



## Application for works approval

Division 3, Part V of the *Environmental Protection Act 1986*

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<b>Works approval number</b>	W6868/2023/1
<b>Applicant</b>	BMD Constructions Pty Ltd
<b>DWER file number</b>	DER2023/000722
<b>Premises</b>	Armadale Line Upgrade Alliance – Bickley Rd Batching Plant 68 Bickley Rd BECKENHAM WA 6107
<b>Date of report</b>	24 January 2024
<b>Status of report</b>	Final

## 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 the premises. As a result of this assessment, works approval W6868/2023/1 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 [DWER Regulatory documents | Western Australian Government \(www.wa.gov.au\)](https://www.wa.gov.au/government/publications/dwer-regulatory-documents).

### 2.2 Application summary and overview of premises

On 13 November 2023, BMD Construction Pty Ltd (the applicant) submitted an application for a works approval under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application relates to installing a temporary concrete batching plant at 68 Bickley Rd, Beckenham (the premises). The premises relates to category 77 concrete batching and cement products manufacturing with a proposed production capacity of 168,000 tonnes per annum under Schedule 1 of the Environmental Protection Regulations 1987, which is defined in works approval W6868/2023/1.

The applicant proposes to establish and operate a mobile concrete batching plant on the premises for the purposes of supplying concrete for the Armadale train line upgrade, including the refurbishment of the Beckenham railway station and creating over passes at existing level crossings for a period of 6 to 10 months (January to October 2024). During this period the applicant is proposing to operate the batching plant between 3:30 am and 5 pm. The expected throughput is 70,000 cubic metres.

The concrete batching plant is proposed to comprise three cement silos, five temporary aggregate/sand storage bins, a cement hopper, two slump stands and a washout box. Other infrastructure proposed to be established on the premises includes two wedge pits and a first flush pit, three self-bunded generators, two 50 KL chilled water tanks, a recycled water tank and a chiller.

## 3. Planning approval

City of Gosnells provided confirmation to the applicant on 10 November 2023 that based on the information provided to them, including the fixed timeframe for the proposal (January to October 2024) they consider the proposed activity constitutes temporary works. City of Gosnells confirmed that the proposed activity therefore does not require Development Approval, subject to it being carried out as per the information provided.

## 4. 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.

## 4.1 Source-pathways and receptors

### 4.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this decision report are detailed in Table 1 below. Table 1 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

The applicant advised that the concrete batching plant will be constructed and operated in accordance with the Environmental Protection (Concrete Batching and Cement Products Manufacturing) Regulations 1998 (Concrete Batching Regulations). The applicant's proposed controls to comply with the Concrete Batching Regulations are also summarised in Table 1.

**Table 1: Proposed applicant controls**

Emission	Sources	Potential pathways	Proposed controls
<b>Construction</b>			
Dust	Installing vertical silos, batching plant, raw material storage bins and washout box	Air / windborne pathway	<ul style="list-style-type: none"> <li>• Water down roadways and control speed of vehicles.</li> <li>• Trucks covered when leaving the premises.</li> <li>• Water down stockpiles of waste material.</li> </ul>
Noise		Air / windborne pathway	<ul style="list-style-type: none"> <li>• Construction will be short term and take place between 7am and 7pm weekdays.</li> <li>• Silence and noise attenuators on construction equipment.</li> <li>• Restrict use of engine brakes by road trucks.</li> <li>• Mobile equipment to have low frequency of broadband directional reversing beepers.</li> </ul>
<b>Operation</b>			
Dust	Delivery of raw materials, batching of concrete, slumping and vehicle washdown facility	Air / windborne pathway	<p>Dust during operation will be managed using the following measures:</p> <ul style="list-style-type: none"> <li>• In accordance with regulation 3 of the Concrete Batching Regulations, to prevent dust escaping from the premises (in addition to the controls detailed below) cement will be delivered in sealed tankers with pneumatic discharge, and dust suppression sprays will operate at the loading point.</li> <li>• In accordance with regulation 4 of the Concrete Batching Regulations: <ul style="list-style-type: none"> <li>- all operational areas on the premises are concrete or asphalt hardstand;</li> <li>- concrete areas will be kept clean by hosing or sweeping;</li> <li>- a water truck will be available for roads;</li> <li>- agitator trucks will be washed and cleaned of cement slurry and dust before leaving the premises.</li> </ul> </li> <li>• In accordance with regulation 5 of the Concrete Batching Regulations, aggregate and sand will be kept in aggregate bays below the top of the bay</li> </ul>

Emission	Sources	Potential pathways	Proposed controls
			<p>walls and sprinklers and sprays will be fitted to prevent dust lift off.</p> <ul style="list-style-type: none"> <li>• Cement storage will comply with regulations 6,7 and 8 of the Concrete Batching Regulations: <ul style="list-style-type: none"> <li>- Cement silo is fitted with fabric filter dust collector and the exhaust duct is ducted to within 1 metre of the ground;</li> <li>- The fabric filter has auto-cleaning at the end of each filling cycle;</li> <li>- Cement silo is fitted with a high-level sensor, visual and audible alarms and automatic cut-off valves;</li> <li>- Cement silo has a reverse pulse dust filter cleaning system fitted.</li> </ul> </li> <li>• In accordance with regulation 9 of the Concrete Batching Regulations conveyors are fitted with windshields and transfer points have misting sprays.</li> <li>• Monthly monitoring of dust levels for an eight month period.</li> </ul>
Noise		Air / windborne pathway	<ul style="list-style-type: none"> <li>• Noise control measures will be implemented for vehicles and other equipment (non-tonal alarms).</li> <li>• 4m high barrier concrete rail sleepers or double stacked seat containers to run along eastern boundary.</li> <li>• 5m high noise barrier around slump stands to enclose the concrete trucks on three sides comprised of flexshield sonic curtain.</li> <li>• No washout activity on site.</li> <li>• No deliveries of raw material during night-time period.</li> <li>• No compressed air in silo during night-time period.</li> <li>• The three cement silos will not operate simultaneously.</li> </ul>
Contaminated runoff		Direct discharge	<ul style="list-style-type: none"> <li>• In accordance with regulation 11 of the Concrete Batching Regulations, runoff from the batching plant is directed to a wedge pit or silt trap to separate water from aggregate.</li> <li>• Disposal of captured stormwater is through storage in wedge pits (11.76m<sup>3</sup>), evaporation and reuse in the concrete batching activities (batching, slumping, agitator washout and stockpile dust suppression).</li> <li>• Collected water from the wedge pit and first flush wedge pit are stored in water tanks which are then used for operations, and no process wastewater is discharged from the site.</li> <li>• Before 15 mm rain events wedge pits will be pumped out to allow for maximum storage</li> </ul>

Emission	Sources	Potential pathways	Proposed controls
			<p>capacity.</p> <ul style="list-style-type: none"> <li>• First flush pit with bypass technology ensuring any discharged water remains usable, clean stormwater (pH less than 7.5).</li> <li>• An automated transfer pump will be installed in the basin to reclaim water for plant/quarry reuse and manage greater than 100-year Average Recurrence Interval (ARI) events.</li> <li>• In accordance with regulation 13 of the Concrete Batching Regulations, solids from the concrete wedge pits will be collected and recycled or disposed of off-site.</li> <li>• Front-end loader, generators (two for the concrete batch plant and one for administration building) and forklift will be refuelled on site, with spill response equipment available and readily accessible.</li> <li>• Gensets will be self-bunded.</li> </ul>

#### 4.1.2 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 2 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 2: Sensitive human and environmental receptors and distance from prescribed activity**

Human receptors	Distance from prescribed activity
Residential Premises <i>Railway Parade &amp; Bickley Road</i> <i>Marriot Street</i>	~200 m north of the activity ~220 m west of the activity
Industrial receptors	Immediately adjacent to the premises boundary
Environmental receptors	Distance from prescribed premises
Lacey street main drain	100 m west of the activity

## 4.2 Modelling

### 4.2.1 Noise modelling

#### Noise model

The applicant provided an environmental noise assessment for the proposed temporary mobile concrete batching plant. The initial assessment indicated there would likely be a significant

number of predicted exceedances of the night-time assigned level under the Environmental Protection (Noise) Regulations 1997 (Noise Regulations).

The applicant supplied further information to the department, culminating in a revised noise assessment. The noise modelling software SoundPLAN was used to predict noise levels at nearby receptors, and the CONCAWE model including worse-case scenario wind conditions was applied.

#### DWER technical review

The department reviewed the final revised environmental noise assessment and identified the following:

- Comparisons of predicted noise levels to *AS/NZA 2107 Acoustics – Recommended design sound levels and reverberation times for building interiors* as suitable alternative noise criteria is not appropriate and therefore was not considered by the department.
- The report lists one cement silo in the plant infrastructure rather than the three on the supplied batch plant layout and supporting documentation (ALUA 2023c), and the supplied sound power level for the cement silo is not insignificant (106 dbA).
- A number of technical assumptions that are not sufficiently justified, including insufficient consideration of  $LA_{max}$  sound power levels.
- The report proposes that the applicant will undertake internal noise monitoring on a monthly basis at the premises boundary and at nearby sensitive receptors.

The revised noise assessment indicates that even with particular noise mitigation controls in place (such as a 5 m high acoustic barrier around slump stands) the proposed concrete batching plant will exceed the night-time assigned level at a number of noise sensitive receptors by 1 to 3 dB(A).

The report proposed the addition of a 4 m high acoustic barrier from sleeper storage or other suitable material, and states that with this additional control in place noise emissions from the concrete batching plant will comply with the night time assigned noise levels at all sensitive receptors (ALUA 2023b).

In response to the draft works approval and decision report (see Appendix 1) the applicant provided a final noise assessment (ALUA 2024) which included a comparison of predicted noise levels considering all proposed noise controls. The noise assessment indicates the predicted noise levels at residential and industrial receptors are borderline compliant with the assigned levels for night-time (ALUA 2024). This includes predicted levels for the receptor on Bickley Road (37 dB compared to the calculated assigned level 38 dB) and receptors on Railway Parade (at the calculated assigned level 43 dB) that previously were predicted to exceed the assigned levels (ALUA 2024).

### 4.3 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and take into account potential source-pathway and receptor linkages as identified in Section 4.1. 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 4.1), 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 3.

Works approval W6868/2023/1 that accompanies this decision report authorises construction only. The conditions in the issued works approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A registration is required to authorise emissions associated with the ongoing operation of the premises. A risk assessment for the operational phase has been included in this decision report.

**Table 3: Risk assessment of potential emissions and discharges from the premises during construction and operation**

Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Reasoning
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
<b>Construction</b>								
Installing vertical silos, batching plant, raw material storage bins and washout box and wedge pit.	Dust	Air / windborne pathway causing impacts to health and amenity	Residences from ~ 200 metres north and west	Refer to Section 3.1	C = Minor L = Possible <b>Medium Risk</b>	Y	NA	Given the proximity of the premises to residential receptors there is a medium risk of amenity impact associated with construction activity although the Delegated Officer noted that construction activities would be of very short duration.
	Noise			Refer to Section 3.1	C = Minor L = Possible <b>Medium Risk</b>	Y	NA	
<b>Operation</b>								
Delivery of raw materials, batching of concrete, slumping and vehicle washdown facility	Dust	Air / windborne pathway causing impacts to health and amenity	Residences from ~ 200 metres north and west	Refer to Section 3.1	C = Moderate L = Unlikely <b>Medium Risk</b>	Y	Condition 1 to 3	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.
	Noise	Air / windborne pathway	Residences from ~ 200	Refer to Section	C = Moderate L = Unlikely	Y	Condition 1 to 3	Based on the review of noise modelling and additional information from the applicant (ALUA 2023b & ALUA 2024), the delegated officer

Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Reasoning
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
		causing impacts to health and amenity	metres north and west	3.1	<b>Medium Risk</b>			<p>concluded that subject to implementing proposed noise controls, noise emissions from operational activities are predicted to comply with the day and night-time assigned levels during operation of the concrete batching plant (see section 4.2.1).</p> <p>As the proposed controls such as a 5 m noise wall around slump stands and additional 4 m barrier to the north east of the premises are required to comply with the Noise Regulations, they will be imposed on the works approval as construction and installation requirements (Condition 1).</p> <p>As noted in section 4.2.1, in reviewing the revised Noise Assessment the department identified that it appeared infrastructure considered was one cement silo rather than three that are referred to in other supporting documents (ALUA 2023b; ALUA 2023c). The applicant stated that they will not operate the silos simultaneously, and only operate one cement silo at a time. As such the delegated officer has determined to authorise the installation of the three cement silos on this basis, being that the applicant will only operate one silo at a time.</p> <p>As the works approval authorises the installation/construction only (see section 6.1) operational controls proposed by the applicant are not included as controls within the works approval.</p> <p>The delegated officer has determined based on the information and statements in the revised Noise Assessments (ALUA 2023b; ALUA 2024) that activities on the premises are predicted to comply with the Noise Regulations including the night time assigned noise levels. The obligation lies with the applicant to ensure that activities are conducted in a manner which ensures they comply with the Noise Regulations. The delegated officer has not conditioned the applicant's proposed noise monitoring however notes that monitoring may be useful for the applicant's own validation purposes.</p>
	Sediment laden stormwater	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Lacey Street Main drain 100 metres west	Refer to Section 3.1	C = Minor L = Rare <b>Low Risk</b>	Y	Condition 1 to 3	<p>The applicant has proposed that the design and operation of the concrete batching plant will comply with the requirements of the Concrete Batching Regulations, which include requirements relating to the control of wastewater and management of slurry pits, to minimise the risk of wastewater contamination.</p> <p>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. The applicant also proposes to manage stormwater through collecting water from the wedge pit and first flush wedge pit and storing in water tanks which are then used for operations, as well as pumping out water from the wedge pits prior to significant rain events. As noted above, the delegated officer cannot impose operational controls as this works approval authorises construction only of the concrete batching plant.</p>

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.



## 5. Consultation

**Table 4: Consultation**

Consultation method	Comments received	Department response
Application advertised on the department's website on 11 December 2023	None received	N/A
Local Government Authority advised of proposal on 13 December 2023	None received	N/A
Applicant was provided with draft documents on 11 January 2023.	See Appendix 1	See Appendix 1

## 6. Decision

The delegated officer has determined the proposal to construct and operate a mobile concrete batching plant at the premises for a period of up to 10 months, with a production capacity of 168,000 tonnes per annum, 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 are sufficient to manage the risk of dust, noise and contaminated wastewater emissions and are expected to comply with the requirements of the Concrete Batching Regulations and the Noise Regulations. To minimise the potential for impacts to public health and the environment, the applicant has proposed the following engineering controls, which will be imposed on the works approval as they are considered critical for maintaining an acceptable level of risk:

- noise mitigation infrastructure must be installed to ensure compliance with the Noise Regulations during operations, including acoustic walls/barriers; and
- dust and contaminated wastewater controls consistent with the requirements under the Concrete Batching Regulations.

The delegated officer has considered the controls proposed by the applicant to ensure there is an acceptable level of risk to public health and the environment during operations; the applicant should note the defence to offence provisions in the EP Act (see sections 74, 74A and 74B) may not apply to emissions or environmental impacts arising from any variations to what has been assessed.

### 6.1 Works approval and registration

Works approval W6868/2023/1 that accompanies this report authorises installation of the concrete batch plant only. Following completion of construction and submission of compliance documentation the applicant may 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.

The operation of the plant and activities are subject to the Concrete Batching Regulations and the Noise Regulations. As outlined in section 3, the applicant proposes to operate the concrete batching plant for a period of up to 10 months and based on the fixed timeframe for the proposal the LGA indicated that Development Approval is not required. It is the responsibility of the applicant to ensure operation of the premises is consistent with any requirements under planning legislation.

## 7. Conclusion

Works approval W6868/2023/1 that accompanies this report has been granted for a period of 12 months and authorises installation of a concrete batching plant subject to conditions commensurate with the applicant's proposed controls, and conditions necessary for compliance,

administration and reporting requirements.

## References

1. Armadale Line Upgrade Alliance 2023 (ALUA 2023a), *Batching Plant Technical Environmental Noise Assessment Report*, Perth Western Australia.
2. Armadale Line Upgrade Alliance 2023 (ALUA 2023b), *Batching Plant Technical Environmental Noise Assessment Report (Revised)*, Perth Western Australia.
3. Armadale Line Upgrade Alliance 2024 (ALUA 2024), *Batching Plant Technical Environmental Noise Assessment Report*, Perth Western Australia.
4. Armadale Line Upgrade Alliance 2023 (ALUA 2023c), *Victoria Park to Canning level crossing removal program Batching Plant Technical Environmental Assessment Report*, Perth Western Australia.
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.
8. Red Fox Advisory Pty Ltd 2023, *Lot 23 Bickley Road Batching Plant Stormwater Assessment*, November 2023, 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	<p>The applicant specified that the 4m high noise barrier (on the eastern boundary) will be installed with concrete rail sleepers OR double stacked container.</p> <p>The applicant specified that the 5m high noise barrier around the slump stands will be installed with a flexshield sonic curtain.</p>	The delegated officer has updated the infrastructure table in the works approval and proposed applicant controls table in the decision report to reflect the proposed noise barrier materials specified by the applicant.
1	The applicant stated that there will be no additional noise impact from installing three cement silos as they will be operated on an individual basis.	The delegated officer has updated the proposed applicant controls table in the decision report to reflect the applicant's proposal to only operate one cement silo at a time. The delegated officer has considered the proposed operational controls as it relates to noise emissions, as discussed in the risk assessment in section 4.3. The delegated officer has updated the works approval to authorise the installation of three cement silos.
1	The applicant stated that the volumetric capacity of the wedge pits would be ~11.76m <sup>3</sup> and supplied additional figures and discussion on stormwater management.	The delegated officer has updated the works approval to include the applicant's proposed wedge pit volumetric capacity and the decision report to include the applicant's proposed operational controls to include contingencies for significant rainfall events. As outlined in the risk assessment in section 4.3, the delegated officer cannot impose operational controls on the works approval as it authorises the installation/construction of the concrete batching plant only.
Schedule 1: Figure 2	The applicant provided has provided the requested infrastructure map with noise barriers.	The delegated officer has updated the works approval and decision report to reflect the infrastructure description and layout provided by the applicant in the updated infrastructure map.
N/A	The applicant provided a final revised Noise Assessment (ALUA 2024) with an updated Table 12 with predicted noise levels at sensitive receptors compared to calculated assigned levels (Noise Regulations) and an updated Table 13 comparing predicted levels to AS2107: Acoustics – Recommended design sound levels and reverberation times for building interiors.	<p>The updated information provided by the applicant in Table 12 has been considered by the delegated officer and has been added in relevant sections of the decision report where required, including section 4.2.1.</p> <p>As noted in section 4.2.1, the prescribed standards for noise emissions are set by the Noise Regulations and the delegated officer does not consider AS2107 to be a suitable criterion for comparison. Table 13 was therefore not considered relevant to this assessment.</p>