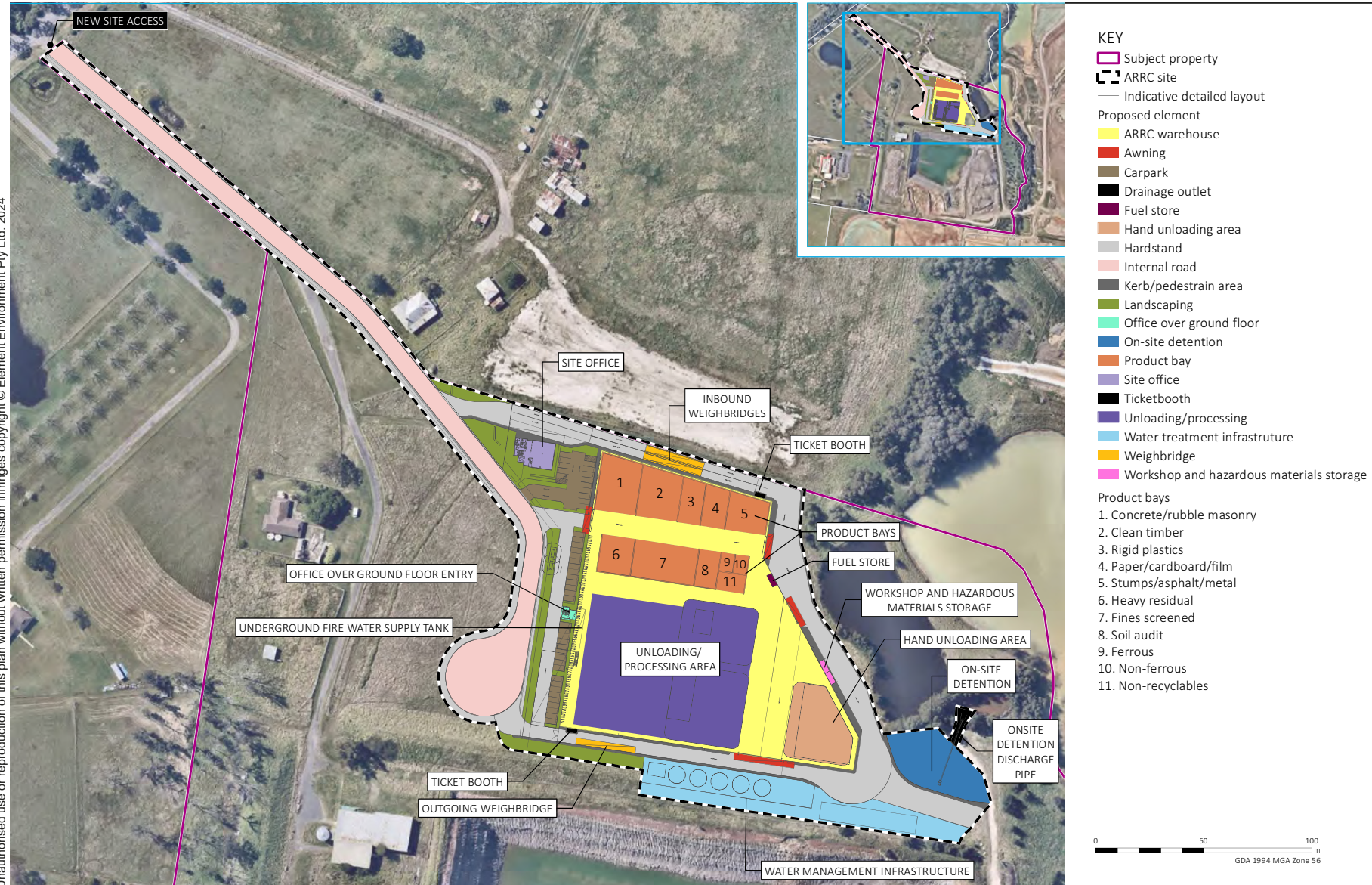
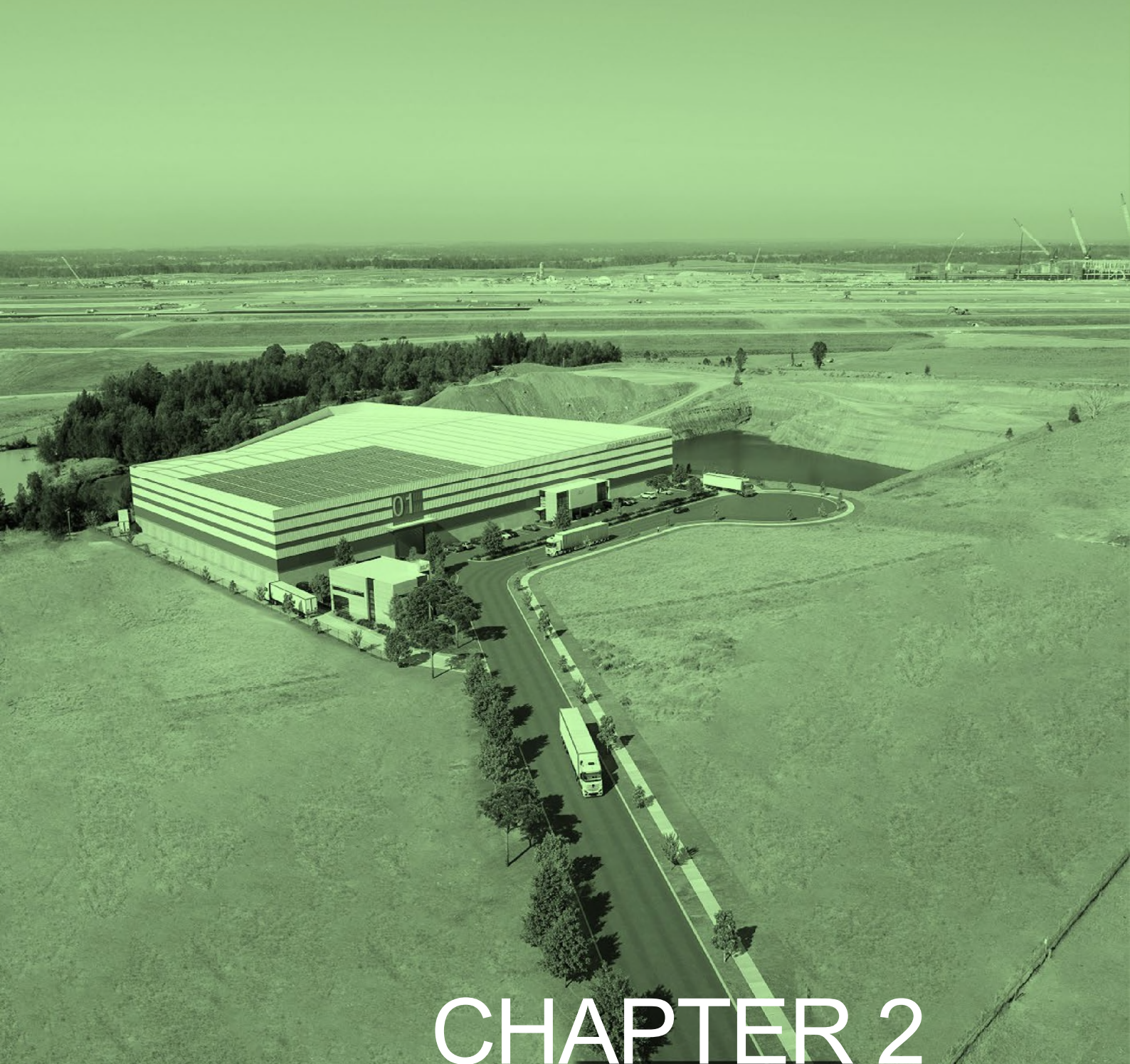


Figure 1.2
ARRC layout

Luddenham Advanced Resource Recovery Centre
CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN





CHAPTER 2

PROJECT OVERVIEW

2 PROJECT OVERVIEW

2.1 Receivers

To assess potential impacts from the project on nearby landowners, the noise assessment locations are shown on Figure 2.1 Noise assessment locations. The receivers are categorised as:

- 'R' – private residential.
- 'C' – commercial.
- 'AR' – active recreation.

2.2 Vehicle generation

Construction of all aspects of the project will generate an estimated peak of approximately 604 heavy and 42 light vehicle movements per day.

2.3 Construction hours

Construction of the ARRC will primarily be conducted during standard construction hours, in compliance with the approved hours detailed in Condition B26 as follows: Monday to Friday: 7:00am to 6:00pm.

- Saturday: 8.00 am to 1:00 pm; and
- No work on Sundays or public holidays.

Work outside of these standard hours may only be undertaken under specific circumstances, as outlined in Condition B27, including:

- Activities that are inaudible at the nearest sensitive receivers.
- Deliveries required outside standard hours by the NSW Police Force or other authorities for safety reasons.
- Emergency situations where work is necessary to prevent the loss of life, property, or to prevent environmental harm.

In these cases, out-of-hours work will be conducted following the noise management requirements specified in the *Interim Construction Noise Guideline* (DECC, 2009), with all feasible and reasonable noise mitigation measures implemented to minimise the potential impact on nearby sensitive receivers.

2.4 Noise assessment locations

The nearest representative noise assessment locations to the ARRC and road upgrades have been identified to assess potential noise and vibration impacts. The locations were selected to represent the range and extent of noise impacts from the ARRC.

Details are provided in Table 2.1 and their locations are shown in Figure 2.1 Noise assessment locations.

Table 2.1 Noise assessment locations

ID	Address	Classification (currently)	Easting	Northing
R1	2161-2177 Elizabeth Drive, Luddenham	Residential	288775	6250213
R2	2111-2141 Elizabeth Drive, Luddenham	Residential	289113	6250041

ID	Address	Classification (currently)	Easting	Northing
R3	285 Adams Road, Luddenham (currently unoccupied) ¹	Residential	288931	6249685
R4	5 Anton Road, Luddenham	Residential	288390	6249272
R5	185 Adams Road, Luddenham	Residential	288317	6249178
R6	225 Adams Road, Luddenham	Residential	288751	6249563
R7	161 Adams Road, Luddenham	Residential	287971	6249090
R8	25102550 Elizabeth Drive, Luddenham	Residential	288373	6250229
AR1	Hubertus Club outdoor firing range	Active recreation	288643	6249324
C1	Hubertus Club restaurant including outdoor facilities	Commercial	288680	6249400

¹ It is understood that the landowner intends to redevelop the property for non-residential uses but impacts at this residence have been assessed in full.

2.5 Construction plant and equipment

Equipment sound power levels

Equipment sound power levels have been taken from the Update of Noise Database for prediction of Noise on Construction and Open Sites (DEFRA 2005), where available.

Acoustically significant fixed and mobile equipment items were considered in the model for the site with 100% utilisation based on information provided by KLF Holdings to assumptions to represent a range of activities likely to undertaken during the construction works.

A summary of the construction phases, duration, number of plant and cumulative sound power levels (SWL) are presented in Table 2.2. The model considered the cumulative plant and equipment sound power levels as an area source across the site providing a potential worst-case scenario for each construction phase.

Table 2.2 Construction stages and equipment sound power levels

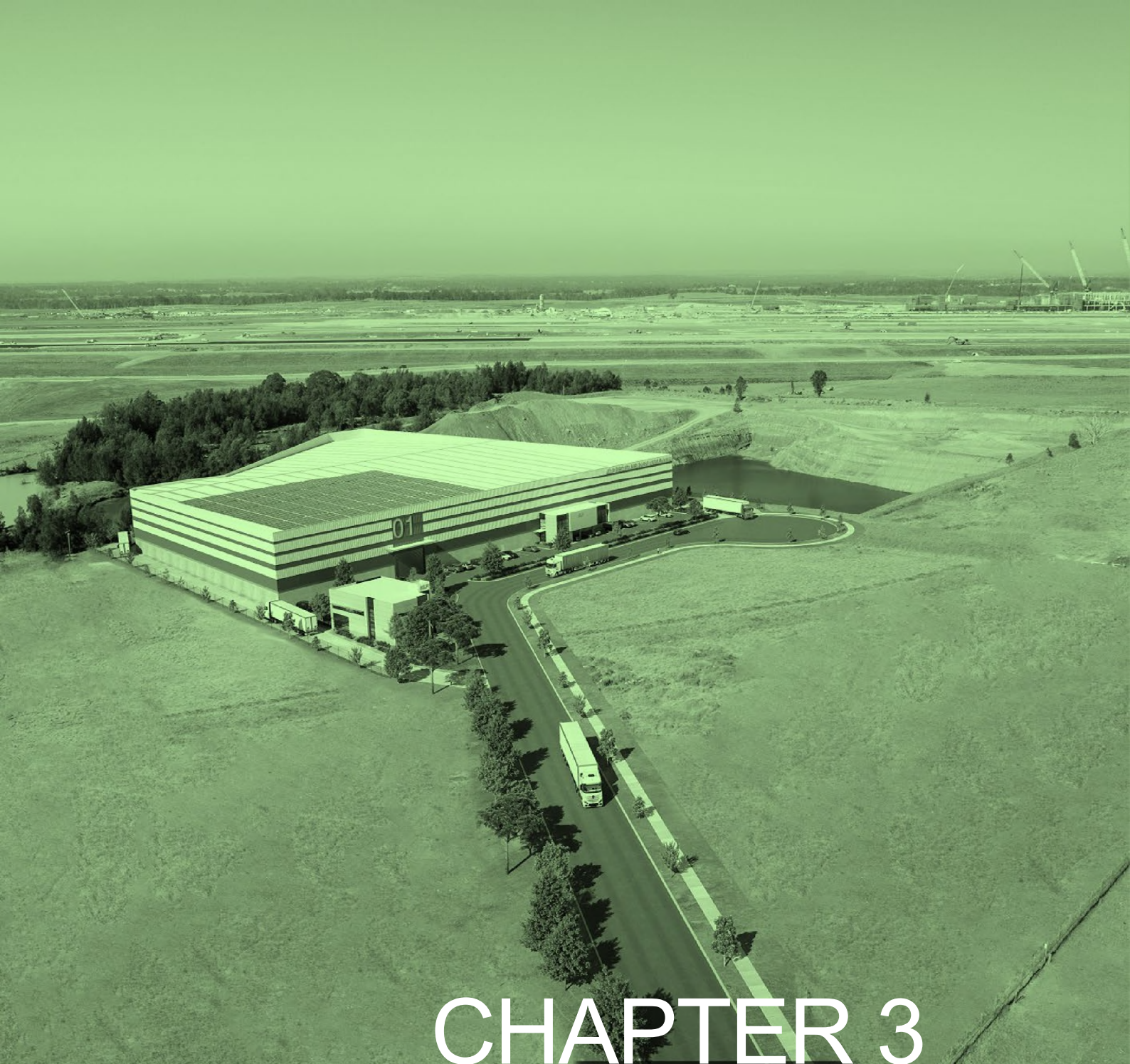
Equipment	Number of items (per 15 minutes)	SWL per item, LAeq	Total SWL, LAeq	Cumulative SWL per phase, LAeq
Stage 1: Bulk earthworks (duration = 8 weeks)				
Rigid tipper	1	103	103	115
Bobcat	2	95	98	
Roller	1	109	109	
Excavator	1	107	107	
Scraper 631	1	112	112	
Semi-trailer	1	103	115	
Stage 2: Concrete Hardstand, lower walls, bunkers and roadway (duration = 30 weeks)				
Concrete agitator	3	108	113	118
Concrete pump	3	109	114	
Crane	1	112	112	
Semi-trailer	1	103	103	
Flatbed Hiab truck	1	103	103	
Stage 3: Building structure and erection (duration = 30 weeks)				
Hand tools	3	108	113	116
Trucks	2	103	106	
Crane	1	112	112	

Equipment	Number of items (per 15 minutes)	SWL per item, LAeq	Total SWL, LAeq	Cumulative SWL per phase, LAeq
Elevated work platform	1	103	103	
Stage 4: Road upgrade works (duration = 4-6 weeks)				
Road trucks	2	103	106	114
Asphalt truck and tipper	1	112	112	
Grader	1	107	107	
Roller	1	103	103	
Water cart	1	97	97	

Figure 2.1
Noise assessment location

Luddenham Advanced Resource Recovery Centre
CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN





CHAPTER 3

CONSTRUCTION NOISE AND VIBRATION CRITERIA

3 CONSTRUCTION NOISE AND VIBRATION CRITERIA

3.1 Existing acoustic environment

Noise around the site was monitored in 2020 by EMM, with results used to characterise existing ambient noise at the site. The monitoring was used to determine the rating background level (RBL) (the noise level exceeded for 90% of the measurement time) and the ambient noise level (the all-encompassing noise in the environment).

The noise sensitive receivers (also referred to as assessment locations) were used in the AQIA and NVIA). Unattended noise monitoring was undertaken from 25 February to 5 March 2020 by EMM at three locations surrounding the site:

- NM1 – 2111 Elizabeth Street, Luddenham.
- NM2 – 275 Adams Road, Luddenham.
- NM3 – 225 Adams Road, Luddenham.

The resulting RBLs and ambient noise levels are summarised in Table 3.1.

Table 3.1 Summary of existing RBLs and ambient noise levels

Monitoring location	Period ¹	Rating background level (RBL), dBA	Measured L _{Aeq, period} noise level ² , dBA
NM1 – 2111 Elizabeth Street, Luddenham	Day	46	60
	Evening	40	55
	Night	39	55
NM2 - 275 Adams Road, Luddenham	Day	39	50
	Evening	38	54
	Night	35	45
NM3 – 225 Adams Road, Luddenham	Day	37	49
	Evening	38	45
	Night	33	43

1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; Evening: 6 pm to 10 pm; Night: 10 pm to 7 am, Sunday to Friday and 10 pm to 8 am Saturday and public holidays.

2. The energy averaged noise level over the measurement period and representative of general ambient noise.

3.2 Interim construction noise guidelines

Noise impacts on sensitive receivers are assessed and managed in accordance with DECC (2009) Interim construction noise guideline (ICNG).

The ICNG contains procedures for determining project specific noise management levels (NMLs) for sensitive receivers based on the existing background noise in the area. The 'worst-case' noise levels from construction of a project are predicted and then compared to the NMLs in a 15-minute assessment period to determine the likely impact.

The NMLs are not mandatory limits. However, where construction noise levels are predicted or measured to be above the NMLs, feasible and reasonable work practices to minimise noise emissions are to be investigated.

The ICNG approach for determining NMLs at residential receivers is shown in Table 3.2.

Table 3.2 ICNG construction noise management levels for residences

Time of day	NML $L_{Aeq, 15 \text{ min}}$	Application
Recommended standard hours: Monday to Friday 7 am to 6 pm, Saturday 8 am to 1 pm, No work on Sundays or public holidays	Noise-affected RBL + 10 dB	<p>The noise-affected level represents the point above which there may be some community reaction to noise.</p> <ul style="list-style-type: none"> Where the predicted or measured $L_{eq(15\text{-min})}$ 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	<p>The highly noise-affected level represents the point above which there may be strong community reaction to noise.</p> <ul style="list-style-type: none"> Where noise-affected level represents the point above which there may be strong community reaction to noise. <ol style="list-style-type: none"> 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); 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	<ul style="list-style-type: none"> 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 dBA above the noise-affected level, the proponent should negotiate with the community. For guidance on negotiating agreements see Section 7.2.2 of the ICNG.

Source: ICNG (EPA, 2009).

3.3 Project specific construction noise management levels

The project construction NMLs for recommended standard out of hour periods are presented in Table 3.3 for all assessment locations.

Table 3.3 Construction noise management levels - all assessment locations

Assessment Location	Period	Adopted RBL ¹	NML $L_{Aeq, 15 \text{ min}}$, dB
R1, R2 and R8	Day (standard ICNG hours)	46	56
	Day (OOH)	46	51
R3 ²	Day (standard ICNG hours)	39	49
	Day (OOH)	38	43
R4-R7	Day (standard ICNG hours)	37	47
	Day (OOH)	37	42
AR1	When in use	n/a	65
C1	When in use	n/a	70

1. The RBLs adopted from table 2.3 summary of existing background and ambient noise

2. Currently unoccupied

3.4 Construction vibration assessment

To comply with Condition B43, vibration impacts are considered in terms of their effects on building occupants (human comfort), building structures (structural/cosmetic damage), vibration sensitive-equipment, including safe working distances for typical plant. These criteria below guided the assessment of construction vibration impacts reported in Section 4.

3.4.1 Structural damage (Condition B43(a))

Vibration limits for structural damage are set by DIN 4150-3 Structural vibration – Effects of vibration on structures (1992-02), supplemented by British Standard BS 7385:1993 for transient vibration to ensure minimal risk of cosmetic damage. Table 3.4 presents BS7385 limits, with conservative screening levels for construction equipment (e.g., vibratory rollers, pile drivers) operating above 4 Hz:

- Reinforced or framed structures: 25.0mm/s peak particle velocity (PPV)
- Unreinforced or light framed structures: 7.5mm/s PPV

Safe working distances for cosmetic damage (BS 7385) are listed in Table 3.6 to guide compliance with these levels.

Table 3.4 Building Damage Vibration Management Levels (BS 7385)

Building Type	PPV (mm/s) in the Frequency Range of Predominant Pulse	
	4Hz to 15Hz	15Hz and Above
Reinforced or framed structures industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
Un-reinforced 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

3.4.2 Human comfort (Condition B43(b))

Vibration impacts on building occupants are assessed using the Environmental Noise Management Assessing Vibration: a technical guideline (December 2006), as incorporated in the approved Noise and Vibration Impact Assessment (NVIA, EMM 2021). The guideline uses Vibration Dose Values (VDVs) to evaluate intermittent vibration, accumulating energy over the daytime (7:00am – 10:00pm) and night-time (10:00pm – 7:00am) periods. Maximum and preferred VDVs, based on the likelihood that a person would be annoyed, are listed in Table 3.5. Safe working distances for human comfort (BS 6472-1) are provided in Table 3.6 to ensure VDVs remain below these thresholds.

Table 3.5 Vibration dose values for intermittent vibration

Building Type	Assessment Period	Vibration Dose Value ¹ (m/s ^{1.75})	
		Preferred	Maximum
Residential	Daytime	0.20	0.40
	Night-time	0.13	0.26
Offices, schools, educational institutions and places of worship	Day or night-time	0.40	0.80
Workshops	Day or night-time	0.80	1.60

Note¹: The VDV accumulates vibration energy over the daytime and night-time assessment periods and is dependent on the level of vibration as well as the duration.

3.4.3 Vibration-sensitive equipment (Condition B43(c))

Vibration limits for sensitive equipment are based on the Generic Vibration Criteria for Vibration-Sensitive Equipment (Gordon, 1999), with the VC-A curve at 50 µm/s (0.05 mm/s) serving as the threshold for scientific and medical instruments. The EMM correspondence dated 7 April 2022 applies these criteria to the WSA aviation fuel farm, confirming that predicted vibration levels from ARRC construction and operation are well below this limit, as detailed in Section 4.3.3. Safe working distances (refer Table 3.6) and vibration attenuation data underpin this compliance with Condition B43(c).

3.4.4 Safe working distances (Condition B44)

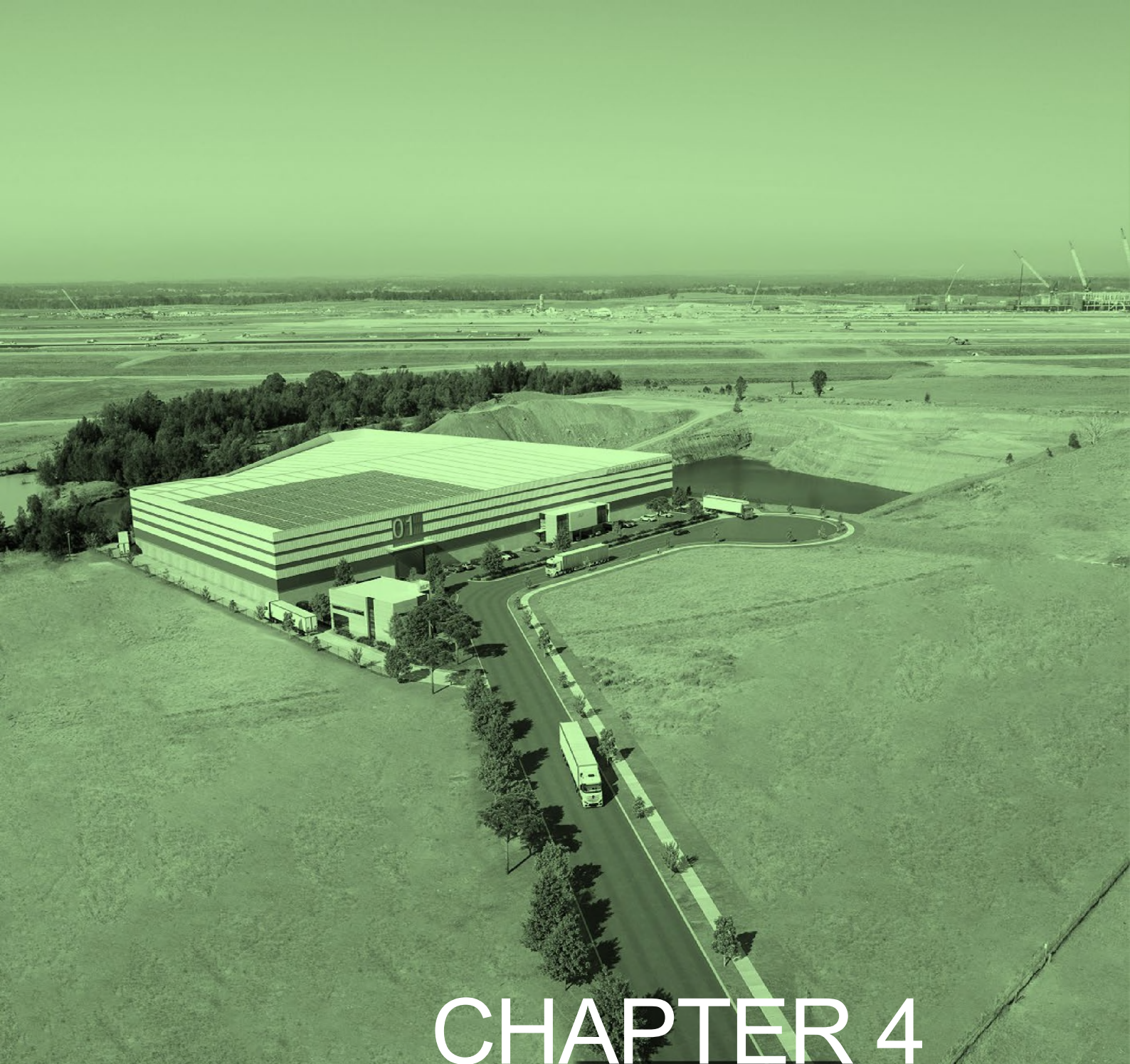
Table 3.6 provides recommended safe working distances for vibration-intensive plant, derived from empirical data (Transport for NSW, 2023). These distances are conservative, assuming continuous vibration, while most construction activities produce intermittent emissions, further reducing risk. Condition B44 mandates a minimum 30 m distance for vibratory works near residential buildings unless monitoring confirms compliance with Table 3.5.

Table 3.6 Recommended safe working distances for vibration intensive plant

Plant Item	Rating/Description	Safe Working Distance	
		Cosmetic Damage (BS 7385)	Human Comfort (BS 6472)
Vibratory Rollers	<50 kN (typically 1-2 tonnes)	5m	15-20m
	<100 kN (typically 2-4 tonnes)	6m	30m
	<200 kN (typically 4-6 tonnes)	12m	40m
	<300 kN (Typically 7-13 tonnes)	15m	100m
	>300 kN (Typically 13-18 tonnes)	20m	100m
	>300 kN (>18 tonnes)	25m	100m
Small Hydraulic Hammer	300 kg (5 to 12t excavator)	2m	7m
Vibratory Pile Drive	Sheet piles	2-20m	20m
Piling Rig – Bored	≤ 800 mm	2 m (nominal)	4m
Jackhammer	handheld	1 m (nominal)	2m

Source: From *Transport for NSW Construction Noise and Vibration Guideline (Roads)*, 2023.

Safe work distances relate to continuous vibration. For most construction activity, vibration emissions are intermittent in nature. The safe working distances are therefore conservative.



CHAPTER 4

CONSTRUCTION NOISE AND VIBRATION IMPACTS

4 CONSTRUCTION NOISE AND VIBRATION IMPACTS

4.1 Predicted construction noise levels

The predicted noise levels from the construction of the ARRC were assessed based on the identified construction activities, associated equipment sound power levels, and their proximity to sensitive receivers. Noise predictions have been modelled assuming worst-case scenarios where equipment is operating simultaneously at full capacity within a 15-minute assessment period. This approach ensures that potential peak noise levels are accurately captured and that necessary mitigation measures can be adequately planned in advance.

Predicted noise levels at the closest sensitive receivers exceed the NMLs during standard construction hours. The highest exceedances are anticipated at R3 and R6, where noise levels may exceed NMLs by 10 dB or more during peak construction periods. These exceedances occur due to high sound power levels associated with bulk earthworks, hardstand preparation, and building structure erection (refer to Table 4.3 in NVIA). The modelling results indicate that at R3, noise levels may reach up to 65 dB(A), while at R6, they may reach 63 dB(A). The predicted noise exceedances at these locations are within the range of 2 dB to 5 dB below the highly noise-affected threshold of 75 dB(A), as defined in the ICNG. Given the anticipated exceedances, noise control measures will be necessary to reduce potential disturbance to the nearest sensitive receptors. However, there is limited opportunity for significant noise mitigation due to the proximity of assessment locations, construction location, duration of work, and local topography. The main management measure will be restricting work to daytime hours wherever possible and ensuring that residents are notified prior to works commencing. While such exceedances are anticipated in major construction projects, proactive management strategies, including community engagement and ongoing noise monitoring, will be implemented to minimise disruptions to sensitive receptors in the vicinity.

While exceedances are common in construction projects, they act as a trigger for noise mitigation rather than a strict limit. Mitigation and management measures to address these exceedances are detailed in Section 5. Implementing these measures is crucial for ensuring compliance and minimising the impact on the surrounding community.

Given the location and topography, some receivers are shielded from direct noise impacts, reducing their exposure to construction noise. However, R3 (currently unoccupied) and R6 remain key monitoring points due to their proximity to the construction site. The presence of natural or built structures may provide partial shielding for some sensitive receivers, but direct exposure to construction noise remains a concern, particularly in open areas or at higher elevations.

4.2 Road upgrade noise levels

Upgrade works at Adams Road or Elizabeth Drive will occur over approximately four to six weeks. Typical plant and equipment associated with the works is expected to be similar to that utilised for the upgrade to the site road access as summarised in Table 4.1.

Table 4.1 Road upgrades sound power levels

Equipment/Activity	Number of items (per 15 minutes)	SWL per item, LAeq	Total SWI, LAeq	Cumulative SWL per phase, LAeq
Road upgrade works (duration = 4-6 weeks)				
Road trucks	2	103	106	114

Equipment/Activity	Number of items (per 15 minutes)	SWL per item, LAeq	Total SWI, LAeq	Cumulative SWL per phase, LAeq
Asphalt truck and tipper	1	112	112	
Grader	1	107	107	
Roller	1	103	103	
Water cart	1	97	97	

The upgrade works will be principally at the site entry, the intersection of Adams Road and Elizabeth Drive and on Adams Road between Elizabeth Drive and Anton Road. The monitoring locations represented in Table 3.1 are potentially most exposed to the proposed construction works (refer to Figure 2.1). They include:

- R1: 2161-2177 Elizabeth Drive, Luddenham.
- R2: 2111-2141 Elizabeth Drive, Luddenham.
- R3: 285 Adams Road, Luddenham (currently unoccupied).
- R4: 5 Anton Road, Luddenham.
- R5: 185 Adams Road, Luddenham; and
- R6: 225 Adams Road, Luddenham.

4.3 Construction vibration

Humans can detect vibration levels which are well below those causing structural damage to a building or its contents. This section assesses vibration impacts from ARRC construction and associated road upgrades (e.g., Adams Road and Elizabeth Drive intersection) against the criteria in Section 3.4, addressing residential receivers and the Western Sydney Airport (WSA) aviation fuel farm.

4.3.1 Structural Damage (Condition B43(a))

The nearest residential building is R3 (285 Adams Road, derelict and unoccupied), approximately 40 m from ARRC construction activities and 14 m from the site access road. The next closest receiver, R2 (2111-2141 Elizabeth Drive), is 100 m from the Elizabeth Drive/Adams Road intersection upgrade, per the Addendum NVIA (EMM 2021). R6 (225 Adams Road) is 200 m from the ARRC construction area.

These structures are conservatively assessed as unreinforced or light framed, with a screening level of 7.5 mm/s PPV (refer Section 3.4). All sensitive receivers are setback further than the safe working distances for cosmetic damage (refer Table 3.6), e.g., 12 m for <200 kN rollers used in ARRC construction or road upgrades. Vibration from intermittent sources is expected to be well below 7.5 mm/s at 14 m (access road) or 40 m (construction), ensuring minimal risk.

Per Condition B44, vibratory works within 30 m are prohibited unless monitoring confirms compliance with Table 3.5 (e.g., 15 mm/s at 4 Hz). As R3 is 14 m from the site access road, within the 30 m threshold, vibration monitoring will be conducted for any vibratory works closer than 30 m to ensure compliance with B43 criteria. If distances cannot be maintained, alternative methods (e.g., smaller rollers, non-vibratory modes) will be adopted.

Road upgrades near R2 (100 m) and ARRC construction near R6 (200 m) pose no structural risk due to the significant buffers.

4.3.2 Human Comfort (Condition B43(b))

R3 (285 Adams Road, derelict and unoccupied) is 40 m from ARRC construction activities and 14 m from the site access road.

The nearest occupied receiver, R2 is 100 m from the Elizabeth Drive/Adams Road intersection upgrade, per the Addendum NVIA (EMM 2021), while R6 (225 Adams Road) is 200 m from ARRC construction. All sensitive receivers are setback further than the safe working distances for human comfort (refer Table 3.6). Table 4.2 indicates a PPV of 6 mm/s is strongly noticeable at close range, but this attenuates below the VDV threshold of 0.40 m/s^{1.75} (daytime, Table 3.4) beyond 40 m, and well below at 14 m for access road activities due to intermittent use.

Annoyance impacts are highly unlikely at R2 and R6 during standard hours. Road upgrades at R2 (100 m), using similar plant (e.g. rollers, graders), pose no risk given the distance exceeds the 40 m threshold.

4.3.3 Vibration-Sensitive Equipment (Condition B43(c))

The WSA aviation fuel farm, located approximately 546 m northeast of the ARRC construction site, is the only identified structure potentially containing vibration-sensitive equipment. As detailed in the EMM correspondence to the Department dated 7 April 2022, a comprehensive vibration assessment was conducted using best-practice standards, including *Generic Vibration Criteria for Vibration-Sensitive Equipment* (Gordon, 1999), as required by Condition B43(c). The assessment predicts that vibration levels at the fuel farm from ARRC activities are:

- Construction: Less than 0.1 mm/s (100 µm/s), significantly reduced at 546 m due to distance and attenuation.
- Operation: Less than 0.01 mm/s (10 µm/s), even lower due to fixed equipment and greater distance from the site boundary.

These levels are well below the VC-A criterion of 50 µm/s (0.05 mm/s), the threshold for vibration-sensitive equipment per Gordon (1999), ensuring compliance with Condition B43(c). The assessment accounts for the fuel farm's distance, the type of construction plant (e.g., <200 kN rollers), and vibration attenuation, confirming negligible risk. Additionally, the structural integrity of buried pipework was evaluated against DIN 4150-3 (1999), with a limit of 50 mm/s, which is also comfortably met. Road upgrades near Elizabeth Drive, over 400 m from the fuel farm, produce similarly low vibration levels due to distance and plant type (e.g., rollers). As a contingency, vibration monitoring will be conducted if construction or upgrade activities approach within 100 m of the fuel farm to verify ongoing compliance with the VC curves.

5 NOISE MANAGEMENT AND VERIFICATION

This section addresses Conditions B29(c) and B29(d), which specify the need for procedures to achieve noise management levels and measures to manage high noise-generating works near sensitive receivers.

5.1 Management measures

This plan incorporates specific procedures to mitigate noise impact on sensitive receivers to achieve the noise management levels outlined in the ICNG. Table 5.1 lists feasible and reasonable noise mitigation measures designed to reduce noise levels to within or below the NMLs wherever possible.

The existing bund wall on the western boundary of the Luddenham Quarry site will be maintained and it will reduce noise impact associated with construction of ARRC to AR1 (Hubertus Club) and R6 receivers.

These procedures include:

- Using quieter equipment and implementing regular maintenance schedules to reduce operational noise.
- Limiting impulsive noise by modifying work practices, such as reducing metal-to-metal contact and avoiding dropping materials from heights.
- Scheduling noisier construction activities during standard ICNG hours and providing advance notification to nearby sensitive receivers if unavoidable high-noise activities are required outside these hours.

By applying these measures, the project aims to achieve compliance with the ICNG NMLs and minimise disturbance to the community.

Table 5.1 Construction noise and vibration management measures

Strategies	Management measures	Timing	Responsibility
Universal work practices	Provide regular training to workers and contractors (such as toolbox talks) to use equipment in ways to minimise noise.	Pre and during construction	Project Manager Site Supervisor Foreman
	Avoid shouting and minimise talking loudly and slamming vehicle doors.	During construction	All personnel
	Keep truck drivers informed of designated vehicle routes, parking locations, acceptable delivery hours and other relevant practices.	During construction	Project Manager Site Supervisor Foreman
	Avoid the use of equipment which generates impulsive noise and minimise metal to metal contact and dropping materials from height.	During construction	Project Manager Site Supervisor Foreman Equipment operators
	Providing staff education and tool box talks on impacts on noise and quiet work practices	Pre and during construction	Project Manager Site Supervisor Foreman Equipment operators
Consultation and notification	Notify residents prior to commencement of intensive works.	Pre construction	Project Manager Site Supervisor
	Keep a register for any complaints, including details of the complaint such as date, time, person receiving complaint, complainant's contact details, person	During construction	Project Manager Site Supervisor Foreman

Strategies	Management measures	Timing	Responsibility
	referred to, description of the complaint, work area and response.		
Work practice methods	Regular enforcement (such as toolbox talks) of the need to minimise noise and vibration.	During construction	Foreman Equipment operators
	Avoiding the use of portable radios, public address systems or other methods of site communication that may unnecessarily impact upon nearby residents.	During construction	Foreman Equipment operators
	Developing routines for the delivery of materials and parking of vehicles to minimise noise.	During construction	Foreman Equipment operators
	Where possible, avoiding the use of equipment that generates impulsive noise.	During construction	Foreman Equipment operators
Plant and equipment	Where possible, choosing quieter plant and equipment base don the optimal power and size to perform the required tasks most efficiently.	During construction	Foreman Equipment operators
	Operate plant in a quiet and efficient manner, minimise idling.	During construction	Equipment operators
	Regularly inspecting and maintaining plant and equipment to minimise noise and vibration level increases, to ensure that all noise and vibration reduction devices are operating effectively.	During construction	Site Supervisor Foreman Equipment operators
	Place as much distance as possible between the equipment and sensitive land uses.	During construction	Equipment operators
	Avoid the use of reverse alarms by designing the site to avoid reversing or install broadband reverse alarms where possible.	Pre construction	Project Manager Site Supervisor
	Where possible, schedule noisy activities to occur during less sensitive periods.	During construction	Site Supervisor Foreman Equipment operators
	Avoid undertaking multiple highly noise intensive activities concurrently.	During construction	Site Supervisor Foreman
	Ensure truck movements are kept to a minimum i.e. trucks are fully loaded on each trip.	During construction	Site Supervisor Foreman Equipment operators
	Implementing a regular maintenance schedule for all plant and equipment	During construction	Project Manager Site Supervisor
Respite Offers	Respite offers will be considered where there are high-noise and vibration generating activities near receivers. As a guide, work will be carried out in continuous blocks that do not exceed three hours each with a minimum respite period of one hour between each block. The actual duration of each block of work and respite should be flexible to accommodate the usage of, and amenity at, nearby receivers. The purpose of such an offer is to provide residents with respite from an ongoing impact.	During construction	Project Manager Site Supervisor
Specific Notification	Specific notification in the form of a personalised letter or phone call to the most impacted receivers, no later than	During construction	Project Manager Site Supervisor

Strategies	Management measures	Timing	Responsibility
	<p>seven calendar days ahead of construction activities that are likely to exceed the noise objectives. Alternatively (or in addition to), communications representatives from the contractor would visit identified impacted receivers at least 48 hours ahead of potentially disturbing construction activities and provide an individual briefing.</p> <ul style="list-style-type: none"> - Letters may be letterbox dropped or hand distributed - Phone calls provide affected stakeholders with personalised contact and tailored advice, with the opportunity to provide comments on the proposed work and their specific needs - Individual briefings are used to inform stakeholders about the impacts of noisy activities and mitigation measures that will be implemented. - Individual briefing provides affected stakeholders with personalised contact and tailored advice, with the opportunity to comment on the project. <p>Specific notifications are used to support periodic notifications, or to advertise unscheduled works and must be approved by the Environmental and Planning Manager prior to implementation/distribution.</p>		

5.2 Managing High Noise-Generating Works Near Sensitive Receivers

In compliance with Condition B29(d), this section outlines the measures for managing high noise-generating works, such as piling, when conducted near sensitive receivers.

Per the NVIA, no construction activities at the ARRC site, including piling, are expected to reach the “highly noise affected” threshold of 75 dB(A) at the nearest sensitive receivers, as defined in the ICNG. Therefore, construction activities are not classified as high noise-generating works under the strict definition of the ICNG.

However, to mitigate any potential noise exceedances above the NMLs that could cause annoyance, this plan includes the following procedures:

- Implementing all noise and vibration mitigation measures listed in Table 5.1 to minimise noise emissions, even if they are below the ICNG’s high-noise threshold.
- Scheduling high noise-generating activities during standard ICNG hours (Monday-Friday 7:00 am - 6:00 pm, Saturday 8:00 am - 1:00 pm). In response to the Workers Hubertus Club’s concern about event disruptions, such activities will be avoided during peak event times (e.g., weekends) where feasible, with advance notification provided at least 7 days prior, as committed in the response letter dated 3 December 2024.
- Monitoring noise levels at sensitive receiver locations (e.g., AR1 and C1 for the Hubertus Club) to ensure compliance with NMLs (65 dB(A) for AR1, 70 dB(A) for C1, Table 3.3). If exceedances occur, additional measures such as temporary noise barriers or equipment relocation will be considered..

- Ensuring proactive communication with sensitive receivers, including the provision of a mobile contact for the site manager (to be provided pre-construction, per the 3 December 2024 letter) for real-time coordination during noisy works..

By adhering to these measures, the project team will effectively manage noise impacts, meeting the intent of Condition B29(d) to mitigate disturbance to sensitive receivers from construction activities, regardless of whether they reach the ICNG's high-noise definition.

5.3 Verification of noise emissions

In addition to the proactive mitigation measures outlined in Sections 5.1 and 5.2, this section addresses the verification of noise emissions to ensure compliance with the NMLs as assessed in the NVIA.

To manage any variations in noise emissions from construction activities, particularly if there are changes in equipment or work practices that differ from those originally assessed, the following validation process will be implemented:

- **Noise modelling and validation calculations:** If construction activities produce higher noise levels than anticipated (e.g., due to unplanned noisy works or unexpected equipment noise), the project team will conduct verification calculations or noise modelling to assess the actual noise levels at surrounding sensitive receivers. This process will help determine whether additional noise controls are required.
- **Implementation of additional noise controls:** Where verification calculations or noise monitoring reveal that noise levels exceed the NMLs, additional feasible and reasonable noise controls will be implemented. These measures could include increasing barrier heights, using alternative quieter equipment, or relocating equipment further from sensitive receivers. The objective is to ensure that compliance with the NMLs is maintained throughout the construction period.
- **Out-of-hours work approval:** In instances where reasonable and feasible noise controls cannot reduce noise emissions to within NMLs, especially for out-of-hours work, Coombes will seek written approval from the Planning Secretary before proceeding with these activities. This approval process will ensure that any high-noise activities conducted outside standard hours are carefully reviewed and approved by the appropriate authority.

This approach supports compliance with both Condition B29(c) and Condition B29(d), as it ensures that noise levels remain within acceptable limits or are managed effectively to minimise impacts on sensitive receivers.

6 COMPLIANCE MANAGEMENT

6.1 Roles and responsibilities

The overall roles and responsibilities for Coombe's personnel are outlined within this chapter. Responsibilities for the implementation of mitigation measures specific to noise management are detailed in Chapter 5 of this CNVMP.

6.2 Training

All employees, contractors and staff working on site will be inducted and trained in relation to noise management, comprising:

- Requirements of this plan.
- Relevant legislation.
- Approved construction hours.
- Location of sensitive receivers.
- Roles and responsibilities for noise management.
- Procedure to follow if out of hour works are required.
- Complaints handling process.
- Disciplinary action around non-compliance with this plan.

Further details regarding staff induction and training are in Chapter 4 of the CEMP.

6.3 Inspections

General requirements and responsibilities in relation to inspections and compliance monitoring are in Section 6 of the CEMP. Routine environmental inspections will include determination of compliance with this plan.

6.4 Incident notification

Incidents will be notified to DPIE in accordance with Appendix 3 of the development consent and Section 6.3 of the CEMP.

6.5 Noise complaints management system

A complaints handling procedure for complaints received during construction of the project is in Section 6.1 of the CEMP and involves the following steps:

1. Record and acknowledge.
2. Assess and prioritise.
3. Investigate.
4. Action or rectify.
5. Respond to complaint.
6. Record.
7. Preventive action.

Noise specific complaints will be handled in accordance with this complaints handling procedure. The following additional procedures specific to a noise complaint will also be implemented:

1. Record and acknowledge: Ask the complainant to describe as accurately as possible what the noise sounded like, exactly what time they heard that noise, where they heard the noise from (eg address) and what direction the noise was coming from. This will allow Coombes to confirm

that the noise was from their construction site and to identify if there was a particular activity that caused the noise complaint.

2. Assess and prioritise: Ask the complainant how the noise they can hear is affecting them (waking them up at night vs irritating daytime noise) to ascertain the seriousness of the complaint and the level of priority it receives.
3. Investigate: If it is established that the noise complaint is from construction activities at the site and is causing disturbance to the complainant, then Coombes will conduct attended noise investigations at the address from where the noise was noticed. The attended noise investigations will be undertaken at a time of day and during construction activities that are aligned as closely as possible to when the complainant noticed the noise which caused their complaint.
4. Action or rectify: If the attended noise investigations identifies that standard construction hours noise affected construction NMLs have been exceeded, Coombes will investigate whether all management measures in Section 5 are being applied, will apply them where feasible where they aren't being applied and will apply additional reasonable and feasible noise management measures to specifically attenuate the noise from the identified construction activity source.
 - If the attended noise investigations identify that standard construction hours highly noise affected construction NMLs have been exceeded following implementation of the above procedures for addressing exceedances, Coombes will further investigate whether they can implement respite periods by restricting the hours that the very noisy activities can occur.
 - If the attended noise monitoring identifies that outside of standard construction hours noise affected construction NMLs have been exceeded and the above procedures for addressing exceedances of noise affected construction NMLs have been implemented, Coombes will investigate whether they can rather undertake the activities causing the exceedance, during standard construction hours. If this is not possible then Coombes would investigate implementing respite periods by restricting the hours that the very noisy activities can occur.
 - Coombes will then conduct follow up attended noise investigations at the address from where the noise complaint originated to establish whether the noise management measures applied have suitably reduced the noise to within the relevant construction NMLs or whether further noise management measures are required.
5. Respond to complaint: The complainant will be notified of the results of the initial attended noise investigations, what additional noise management measures have been implemented to address any identified exceedances of relevant construction NMLs and results of follow up attended noise monitoring after the implementation of additional noise management measures.
6. Record: All aspects of the noise complaints handling procedure will be recorded including where and when it occurred, results of initial noise monitoring, noise management measures applied, results of follow up noise monitoring and all correspondence with the complainant.
7. Preventive action: In planning future phases of work during construction, Coombes will ensure that where the same or similar plant and equipment (or with similar sound power levels or noise characteristics) is to be used, that all noise management measures identified as being necessary during previous noise complaint handling processes, are implemented.

6.6 Monitoring

Noise monitoring will be undertaken to assess noise levels against the NMLs specified in the project approval conditions and to determine whether additional noise management measures are required. Monitoring will also be conducted in response to formal complaints regarding construction noise.

As R3 is 14 m from the site access road, within the 30 m threshold, vibration monitoring will be conducted for any vibratory works closer than 30 m to ensure compliance with B43 criteria.

6.6.1 Noise Monitoring Triggers

Monitoring will be conducted under the following circumstances:

- In response to formal complaints about noise impacts from construction activities.
- When construction activities are identified as having a high likelihood of exceeding NMLs, as outlined in the NSW Interim Construction Noise Guidelines (ICNG).

6.6.2 Monitoring Procedure

When noise or vibration monitoring is required, the following steps will be followed:

Step 1: Engage a suitably qualified person

Monitoring will be performed by a suitably qualified acoustic/vibration specialist in accordance with the relevant legislation and standards.

Step 2: Select monitoring locations

Monitoring locations will be selected to:

- Proximity to sensitive receivers identified in the Noise and Vibration Impact Assessment (NVIA).
- Address the specific source of complaints or areas of concern.
- Comply with guidance from the ICNG regarding representative and worst-case receiver locations.

Step 3: Instrumentation and Standards

All acoustic instruments used will:

- Comply with AS IEC 61672.1-2019 Electroacoustics – Sound level meters – Specifications.
- Have current calibration certificates from NATA-accredited laboratories or manufacturers.
- Be field-calibrated before and after each monitoring session to maintain accuracy.
- Be positioned at approximately 1.2 to 1.5 metres above ground level and at least 1 metre away from reflective surfaces (e.g., walls or fences).

Performance characteristics for the measurement vibration instrumentation should meet the requirements set out in BS 6841 and BS 7482 Parts 1 and 3.

Step 4: Conducting monitoring

Monitoring will follow these guidelines:

- Measurement parameter: Noise will be measured as LAeq (15 minutes) to assess compliance with the NMLs.
- Observations: Monitoring will include detailed observations of the construction activities taking place, the operation of machinery, and any environmental factors.
- Weather conditions: Monitoring will not be conducted during adverse weather conditions, such as strong winds exceeding 5 m/s or during rainfall, as these can compromise measurement accuracy.
- Time periods: Measurements will be conducted during construction hours, including periods of peak activity or in response to specific complaints.

Step 5: Documentation

Noise monitoring logs, which serve as a real-time record of the monitoring session, will include:

- Date, time, and duration of monitoring.
- Weather conditions during the session.

- Specific construction activities occurring at the time.
- Noise levels recorded (e.g., LAeq, LAmax).
- Vibration Levels recorded.
- Details of the monitoring equipment used, including calibration data.

6.6.3 Reporting and Communication

Monitoring results will be documented in a Noise Monitoring Report. This is a formal, structured document that compiles and analyses the data from monitoring logs to provide conclusions and recommendations. It includes:

- Details of the monitoring locations, conditions, and activities during the monitoring period.
- Noise levels compared to NMLs as defined in the ICNG.
- Recommendations for mitigation measures where exceedances are identified.

Where exceedances occur:

- Immediate corrective actions will be implemented to reduce noise impacts.
- Reports will be made available to regulatory authorities upon request.

6.7 Review and improvement

This plan will be reviewed, and if necessary, updated in the following circumstances:

- Significant changes to the equipment, machinery and plant operated onsite.
- If monitoring identifies the noise performance of the project is not in accordance with this plan.
- In accordance with Condition C1(h) the development consent.

All employees and contractors will be informed of any revisions to this plan during toolbox talks.

7 CONSULTATION

In compliance with Condition B29(f), this section outlines the community consultation undertaken to develop strategies for managing high noise-generating works, as required by Condition B29(e). These consultations aimed to inform, engage, and address concerns from residents and stakeholders regarding the CNVMP.

7.1 Consultation Activities

The following consultation activities were conducted:

24 October 2024

Letters and a fact sheet were sent to eight nearby residents and the Workers Hubertus Country Club. These materials provided details about potential construction noise and vibration impacts, mitigation measures, and a contact for feedback.

29 October 2024

Feedback was received from the Workers Hubertus Club, which included:

- A request for a mobile contact for the responsible site manager during construction.
- Clarifications about construction timelines and road upgrades.
- Concerns about potential impacts such as light spill, odours, and dust, unrelated to noise and vibration.

31 October 2024

A phone call with a local resident at 2550 Adams Road, revealed concerns about noise impacts on her working duck farm. She was assured of proactive updates on construction schedules and mitigation measures.

2 November 2024

Three letters sent to residents at 225 Adams Road, 2111 Elizabeth Drive, and 2161 Elizabeth Drive were returned due to unknown addresses. Efforts to contact these residents will continue.

7.2 Summary of Feedback

Community feedback has shaped the noise management strategies as follows:

1. Workers Hubertus Club:

Concerns included adequacy of contact details, potential disruptions to community events, and operational impacts like light spill and dust. A response letter dated 3 December 2024 (emailed to Morgan Stewart, CEO of Workers Lifestyle Group) addressed these by committing to:

- Scheduling high noise-generating works outside peak event times (e.g., weekends) where feasible, with at least 7 days' prior notification to minimise event disruption.
- Providing a mobile contact for the site manager pre-construction, supplementing the existing email contact, to enable prompt reporting of noise issues.
- Implementing mitigation measures (e.g., quieter equipment, maintenance schedules) to keep noise below 75 dB(A), with predicted levels at the Club's boundary at 64 dB(A). No response to the letter has been received as of 6 March 2025.

Non-noise concerns (light spill, odours, dust) were also addressed, reinforcing CPG's commitment to minimising overall impacts.

2. Residents:

A resident at 2550 Adams Road raised concerns about noise impacts on her duck farm during a call on 31 October 2024. Commitments were made to provide proactive updates on construction schedules and implement mitigation measures (e.g., Table 5.1). Following this feedback, Section 5.2 includes scheduling high noise-generating activities to standard ICNG hours (Monday-Friday 7:00 am - 6:00 pm, Saturday 8:00 am - 1:00 pm).

The strategies in Section 5.2, such as scheduling high noise-generating works outside peak event times and providing a site manager contact, were developed based on this consultation to address the Club's concerns.

7.3 Ongoing Consultation

The project team is committed to maintaining effective engagement with the community throughout the project. Key actions include:

1. **Regular updates:** Stakeholders will receive timely updates on construction schedules, noise mitigation measures, and other developments via letters or emails.
2. **Proactive communication:** High-noise activities will be communicated at least 7 days in advance, as committed to the Workers Hubertus Club on 3 December 2024, allowing stakeholders to plan accordingly.
3. **Feedback channels:** A mobile contact for the site manager will be provided before construction begins (per the 3 December 2024 letter), complementing the existing email for complaints and inquiries.
4. **Collaboration:** Monthly reviews of feedback from the Hubertus Club and residents will inform adjustments to work schedules or mitigation measures, ensuring concerns are addressed promptly and transparently.



APPENDIX A

CONTINGENCY MANAGEMENT PLAN

ANNEX A – CONTINGENCY MANAGEMENT PLAN

Item	Trigger/ response	Condition		
		Green	Amber	Red
Noise impacts at sensitive receivers	Trigger	Noise levels do not exceed applicable NMLs.	Noise levels exceed applicable NMLs.	Noise levels exceed highly noise affected criteria (75 dBA).
	Response	Ongoing best practice management measures to minimise noise emissions.	Implement all feasible and reasonable mitigation and management measures to minimise noise impacts.	Implement all feasible and reasonable mitigation and management measures to ensure noise levels are below highly noise affected criteria. If noise levels cannot be kept below applicable limits then a different construction method or equipment will be utilised or respite periods will be implemented by restricting the hours that the very noisy activities can occur.



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