

Decision Report

Application for Works Approval

Part V Division 3 of the Environmental Protection Act 1986

Works Approval Number	W6957/2024/1
Applicant	Australian Precast Solutions Pty Ltd
ACN	113 220 894
File number	DER2024/000357
Premises	Australian Precast Solutions Pty Ltd 72 Eveline Road Middle Swan WA 6056
	Legal description
	Portion of PIN 12245594 & Lot 72 on DP 408605
Date of report	3 December 2024
Decision	Works approval granted

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of a temporary concrete batching plant and precast concrete moulding facility within a central portion of Lot 72 Eveline Road Middle Swan, City of Swan. The premises will supply precast tunnel segments for the Alkimos Desalination Plant intake and outfall tunnels. Compliance with the Environmental Protection (Concrete Batching and Cement Products Manufacturing) Regulations 1998 (Concrete Batching Regulations) were assessed. As a result of this assessment, works approval W6957/2024/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://www.wa.gov.au/service/building-utilities-and-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essential-services/integrated-essenti

2.2 Application summary

On 28 June 2024, Australian Precast Solutions Pty Ltd (the applicant) submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application is to undertake construction works relating to a concrete batching and moulding facility at a premises located within the central portion of Lot 72 Eveline Road, Middle Swan. The premises is located within the industrial area of Middle Swan within the City of Swan and covers approximately 5.8ha.

The premises relates to the category 77 (concrete batching or cement products manufacturing) with a design/production capacity of 78,000 tonnes per year under Schedule 1 of the Environmental Protection Regulations 1987 (Accendo 2024a) which are defined in works approval W6957/2024/1. The applicant proposes an estimated production throughput of 39,000 tonnes per year for the premises. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6957/2024/1.

The premises is intended as a temporary establishment anticipated to be constructed and operated for approximately 18-24 months with construction planned to commence in the latter half of 2024 and completed by March 2025, and segment production undertaken from April -October 2025 followed by decommissioning from November 2025 to April 2026.

2.3 Overview of premises

2.3.1 Construction

The proposed premises will be established within a portion of the Midland Brick Facility (BGC) on Lot 72 Eveline Road, Middle Swan. It is expected that construction works will occur between the hours of 7:00am to 6:00pm Monday to Saturday. An existing refurbished shed will be used to house the segment manufacturing unit while the concrete batching plant will be established north of the shed. The following infrastructure/equipment will be established at the premises (Accendo 2024b):

- Batching Plant:
 - Dual Pan Mixer (EURO Star);
 - 2 x 65 tonne fully sealed cement silos;

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- Four sand and aggregate 40 tonne hoppers (Bin trailers) with water sprays;
- Inclined conveyor to feed raw materials to the Dual Pan Mixer;
- o A vibrating feeder;
- Steel Fibre Weighing;
- Flying bucket/hopper;
- Flying bucket/hopper washdown bay;
- o 15,000L water cart;
- o Concrete hardstand floor, bunded and drained to the primary wedge pit;
- A primary and secondary wedge pit;
- A slurry tank.
- Aggregate Storage:
 - Four 216 m³ storage bins, enclosed on three sides and roofed;
 - o A material loader;
 - o Concrete hardstand floor, bunded and drained to a sump;
 - o A truck-wash bay.
- Concreting Cabin/Carousel area/Curing chamber (within the existing shed):
 - o 2 Gantry crane (for handling and loading moulds);
 - Demoulding trolley;
 - Tilting machine;
 - Lifting tables;
 - Stacker trolley;
 - Fixed vibrators;
 - Rattle guns/Torque/wrenches;
 - Forklifts;
 - Vapor Generator;
 - o Concrete hardstand floor, bunded and drained to the slurry sump;
 - A slurry sump pit.
- A wastewater treatment plant (located within the existing shed) with an oil separator, filtration systems, mixing tanks and dosing pumps.
- Tunnel segment stockyard with gravel hardstand.
- A gravel hardstand for all areas outside the processing area, including trafficable areas.
- A water reticulation system within the gravel hardstand for dust suppression.
- Demountable office facilities.

2.3.2 Operation

The premises is expected to operate 24 hours per day seven days per week. Operational activities will be limited outside of the 7:00am to 7:00pm period to ensure compliance with the Environmental Protection (Noise) Regulations 1997 (Noise Regulations). The key activities on the premises are described below.

Materials delivery and storage

Sand and aggregate materials will be delivered to the premise and unloaded into sand and aggregate hoppers and storage bins. The storage bins will be enclosed on three sides and roofed with gutter for stormwater diversion.

Delivery of dry cement will be completed by delivery tankers and transferred via a sealed hose connection into cement storage silos which will be compliant with the Concrete Batching Regulations.

Concrete batching

The batch plant will consist of four aggregate storage hoppers each with a reticulated water system for dust control. An inclined conveyor will feed the raw material from the hoppers into two dual pan mixers (EURO Star). The cement is batched and added directly to the mixer via a fully enclosed worm screw before the addition of water and mixing.

Once mixing is complete and the concrete has reached the desired consistency, the wet mix is discharged from the mixer into a flying bucket for delivery to the mould.

Segment manufacturing

Carousel system moulds are filled with the wet mix and vibration is used to settle the mix within the moulds. Two vibrators are installed on each mould, mounted on structural steel fixed to an isolated slab designed to prevent vibration transfer to the main factory floor. These moulds are then cured within a steam curing system. Once cured the segments are removed from the moulds and transported via cranes to the external storage area prior to transport to the Alkimos Desalination Plant.

Surface water management

Lot 72 has an established stormwater management system detailed within the *Midland Brick Middle Swan Brickworks Site Water Management Plan (SWMP)* (Hyd2o, 2022) which comprises a series of drains and sumps/settling ponds for attenuation and settlement of clean stormwater runoff prior to discharge into the Swan River to the north and the Black Adder creek to the south of the premises. Clean surface water run-off from the segment stockyard and the aggregate storage area roof only will be diverted to the existing Lot 72 drainage system.

Surface water runoff and wastewater generated from the premises processing areas (batching plant, aggregate storage and carousel areas) will be treated as contaminated and will not be released to the wider Lot 72 drainage system. The main contaminant will be cement sediments with potential also for hydrocarbons from breakdown or washing of machinery and vehicles. Processing areas will be bunded, graded and drained to direct runoff to collection sumps or wedge pits from where the collected water will be directed to a wastewater treatment plant (WWTP) and treated for reuse. Wastewater generated from mixing operations, washing of flying buckets/hoppers, cleaning of moulds and segment curing will also drain to collection sumps or wedge pits and be transferred to the WWTP. Treated wastewater will be used for the cleaning of moulds, flying bucket and hoppers. It will also be used in the flushing of toilets, irrigation of planted vegetation and through the irrigation system which will be installed for dust suppression. Settled solids will be collected weekly from sumps/wedge pits and mixed with aggregates or disposed offsite to a suitably licenced facility.

Key components of the wastewater management infrastructure are outline below.

- The batching plant will be located within a bunded concrete hardstand which is graded to drain to the primary wedge pit (capacity of 3.12kL).
- Grated drainage will transfer water from the primary wedge pit to the secondary wedge pit (capacity of 3.12kL). Water from the secondary wedge pit will be pumped to an adjacent 10kL water tank then piped to the WWTP for final treatment.
- A hopper and flying bucket washdown will be located within the batching plant concrete hardstand which will drain to the primary wedge pit.

- The aggregate/sand storage bays will be located within a bunded concrete hardstand which is graded to drain to a sump pit (capacity of 10kL) with a submersible sump for transfer the WWTP. A truck wash bay will also be established within this area which drains to the sump pit.
- The carousel area within the existing shed will be graded to drain to an existing 55 kL slurry sump. A submersible pump will be installed to pump water from the sump to the WWTP.
- A WWTP will be established within the existing shed which will comprise an oil separator, 1 kL tank, filtration system, two 5 kL mixing tanks, a 50 kL storage tank, a dosing pump system and other pumps and piping.

The applicant stated that the wastewater system is capable of treating 50 kL/day and the volume of wastewater production is expected to be approximately 19 kL/day. The premises has a total capacity to store over 100 kL of wastewater in case of an extreme weather events, including the various sumps/pits and storage tanks.

2.3.3 Compliance with the Concrete Batching Regulations

The application states that the premises will comply with the Concrete Batching Regulations. The applicant's proposed design and mitigation measures relating to dust control were detailed in a Dust Management Plan included with the application to address the relevant requirements of the Regulations. The applicant's proposed controls relating to wastewater management were detailed in a Surface Water Management Plan (SWMP) included with the application to address the relevant requirements of the Regulations. The applicant's proposed controls relating to wastewater management were detailed in a Surface Water Management Plan (SWMP) included with the application to address the relevant requirements of the Regulations. The applicant's proposed controls detailed in the plans are summarised in Table 1 with reference to the relevant requirements of the Regulations.

The delegated officer reviewed the proposed controls and determined the concrete batching and moulding operation as proposed in the application is likely to comply with the Concrete Batching Regulations.

Concrete Batching Regulations	Applicant controls	
Regulation 3: Minimisation of dust	The applicant will implement a dust management plan and training will be supplied on dust management to all personnel onsite.	
	If dust is observed operations will cease until the problem is rectified.	
	Cleaning equipment will be available and regular washing will occur.	
Regulation 4: Control of dust from trafficable areas	All unsealed surfaces surrounding the plant are to be constructed to a minimum hardstand standard. The processing areas will be sealed concrete.	
	Speed restrictions will be in place (30km/hr within site)	
	A water cart will be located onsite able to water down the batching plant area to minimise dust during summer. Reticulation of gravel areas outside the batching area will be established for dust suppression.	
	All trucks will be washed prior to leaving the premises at the designated washbay.	
Regulation 5: Storage of aggregate and sand.	All aggregate and sand will be stored within covered hoppers or roofed three-sided concrete storage bins located within the concrete hardstand area. Storage will not occur on the ground at any time.	
	An automated water reticulation system will be used as an additional dust control measure if required for hoppers and storage bins.	
	Material within the bins will not exceed the height of the bin	
	All aggregate and sand will be dampened during delivery in summer and if visible dust is observed.	

Table 1: Applicant controls	compared to Concrete	Batching Regulations
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Concrete Batching Regulations	Applicant controls
Regulation 6: Storage of cement	Cement will be stored in sealed silos which are fully compliant with Regulations 7 and 8.
	Operators will be trained in the correct procedures for unloading cement into the silo.
	Cement delivery will be via a sealed hose connection and will cease if visible dust is observed.
	Regular maintenance and inspections will be undertaken of the equipment and air cleaning system and valves and filter units will be replaced where necessary.
Regulation 7: Air cleaning system for cement storage silo	The cement storage silo will have an air cleaning system which is fully compliant with the Regulations and that will discharge air from the system to an outlet which is within one metre from the ground.
	Regular maintenance will be scheduled and undertaken, and air cleaning cartridges will be changed if dust build-up is observed or at scheduled maintenance intervals.
	Sufficient spare filters to replace all bags and cartridges will be stored onsite and readily accessible in case of emergency or routine maintenance requirements.
	Air cleaning system will be tested regularly and must be working to manufacturer's specifications prior to cement unloading commencing.
Regulation 8: Level indicator system or relief	The software to be used for the cement batching will provide real time information on current silo levels and will alarm when required.
valve for cement storage silo	A test circuit which indicates whether the level indicator and alarm are working will be installed.
	Operators will be trained in the correct procedures for unloading cement into the silo including the requirement to ensure that the level indicator and alarm test circuit is activated prior to unloading commencing. A relief valve will be fitted to the silo with an outlet within one metre of the ground.
Regulation 9: Movement of materials on premises and loading of agitators	Inclined conveyors loading aggregates and raw materials are fitted with spray bars and a reticulated water system to dampen materials prior to entry to the mixer.
	Cement will be delivered into the mixer via a fully enclosed worm screw.
	Regular maintenance and inspections will be scheduled on all equipment to ensure the above dust controls are maintained in good working order.
Regulation 10: Cement product manufacturing premises to be cleaned	Operators will be trained in housekeeping, regular cleaning of all inside areas on the premises will be undertaken to prevent the accumulation of dust.
Regulation 11: Control of wastewater	Processing areas (i.e. the aggregate/sand storage bins, the batching plant and the carousel area) will have bunded concrete hardstands which are graded to drain water into wedge pits or slurry sumps.
	Wastewater will be transferred from the wedge/slurry pits to a WWTP for treatment and reuse on the premises. No discharge from the premises is proposed.
	Runoff from non-process areas such as roads, the segment stockyard and roofs will be drained to the existing drainage system on Lot 72.

Concrete Batching Regulations	Applicant controls
Regulation 12: Slurry pits, settling ponds, silt traps and oil interceptors	Settled solids will be collected weekly from sumps/wedge pits and mixed with aggregates or disposed offsite to a suitably licenced facility.
Regulation 13: Disposal of waste	No domestic or industrial waste will be stored onsite. Any waste material generated during the operational activities will be taken offsite for disposal at an approved landfill facility on a daily basis.

3. **Planning approvals**

The City of Swan advised DWER that the City had recommended approval of the proposed activity to the Western Australia Planning Commission (WAPC) under the Metropolitan Region Scheme (MRS).

WAPC granted the Approval to Commence Development for the premises activity on Lot 72 and 9007 on 30 September 2024 in accordance with the *Planning and Development Act 2005*. The approval was granted for a period of two years from the date of the grant and subject to conditions stipulated in the WAPC's determination.

The City of Swan advised via email response to the invitation to comment on the application on 30 September 2024, that it had no objection to the proposed activity once the development approval has been granted by WAPC subject to conditions under the Metropolitan Region Scheme.

4. Noise and Vibration Assessment

4.1 Noise Modelling

Lloyd George Acoustics (LGA) was engaged by Accendo Australia on behalf of the applicant to undertake an environmental noise assessment for a proposed batching and precast segment manufacturing facility (Accendo 2024b). Noise modelling software *SoundPLAN 8.1* was used with ISO9613 algorithms selected to include the influence of the meteorological conditions. The following data input were considered in the model and represents the worst-case conditions for noise propagation:

- Meteorological information;
- Topographical data;
- Ground Absorption; and
- Source sound power levels.

The noise modelling considered three scenarios as follows:

- Scenario 1: Daytime LA10 Noise All Plant
- Scenario 2: Night-time L_{A10} Noise Reduced Plant
- Scenario 3: Daytime Truck Movements

For night-time noise modelling, a +5 dB adjustment was applied for possible tonality.

The sound power level of various equipment and activity proposed to occur on the premises were provided from a similar project, the Central Tunnel Package (CTP) of Stage 1 of the Sydney Metro West Project, conducted by Hutchinson Weller in 2021. Assumptions were also made for the acoustic performance of the existing shed, including that all openings will be sealed (except for the conveyor entry point).

The modelling results indicated that the day-time noise levels from the facility, including noise related to truck movements, are predicted to comply with the Noise Regulations while the night-time noise levels are predicted to be exceeded between 2 - 4 dB for three of the receptors (residences) identified (Accendo 2024b). To achieve compliance, the applicant proposes to install insulated cladding at the Steel Fibre Weighing and the Mixers that is expected to achieve 14 dB and 10 dB noise reduction respectively. Additionally, other noise control measures proposed to be adopted include:

- Opening size for the flying bucket to the carousel is to be minimised with the remaining open area covered with mass loaded vinyl, minimum 6 kg/m²
- No night-time truck movements.
- No loading associated with the batching plant at night.
- Torque wrenches to be used in place of rattle guns.
- Forklifts are to remain behind the shed so that there is no line-of-sight to the future Stage 3 of Rivermark. Alternatively, a wall can be constructed effectively extending the length of the shed.
- Equipment is to be maintained in good working order to minimise noise emissions.
- Mobile equipment is to either operate with no reversing alarms if deemed safe to do so or shall be fitted with broadband alarms rather than tonal type alarms.

DWER Technical review

The department reviewed the environmental noise assessment and the proposed noise management plan and identified the following:

- The selection of receivers in the LGA report represents the worst-case locations.
- As there are no occupied buildings present on the Stage 3 Rivermark location, the assigned levels for "*noise sensitive premises: any area other than highly sensitive area*" applies e.g. the daytime L_{A10} assigned level would be 60 dB.
- The nighttime scenario includes a +5 dB adjustment for the presence of tonality and indicates that noise level exceedance of up to 3 dB is possible to some residences to the west and by 4 dB at the Stage 3 Rivermark (should there be inhabited dwellings) receivers. To achieve compliance, the applicant proposes that the Steel Fibre Weighing and Mixers will be enclosed, and the DWER technical review agreed that compliance would be achieved if the stated noise reduction of 14 dB and 10 dB respectively is achieved.
- The DWER technical review noted that no adjustment for potential tonality was applied to the • daytime scenario levels. This would be acceptable if the existing daytime background noise levels were high enough to mask the presence of tonality. However, no evidence was provided to support that claim. In isolation, the daytime scenario would likely meet the LA₁₀ assigned levels at all receivers, even if considered tonal. The Noise Management Plan estimated that a total of 35 trucks is expected per day, which averages to approximately 3 truck movements per hour over a 12-hour period but adds that this number may be exceeded at times. Considering the cumulative effect of Scenario 1 and Scenario 3, that is, including daytime truck movements with general daytime operations, the cumulative noise level would likely meet that LA_{10} assigned levels at all receivers, if considered not tonal. However, there is a risk that the daytime L_{A10} assigned levels would be exceeded should the cumulative noise be considered tonal. Should the cumulative noise be considered tonal the potential exceedance of the daytime LA10 assigned level depends on the number of truck movements per hour and the location of the receivers in relation to the truck path. At receiver E1 - 67 Winston Crescent 1 truck per hour would be compliant, however 2 to 6 trucks per hour would potentially exceed the LA10 assigned level by 1 to 2 dB, if tonal. Similarly, the LA10 assigned level at receiver E4 -2 Cranwood Crescent would potentially be exceeded by 1 dB and the Stage 3 Rivermark receivers, should there be inhabited dwellings, would also potentially be exceeded by 1 dB, should the number of trucks exceed 5 per hour and cumulative noise from the proposed operations be considered tonal.

The delegated officer noted that the day and night-time time noise levels from the premises would generally comply with Noise Regulations even when tonal if considered in isolation, but a risk of noncompliance only exists when the noise levels of premises operations are considered cumulatively with the truck movements. It is the obligation of the applicant to manage their operational activities related to truck movements to ensure they comply with the Noise Regulations at the premises at all times. The delegated officer also noted that a temporary noise barrier constructed of shipping containers exists to the west of the subject site, and two Midland Brick sheds (one to the east and another to the west) are also anticipated to act as acoustic barriers. As the noise barrier was accounted for in the noise assessment, the applicant should be aware that noise levels at a number of residents to the west would be higher than predicted should the barrier be removed. While the structures are anticipated to remain in place during the life of the project, it is the obligation of the applicant to review their noise control measures to ensure compliance with the Noise Regulations, if any of these structures are demolished during the life of the project.

4.2 Vibration Assessment

The impacts and vibration levels from the premises activities (operation of vibratory roller during construction, vibrating feeder and fixed vibrators to settle concrete mix during operations) were determined based on measurements taken at the CTP project (Accendo 2024c). The CTP project assessed the vibration impact from concrete batching and precast segment manufacturing plant to be minimal based on the recommended minimum working distance for vibration intensive plant from a receiver as indicated in Table 2 below.

Plant Item	Rating/Description	Minimum working distance		
		Cosmetic damage	Human response	
Vibratory roller	<50kN (typically 1-2t)	5m	15m to 20m	
	<100kN (typically 2-4t)	6m	20m	
	<200kN (typically 4-6t)	12m	40m	
	<300kN (typically 7-13t)	15m	100m	
	>300kN (typically 13-18t)	20m	100m	
	>300kN (>18t)	25m	100m	
Small hydraulic hammer	300kg – 5 to 12t excavator	2m	7m	
Medium hydraulic hammer	900kg - 12 to 18t excavator 7m 23m		23m	
Large hydraulic hammer	1600kg – 18 to 14t excavator	vator 22m 73m		

Table 2	· Recommended	minimum work	ing distance	for vibration	intonsivo nl	ant from	rocoivor
I able Z	. Recommended		ing distance	IOI VIDIALIOII	intensive pi	ant nom	receiver

During construction, the applicant intends to use a vibratory roller to level the precast segment stockyard surface and other small to large hydraulic hammer (excavators). Considering the nearest sensitive receptors (residences) are at least 300m away from the stockyard as shown in Figure 1, and noting the recommended minimum distance of the vibration intensive plant from the receiver shown in Table 2, the application states that the likelihood of a human or cosmetic damage/impact is negligible.

Two vibrators will be installed in each concrete mould, fixed on structural steel bolted onto the concrete booth slab which is independent of the existing shed floor to prevent vibration transfer to the main factory floor. The applicant states that vibration emissions are not anticipated from the concrete booth slab as it will be constructed separately from the remainder of the site (i.e. the shed and the batching plant) to avoid vibration impact. The concrete booth slab, the foundation of the batching plant and the existing shed will be independent of each other thereby attenuating any vibration generated with no vibration transferred outside of the site during premises operation. Wall and ceiling insulation will be installed within the concrete booth to minimise any radiated airborne noise from process.

5. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

5.1 Source-pathways and receptors

5.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction as well as operation which have been considered in this decision report are detailed in Table 3. Table 3 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Refurbishment	Air/windborne pathway causing	Water cart will be available onsite.
	installation of		Speed restrictions (30km/hr within site)
Noise	the carousel system	impacts to health and	 Existing temporary shipping container noise barrier to the west of the premises.
	Construction amenity and installation of the batching plant	amenity	 Use machinery and equipment with minimal noise output levels and where appropriate, all machinery and equipment will be shut off when not in use.
	 Movement of vehicles 		 Speed restrictions (30km/hr within site) and a ban on exhaust braking.
		No construction works at night, including truck movement.	
			 Mobile equipment is to either operated with no reversing alarms where deemed safe to do so or shall be fitted with broadband alarms rather than tonal type alarms.
Vibration	Operation of vibratory roller, movement of trucks	Ground vibrations	• None specified given the minimum distance of the vibratory roller activity to the sensitive receptors (300 m).
Operation		·	
Dust	 Cement unloading and storage Aggregate and sand movement and storage Aggregate and and storage 	Air/windborne pathway causing impacts to	• The processing area is located between the aggregate material bins and the existing BGC shed for protection from both easterly and south westerly winds
		amenity	An automated reticulation system fitted on the gravel hardstand for dust suppression
	Concrete batching		 Aggregate storage bins to be enclosed on three sides and roofed.

Table 3: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
	operation Operation of vibratory feeder 		 Materials will not be stored at a height greater than the walls of the bins. Aggregates and sand will not be stored in
	Vehicle		stockpiles on the ground.
	movements		 A reticulated water system for the hoppers and storage bins
			 Sand and aggregate material will be dampened during delivery to minimise dust during unloading.
			 Delivery of cement to be completed via a sealed hose connection from cement tankers to the cement storage silos.
			 Cement will be stored in sealed silos fully compliant with the Concrete Batching Regulations or bulk bags.
			 Cement will be delivered into the mixer via a fully enclosed worm screw.
			 Settled solids will be collected weekly from sumps/wedge pits and mixed with aggregates or disposed offsite to a suitably licenced facility
			 Operators will be trained in the correct procedure for unloading cement into silos, including inspection, cleaning and maintenance.
			 A water cart available on site for dust suppression.
			 Induction and training of operators and personnel on dust management and housekeeping measures.
			 Ongoing visual monitoring of dust throughout the day during operations and information maintained on a logging sheet.
			 Operations will cease immediately if visible dust is observed, all filters and valves will be checked and replaced as necessary.
			 All required parts such as spare filters, air cartridges and essential maintenance items will be available and stored onsite in case of an emergency.
Noise	Raw material		Vibrators are sited inside the existing shed.
	delivery and loadingConcrete		 Any openings in the existing shed are to be sealed. Where openings are required for the flying bucket, the opening size is to be
	batching (including Steel Fibre Weighing)		minimised with the remaining open area covered with mass loaded vinyl, minimum 6 kg/m ² .
	 Movement of loaders and vehicles Production of 		 Steel Fibre Weighing is to be screened/enclosed with insulated cladding of 1.0mm thick steel or equivalent, internally lined with acoustic absorption to achieve a minimum 14 dB noise reduction. Any openings

Emission	Sources	Potential pathways	Proposed controls
	concrete segments • Water treatment plant operation		 are to be to the east. Mixer is to be screened/enclosed with insulated cladding of minimum 0.6 mm thick steel or equivalent, internally lined with acoustic absorption sufficient to achieve a minimum 10 dB noise reduction. Any openings are to be to the east. Use of machinery and equipment with minimal noise output levels. Speed restrictions (30km/hr within site) and a ban on exhaust braking. Where appropriate, all machinery and equipment will be shut off when not in use. Limited works outside of 7:00am to 7:00pm day shift hours as follows: No truck movement at night. Mobile equipment is to either by operated with no reversing alarms or shall be fitted with broadband alarms rather than tonal type alarms. No loading associated with the batch plant at night. Torque wrenches or similar are to be used in place of rattle guns at night.
Vibration	• Fixed vibrators used in the construction of segments.	Ground vibrations	 Vibrators are sited inside the shed in the moulds, and fixed on structural steel bolted to an independent slab. Concrete booth slab on which the vibrators are located, will be constructed separate from the remainder of the site (i.e. the shed and the batching plant) to attenuate vibration. Concrete booth walls and ceiling will be insulated.
Sediment laden, elevated pH storm water and process water	 Runoff from concrete batching activity area Washing of flying bucket, hoppers Washing of moulds Steam curing Washing of vehicles 	Overland runoff Direct seepage into soil causing contamination	 Processing areas (i.e. the aggregate/sand storage bins, the batching plant and the carousel area) will have bunded concrete hardstands which are graded to drain water into wedge pits or slurry sumps. Moulds, flying bucket hoppers will be washed at the washbay located within the batch plant concrete bunded area. All contaminated stormwater and process water from the processing areas collected in wedge pits and slurry sumps will be transferred to a WWTP for treatment and reuse on the premises. The WWTP includes an oily water separator, filtration system, mixing tanks, dosing pumps and storage tanks. Runoff from non-process areas such as roads

Emission	Sources	Potential pathways	Proposed controls
			the segment stockyard and roofs will be drained to the existing drainage system on Lot 72.
Hydrocarbons or hydrocarbon contaminated water	Machinery and equipment breakdown and malfunction	Overland runoff Direct seepage into soil causing contamination	 No storage of hydrocarbons on site Immediate clean-up of spills using absorbent materials and segregated for removal and disposal offsite by a licenced contractor. Spill kits containing appropriate equipment for control, containment and cleanup of hydrocarbon and chemical spills will be available in appropriate locations onsite and maintained. All contaminated water will be directed through the WWTP prior to reuse, where an oil separator will remove any hydrocarbon contamination from water

5.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the Delegated Officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Table 4 and Figure 1 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)).

Table 4: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity		
Closest residential premises	~300m to the south-east and 400m to the west of the premises.		
School	~330m to the south-east of the premise.		
Zoned future residential area (Rivermark Stage 3)	~180m to the south-west (not anticipated to be developed until after the plant is decommissioned).		
Environmental receptors	Distance from prescribed activity		
Swan River	~100m north of the premise boundary		



Figure 1: Distance to sensitive receptors

5.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account potential source-pathway and receptor linkages as identified in Section 5.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 5.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 5.

Works approval W6957/2024/1 that accompanies this decision report authorises construction only. The conditions in the issued works approval, as outlined in Table 5 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A registration is required to authorise emissions associated with the operation of the premises i.e. the concrete batching and precast concrete moulding activities. A risk assessment for the operational phase has been included in this decision report.

Table 5: Risk assessment of potential emissions and discharges from the premises during construction and operation

Risk events					Risk rating ¹		• ••• •	
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controlsC = consequence L = likelihood	Applicant controls sufficient?	of works approval	Reasoning	
Construction								
 Refurbishment of the shed and installation of the carousel system Construction and 	Dust	Air / windborne pathway causing	Residences approximately 300m to the east and 350m to the west and south. School 330m south-east of the premise	Refer to Section 5.1.1	C = Minor L = Possible Medium Risk	Y	NA	Given the proximity of the premises to the residential receptors (300m), a medium risk of dust and noise impacts associated with the construction activity is anticipated. It is however, noted that the construction
installation of the batching plantMovement of vehicles	Noise	impacts to health and amenity			C = Minor L = Possible Medium Risk	Y	NA	would be a short-term activity (6-7 months), and the Delegated Officer has determined that the controls identified by the applicant are appropriate to mitigate the risk of noise and dust impacts.
Use of vibratory roller for stockyard levelling	Vibration	Ground vibration causing impact to health and amenity			C = Slight L = Unlikely Low Risk	Y	NA	Based on the information provided with the application relating to vibration and the separation distance to the nearest sensitive receptors (residents) the Delegated Officer has concluded that vibration impacts are not expected to occur as a result of the construction activity.
Operation								
 Cement unloading and storage Aggregate and sand movement and storage Concrete batching operation Operation of vibratory feeder Vehicle movements 	Dust	Air / windborne pathway causing impacts to health and amenity	Residences approximately 300m to the east and 350m to the west and south. School 330m	Refer to Section 5.1.1	C = Minor L = Unlikely Medium Risk	Y	Condition 1	The applicant has proposed that the design and operation of the concrete batching plant will comply with the requirements of the Concrete Batching Regulations, including the requirements related to dust emissions. The construction and installation requirements (Condition 1) imposed on the works approval are consistent with the applicant's proposed controls and align with the requirements in the Concrete Batching Regulations.
 Raw material delivery and loading Concrete 	Noise	Air / windborne pathway causing impacts to health and amenity	the premise	Refer to Section 5.1.1	C = Minor L = Possible Medium Risk	Y		Based on the noise modelling report (included in Accendo Australia, 2024b) and additional information provided by the applicant (Accendo Australia 2024c), the Delegated Officer determined that subject to implementing the proposed noise controls, noise

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Risk events					Risk rating ¹	A	Or an Hitle and 2	
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	controls sufficient?	of works approval	Reasoning
batching (including Steel Fibre Weighing)								emissions from the premises operational activities are predicted to comply with the day and night-time assigned levels (see section 4.2.1).
Movement of loaders and vehicles								As the works approval authorises the installation/construction only (see section 6.1) operational controls proposed by the applicant are not
Production of concrete								included as controls within the works approval.
Water treatment plant operation								The delegated officer has determined based on the information and statements in the Noise Assessments (included in Accendo Australia, 2024b) that activities on the premises are predicted to comply with the Noise Regulations including the night-time assigned noise levels. No noise monitoring conditions has been included in the Works Approval, it is to be noted that monitoring may be required for validation in response to noise complaints, if any, in the future.
			-					The obligation lies with the applicant to ensure that activities are conducted in a manner which ensures they comply with the Noise Regulations.
Operation of fixed vibrators for the		Ground vibration		Refer to	C = Minor			The applicant states that the foundation of the batching plant, carousel shed and the concrete booth slab will be constructed independent of each other (Accendo Australia, 2024c). Historical data from a similar project (CTP) indicated that this design of infrastructure attenuates any vibration generated from the concrete batching and moulding works with no vibration transferred outside of the site.
construction of segments	Vibration	causing impact to health and amenity		Section 5.1.1	L = Unlikely Medium Risk	Y		The Delegated Officer concluded that having this design incorporated in the infrastructure during the construction stage, along with the recommended minimum distance of the vibration intensive equipment from the receptor, ensures that the premises operational activities will not pose significant risk of human or cosmetic damages/impacts to the residences located at least 300m away from the premises.
Runoff from concrete batching activity area	Sediment laden, elevated pH	Overland runoff potentially causing	Swan River 100m to the	Refer to Section	C = Moderate L = Unlikely	Y		Based on the information in the application the Delegated Officer has determined that appropriate controls related to management of wastewater,

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Risk events				Risk rating ¹	A			
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	controls sufficient?	of works approval	Reasoning
 Washing of flying bucket, hoppers Washing of moulds 	storm water and wastewater (hydrocarbon may also be	ecosystem disturbance or impacting surface water quality	north	5.1.1	Medium Risk			contaminated and uncontaminated stormwater at the premises are proposed (see section 4.4.1), and the premises operational activity does not pose an unmanageable risk to the environment.
 Steam curing Washing of vehicles 	present)							the contaminated stormwater will be collected in sumps/pits prior to being pumped to the water treatment system. Treated water will be reused at the premises for washing flying buckets/hoppers, mould cleaning, dust suppression etc. Uncontaminated stormwater from the segment stockyard, carousel shed, and the roofed aggregate storage bins will be diverted to the wider Lot 72 drainage system via a series of drains and sumps/settling ponds before being discharged into the Swan River to the north and the Black Adder creek to the south of the premises.
								The construction and installation requirements (Condition 1) imposed on the works approval are consistent with the applicant's proposed controls and align with the requirements in the Concrete Batching Regulations.
								Based on the wastewater collection and treatment system described for the various emission sources, the Delegated Officer determined that the wastewater emission from the premises activity does not pose significant risk as appropriate controls are proposed to be implemented to minimise the risk and impacts to the environment and the nearby sensitive receptors, while only clear stormwater run-off from the premises will be diverted to the wider Lot 72 drains in accordance with the existing Midland Brick Stormwater Management System.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Guideline: Risk Assessments (DWER 2020).

Note 2: Proposed applicant controls are depicted by standard text. Bold and underline text depicts additional regulatory controls imposed by department.

Note 3: Conditions 2-6 are all department imposed conditions required for compliance reporting, and general complaint and record keeping requirements

6. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

Table 6: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 3 September 2024.	None received	N/A
City of Swan advised of proposal on 4 September 2024.	An acknowledgement letter was received on 10 September 2024, but no comments or advice was provided. DWER followed up with an email on 30 September 2024 and a response was provided advising that the City has previously recommended approval for the 'Public Works – Concrete Batching & Precast Concrete Manufacturing Facility' subject to conditions under the Metropolitan Region Scheme (MRS). and that in the event that the WAPC have issued the MRS approval in accordance with the City's recommendation, then the City of Swan has no objection to the proposed works.	The delegated officer noted that WAPA granted the Development Approval on 30 September 2024 subject to conditions under the WAPC's determination.
Department of Biodiversity, Conservation and Attractions (DBCA) was advised of the proposal on 4 September 2024 in relation the premises being located within the Swan Canning Development Control Area (SCDCA).	DBCA responded on 5 September and advised they had no objections to the proposal consistent with their advice to WAPC (provided) and subject to implementation of Surface Water Management Plan Lot 72 Eveline Road, Middle Swan (Accendo Australia 2024, Version4), which states that no runoff or drainage from the works shall enter the Swan River.	The delegated officer noted the advice and that no discharge of contaminated waste/stormwater to the Swan River will occur from the premises and that clean stormwater from non-process areas of the premises will be managed within the wider Lot 72 stormwater management infrastructure.
Applicant was provided with draft documents on 25/11/2024	Refer to Appendix 1	Refer to Appendix 1

7. Decision

Based on the assessment in this decision report, the delegated officer has determined that the applicant's proposal to construct and operate a temporary concrete batching and precast segment manufacturing facility at the premises, with a production capacity of 39,000 tonnes per year, over a period of approximately 12 - 18 months, is not expected to pose an unacceptable risk of impact to public health or the environment subject to design and construction of the premises consistent with the risk assessment outcomes.

The delegated officer determined the applicant's proposed design and operational controls were sufficient to manage the risk of dust, noise, vibration and potentially contaminated water emissions and are expected to comply with the requirements of the Concrete Batching Regulations. To minimise the potential for impacts to public health and the environment, the applicant has proposed the following controls, which will be imposed on the works approval as they are considered critical for maintaining an acceptable level of risk:

- noise mitigation infrastructure including acoustic cladding around key noise sources to ensure compliance with the Noise Regulations during operations; and
- dust and potentially contaminated water controls consistent with the requirements under the Concrete Batching Regulations.

Works approval W6957/2024/1 that accompanies this decision report has been granted for a period of three years and authorises the installation of a concrete batching and moulding facility. Following completion of construction and subject to submitting relevant works approval compliance documentation, the applicant can apply for registration of the premises under section 5B of the EP Regulations for category 77 concrete batching or cement products manufacturing. Alternatively, the applicant may apply for a licence under section 57(1) of the EP Act. Operational activities are regulated by the Concrete Batching Regulations and subsidiary legislation such as the Noise Regulations.

8. Conclusion

Works approval W6957/2024/1 that accompanies this decision report has been granted for a period of three years and authorises installation of a concrete batching plant and precast concrete facility subject to conditions commensurate with the applicant's proposed controls, and conditions necessary for compliance, administration and reporting requirements.

References

- 1. Accendo Australia, 2024a, Application form: Works Approval, Perth, Western Australia.
- 2. Accendo Australia, 2024b, *Works Approval Application Lot 72 Eveline Road, Middle Swan Australian Precast Solutions,* Perth, Western Australia (Supporting Document).
- 3. Accendo Australia 2024c, *Tunnel Segment Facility for Alkimos Desalination Plant Noise and Vibration*, Perth Western Australia (additional supporting document provided in response to Validation RFI).
- 4. Acciona 2024, *Tunnel Segment Facility for Alkimos Desalination Plant Stormwater/Surface Water and Wastewater Management,* Perth, Western Australia (additional supporting document provided in response to Validation RFI).
- 5. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
- 6. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
- 7. DWER 2020, Guideline: Risk Assessments, Perth, Western Australia.

Appendix 1: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of applicant's comment	Department's response
1	The applicant provided additional information in Table 1 of condition 1, as requested in the draft instrument and the decision report. Additional information provided included the following:	The decision report and the works approval were updated to include the relevant new information provided by the applicant.
	 Revised premises layout maps with labelled items of infrastructure; 	
	 Location of steel fibre weighing; 	
	 Storage capacity of various wastewater storage sumps/pits and tank; 	
	• Description of how the vibrators will be fixed on the concrete booth slab to minimise vibration.	
N/A	The applicant did not provide any comments on the conditions included in the draft works approval in their response.	The delegated officer noted no specific changes to the works approval conditions were requested and maintained the conditions as drafted.