

ATTACHMENT NO. 4

ATTACHMENT A



Job Ref: 8379
26 February 2019

Chief Executive Officer
Town of Bassendean
35 Old Perth Road
BASSENDEAN WA 6054

Attention: Mr Brian Reed – Manager Development Services

Dear Sir

**Application to Amend Development Approval – Removal of Conditions
Lot 105 (No. 2) Clune Street, Bassendean**

Rowe Group acts on behalf of the Leasee of Lot 105 (No. 2) Clune Street, Bassendean ('the subject site'). We have been instructed to prepare and lodge an Application for Development Approval which seeks approval for the removal of Conditions.

This Application is made under Clause 77 (1) (c) of Schedule 2 of the *Planning and Development (Local Planning Schemes) 2015* ('the Regulations').

In order to progress this matter, we attach the following:

- Completed Town of Bassendean Application for Development Approval form;
- Application fee of \$295.00 (being the requisite fee associated with an amendment to a Development Approval);
- Copy of the Certificate of Title; and
- The following justification.

Subject Site

The subject site is legally identified as:

- Lot 105 on Diagram 62913 Certificate of Title Volume 2110 Folio 480.

Refer Attachment One – Certificate of Title.

The subject site is approximately 7,563m². The subject site has frontage to Clune Street.

Level 3
369 Newcastle Street
Northbridge 6003
Western Australia

p: 08 9221 1991
f: 08 9221 1919
info@rowegroup.com.au
rowegroup.com.au



Background

The Town of Bassendean ('the Town') issued a Development Approval for a concrete batching plant at the subject site on 20 January 2017. Refer Attachment Two – 20 January 2017 Development Approval.

The Town issued an amended Development Approval for the addition of three (3) silos and plant equipment at the subject site on 22 August 2017. Refer Attachment Three – 22 August 2017 Development Approval.

The Town issued an amended Development Approval for minor modifications to the approved concrete batching plant at the subject site on 27 March 2018. Refer Attachment Four – 27 March 2018 Development Approval.

Proposed Removal of Conditions

This Application seeks approval for the removal of Conditions 6, 7, 8, 9 and 10 from the Development Approval.

The purpose of this Application is to remove Conditions that overly restrict the operation of the approved concrete batching plant at the subject site.

Each Condition is addressed individually below.

Condition 6

Condition 6 of the Development Approval reads:

6. *Operating house [sic] are to be restricted to 6:00am to 6:00pm Monday to Saturday (public holidays excluded), however no front end loader may operate prior to 7:00am;*

Our Client intends to (generally) operate the concrete batching plant between 12 to 14 hours per day, six (6) days a week. There may be rare occasions where the plant will operate on a Sunday or public holiday. In order to facilitate this, we require that Condition 6 be removed from the Development Approval.

We understand that the intent of Condition 6 may have been to impose to alleviate perceived noise impacts on the surrounding area and nearby noise sensitive land uses.

Our Client has engaged Lloyd George Acoustics to prepare a site specific Environmental Noise Assessment of the approved concrete batching plant in order to demonstrate compliance with the *Environmental Protection (Noise) Regulations 1997* ('Noise Regulations'). The Environmental Noise Assessment concludes that noise levels resulting from operations at the subject site comply with the Noise Regulations at all hours of the day without the need for mitigation measures.

Refer Attachment Five – Environmental Noise Assessment.



Furthermore, a revised Transport Statement has been prepared by Shawmac to demonstrate that the proposed operation will not have an adverse traffic impact on the surrounding road network. Based on the assessment of traffic generation under the existing and the proposed peak period, it is predicted that the existing and proposed operating schedule will not have unacceptable impact on the adjacent intersections and road segments. The proposal to remove the approval condition which restricts operating hours to be between 6:00am-6:00pm is supported from the traffic engineering perspective.

Refer Attachment Six – Revised Transport Statement.

On the basis of the above, we are of the view that Condition 6 should be removed from the Development Approval.

Conditions 7, 9 and 10

Conditions 7, 9 and 10 of the Development Approval reads:

7. *The annual output (1 January to 31 December) of the facility is limited to 105,300m³ of concrete;*
9. *Average production of the plant not exceeding 350m³ on any given day with a maximum production capacity of 375m³ on any given day without the further approval of the Town first having been obtained;*
10. *The amount of concrete batched on-site is to be provided quarterly to the Town by no more than 30 days after the end of each quarter ending 31 March, 30 June, 30 September and 31 December on any given year. The quarterly summary must identify and highlight for each working day the date and time that the maximum output was reached being:
 - (a) 350m³ as a daily average; and
 - (b) 375m³ as a daily maximum.*

We understand that the intent of Conditions 7, 9 and 10 may have been to minimise perceived noise, dust and waste impacts on the surrounding area. We are of the view that there will be no adverse noise, dust and waste impacts on the surrounding area. Therefore, Conditions 7, 9 and 10 should be removed from the Development Approval.

As previously mentioned, our Client has engaged Lloyd George Acoustics to prepare a site specific Environmental Noise Assessment of the approved concrete batching plant in order to demonstrate compliance with the Noise Regulations. The Environmental Noise Assessment concludes that noise levels resulting from operations at the subject site comply with the Noise Regulations at all hours of the day without the need for mitigation measures. Therefore, the proposal will not have any adverse noise impact on the surrounding area or nearby noise sensitive land uses.

In respect to other environmental impacts such as dust and waste, we have prepared a revised Waste and Dust Management Plan ('WDMP') which demonstrates mitigation measures and management systems to negate any



perceived dust and waste impacts. It should also be noted that in this respect, the proposed operation is required to comply with the mitigation measures and standards contained in the *Environmental Protection (Concrete Batching and Cement Manufacturing) Regulations 1998* ('Concrete Batching Regulations'). The facility will operate in accordance with the Concrete Batching Regulations, as is required. Such mitigation measures that are required to be implemented by the Concrete Batching Regulations include:

- Not allowing any vehicles carrying concrete or other ingredients of concrete to leave the subject site until it has been washed;
- Materials will not be stored to a height which exceeds that of the material bins;
- Material bins incorporate a sprinkler system and wind shields to reduce dust emissions;
- An air cleaning system is incorporated in the cement silo to reduce dust emissions; and
- The plant incorporates an enclosed transfer point to the conveyor and a fully covered conveyor to reduce dust emissions.

Refer Attachment Seven – Waste and Dust Management Plan.

Furthermore, the quantity of concrete batched, or the operation times of the plant does not increase the amount or risk of dust emissions. Mitigation measures and management systems are proposed through the WDMP and these will ensure dust emissions do not escape or cause an adverse impact on the surrounding area.

On the basis of the above, we are of the view that Conditions 7, 9 and 10 should be removed from the Development Approval.

Condition 8

Condition 8 of the Development Approval reads:

8. *There is to be no access to the site by trucks and semi-trailers on Sundays or public holidays;*

As previously mentioned, our Client intends to generally operate the concrete batching plant 12 to 14 hours per day, six (6) days a week. There may be rare occasions where the plant will operate on a Sunday or public holiday. This will mean that trucks need to have access to the subject site on Sundays and public holidays. In order to facilitate this, we require that Condition 8 be removed from the Development Approval.

We understand that the intention of Condition 8 may have been to minimise traffic impacts. A revised Transport Statement has been prepared by Shawmac to demonstrate that the proposed operation will not have an adverse traffic impact on the surrounding road network.

Refer Attachment Six – Revised Transport Statement.

The revised Transport Statement concludes based on the assessment of traffic generation under the existing and the proposed peak period, it is predicted that the existing and proposed operating schedule will not have unacceptable impact on the adjacent intersections and road segments.



In addition, our Client has engaged Lloyd George Acoustics to prepare a site specific Environmental Noise Assessment of the approved concrete batching plant in order to demonstrate compliance with the Noise Regulations. The Environmental Noise Assessment concludes that noise levels resulting from operations at the subject site comply with the Noise Regulations at all hours of the day (including Sundays and public holidays) without the need for mitigation measures.

On the basis of the above, we are of the view that the proposed operation does not have any impacts that warrant the vehicle access restrictions contained in Condition 8 of the Development Approval. Therefore, Condition 8 should be removed.

Conclusions

This Application seeks approval to remove Conditions 6, 7, 8, 9 and 10 of the Development Approval issued by the Town of Bassendean on 27 March 2018. The purpose of this Application is to remove Conditions that overly restrict the operation of the approved concrete batching plant at the subject site.

This Application should be supported for the following reasons:

- An Environmental Noise Assessment prepared by Lloyd George Acoustics demonstrates that the proposed operation will comply with the *Environmental Protection (Noise) Regulations 1997* at all times without the need for noise mitigation measures;
- The concrete batching plant will operate in accordance with a Waste and Dust Management Plan and incorporates the required mitigation measures and management systems set out in the *Environmental Protection (Concrete Batching and Cement Manufacturing) Regulations 1998*. Therefore, the proposal will not have any adverse dust and waste impacts on the surrounding area; and
- The proposed operation will not have an adverse traffic impact on the surrounding road network as demonstrated in the revised Transport Statement.

Should you require any further information or clarification in relation to this matter, please contact the undersigned on 9221 1991.

Yours faithfully,

Nathan Stewart

Rowe Group

CC. Client

Encl.



Attachment One – Certificate of Title

Attachment Two – 20 January 2017 Development Approval

Attachment Three – 22 August 2017 Development Approval

Attachment Four – 27 March 2018 Development Approval

Attachment Five – Environmental Noise Assessment

Attachment Six – Revised Transport Statement

Attachment Seven – Waste and Dust Management Plan



**Metropolitan Region Scheme
Form 1
Application for Planning Approval**



Owner/s details

Registered proprietor/s (landowner/s) or the authorised agent's details must be provided in this section. If there are more than two landowners please provide all relevant information on a separate page. Signature/s must be provided by all registered proprietors or by an authorised agent. Alternatively, a letter of consent, which is signed by all registered proprietors or by the authorised agent, can be provided.

Full name

Company/agency (if applicable) Keppel Holdings Pty Ltd

ACN/ABN (if applicable) : 22 504 744 247

Postal address : PO BOX 419

Town/suburb : MORLEY WA

Postcode 6943

The landowner/s or authorised agent consents to the applicant submitting this application

Signature

Date 17/1/2019

Print name and position : SALVATORE MANICHONG DIRECTOR
(if signing on behalf of a company or agency)

Applicant details

Name/company Rowe Group

Contact person Nathan Stewart

Postal address Level 3, 369 Newcastle Street

Town/suburb Northbridge WA

Postcode 6003

Fax

Email nathan.stewart@rowegroup.com.au

Applicant signature

Print name and position : Nathan Stewart - Senior Planner
(if signing on behalf of a company or agency) Date 18/1/19

Property details

Certificate of title description of land:	Lot No 105	Location No
Plan or diagram 62913	Vol 2110	Folio 480

Certificate of title description of land:	Lot No	Location No
Plan or diagram	Vol	Folio

Title encumbrances (e.g. easements, restrictive covenants)	G372858
Locality of development (house no., street name, suburb, etc)	2 Clune Street, Bassendean
Nearest street intersection	Clune Street and Lavan Street
Existing building/land use	Concrete batching plant
Description of proposed development and/or use	Removal of conditions 6, 7, 8, 9 & 10 of current Planning Approval
Nature of any existing buildings and/or use	Concrete batching plant
Approximate cost of proposed development (excl. gst) \$	300,000.00
Estimated time of completion	2019

Office use only

Acceptance officer's initials	Date received
Local government reference No.	Commission reference No.

The information and plans provided with this application may be made available by the WAPC for public viewing in connection with the application.



Metropolitan Region Scheme Form 1 Application for Planning Approval



Additional Information to be provided on the MRS Form 1:

Is the development within a designated Bushfire Prone Area? Y N

If yes, please provide either a BAL Assessment or BAL Contour map to assist in the assessment of this application.

Does your application require determination by a Development Assessment Panel? (DAP) Y N

Please refer to the following website for DAP requirements: <http://www.planning.wa.gov.au/7581.asp>

If yes, please complete DAP Application Form as per DAP requirements.

Checklist (supporting information)

Please complete the checklist below and ensure that all the relevant information is provided with the application.

1. Completed Metropolitan Region Scheme (MRS) Form 1
2. Plans at a scale not less than 1:500 (A3) showing:-
 - (i) the location of the site including street names, lot number(s), north point and the dimensions of the site;
 - (ii) the existing and proposed ground and floor levels over the whole of the land that is the subject of the application, including details of proposed cut and fill, and retaining walls;
 - (iii) the location, metric dimensions, materials, finishes and type of all existing and proposed structures, including services, on the land that is the subject of the application and all existing structures and vegetation proposed to be removed;
 - (iv) the existing and proposed use of the site, including proposed hours of operation and buildings to be erected on the site;
 - (v) the existing and proposed means of access and egress for pedestrians and vehicles to and from the site;
 - (vi) the location, number, dimensions and layout of all car parking spaces intended to be provided, including provision for the disabled;
 - (vii) the location and dimensions of any area proposed to be provided for the loading and unloading of vehicles carrying goods or commodities to and from the site and the means of access to and from those areas;
 - (viii) the location, dimensions and design of any open storage or trade display area and particulars of the manner in which it is proposed to develop those areas;
 - (ix) the nature and extent of any open space and landscaping proposed for the site; and
 - (x) proposed external lighting and signage.
3. Plans, elevations and sections, as appropriate, of any building or structure proposed to be erected or altered and of any building or structure it is intended to retain;
4. Any specialist studies that the responsible authority may require the applicant to undertake in support of the application such as traffic, heritage, environmental, engineering or urban design studies;
5. Any management plans the responsible authority may require to support or implement the application; and
6. Any other plan or information that the responsible authority may require to enable the application to be determined. This may include scale models or information in digital formats.

For additional information please refer to Development Control Policy 1.2

http://www.planning.wa.gov.au/dop_pub_pdf/Developmental_Control_Policy1.2.pdf



Metropolitan Region Scheme Form 1 Application for Planning Approval



Development application checklist Lodgement requirements

Application signatures	<p>The MRS Form is to be signed by the registered proprietor/s as shown on the certificate/s of title.</p> <p>Where the landowner/s cannot sign, an authorised agent can sign and attach evidence of the authority.</p> <p>If the subject land is owned by a company, you must confirm whether it is a sole proprietorship company and state the full name/s and position/s of the company signatory/ies.</p> <p>Appropriate company signatory/ies include one director and the company seal, two directors, or one director and one secretary.</p> <p>Eg: _____ John F. Smith - Director Smith Pty Ltd Peter S James - Director Smith Pty Ltd</p> <p>Or _____ John F. Smith - Sole Director Smith Pty Ltd</p> <p>If the subject land is owned by a strata company, consent can be signed by the strata company secretary or by an elected person of the strata company providing proof of authority either by letter of delegated authority, signed by all strata owners or minutes showing delegated authority.</p>
Certificate of Title	Ensure the Certificate of Title/s is/are current (within 6 months) and provide copy/s.
Change of name	<p>Applications made by either private owners or companies who have changed names to that depicted on the Certificate of Title, must provide supporting documentation showing the change of name such as:</p> <ul style="list-style-type: none"> • a transfer of land document that incorporates a lodgement receipt, • a company search from the Australian Securities and Investment Commission, • a marriage certificate or • a change of name certificate.
Contacts	A contact name, phone and email address is essential, in the event more information is required and for issuing correspondence relating to the Department's decision.
Contracts of sale	<p>Where the land is subject to a contract of sale or offer and acceptance, evidence of landowner's consent must be provided. Relevant evidence may include;</p> <ul style="list-style-type: none"> • an express provision of consent by the vendor on the contract of sale or offer and acceptance, • a letter of consent from the registered proprietor/s giving prospective purchaser/s consent to lodge the application or • a copy of the transfer of land document that incorporates a lodgement receipt.
Crown land	Where the land is registered in the name of the Crown, the application form must be signed by an authorised officer of the Department of Lands, stating the name and position. Alternatively, a letter of consent from the authorised Crown land officer.
Deceased estates	Where the land is registered in joint tenants, a copy of the death certificate of the deceased landowner must be provided. Where the land is registered in tenants in common, a copy of the grant of probate or endorsed enduring power of attorney must be provided.



**Metropolitan Region Scheme
Form 1
Application for Planning Approval**



**Development application checklist
Lodgement requirements**

Designated Bushfire Prone Area	If the proposed development is located within a Bushfire Prone Area according to the Map of Bush Fire Prone Areas, then a BAL assessment or BAL Contour Map should accompany a development application.
Emailed documents	Emailed applications or documents are acceptable, however the application must be signed by the registered proprietor/s.
Government agencies	Where the land is registered in the name of a government authority, the application form must be signed by an authorised officer of the relevant authority, stating the name and position of the signatory/s. Alternatively, a letter of consent signed by an authorised officer.



Attachment One – Certificate of Title



Application C348195

WESTERN

AUSTRALIA



Volume Folio
1587 975
1587 976

1617 540

CERTIFICATE OF TITLE

UNDER THE "TRANSFER OF LAND ACT, 1893" AS AMENDED

Page 1 (of 2 pages) 540 VOL. 1617 FOL.

I certify that the person described in the First Schedule hereto is the registered proprietor of the undermentioned estate in the undermentioned land subject to the easements and encumbrances shown in the Second Schedule hereto.

Dated 29th April, 1982

Jamison
REGISTRAR OF TITLES



ESTATE AND LAND REFERRED TO

Estate in fee simple in portion of Swan Location 7825 and being Lot 105 the subject of Diagram 62913, delineated and coloured green on the map in the Third Schedule hereto, limited however to the natural surface and therefrom to a depth of 12.19 metres.

FIRST SCHEDULE (continued overleaf)

~~Industrial Lands Development Authority of 12 St. George's Terrace, Perth~~

SECOND SCHEDULE (continued overleaf)

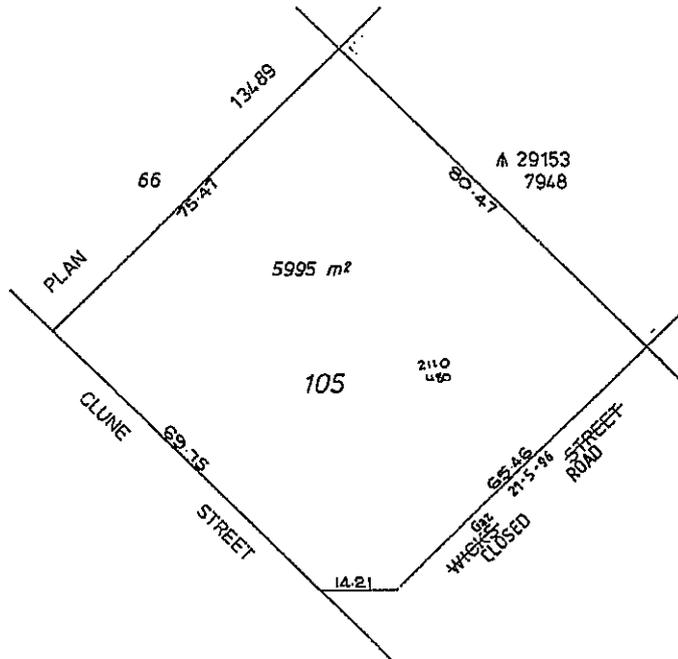
~~CONVEYANCE 2291340. Lodged 22.1.82 at 2.23 p.m.~~
Withdrawn D77471 29.7.85

Jamison
REGISTRAR OF TITLES

CANCELLED

THIRD SCHEDULE

Cancelled



SCALE 1:1000
D.M.

NOTE: RULING THROUGH AND SEALING WITH THE OFFICE SEAL INDICATES THAT AN ENTRY NO LONGER HAS EFFECT. ENTRIES NOT RULED THROUGH MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS.

72009/12/77-45M-5/2880

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

FIRST SCHEDULE (continued)		NOTE: RULING THROUGH AND SEALING WITH THE OFFICE SEAL INDICATES THAT AN ENTRY NO LONGER HAS EFFECT. ENTRIES NOT RULED THROUGH MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS.						
REGISTERED PROPRIETOR		INSTRUMENT		REGISTERED	TIME	SEAL	INITIALS	
NATURE	NUMBER	NATURE	NUMBER					
Collier Paving Contractors Pty. Ltd. of 2 Clune Street, Bayswater.		Transfer	D77472	29.7.85	9.49		1	

Cancelled

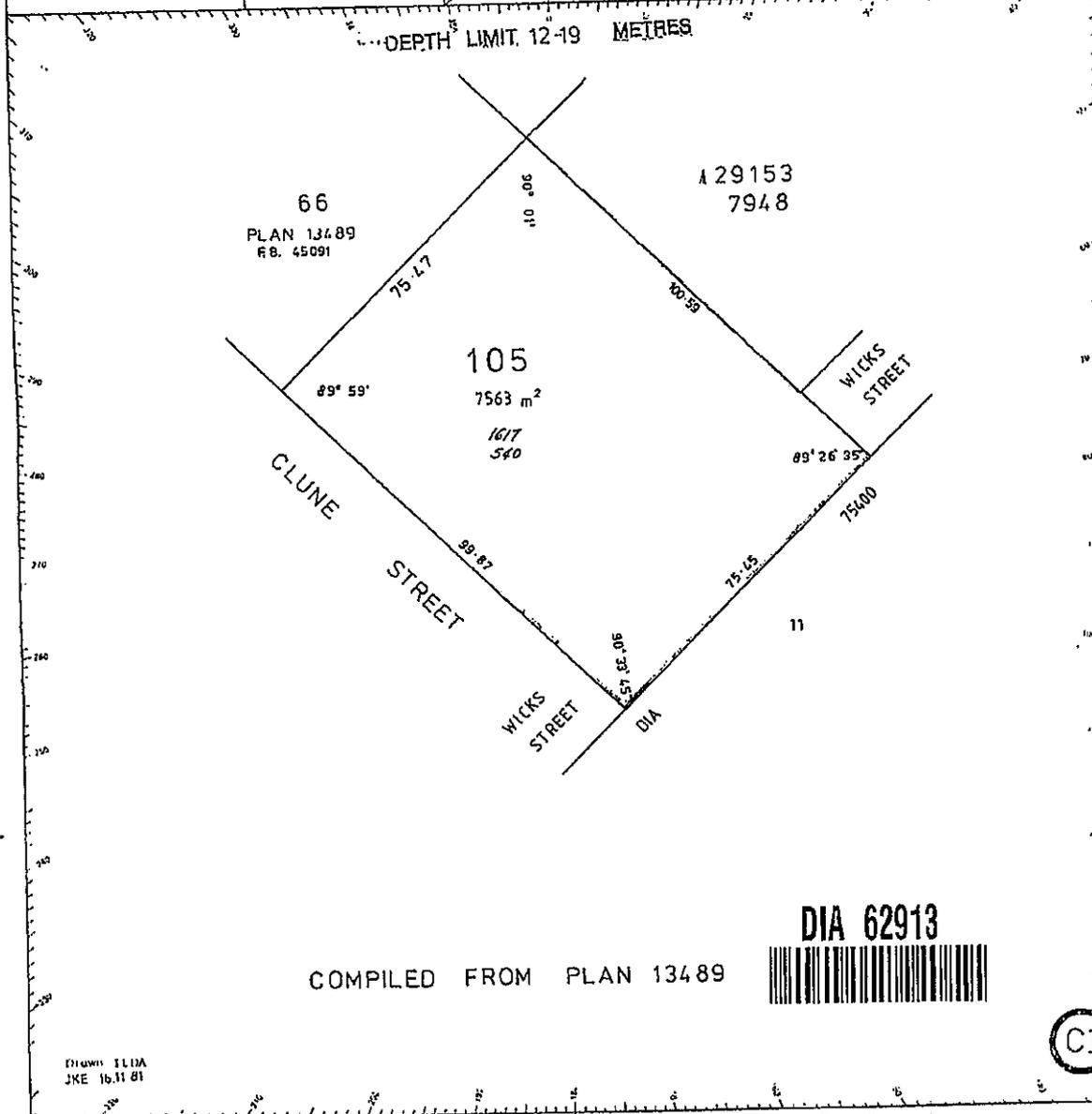
TOTALLY CANCELLED		LODGED/REGISTERED
WITHDRAWALS DISCHARGES/ APPLICATION	G 545396	1.8.97 at 10:27 hrs.
(Includes Closed Road)		
To Vol. 2110 Fol. 480		

SECOND SCHEDULE (continued)		NOTE: RULING THROUGH AND SEALING WITH THE OFFICE SEAL INDICATES THAT AN ENTRY NO LONGER HAS EFFECT. ENTRIES NOT RULED THROUGH MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS.									
INSTRUMENT		PARTICULARS	REGISTERED	TIME	SEAL	INITIALS	CANCELLATION	NUMBER	REGISTERED OR LODGED	SEAL	INITIALS
NATURE	NUMBER										
Mortgage	D77472	to Commonwealth Development Bank of Australia.	29.7.85	9.48		1	Discharged	D110755	17.9.85		1
Mortgage	D110756	to Westpac Banking Corporation.	17.9.85	9.09		1					

CERTIFICATE OF TITLE VOL. 1617 540

LANDGATE COPY OF ORIGINAL NOT TO SCALE Thu Sep 17 13:42:28 2015 JOB 48903759

Town or District.	Number of Lot or Location.	Field Book.	Scale.	Certificate in which Land is Vested.	Area
SWAN	LOTS 64 & 65 OF LOC 7825		1:1000	Vol. 1587 1587 Fol. 975... 976	



<p>CERTIFICATE</p> <p>I hereby certify that this survey was performed by me personally for under my own personal supervision, inspection and field check) in strict accordance with the Licensed Surveyors (Guidance of Surveyors) Regulations, 1961.</p>		<p>Approved by Town Planning Board</p> <p><i>[Signature]</i> Date <i>24/1/82</i> Chairman</p>	
<p>Date</p> <p>COMPILED Licensed Surveyor</p>		<p>On</p> <p>Plan 13489 Diagram Index Plan PERTH 2000. 17 29</p>	
<p>Approved</p> <p><i>[Signature]</i> Date 26. 3. 82</p>		<p>Diagram No</p> <p>62913</p>	

Examined: Dkt. Dia 46478



Attachment Two – 20 January 2017 Development Approval

Our Ref: DABC/BDVAPPS/2015-246:TR



ROWE GROUP (PLANNING DESIGN DELIVERY)
LEVEL 3, 369 NEWCASTLE STREET
NORTHBRIDGE WA 6003

Dear Sir or Madam:

PROPOSED CONCRETE BATCHING PLANT – (LOT 105) NO. 2-8 CLUNE STREET BASSENDEAN WA 6054.

I advise that your application has been approved by the State Administrative Tribunal (SAT), in accordance with the conditions specified on the attached Notice of Approval, with the Final Orders being:

1. The application is allowed;
2. The decision of the respondent made on 28 June 2016 to refuse the amended application as contained in the letter from Rowe Group to the respondent dated 22 August 2016 and the attachments is set aside and instead the application for development approval is granted subject to the conditions attached in Annexure A.

This approval applies to development approval only, and approval of detailed building plans and issue of a building permit must precede any development.

Should you wish to discuss any aspect of this matter further, please contact Council's Planning Officer Timothy Roberts directly on 9377 8024.

Yours faithfully



**BRIAN REED
MANAGER DEVELOPMENT SERVICES**

20 January 2017

KEPPEL HOLDINGS P/L ATF MANGIONE INVEST TRUST
PO BOX 419
MORLEY BC WA 6943

Encl: Determination on Application for Planning Approval
Copy of Approved Plan

**NOTICE OF DETERMINATION ON
APPLICATION FOR DEVELOPMENT APPROVAL
PLANNING AND DEVELOPMENT ACT 2005
TOWN OF BASSENDEAN
LOCAL PLANNING SCHEME NO. 10**

NAME OF OWNER: **KEPPEL HOLDINGS P/L ATF MANGIONE
INVEST TRUST**

ADDRESS: **2-8 CLUNE STREET BASSENDEAN WA 6054**

APPLICATION NUMBER: 2015-246

RECEIVED ON: 18/12/2015

DESCRIPTION OF PROPOSED DEVELOPMENT: **CONCRETE
BATCHING PLANT.**

The application for development approval is granted subject to the following conditions:

1. Prior to the issue of a building permit, a development bond for the sum of \$10,000 being lodged with the Town of Bassendean to ensure the satisfactory completion of all works associated with landscaping, car parking, access ways, screen walls, and other associated works. In the event the works are not completed to a satisfactory standard, the Town may call on the bond for the purposes of completing the works.
2. A detailed landscaping plan being submitted for approval prior to or in conjunction with the application for a Building Permit which demonstrates compliance with the following requirements:
 - (a) Provision of a minimum 6 shade trees for car parking on site;
 - (b) Shade trees being a minimum height of 2m at the time of planting;
 - (c) Eucalyptus Leucoxyton Rosea to be planted with a minimum pot size at the time of planting of 100L;
 - (d) All landscaped areas being reticulated;

(e) A focus on the use of local species as specified within the Town's adopted Local Planning Policy – Landscaping with Local Plants.

3. All landscaped areas shall be reticulated and maintained for the life of the development in accordance with the approved landscaping plants.
4. Any fencing to be setback a minimum of two (2) metres from the Clune Street frontage, behind the landscaping strip as marked in red on the approved drawings. Fencing is not permitted to be constructed along the alignment of the Clune Street property boundary. Fencing along the Wicks Street road reserve post resumption of the unzoned portion of the lot is to be subject of a separate planning application. Details of fencing to be submitted for the approval of the Town in conjunction with or prior to the issue of the Building Permit.
5. The proposed development is, at all times, to operate in accordance with the *Waste and Dust Management Plan and the Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998*.
6. Operating hours are to be restricted to 6:00am to 6:00pm Monday to Saturday (public holidays excluded), however no front end loader may operate prior to 7:00am.
7. The annual output (1 January to 31 December) of the facility is limited to 105,300m³ of concrete.
8. There is to be no access to the site by trucks and semi-trailers on Sundays or public holidays.
9. Average daily production of the plant not exceeding 350m³ per working day with a maximum production capacity of 375m³ on any given day without the further approval of the Town first having been obtained.
10. The amount of concrete batched on-site is to be provided quarterly to the Town by no more than 30 days after the end of each quarter ending 31 March, 30 June, 30 September and 31 December on any given year. The quarterly summary must identify and highlight for each working day the date and time that the maximum output was reached being:
 - (a) 350m³ as a daily average; and
 - (b) 375m³ as a daily maximum.

11. Prior to the building permit for the development being issued, detailed design drawings for the wastewater management system must be submitted to the Town for approval. The wastewater management system must thereafter be constructed in accordance with the approved plans.
12. Standing water shall not remain on site for a period greater than 120 consecutive hours, so as to minimise the possibility of mosquito breeding.
13. All uncontaminated stormwater and drainage runoff produced on site is to be disposed of onsite via the use of soakwells, approved by the Town. The soakwells must deal with the entire land area and be designed to contain a 24 hour storm duration and 100-year ARI.
14. A copy of an approval issued by the Department of Environment Regulation – Licensing Section for the operation of the facility shall be submitted to the Town prior to operations commencing.
15. Any stored aggregate or sand outside the building is to be either wetted at all times or covered to prevent wind driven dust erosion.
16. Any material spills outside the material bins or waste storage bins are to be immediately wetted prior to removal of the materials.
17. Trucks must be washed down at the slump stand before leaving the site.
18. No products, goods materials or waste shall be stored outside of the material bins or waste storage bins unless in a designated area that has been approved by the Town for this purpose.
19. A bine area is:
 - (a) To be provided of not less than 10m²,
 - (b) To be screened by a gate and brick walls or other suitable material to a height of not less than 1.8m;
 - (c) To be provided with 75mm minimum thickness concrete floors grading to a 100mm industrial floor waste, with a hose cock to enable both the bins and bin storage area to be washed out; and
 - (d) To be provided with internal walls that are cement rendered (solid and impervious) to enable easy cleaning.

20. Bins are to be washed only in approved wash down facility within the bin area; drained to a silt trap and disposal of via the Water Corporation sewer system or if this is not available, a leach drain soakwell system which is separate to the stormwater disposal system, or approved system, to the satisfaction of the Town of Bassendean.
21. The 19 car parking space and 18 trucks parking spaces and associated access ways shown on the approved drawings being constructed, kerbed, marked and maintained thereafter to the Town's satisfaction.
22. Car parking bays being setback two (2) metre minimum from the existing corner truncation as marked in red on the approved plans.
23. Concrete mixer trucks are to be parked within an approved truck parking bay only.
24. Truck parking bays are to conform to the relevant Australian Standards. Future truck parking as marked on the approved plans are not approved as part of the planning application and subject to a future application for development upon resumption of the unzoned portion of the lot.
25. The required crossover post resumption of the unzoned portion of land shall be constructed to Council's specifications. (Note: Separate application and approval required).
26. On completion of construction, all excess articles, equipment, rubbish and materials being removed from the site and the site left in an orderly and tidy condition.
27. No retail sales to be carried out from the premises.
28. Signage being subject to a separate application.
29. The street number being prominently displayed at the front of the development.
30. The issue of a Building Permit prior to the commencement of any on site works.

Footnotes:

- i) The Town of Bassendean encourages the retention of stormwater on-site through various best management practices, as laid out in its Planning Policy. Details of the stormwater containment and disposal method are to be provided with the building licence application.

Dial Before You Dig

Underground assets may exist in the area that is subject to your application. In the interests of health and safety and in order to protect damage to third party assets please telephone 1100 before excavating or erecting structures. If alterations are required to the configuration, size, form or design of the development upon contacting the Dial Before You Dig service, an amendment to the development consent (or a new development application) may be necessary. Individuals owe asset owners a duty of care that must be observed when working in the vicinity of plant or assets. It is the individual's responsibility to anticipate and request the nominal location of plant or assets on the relevant property via Dial Before You Dig "1100" number in advance of any construction activities.

Telecommunications Act 1997 (Commonwealth)

Telstra (and its authorised contractors) are the only companies that are permitted to conduct works on Telstra's network and assets. Any person interfering with a facility or installation owned by Telstra is committing an offence under the Criminal Code Act 1995 (Cth) and is liable for prosecution. Furthermore, damage to Telstra's infrastructure may result in interruption to the provision of essential services and significant costs. If you are aware of any works or proposed works which may affect or impact on Telstra's assets in any way, please contact Telstra's Network Integrity Team on 1800 810 443.

If the development the subject of this approval is not substantially commenced within a period of 2 years, or such other period as specified in the approval after the date of the determination, the approval shall lapse and be of no further effect.

Where an approval has so lapsed, no development shall be carried out without the further approval of the local government having first been sought and obtained.

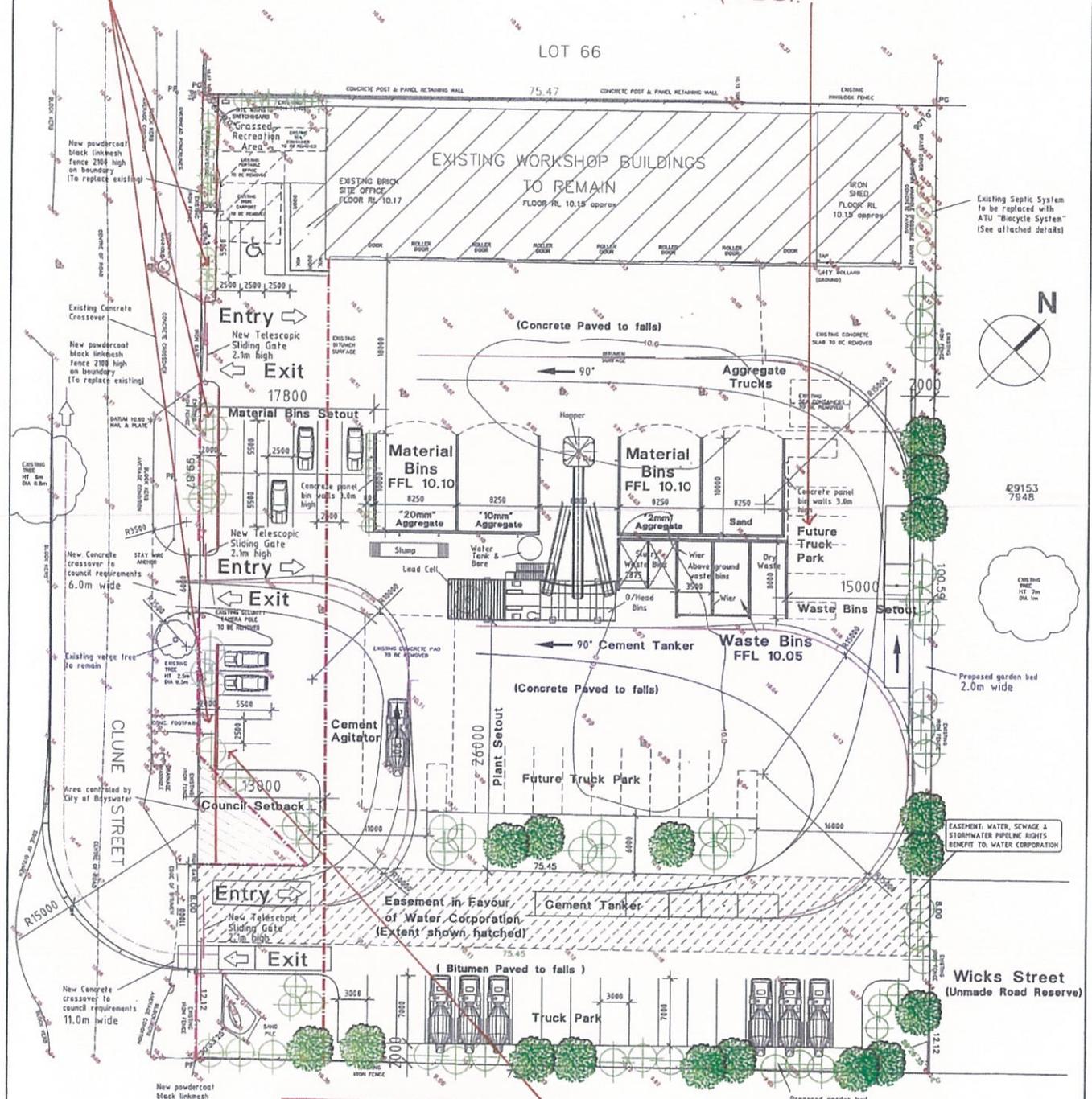


BRIAN REED
MANAGER DEVELOPMENT SERVICES
for and on behalf of the Town of Bassendean

20 January 2017

See condition 4 of development approval.
Fencing along Clune Street frontage to be setback behind the landscaping strip and two metres from the lot boundary.

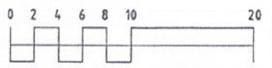
See condition 24 of development approval. Future truck parking subject to a future application for development upon resumption of the unzoned portion of the lot.



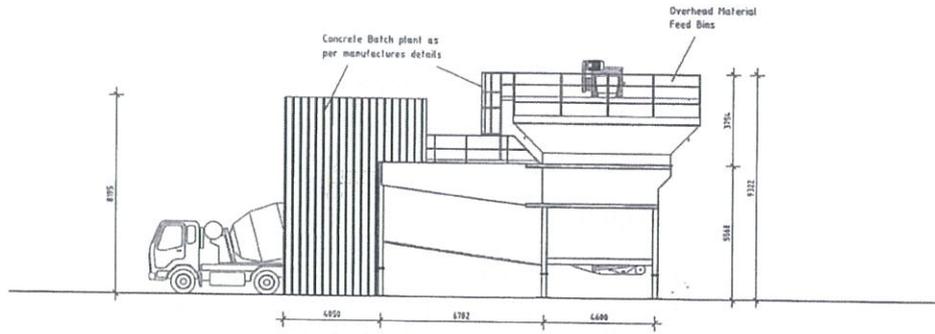
Note:-
Garden Beds to be planted with Native shrubs, relocated and mulched to council requirements.
Street verge to be grassed & relicultured via site bore
Yard area to be concrete paved to internal falls except where noted otherwise
Extent of new powdercoat linkmesh fence.
Extent of area controlled by City of Bayswater

TOWN of BASSENDEAN
APPROVED 05 / 12 / 2010
 REF. 2015-2410 REFER TO DECISION NOTICE
Brian Reed
MANAGER DEVELOPMENT SERVICES

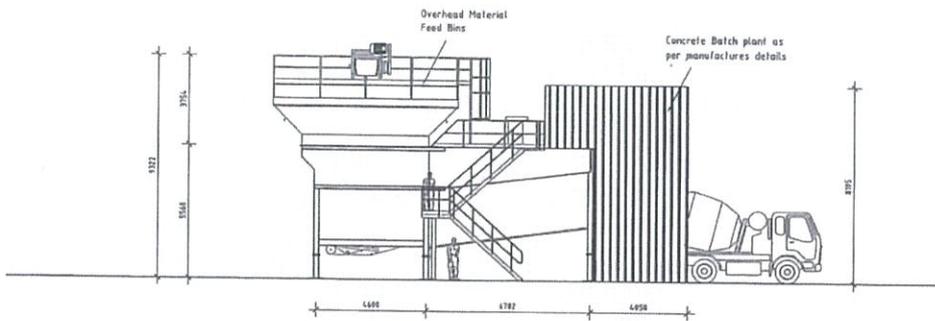
See condition 22 of development approval. Car parking bays being setback two (2) metres minimum from the existing corner truncation.



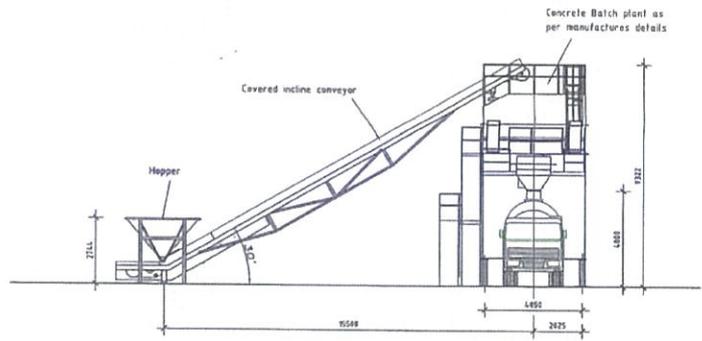
<table border="1"> <tr> <th>DESCRIPTION</th> <th>REVISION</th> <th>DATE</th> <th>BY</th> <th>CHKD.</th> <th>APP'D.</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	DESCRIPTION	REVISION	DATE	BY	CHKD.	APP'D.							<table border="1"> <tr> <th>DESCRIPTION</th> <th>REFERENCE DRAWINGS</th> <th>REVISION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	DESCRIPTION	REFERENCE DRAWINGS	REVISION				<table border="1"> <tr> <td> Site Layout Australia 474 Street Perth WA 6000 Tel: 08 9447 9999 Fax: 08 9447 9999 Email: info@bgc.com.au Website: www.bgc.com.au </td> <td> SCALE: 1:200 DRAWN: HJC CHKD.: JOB No: DATE: NOV-2015 </td> <td> BGC Concrete-Proposed Concrete Batch Plant Part Lot 66 Clune St, Bassendean DWS No. A 01 REV H </td> </tr> </table>	Site Layout Australia 474 Street Perth WA 6000 Tel: 08 9447 9999 Fax: 08 9447 9999 Email: info@bgc.com.au Website: www.bgc.com.au	SCALE: 1:200 DRAWN: HJC CHKD.: JOB No: DATE: NOV-2015	BGC Concrete-Proposed Concrete Batch Plant Part Lot 66 Clune St, Bassendean DWS No. A 01 REV H
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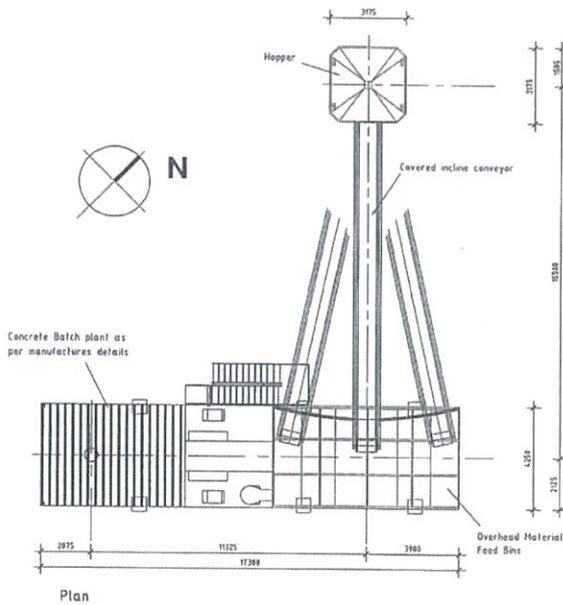
South/East Elevation



North/West Elevation



South/West Elevation



Plan

TOWN of BASSENDEAN

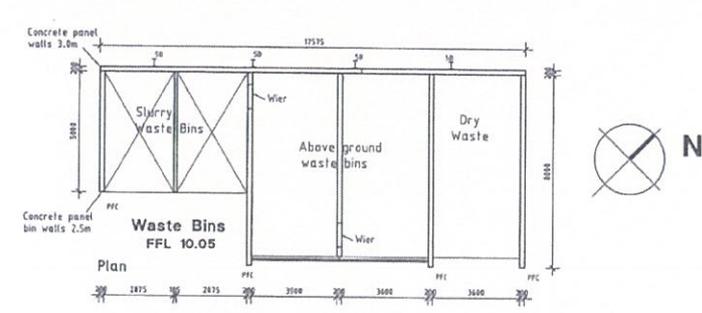
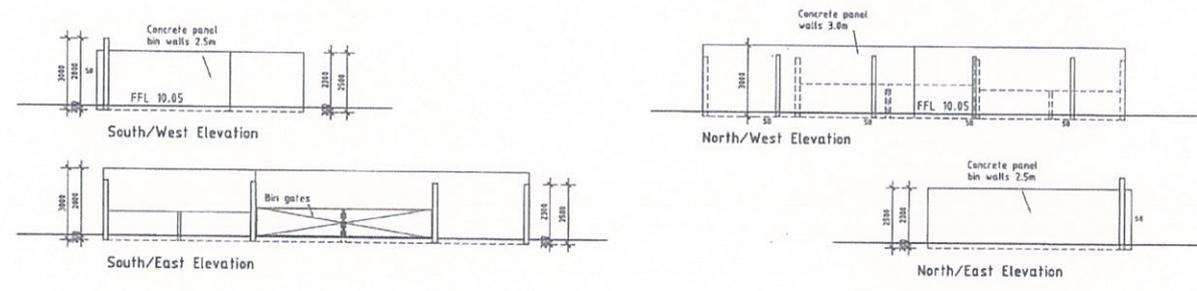
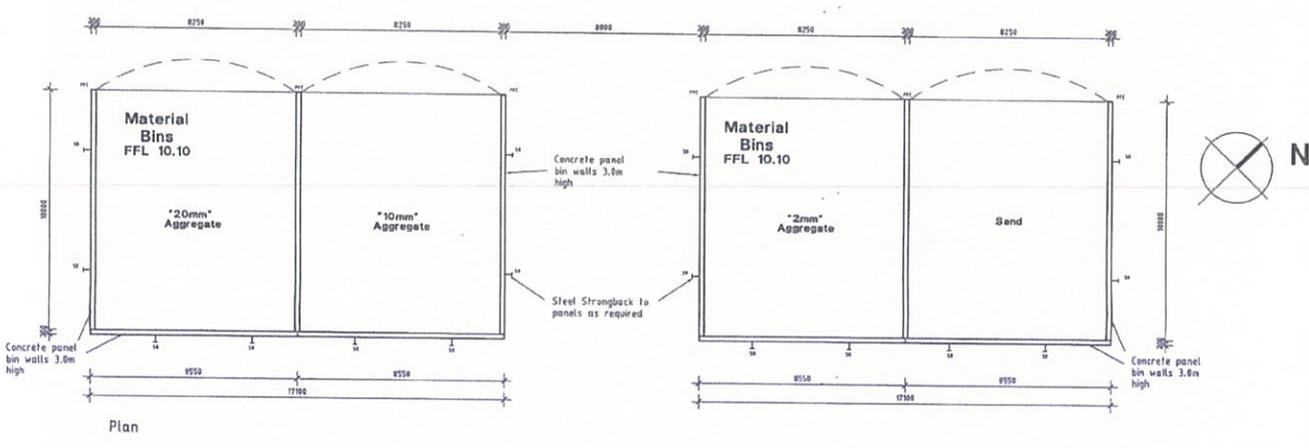
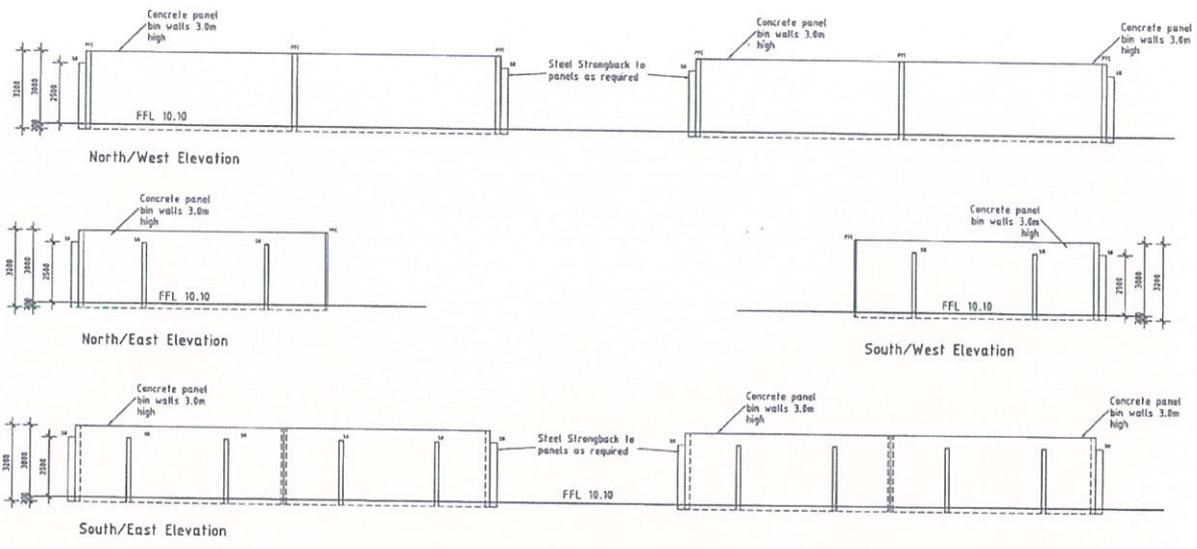
APPROVED..05..12..2016

REF: 2015-246 REFER TO DECISION NOTICE

Brian Reed

MANAGER DEVELOPMENT SERVICES

<p>Batch Plant Plan & Elevations</p>		<p>SCALE 1:100</p> <p>DRAWN HJK</p> <p>CHKD.</p> <p>DATE NOV-2015</p>	<p>BGC Concrete-Proposed Concrete Batch Plant</p> <p>Part Lot 105 Clune St. Bassebande</p>	<p>REV A1</p> <p>REV E</p>
<p>NO.</p> <p>DESCRIPTION</p>	<p>REVISION</p>	<p><small>THIS DRAWING IS A PROPERTY OF BGC CONCRETE. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED IN THE TITLE BLOCK. ANY REUSE OR MODIFICATION OF THIS DRAWING WITHOUT THE WRITTEN PERMISSION OF BGC CONCRETE IS STRICTLY PROHIBITED.</small></p>		



TOWN of BASSENDEAN
APPROVED 05 / 12 / 2010
 REF: 2015-246 REFER TO DECISION NOTICE
Brian Reed
MANAGER DEVELOPMENT SERVICES

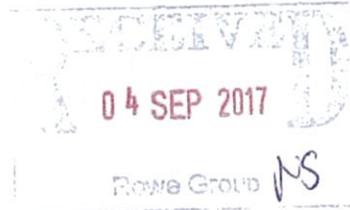
External Bins Plans & Elevations		UCC Australia 4/70 Reed Street Perth WA 6000 Tel: 08 9447 5000 Fax: 08 9447 5001 Email: info@ucc.com.au Web: www.ucc.com.au	SCALE: 1:500 DRAWN: HJC C.D.: Job No: DATE: NOV-2010	BGC Concrete:- Proposed Concrete Batch Plant Part Lot 105 Clune St, Basseendeen	A1 REV E DRG No. A 03
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Attachment Three – 22 August 2017 Development Approval

Our Ref: DABC/BDVAPPS/2017-103:TR

ROWE GROUP (PLANNING DESIGN DELIVERY)
LEVEL 3, 369 NEWCASTLE STREET
NORTHBRIDGE WA 6003



Dear Sir or Madam:

**PROPOSED AMENDED APPLICATION FOR CONCRETE BATCHING
PLANT – (LOT 105) NO. 2-8 CLUNE STREET BASSENDEAN WA 6054.**

Council, at its Ordinary Meeting held on 22 August 2017, considered your application dated 06 July 2017 for the above.

I advise that your application has been approved in accordance with the conditions specified on the attached Notice of Approval.

This approval applies to development approval only, and approval of detailed building plans and issue of a building permit must precede any development.

If you are dissatisfied with the conditions imposed, you may seek a review either directly to Council in writing prior to the development commencing, or to the State Administrative Tribunal within 28 days of the date of this approval. The State Administrative Tribunal website <http://www.sat.justice.wa.gov.au/> provides excellent advice as well as access to the appeal forms.

Should you wish to discuss any aspect of this matter further, please contact Council's Planning Officer Timothy Roberts directly on 9377 8024.

Yours faithfully



**BRIAN REED
MANAGER DEVELOPMENT SERVICES**

22 August 2017

KEPPEL HOLDINGS P/L ATF MANGIONE INVEST TRUST
PO BOX 419
MORLEY BC WA 6943

Encl: Determination on Application for Planning Approval
Copy of Approved Plan

**NOTICE OF DETERMINATION ON
APPLICATION FOR DEVELOPMENT APPROVAL
PLANNING AND DEVELOPMENT ACT 2005
TOWN OF BASSENDEAN
LOCAL PLANNING SCHEME NO. 10**

NAME OF OWNER: KEPEL HOLDINGS P/L ATF MANGIONE INVEST TRUST

ADDRESS: 2-8 CLUNE STREET BASSENDEAN WA 6054

APPLICATION NUMBER: 2017-103

RECEIVED ON: 06/07/2017

DESCRIPTION OF PROPOSED DEVELOPMENT: AMENDED
APPLICATION FOR CONCRETE BATCHING PLANT.

The application for development approval is granted subject to the following conditions:

1. The proposed car parking spaces marked in red on the approved plans shall be relocated 1.0m closer to the front lot boundary, to ensure that the southernmost bay does not interfere with the general circulation of vehicles on site;
2. Prior to the finalisation of the approval the applicant shall either confirm in writing that there will be no increase in traffic to the site as a result of the amended proposal, or provide a revised traffic management plan for the approval of the Town, prior to this consent being implemented;
3. Prior to the finalisation of this approval the nature and safety of ground granulated blast furnace slag and end of line combustion processes, be referred to the Department of Water and Environment Regulations to ensure that the product complies with the licences issued by the Department of Water and Environment Regulations; and
4. All other conditions and requirements detailed on the previous approval dated 20 January 2017 shall remain unless altered by this approval.

Footnotes:

- i) The Town of Bassendean encourages the retention of stormwater on-site through various best management practices, as laid out in its Planning Policy. Details of the stormwater containment and disposal method are to be provided with the building licence application.

Dial Before You Dig

Underground assets may exist in the area that is subject to your application. In the interests of health and safety and in order to protect damage to third party assets please telephone 1100 before excavating or erecting structures. If alterations are required to the configuration, size, form or design of the development upon contacting the Dial Before You Dig service, an amendment to the development consent (or a new development application) may be necessary. Individuals owe asset owners a duty of care that must be observed when working in the vicinity of plant or assets. It is the individual's responsibility to anticipate and request the nominal location of plant or assets on the relevant property via Dial Before You Dig "1100" number in advance of any construction activities.

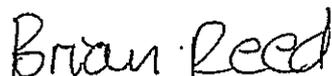
Telecommunications Act 1997 (Commonwealth)

Telstra (and its authorised contractors) are the only companies that are permitted to conduct works on Telstra's network and assets. Any person interfering with a facility or installation owned by Telstra is committing an offence under the Criminal Code Act 1995 (Cth) and is liable for prosecution. Furthermore, damage to Telstra's infrastructure may result in interruption to the provision of essential services and significant costs. If you are aware of any works or proposed works which may affect or impact on Telstra's assets in any way, please contact Telstra's Network Integrity Team on 1800 810 443.

If the development the subject of this approval is not substantially commenced within a period of 2 years, or such other period as specified in the approval after the date of the determination, the approval shall lapse and be of no further effect.

Where an approval has so lapsed, no development shall be carried out without the further approval of the local government having first been sought and obtained.

If an applicant is aggrieved by this determination there is a right of review under Part 14 of the *Planning and Development Act 2005*. An application for review must be lodged within 28 days of the determination.

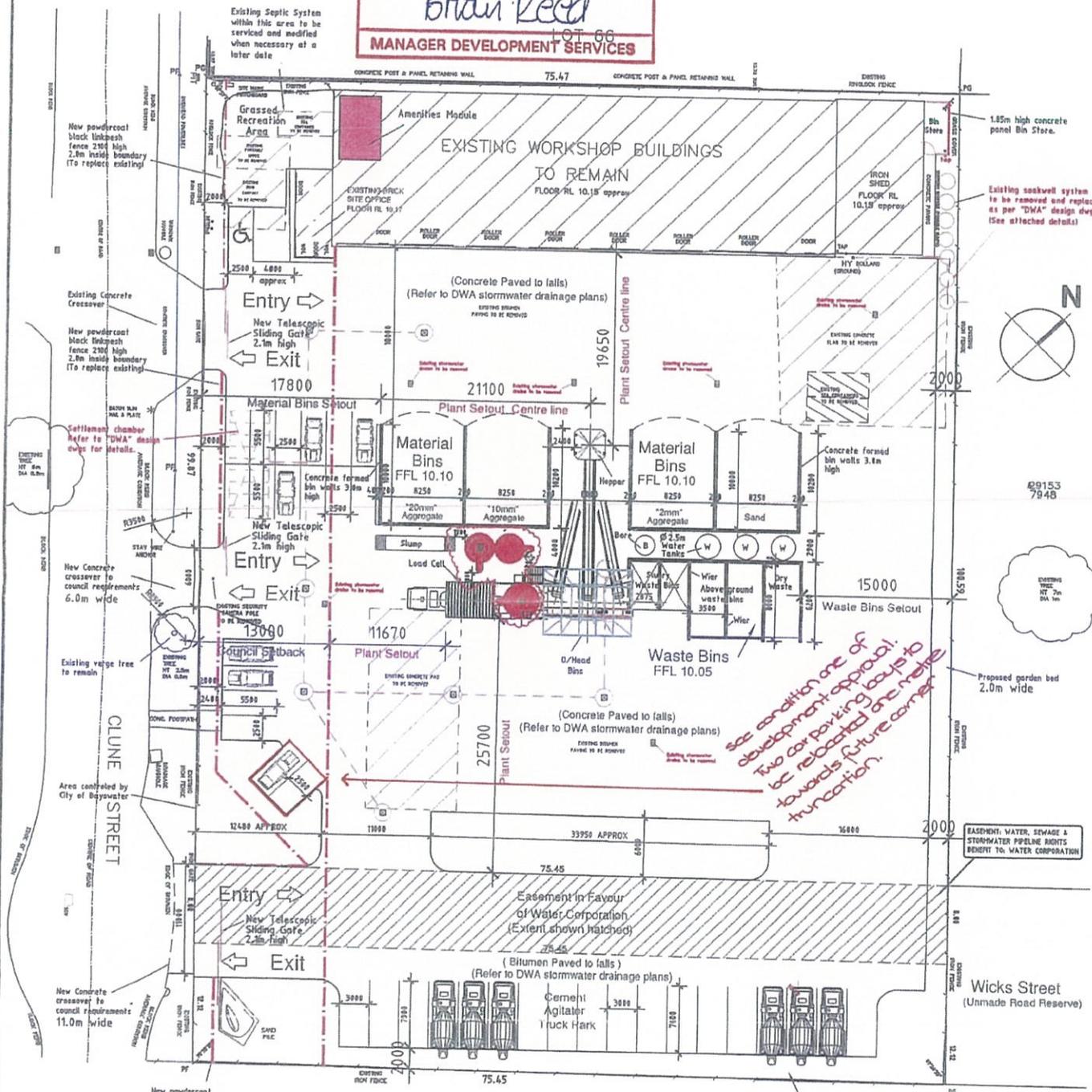


BRIAN REED
MANAGER DEVELOPMENT SERVICES
for and on behalf of the Town of Bassendean

22 August 2017

TOWN of BASSENDEAN
APPROVED 22 / 08 / 2017
 REF: 2017-103
 REFER TO DECISION NOTICE

Brian Reed
 MANAGER DEVELOPMENT SERVICES



89153
7948



see condition one of development approval. Two car parking bays to be relocated one metre towards future corner truncation.

EASEMENT, WATER, SEWAGE & STORMWATER PIPELINE RIGHTS BENEFIT TO WATER CORPORATION

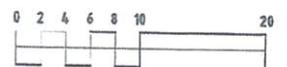
Wicks Street (Unmade Road Reserve)

LOT 11

TOWN OF BASSENDEAN
 07 JUL 2017
 RECEIVED

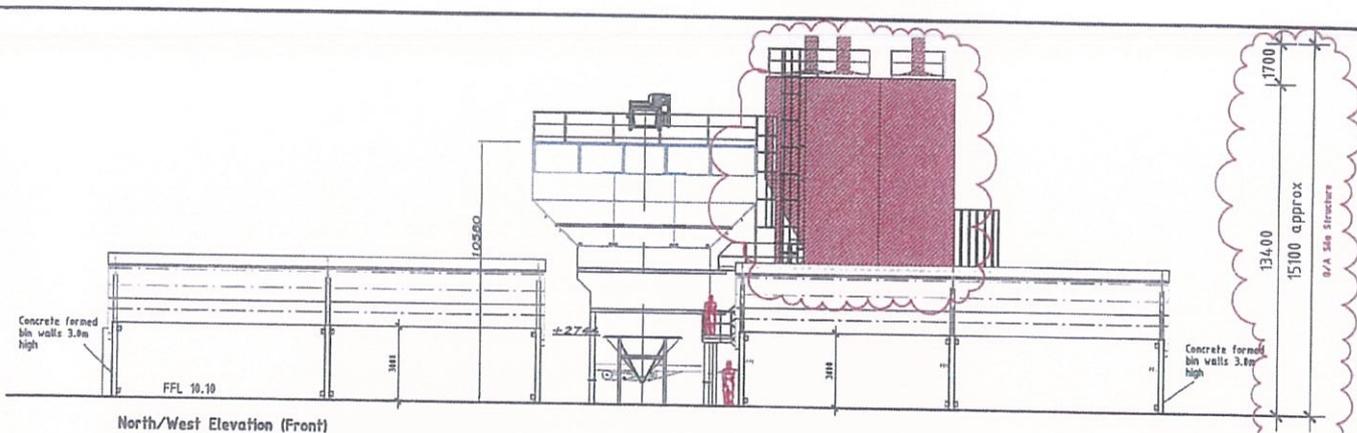
Note:-

- Yard area to be concrete paved to internal falls except where noted otherwise.
- Extent of new powdercoat linkmesh fence.
- Extent of area controlled by City of Bayswater.

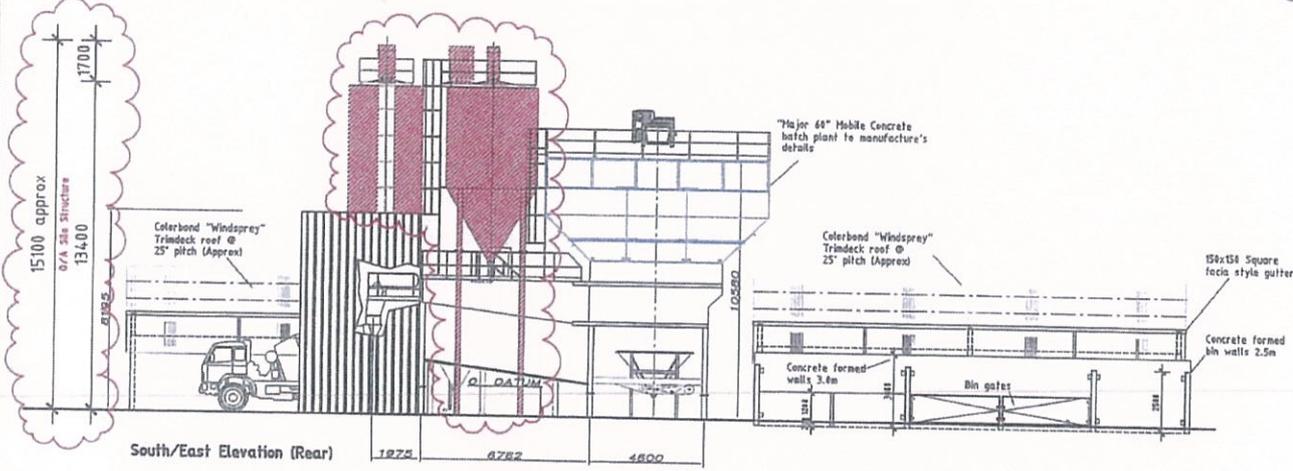


Planning Application for Lot 11, 111 Clune Street, Bayswater 2017 Planning Application No. 17/103		Australia Scale 1:200 Date 08/07/17	SCALE 1:200 DRAWN HJC CHK. JMS JOB No. 17/103 DATE NOV-2016	BGC Concrete-Proposed Concrete Batch Plant Lot 11, 111 Clune St, Bayswater	A1 REV D
REVISION NO. DATE BY DESCRIPTION	REVISION NO. DATE BY DESCRIPTION	REVISION NO. DATE BY DESCRIPTION	REVISION NO. DATE BY DESCRIPTION	REVISION NO. DATE BY DESCRIPTION	REVISION NO. DATE BY DESCRIPTION

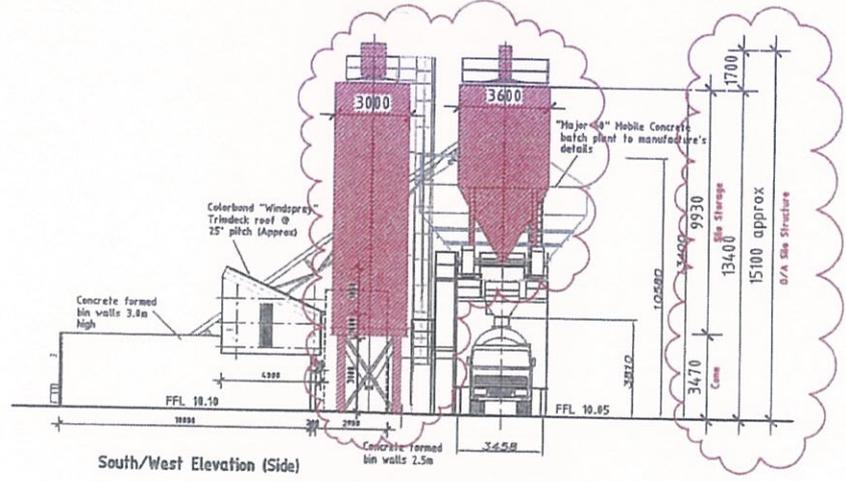
Site Layout



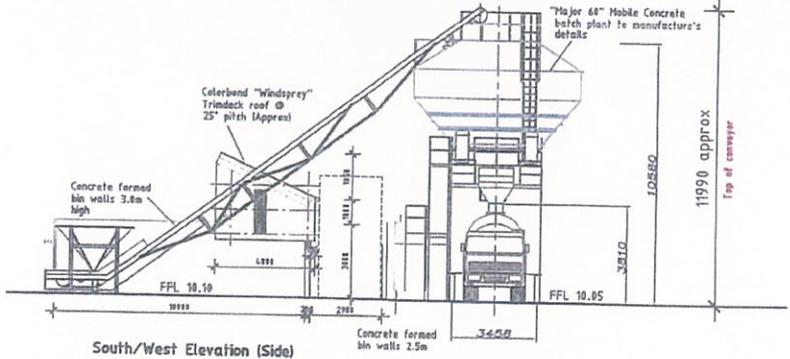
North/West Elevation (Front)



South/East Elevation (Rear)



South/West Elevation (Side)



South/West Elevation (Side)

TOWN of BASSENDEAN
APPROVED 22 / 08 / 2017
 REF: 2017-103 REFER TO DECISION NOTICE
Brian Reed
MANAGER DEVELOPMENT SERVICES

TOWN OF BASSENDEAN
 07 JUL 2017
 RECEIVED

Planning Application for Additional site For further details visit www.bassendean.wa.gov.au		Plant Elevations	Australia AS 1100 AS 1101 AS 1102 AS 1103 AS 1104 AS 1105 AS 1106 AS 1107 AS 1108 AS 1109 AS 1110 AS 1111 AS 1112 AS 1113 AS 1114 AS 1115 AS 1116 AS 1117 AS 1118 AS 1119 AS 1120	SCALE 1:500 DRAWN BJK CHECKED JOB NO DATE FEB-2017	BGC Concrete- Proposed Concrete Batch Plant Lot 105No 2-8 Clune St, Bassendean	A1 REV D
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Attachment Four – 27 March 2018 Development Approval

Our Ref:DABC/BDVAPPS/2018-019:BR:TR

ROWE GROUP
LEVEL 3 / 369 NEWCASTLE STREET
NORTHBRIDGE WA 6003

11 APR 2018

NS

Dear Sir or Madam:

PROPOSED AMENDED APPLICATION FOR CONCRETE BATCHING PLANT – (LOT 105) NO. 2-8 CLUNE STREET BASSENDEAN WA 6054.

Council, at its Ordinary Meeting held on 27 March 2018, considered your application dated 07 February 2018 for the above.

I advise that your application has been approved in accordance with the conditions specified on the attached Notice of Approval.

This approval applies to development approval only, and approval of detailed building plans and issue of a building permit must precede any development.

If you are dissatisfied with the conditions imposed you may seek a review either directly to Council in writing prior to the development commencing, or to the State Administrative Tribunal within 28 days of the date of this approval. The State Administrative Tribunal website <http://www.sat.justice.wa.gov.au/> provides excellent advice as well as access to the appeal forms.

Should you wish to discuss any aspect of this matter further, please contact Council's Planning Officer Timothy Roberts directly on 9377 8024.

Yours faithfully



BRIAN REED
MANAGER DEVELOPMENT SERVICES

27 March 2018

KEPPEL HOLDINGS P/L ATF MANGIONE INVEST TRUST
PO BOX 419
MORLEY BC WA 6943

Encl: Determination on Application for Development Approval
Copy of Approved Plan

**NOTICE OF DETERMINATION ON
APPLICATION FOR DEVELOPMENT APPROVAL
PLANNING AND DEVELOPMENT ACT 2005
TOWN OF BASSENDEAN
LOCAL PLANNING SCHEME NO. 10**

NAME OF OWNER: **KEPPEL HOLDINGS P/L
ATF MANGIONE INVEST TRUST**

ADDRESS: **2-8 CLUNE STREET BASSENDEAN WA 6054**

APPLICATION NUMBER: 2018-019

RECEIVED ON: **07/02/2018**

**DESCRIPTION OF PROPOSED DEVELOPMENT: AMENDED
APPLICATION FOR CONCRETE BATCHING PLANT.**

The application for development approval is granted subject to the following conditions:

1. Prior to the issue of a Building Permit, a development bond for the sum of \$10,000 being lodged with the Town of Bassendean to ensure the satisfactory completion of all works associated with landscaping, car parking, access ways, screen walls, and other associated works. In the event the works are not completed to a satisfactory standard, the Town may call on the bond for the purposes of completing the works;
2. A detailed landscaping plan being submitted for approval prior to or in conjunction with the application for a Building Permit, which demonstrates compliance with the following requirements:
 - (a) Provision of 6 shade trees for car parking on site;
 - (b) Shade trees being planted with a minimum pot size of 90L and a minimum height of 2m at the time of planting;
 - (c) Eucalyptus Leucoxydon Rosea to be planted with a minimum pot size of 100L and a minimum height of 2 metres at the time of planting;

-
- (d) All landscaped areas being reticulated; and
- (e) A focus on the use of local species as specified within the Town's adopted Local Planning Policy – Landscaping with Local Plants;
3. All landscaped areas shall be reticulated and maintained for the life of the development in accordance with the approved landscaping plan. Landscaping along the Wicks Street road reserve post resumption of the unzoned portion of the lot is to be subject of a separate development application;
4. Any fencing to be setback a minimum of two (2) metres from the Clune Street frontage, behind the landscaping strip as detailed on the approved drawings. Fencing along the Wicks Street road reserve post resumption of the unzoned portion of the lot is to be subject of a separate development application;
5. The proposed development is, at all times, to operate in accordance with the *Waste and Dust Management Plan and the Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998*;
6. Operating hours are to be restricted to 6:00am to 6:00pm Monday to Saturday (public holidays excluded), however, no front end loader may operate prior to 7:00am;
7. The annual output (1 January to 31 December) of the facility is limited to 105,300m³ of concrete;
8. There is to be no access to the site by trucks and semi-trailers on Sundays or public holidays;
9. Average daily production of the plant not exceeding 350m³ on any given day with a maximum production capacity of 375m³ on any given day without the further approval of the Town first having been obtained;
10. The amount of concrete batched on-site is to be provided quarterly to the Town by no more than 30 days after the end of each quarter ending 31 March, 30 June, 30 September and 31 December on any given year. The quarterly summary must identify and highlight for each working day the date and time that the maximum output was reached being:
- (a) 350m³ as a daily average; and
- (b) 375m³ as a daily maximum.

11. Prior to the building permit for the development being issued, detailed design drawings for the wastewater management system must be submitted to the Town for approval. The wastewater management system must thereafter be constructed in accordance with the approved plans;
12. Standing water shall not remain on site for a period greater than 120 consecutive hours, so as to minimise the possibility of mosquito breeding.
13. All uncontaminated stormwater and drainage runoff produced on site is to be disposed of onsite via the use of soakwells, approved by the Town. The soakwells must deal with the entire land area and be designed to contain a 24 hour storm duration and 1% average exceedance probability. Details of stormwater disposal being submitted for the approval of the Town in conjunction with or prior to the issue of a Building Permit, in accordance with Local Planning Policy No. 14 – On-Site Stormwater Policy.
14. A copy of an approval issued by the Department of Environment Regulation – Licensing Section for the operation of the facility shall be submitted to the Town prior to operations commencing.
15. Any stored aggregate or sand outside the building is to be either wetted at all times or covered to prevent wind driven dust erosion.
16. Any material spills outside the material bins or waste storage bins are to be immediately wetted prior to removal of the materials.
17. Trucks must be washed down at the slump stand before leaving the site.
18. No products, goods materials or waste shall be stored outside of the material bins or waste storage bins unless in a designated area that has been approved by the Town for this purpose.
19. A bin area is:
 - (a) To be provided of not less than 10m²,
 - (b) To be screened by a gate and brick walls or other suitable material to a height of not less than 1.8m;
 - (c) To be provided with 75mm minimum thickness concrete floors grading to a 100mm industrial floor waste, with a hose cock to enable both the bins and bin storage area to be washed out; and
 - (d) To be provided with internal walls that are cement rendered (solid and impervious) to enable easy cleaning.

20. Bins are to be washed only in an approved wash down facility within the bin area; drained to a silt trap and disposed of via the Water Corporation sewer system or if this is not available, a leach drain soakwell system which is separate to the stormwater disposal system, or approved system, to the satisfaction of the Town of Bassendean.
21. The 19 car parking space and 18 trucks parking spaces and associated access ways shown on the approved drawings being constructed, kerbed, marked and maintained thereafter to the Town's satisfaction.
22. Concrete mixer trucks are to be parked within an approved truck parking bay only.
23. Truck parking bays are to conform to the relevant Australian Standards. Future truck parking is subject to a future application for development upon resumption of the unzoned portion of the lot.
24. The required crossover post resumption of the unzoned portion of land shall be constructed to Council's specifications. (Note: Separate application and approval required).
25. On completion of construction, all excess articles, equipment, rubbish and materials being removed from the site and the site left in an orderly and tidy condition.
26. No retail sales to be carried out from the premises.
27. Signage being subject to a separate application.
28. The street number being prominently displayed at the front of the development.
29. The issue of a Building Permit prior to the commencement of any on site works.

Footnotes:

- i) The Town of Bassendean encourages the retention of stormwater on-site through various best management practices, as laid out in its Planning Policy. Details of the stormwater containment and disposal method are to be provided with the building licence application.

Dial Before You Dig

Underground assets may exist in the area that is subject to your application. In the interests of health and safety and in order to protect damage to third party assets please telephone 1100 before excavating or erecting structures.

If alterations are required to the configuration, size, form or design of the development upon contacting the Dial Before You Dig service, an amendment to the development consent (or a new development application) may be necessary. Individuals owe asset owners a duty of care that must be observed when working in the vicinity of plant or assets. It is the individual's responsibility to anticipate and request the nominal location of plant or assets on the relevant property via Dial Before You Dig "1100" number in advance of any construction activities.

Telecommunications Act 1997 (Commonwealth)

The **nbn**[™] network is Australia's new landline phone and internet network. It's designed to provide all Australians with access to fast and reliable phone and internet services, no matter where you live. **nbn** (the company) was established in 2009 to design, build and operate Australia's new broadband network. They are responsible for providing wholesale services to phone companies and internet service providers who offer **nbn**[™] plans for homes and businesses.

Each building unit or lot in a new real estate development needs to be serviced by "fibre-ready facilities" under the Telecommunications Act. For new homes, **nbn** enables developers to connect to the **nbn**[™] network upfront in the new build process – but the developer needs to apply via www.nbn.com.au/newdevelopments. **nbn** asks that you apply at least 3 months before civils commence. If you do not have these facilities in place, there may be a delay with your titles process.

Telstra and **nbn** (and its authorised contractors) are the only companies that are permitted to conduct works on network and assets.

Any person interfering with a facility or installation owned by Telstra or **nbn** is committing an offence under the Criminal Code Act 1995 (Cth) and is liable for prosecution. Furthermore, damage to telecommunication infrastructure may result in interruption to the provision of essential services and significant costs. If you are aware of any works or proposed works which may affect or impact on assets in any way, please contact Telstra's Network Integrity Team on 1800 810 443 or **nbn** on relocationworks@nbnc.com.au

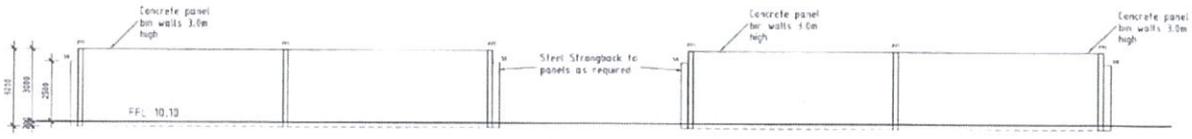
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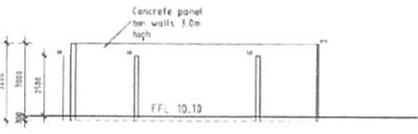
If an applicant is aggrieved by this determination there is a right of review under Part 14 of the *Planning and Development Act 2005*. An application for review must be lodged within 28 days of the determination.

BRIAN REED
MANAGER DEVELOPMENT SERVICES
for and on behalf of the Town of Bassendean

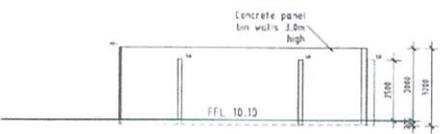
27 March 2018



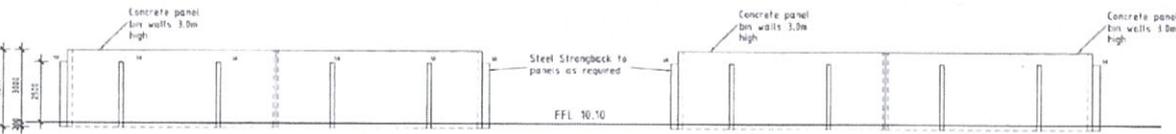
North/West Elevation



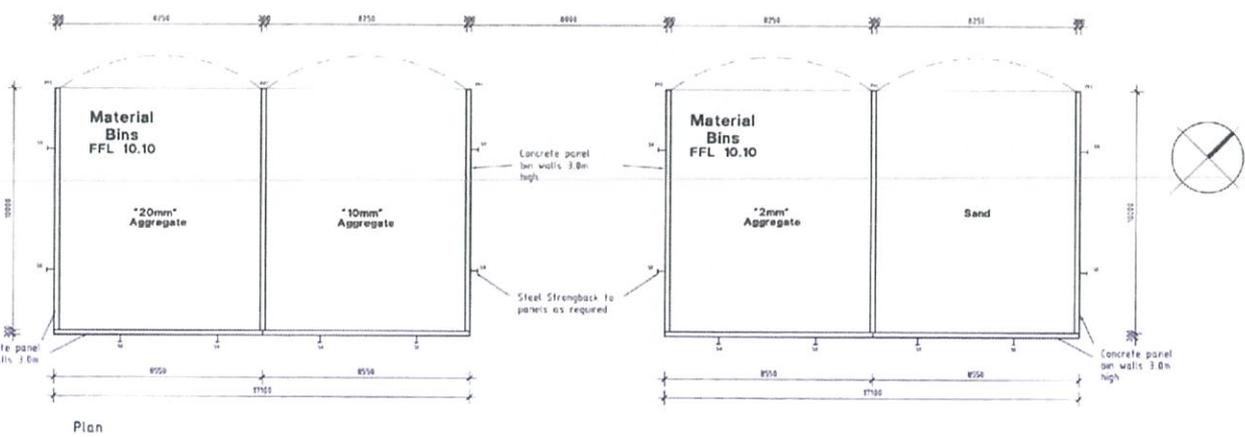
North/East Elevation



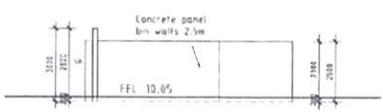
South/West Elevation



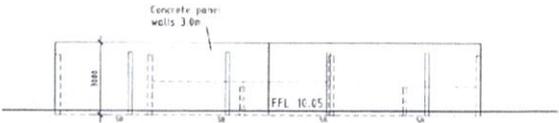
South/East Elevation



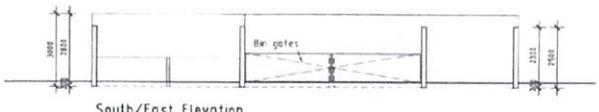
Plan



South/West Elevation



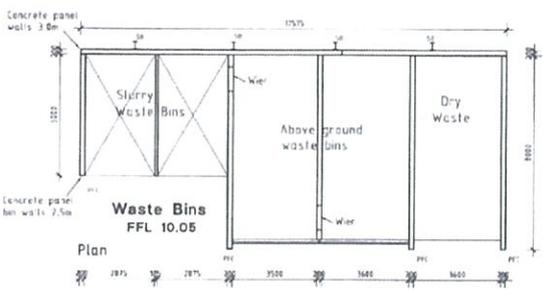
North/West Elevation



South/East Elevation



North/East Elevation



Plan

TOWN of BASSENDEAN

APPROVED 27/04/2018

REF. 2018-019 REFER TO DECISION NOTICE

Brian Reed

MANAGER DEVELOPMENT SERVICES

DES. No.	DESCRIPTION	Planning Application/Approval/Permit No.	DATE	REV.	BY
External Bins Plans & Elevations					
<small>BGC Australia Pty Ltd 170/171 The Mall, Perth WA 6000. Phone 08 9447 9999. Fax 08 9447 9998. Email: info@bgc.com.au. Website: www.bgc.com.au</small>					
<small>SCALE: 1:100 DRAWN: HJK CAD: JOB No: DATE: NOV 2015</small>			<small>BGC Concrete-Proposed Concrete Batch Plant Part Lot 195, Lane St, Bassetden</small>		
					A1
					A 03

LOT 105

7345m
SANDY

NOTE: BOUNDARY POSITION APPROXIMATE ONLY. ALIGNMENT TO EDP REQUIRED. REFER TO SURVEY.

NOTE: APPROXIMATE ONLY. REFER TO SURVEY.

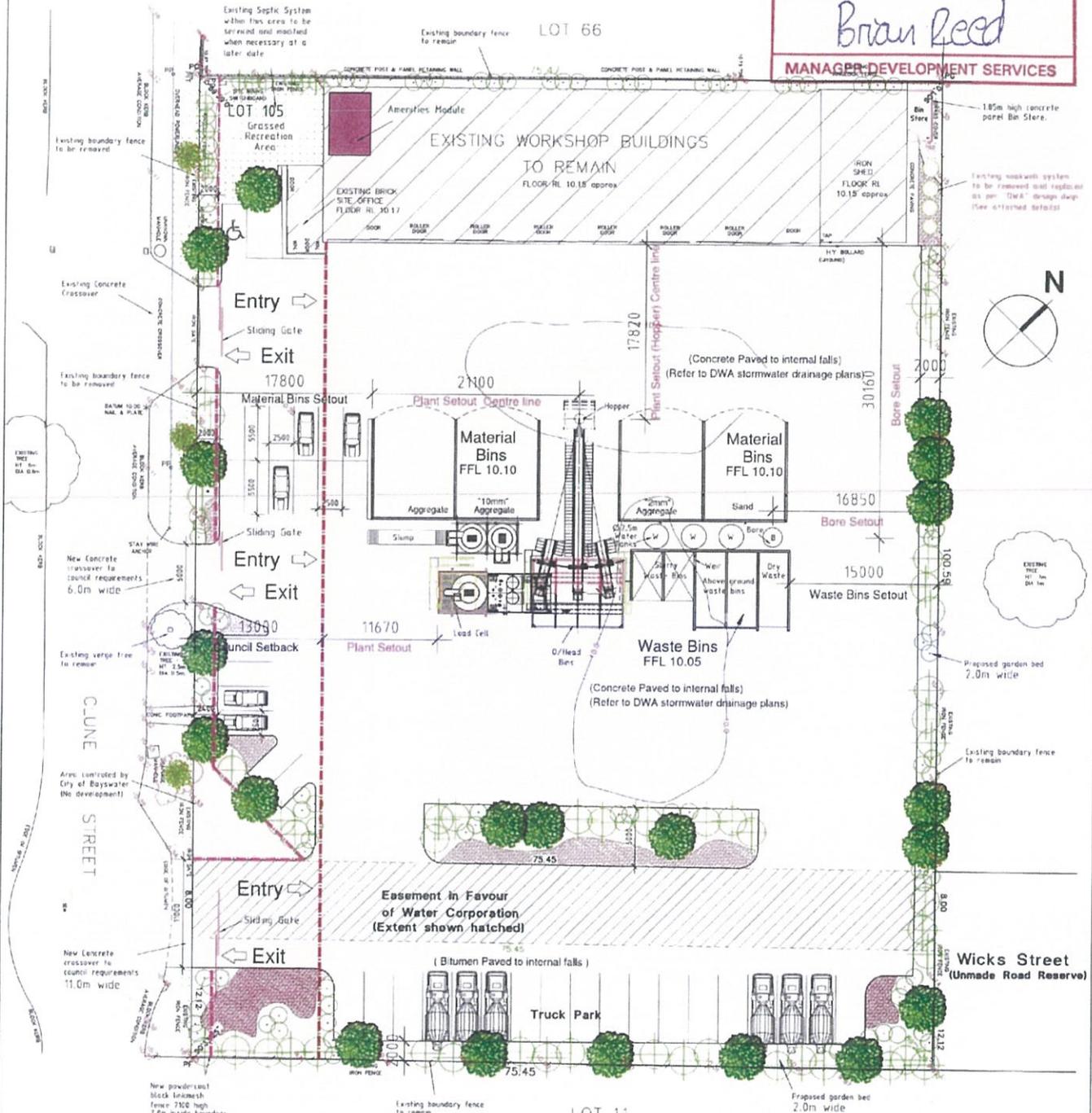
TOWN of BASSENDEAN

APPROVED 27 / 04 / 2018

REF: 2018-019 REFER TO DECISION NOTICE

Brian Reed

MANAGER-DEVELOPMENT SERVICES

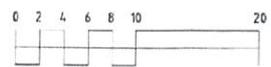


Note -

- Garden Beds to be planted with Native shrubs, reticulated and mulched to council requirements. Street verges to be grassed & reticulated via site bore.
- Yard areas to be concrete paved to internal falls except where noted otherwise.
- Extent of existing metal fence.
- Extent of new powdercoated black mesh fence.
- Extent of area controlled by City of Bayswater.
- Garden beds with shrubs and ground covers.

Tree Schedule

- 1 Existing Mature Tree to remain
 - 2 Eucalyptus Uncaespina or similar (10.0m post)
 - 3 Eucalyptus Comalduensis Silverton or similar (5.0m post)
 - 4 Monilaea Rhizophyllis or similar (2.0m post)
- Remaining garden beds to be planted out with native shrubs and ground covers. I.e. Grevillea Red Lantern, Grevillea Sandra, Garden Melaleuca lateralis or similar; reticulated via dripper system fed off bore.
- Street verges to be grassed and reticulated via site bore and 'Pop Up' sprays.



DESCRIPTION	REVISION	DATE	BY	CHK	DESCRIPTION	REVISION	DATE	BY	CHK

Landscape Plan

Project and description, all drawings to be checked for compliance with the relevant codes of practice. For further details, refer to the project description.

SCALE 1:200

DRAWN BY: [Name]

CHKD BY: [Name]

DATE: NOV-2018

BGC Concrete-Proposed Concrete Batch Plant

Lot 105 No 2-8 Clune St Bassendean

DATE: NOV-2018

SCALE: 1:200

DRAWN BY: [Name]

CHKD BY: [Name]

DATE: NOV-2018



Attachment Five – Environmental Noise Assessment

ATTACHMENT B

Environmental Noise Assessment

Lot 105 (2-8) Clune Street, Bassendean

Reference: 18114736-01B

Prepared for:

BGC Australia

Report: 18114736-01B

Lloyd George Acoustics Pty Ltd ABN: 79 125 812 544 PO Box 717 Hillarys WA 6923 T: 9300 4188 / 9401 7770 F: 9300 4199				
Contacts	Daniel Lloyd	Terry George	Matt Moyle	Olivier Mallié
E:	daniel@lgacoustics.com.au	terry@lgacoustics.com.au	matt@lgacoustics.com.au	olivier@lgacoustics.com.au
M:	0439 032 844	0400 414 197	0412 611 330	0439 987 455

This report has been prepared in accordance with the scope of services described in the contract or agreement between Lloyd George Acoustics Pty Ltd and the Client. The report relies upon data, surveys, measurements and results taken at or under the particular times and conditions specified herein. Any findings, conclusions or recommendations only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client. Furthermore, the report has been prepared solely for use by the Client, and Lloyd George Acoustics Pty Ltd accepts no responsibility for its use by other parties.

Date:	Rev	Description	Prepared By	Verified
21-Dec-18	0	Issued to Client	Matt Moyle	Terry George
11-Jan-18	A	Minor wording revisions	Matt Moyle	Terry George
12-Apr-19	B	Updates to address City Comments	Matt Moyle	Terry George

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Appendices

A	Land Use Map
B	Terminology

1 INTRODUCTION

Lloyd George Acoustics was commissioned by BGC Australia to conduct an Environmental Noise Assessment of a Concrete Batching Plant at Lot 105 (2-8) Clune Street, Bassendean – refer *Figure 1-1*. The site is amongst “Industrial” zoning with “Residential” to the southeast, with the nearest at a distance of approximately 430 metres.

The facility exists currently but proposes to operate a 24 hour batching plant, which involves loading of aggregate, sand and cement material into concrete mixing trucks. This report provides an assessment of operations as they might occur during critical night time periods.

The site was assessed by way of noise modelling and supplemented by site measurements. This report assesses the noise levels in accordance with the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations).



Figure 1-1 Site Locality (City of Bayswater Images (Dated Dec 2018))

Appendix B contains a description of some of the terminology used throughout this report.

2 CRITERIA

Environmental noise in Western Australia is governed by the *Environmental Protection Act 1986*, through the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations).

Regulation 7 defines the prescribed standard for noise emissions as follows:

“7. (1) Noise emitted from any premises or public place when received at other premises –

- (a) Must not cause or significantly contribute to, a level of noise which exceeds the assigned level in respect of noise received at premises of that kind; and
- (b) Must be free of –
 - i. Tonality;
 - ii. Impulsiveness; and
 - iii. Modulation”.

A “...noise emission is taken to *significantly contribute to* a level of noise if the noise emission exceeds a value which is 5 dB below the assigned level...”

Tonality, impulsiveness and modulation are defined in Regulation 9. Noise is to be taken to be free of these characteristics if:

- (a) The characteristics cannot be reasonably and practicably removed by techniques other than attenuating the overall level of noise emission; and
- (b) The noise emission complies with the standard after the adjustments of *Table 2-1* are made to the noise emission as measured at the point of reception.

Table 2-1 Adjustments for Intrusive Characteristics

Tonality	Modulation	Impulsiveness
+ 5dB	+ 5dB	+ 10dB

Note: The above are cumulative to a maximum of 15dB.

The baseline assigned levels (prescribed standards) are specified in Regulation 8 and are shown in *Table 2-2*.

Table 2-2 Baseline Assigned Noise Levels

Premises Receiving Noise	Time Of Day	Assigned Level (dB)		
		L _{A10}	L _{A1}	L _{Amax}
Noise sensitive premises: highly sensitive area ¹	0700 to 1900 hours Monday to Saturday (Day)	45 + influencing factor	55 + influencing factor	65 + influencing factor
	0900 to 1900 hours Sunday and public holidays (Sunday)	40 + influencing factor	50 + influencing factor	65 + influencing factor
	1900 to 2200 hours all days (Evening)	40 + influencing factor	50 + influencing factor	55 + influencing factor
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	35 + influencing factor	45 + influencing factor	55 + influencing factor
Commercial	All hours	60	75	80
Industrial	All hours	65	80	90

1. *highly sensitive area* means that area (if any) of noise sensitive premises comprising —
- a building, or a part of a building, on the premises that is used for a noise sensitive purpose; and
 - any other part of the premises within 15 metres of that building or that part of the building.

The influencing factor has been calculated as 11 dB at the nearest noise sensitive receiver as shown in Table 2-3. Note that this receiver is approximately 430 metres south of the subject site.

Table 2-3 Influencing Factor Calculation

Description	Within 100 metre Radius	Within 450 metre Radius	Total
Industrial Land	1.1 dB 11 %	3.9 dB 39 %	4.9 dB
Commercial Land	0 dB 0%	0 dB 0%	0 dB
Transport Factor			6 dB
Total			11 dB

Table 2-4 shows the assigned noise levels for the commercial and industrial neighbours and the noise sensitive premises (including the influencing factor). The receiving noise sensitive premises are identified in Figure 2-1. The Land use map of the area near the facility is provided in Appendix A.

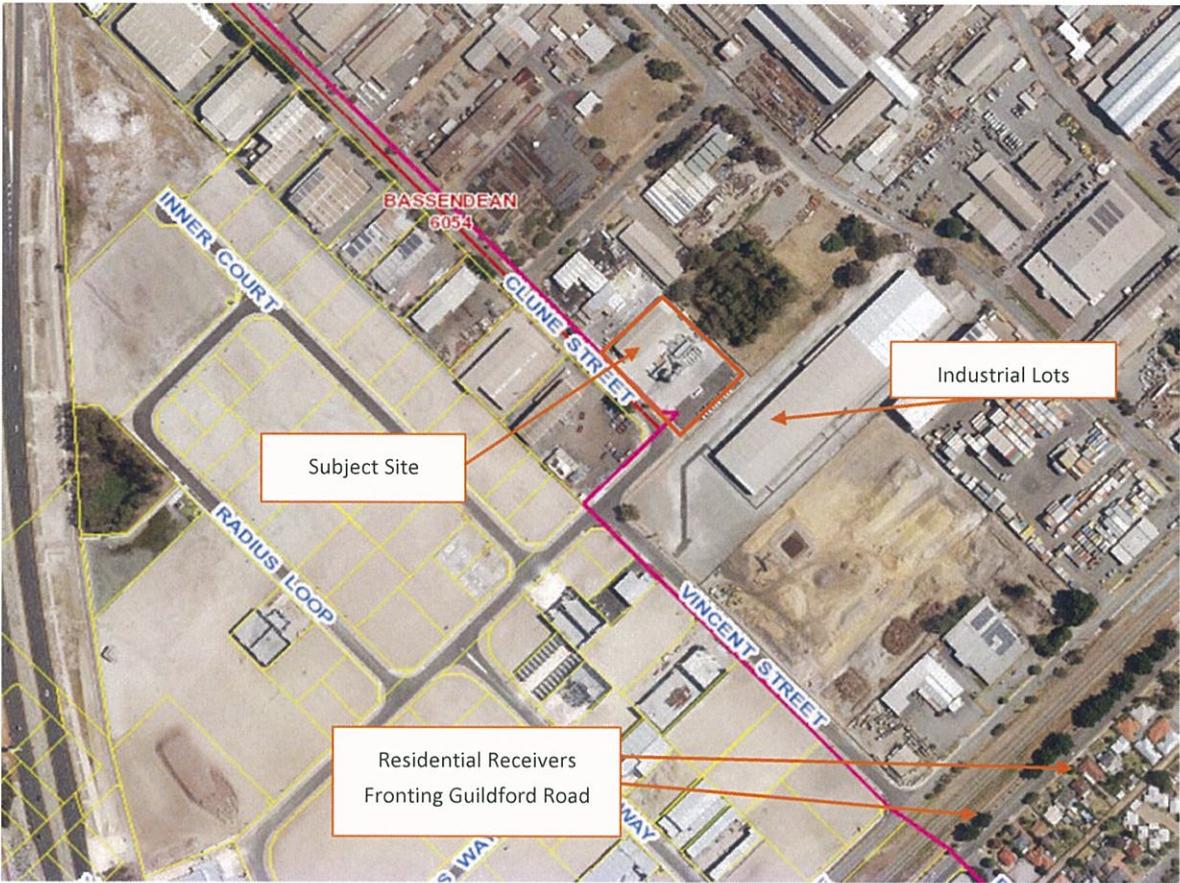


Figure 2-1 Noise Receiving Premises

Table 2-4 Assigned Noise Levels

Premises Receiving Noise	Time Of Day	Assigned Level (dB)		
		L _{A10}	L _{A1}	L _{Amax}
Noise sensitive premises: highly sensitive area	0700 to 1900 hours Monday to Saturday (Day)	56	66	76
	0900 to 1900 hours Sunday and public holidays (Sunday)	51	61	76
	1900 to 2200 hours all days (Evening)	51	61	66
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	46	56	66
Industrial	All hours	65	80	90

It must be noted the assigned noise levels above apply outside a receiving premises and at a point at least 3 metres away from any substantial reflecting surfaces and within 15 metres of a noise sensitive building.

It is noted the assigned noise levels are statistical levels and therefore the period over which they are determined is important. The Regulations define the Representative Assessment Period (RAP) as *a period of time of not less than 15 minutes, and not exceeding 4 hours*, which is determined by an *inspector or authorised person* to be appropriate for the assessment of a noise emission, having regard to the type and nature of the noise emission. An *inspector or authorised person* is a person appointed under Sections 87 & 88 of the *Environmental Protection Act 1986* and include Local Government Environmental Health Officers and Officers from the Department of Environment Regulation. Acoustic consultants or other environmental consultants are not appointed as an *inspector or authorised person*. Therefore, whilst this assessment is based on a 4 hour RAP, which is assumed to be appropriate given the nature of the operations, this is to be used for guidance only.

3 METHODOLOGY

Computer modelling has been used to predict the noise emissions from the site, augmented by site measured operations. The software used was *SoundPLAN 8.1* with the ISO 9613 algorithms (ISO 17354 compliant) selected. These algorithms have been selected as they include the influence of wind and atmospheric stability. Input data required in the model are:

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

3.1 Meteorological Information

Meteorological information utilised is provided in *Table 3-1* and is considered to represent worst-case conditions for noise propagation. At wind speeds greater than those shown, sound propagation may be further enhanced, however background noise from the wind itself and from local vegetation is likely to be elevated and dominate the ambient noise levels.

Table 3-1 Modelling Meteorological Conditions

Parameter	Night (1900-0700)
Temperature (°C)	15
Humidity (%)	50
Wind Speed (m/s)	Up to 5m/s
Wind Direction*	All

* Note that the modelling package used allows for all wind directions to be modelled simultaneously.

It is generally considered that compliance with the assigned noise levels needs to be demonstrated for 98% of the time, during the day and night periods, for the month of the year in which the worst-case weather conditions prevail. In most cases, the above conditions occur for more than 2% of the time and therefore must be satisfied.

3.2 Topographical Data

Topographical data was adapted from *Google Earth*, site photographs and site plans. Existing neighbouring and on site buildings have also been included as these can provide barrier attenuation when located between a source and receiver, much the same as a hill.

3.3 Ground Absorption

Ground absorption varies from a value of 0 to 1, with 0 being for an acoustically reflective ground (e.g. water or bitumen) and 1 for acoustically absorbent ground (e.g. grass). In this instance, a value 0.1 has been used for all roads, site car park and hard stand areas.

3.4 Source Sound Levels

The general list of noise emissions considered in the assessment are based on typical activities on site, including:

- Front end loader working in material bins area;
- Dry loading of concrete truck;
- Wet Slumping of concrete truck; and
- Cement blowing (loading silo with cement from a delivery truck).

Short term measurements on site within close proximity of the above observed activities were used to derive source levels. Based on these near field measurements, a set of source sound power levels were calculated for the noisiest operations – refer *Table 3-2*.

Table 3-2 Source Sound Power Levels, dB(A)

Description	Octave Band Centre Frequency (Hz)								Overall dB(A)
	63	125	250	500	1k	2k	4k	8k	
Loading Aggregate into Hopper – L ₁	86	82	90	95	100	104	105	100	109
Loader working material area – L ₁	88	91	92	100	97	96	93	87	104
Truck Reversing Beeper – L ₁	-	-	-	-	103	-	-	-	103
Batching – Dry Loading into Truck – L ₁₀	80	83	85	102	100	97	92	83	105
Wet Slumping mixture in Truck – L ₁₀	81	87	96	102	104	104	99	94	109
Cement Blowing – L ₁₀	89	90	93	102	109	107	102	96	112

3.5 Description of Operations

The items listed in *Table 3-2* were identified as the noisiest repetitive operations on site. Other short term events such as raw material deliveries and trucks moving were considered less of an impact for assessment purposes due to their short term nature. With the exception of the loader, the noise sources are generally at static locations around the main mixing tower.

The loader was observed to be confined to working in front of the material bins, generally pushing delivered aggregate and sand into mounds and loading into the main conveyor hopper as required. This occurs for as long as required to maintain the quantities in the main batching tower. While the loader may work for as long as required to be considered an L_{10} noise source for a given RAP, it is constantly moving throughout the bins and hopper areas and then parking again for a time. As such, it was considered most conservative to assess the loader as an L_1 source but to position it at a point that is worst case for noise, in this case that is in front of the southern most bin.

Typically, the batching tower loads a single concrete truck with a dry mixture of material. The truck engine is idling at this time and operating its mixer drum. When fully loaded, the truck moves into the wet "slumping" area, where water is fed into the drum while the mixer continues to run. At peak throughput, two trucks can be simultaneously loading and slumping. Any trucks waiting to load will be on site and parked with engines turned off.

Cement blowing describes the activity of loading the batching silo with dry cement powder by way of a delivery truck. The truck has a powered pump at the back that feeds the powder from the truck up into the tower.

The truck reversing tone is based on field noise measurements and conservatively normalised against industry standards. It is modelled at 0.5m above ground level.

Given the proposed hours of operation being for 24 hours a day, 7 days a week, the night-time scenario is most critical for noise sensitive premises. Noise modelling scenarios are:

1. Night L_{A10} – Consists of 2 concrete trucks (1 slumping, 1 dry loading) in loading positions, and a cement blowing activity occurring;
2. Night L_{A1} – Consists of all the activities of scenario 1 but with the addition of Loader working, hopper loading noise, and a reversing beeper in the mixer truck area;

An image of the noise model for Scenario 2 is shown in *Figure 3-1*.

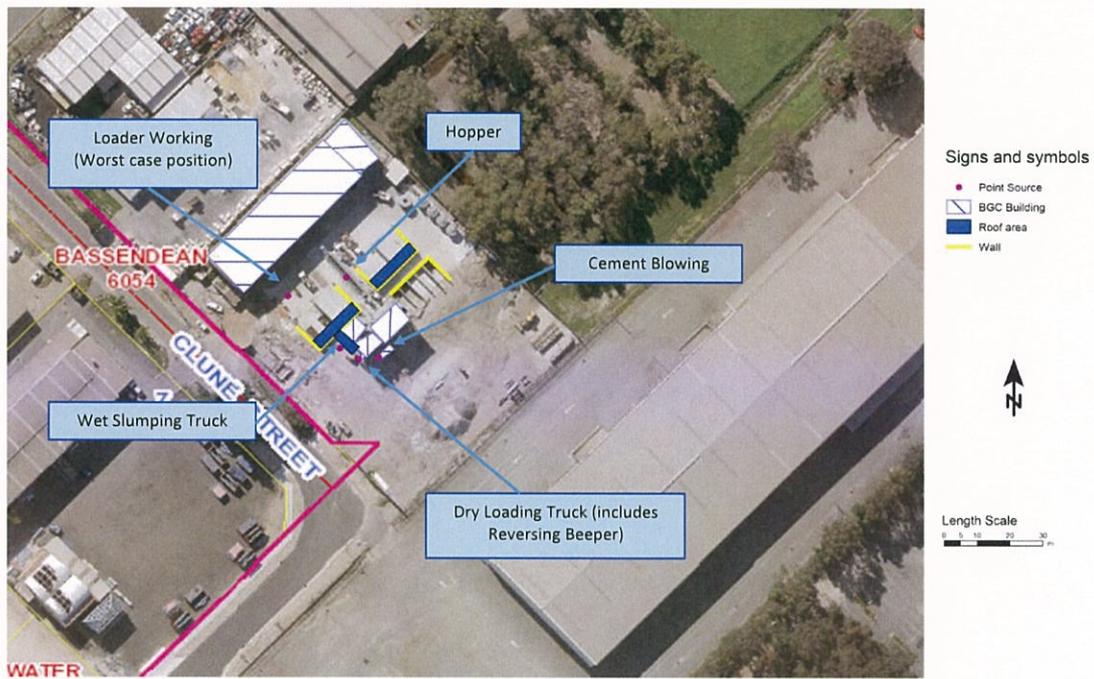


Figure 3-1 2D Image of Noise Model

4 RESULTS

4.1 Scenario 1: Predicted Noise Night L_{A10}

The results of the L_{A10} Night scenario noise modelling are shown as a noise level contour plot in Figure 4-1 and summarised below in Table 4-1.

Table 4-1 Predicted Night Noise Levels, dB L_{A10}

Location	Slumping	Dry Loading	Cement Blowing	Overall	Critical Assigned Level, dB L_{A10}	Exceedence Amount
Guildford Road Residents (Southeast)	34	28	34	38	46	Complies
Industrial Boundary (Southwest)	59	62	60	65	65	Complies

Noise is highest at the neighbouring industrial site boundary, with a combined level of 65 dB L_{A10} with dry loading noise being dominant. Over the representative period the noise level was not observed to be tonal due to the noise being from several activities occurring simultaneously. The noise level therefore marginally complies with the Industrial assigned level of 65 dB L_{A10} .

At the nearest residential sites along Guildford Road to the South, the noise levels are predicted to be 8 dB below the assigned level for noise sensitive premises.

4.2 Scenario 2: Predicted Noise Night L_{A1}

The results of the Night L_{A1} scenario noise modelling are shown as a noise level contour plot in Figure 4-2 and summarised below in Table 4-2.

Table 4-2 Predicted Night Noise Levels, dB L_{A1}

Location	Hopper Loading	Reversing Alarm	Loader Working	Overall*	Critical Assigned Level, dB L_{A1}	Exceedence Amount
Guildford Road Residents (Southeast)	27	35	30	40	56	Complies
Industrial Boundary (Southwest)	65	58	62	69	80	Complies

*Also includes the L_{A10} noise sources from Scenario 1.

Noise is highest at the neighbouring industrial site boundary, with a combined level of 69 dB L_{A1} with dry loading noise being dominant. Over the representative period the noise level was again not considered to have tonal characteristics. Impulsiveness characteristics may be audible at the industrial boundaries which would apply a +10 dB penalty. Despite this penalty, the noise level therefore complies with the Industrial assigned level of 80 dB L_{A1} .

At the nearest residential properties along Guildford Road to the South, the noise levels are predicted to be 16 dB below the assigned level for noise sensitive premises.

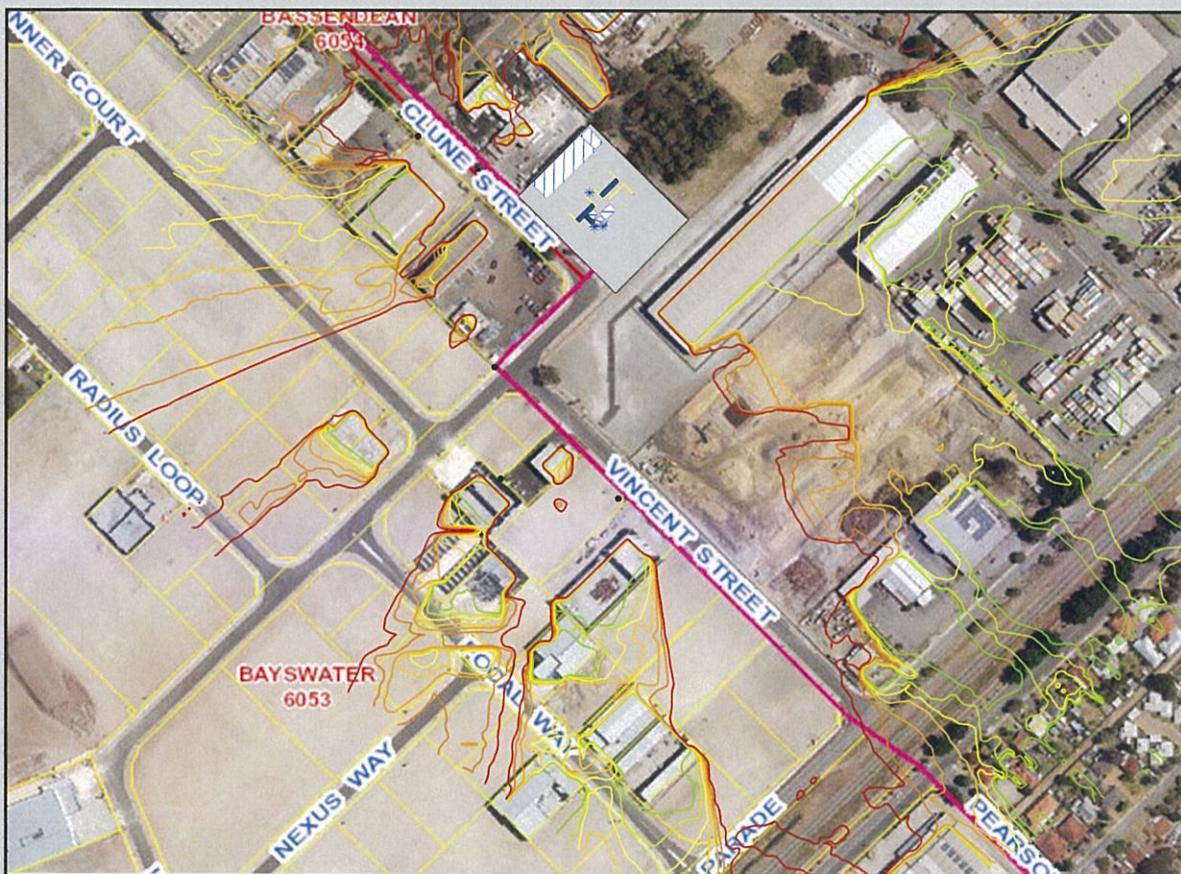
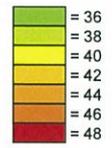


Figure 4-1

Predicted Noise level
L_{A10} dB



Signs and symbols

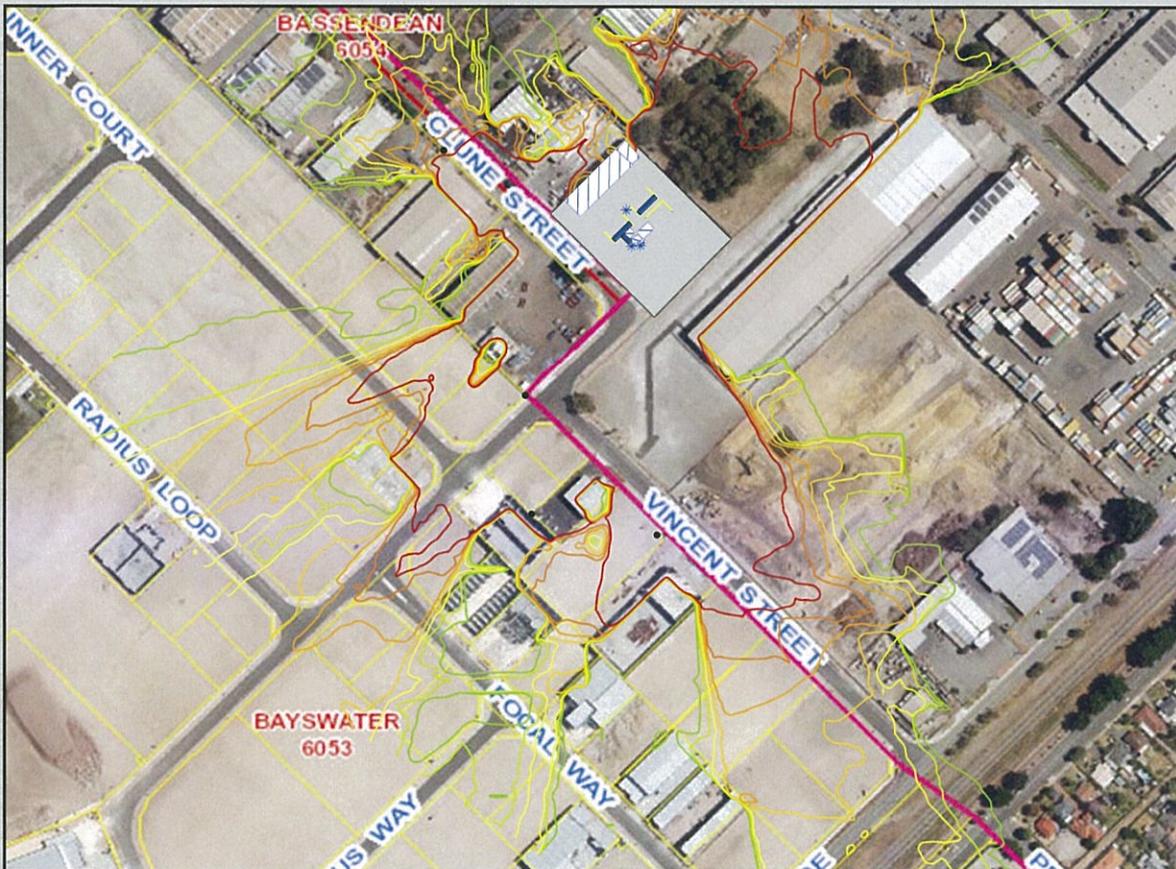
- * Point source
- ▨ Site building
- Wall
- Roof area
- Subject Site

Lot 105(2-8) Clune Street, Bassendean - Batching Plant
 L_{A10} Noise Level Contours - Scenario 1 - Ground Floor Predicted Noise Levels

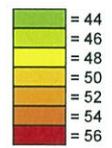


Lloyd George Acoustics
 by Matt Moyle
 matt@lgacoustics.com.au
 (61) 412 611 330

Figure 4-2



Predicted Noise level
L_{A1} dB



Signs and symbols

- * Point source
- Site building
- Wall
- Roof area
- Subject Site

Lot 105(2-8) Clune Street, Bassendean - Batching Plant
L_{A1} Noise Level Contours - Scenario 2 - Ground Floor Predicted Noise Levels



Lloyd George Acoustics
by Matt Moyle
matt@lgacoustics.com.au
(61) 412 611 330

5 CONCLUSION

Noise levels resulting from operations at the existing Concrete Batching facility at Lot 105 (2-8) Clune Street, Bassendean have been assessed and demonstrated to comply with the most critical night time assigned levels at residential and industrial premises, as determined in accordance with the *Environmental Protection (Noise) Regulations 1997*. Operations are demonstrated to comply at all hours of the day without the need for mitigation measures.

Appendix A

Land Use Map

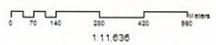
- Legend
- Region Scheme - Zones and Reserves (DOP-072)**
- Industrial
 - Other regional roads
 - Parks and recreation
 - Primary regional roads
 - Public purposes - high school
 - Public purposes - State Energy Commission
 - Public purposes - Water Authority of WA
 - Railways
 - Urban
 - Waterways
- Emergency Service**
- Ambulance Depot
 - Bayswater SES
 - Bayswater Towns Police Station
 - Mercy Hospital
- Civic Facility**
- City of Bayswater Civic Centre
 - The RISE
 - Paddy Walker Works Depot
 - Rangers & Security Office
 - Dog Pound
- City Local Government Boundary**
- Suburb Boundary
 - Traffic Lights
 - Road Network
 - Bridges
 - Footpath Network



Original paper size A3 landscape
 Plot Date: 17 December 2018
 Developed by Azsel & Mapping Services 2018
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City of Bayswater - Public Map Print

Map Created by: City Public Maps Gallery
 Print Date: 17 Dec 2018 12:19:30 PM



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Appendix B

Terminology

The following is an explanation of the terminology used throughout this report.

Decibel (dB)

The decibel is the unit that describes the sound pressure and sound power levels of a noise source. It is a logarithmic scale referenced to the threshold of hearing.

A-Weighting

An A-weighted noise level has been filtered in such a way as to represent the way in which the human ear perceives sound. This weighting reflects the fact that the human ear is not as sensitive to lower frequencies as it is to higher frequencies. An A-weighted sound level is described as L_A dB.

Sound Power Level (L_w)

Under normal conditions, a given sound source will radiate the same amount of energy, irrespective of its surroundings, being the sound power level. This is similar to a 1kW electric heater always radiating 1kW of heat. The sound power level of a noise source cannot be directly measured using a sound level meter but is calculated based on measured sound pressure levels at known distances. Noise modelling incorporates source sound power levels as part of the input data.

Sound Pressure Level (L_p)

The sound pressure level of a noise source is dependent upon its surroundings, being influenced by distance, ground absorption, topography, meteorological conditions etc and is what the human ear actually hears. Using the electric heater analogy above, the heat will vary depending upon where the heater is located, just as the sound pressure level will vary depending on the surroundings. Noise modelling predicts the sound pressure level from the sound power levels taking into account ground absorption, barrier effects, distance etc.

L_{ASlow}

This is the noise level in decibels, obtained using the A frequency weighting and the S time weighting as specified in AS1259.1-1990. Unless assessing modulation, all measurements use the slow time weighting characteristic.

L_{AFast}

This is the noise level in decibels, obtained using the A frequency weighting and the F time weighting as specified in AS1259.1-1990. This is used when assessing the presence of modulation only.

L_{APeak}

This is the maximum reading in decibels using the A frequency weighting and P time weighting AS1259.1-1990.

L_{Amax}

An L_{Amax} level is the maximum A-weighted noise level during a particular measurement.

L_{A1}

An L_{A1} level is the A-weighted noise level which is exceeded for one percent of the measurement period and is considered to represent the average of the maximum noise levels measured.

L_{A10}

An L_{A10} level is the A-weighted noise level which is exceeded for 10 percent of the measurement period and is considered to represent the "intrusive" noise level.

L_{Aeq}

The equivalent steady state A-weighted sound level ("equal energy") in decibels which, in a specified time period, contains the same acoustic energy as the time-varying level during the same period. It is considered to represent the "average" noise level.

L_{A90}

An L_{A90} level is the A-weighted noise level which is exceeded for 90 percent of the measurement period and is considered to represent the "background" noise level.

One-Third-Octave Band

Means a band of frequencies spanning one-third of an octave and having a centre frequency between 25 Hz and 20 000 Hz inclusive.

L_{Amax} assigned level

Means an assigned level which, measured as a $L_{A\ Slow}$ value, is not to be exceeded at any time.

L_{A1} assigned level

Means an assigned level which, measured as a $L_{A\ Slow}$ value, is not to be exceeded for more than 1% of the representative assessment period.

L_{A10} assigned level

Means an assigned level which, measured as a $L_{A\ Slow}$ value, is not to be exceeded for more than 10% of the representative assessment period.

Tonal Noise

A tonal noise source can be described as a source that has a distinctive noise emission in one or more frequencies. An example would be whining or droning. The quantitative definition of tonality is:

the presence in the noise emission of tonal characteristics where the difference between -

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

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

This is relatively common in most noise sources.

Modulating Noise

A modulating source is regular, cyclic and audible and is present for at least 10% of the measurement period. The quantitative definition of modulation is:

a variation in the emission of noise that —

- (a) is more than 3 dB $L_{A\ Fast}$ or is more than 3 dB $L_{A\ Fast}$ in any one-third octave band;
- (b) is present for at least 10% of the representative.

Impulsive Noise

An impulsive noise source has a short-term banging, clunking or explosive sound. The quantitative definition of impulsiveness is:

a variation in the emission of a noise where the difference between $L_{A\text{ peak}}$ and $L_{A\text{ Max slow}}$ is more than 15 dB when determined for a single representative event;

Major Road

Is a road with an estimated average daily traffic count of more than 15,000 vehicles.

Secondary / Minor Road

Is a road with an estimated average daily traffic count of between 6,000 and 15,000 vehicles.

Influencing Factor (IF)

$$= \frac{1}{10} (\% \text{ Type A}_{100} + \% \text{ Type A}_{450}) + \frac{1}{20} (\% \text{ Type B}_{100} + \% \text{ Type B}_{450})$$

where:

% Type A₁₀₀ = the percentage of industrial land within a 100m radius of the premises receiving the noise

% Type A₄₅₀ = the percentage of industrial land within a 450m radius of the premises receiving the noise

% Type B₁₀₀ = the percentage of commercial land within a 100m radius of the premises receiving the noise

% Type B₄₅₀ = the percentage of commercial land within a 450m radius of the premises receiving the noise

+ Traffic Factor (maximum of 6 dB)

= 2 for each secondary road within 100m

= 2 for each major road within 450m

= 6 for each major road within 100m

Representative Assessment Period

Means a period of time not less than 15 minutes, and not exceeding four hours, determined by an inspector or authorised person to be appropriate for the assessment of a noise emission, having regard to the type and nature of the noise emission.

Background Noise

Background noise or residual noise is the noise level from sources other than the source of concern. When measuring environmental noise, residual sound is often a problem. One reason is that regulations often require that the noise from different types of sources be dealt with separately. This separation, e.g. of traffic noise from industrial noise, is often difficult to accomplish in practice. Another reason is that the measurements are normally carried out outdoors. Wind-induced noise, directly on the microphone and indirectly on trees, buildings, etc., may also affect the result. The character of these noise sources can make it difficult or even impossible to carry out any corrections.

Ambient Noise

Means the level of noise from all sources, including background noise from near and far and the source of interest.

Specific Noise

Relates to the component of the ambient noise that is of interest. This can be referred to as the noise of concern or the noise of interest.

Peak Component Particle Velocity (PCPV)

The maximum instantaneous velocity in mm/s of a particle at a point during a given time interval and in one of the three orthogonal directions (x, y or z) measured as a peak response. Peak velocity is normally used for the assessment of structural damage from vibration.

Peak Particle Velocity (PPV)

The maximum instantaneous velocity in mm/s of a particle at a point during a given time interval and is the vector sum of the PCPV for the x, y and z directions measured as a peak response. Peak velocity is normally used for the assessment of structural damage from vibration.

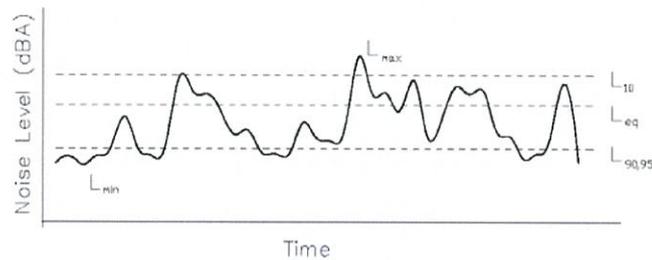
RMS Component Particle Velocity (PCPV)

The maximum instantaneous velocity in mm/s of a particle at a point during a given time interval and in one of the three orthogonal directions (x, y or z) measured as a root mean square (rms) response. RMS velocity is normally used for the assessment of human annoyance from vibration.

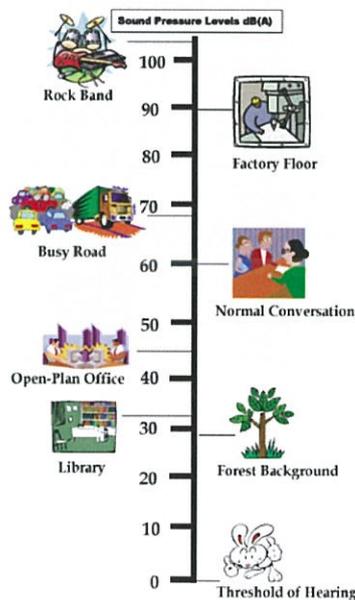
Peak Particle Velocity (PPV)

The maximum instantaneous velocity in mm/s of a particle at a point during a given time interval and is the vector sum of the PCPV for the x, y and z directions measured as a root mean square (rms) response. RMS velocity is normally used for the assessment of human annoyance from vibration.

Chart of Noise Level Descriptors



Typical Noise Levels



ATTACHMENT C



Transport Impact Statement

Project:	Lot 105 (No. 2) Clune Street, Bassendean Proposed Change of Operating Conditions
Client:	BGC c/o Rowe Group
Author:	Keli Li
Revision:	D
Document #	1901011-TIS-001

CONSULTING CIVIL AND TRAFFIC ENGINEERS
1 ST. FLOOR, 908 ALBANY HIGHWAY, EAST VICTORIA PARK WA 6101.
PHONE|+61 8 9355 1300
FACSIMILE| +61 8 9355 1922
EMAIL| admin@shawmac.com.au



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C	Council's Comments	K Li	L Dawson	L Dawson	24/05/2019
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1. Summary

Shawmac was commissioned to assess the impacts associated with the proposed change of operating conditions for the existing concrete batching plant located at Lot 105 (No. 2) Clune Street, Bassendean, in the Town of Bassendean.

This Transport Impact Statement has been prepared in accordance with the WAPC Transport Impact Assessment Guidelines for Developments: Volume 4 – Individual Developments (2016), for lodgement with the Development Application.

Based on the assessment of traffic generation under the existing and the proposed peak period, it is predicted that the existing and proposed operating schedule will not have unacceptable impact on the adjacent intersections and road segments. The proposal to remove the approval condition which restricts operating hours to be between 6:00am-6:00pm is supported from the traffic engineering perspective.

2. Introduction

2.1. Background

Shawmac has been commissioned to prepare a Transport Impact Statement to assess the potential traffic impacts associated with the proposed change of operating conditions for the existing concrete batching plant located at Lot 105 (No. 2) Clune Street, Bassendean, in the Town of Bassendean. The approved site plan of the facility is shown in **Appendix A**.

A transport impact statement was prepared for the development prior to its establishment. The concrete plant has been established with the planning approval and a list of conditions, one of the conditions states:

- “Operating hours are to be restricted to 6:00am to 6:00pm Monday to Saturday (public holidays excluded), however no front-end loader may operate prior to 7:00am.”

To suit adaptive workload, this condition is proposed to be removed and the purpose of this report is to assess the traffic impact. Whilst the facility could operate 24 hours a day, the facility intends to (generally) operate the concrete batching plant between 12 to 14 hours per day, six (6) days a week. The defined operating hours are subject to change on a day to day basis depending on workload. It is noted that the proposal also seeks to remove a number of conditions which restrict the production of the approved plant. As advised, removal of these conditions will not affect the output amount as outlined in **Table 1**.

2.2. Site Location

The subject site is located as shown in **Figure 1**. An aerial view (January 2019) of the established concrete batching plant is shown in **Figure 2**.



Figure 1 - Site Location



Figure 2 - Aerial View

2.3. Reference Information

In undertaking the study, the information listed below was referenced.

- WAPC Transport Impact Assessment Guidelines for Developments: Volume 5 – Individual Developments
- MRWA Functional Hierarchy Criteria;
- Livable Neighbourhoods Guidelines 2009;
- City of Bassendean Local Planning Scheme No. 10



3. Site Proposal

3.1. Site Operation

The site currently operates from 6:00 am to 6:00 pm. Due to the seasonal effect on concrete demand, particularly during summer times, concrete is required to be delivered early in the morning and the opening hours of the site is required to start early (for example 4:00am). Discussion with the client indicates the length of daily operation should be flexible between 12-14 hours, therefore the site requires a flexible opening hour and removal of the approval condition which restricts the site to operate from 6:00 am to 6:00 pm.

The client has advised that the maximum (realistic) output efficiency of the plant is 100m³ per hour. Although the site output efficiency varies based on demand, for the purpose of this assessment, traffic assigned to the road network is based on the maximum output efficiency. The required transport metrics to meet the maximum output efficiency is shown in **Table 1**.

Table 1 - Transport Metrics

Output	Output Amount	Agitator	Cement	Aggregates	Total Vehicles	Vehicles Movements (in & out)
Peak Hour	100m ³	15	1 (0.5)	4 (3.75)	20	40
Daily (12-hour operation)	1200m ³	180	6	45	231	462

3.2. Delivery Route

The existing delivery route is via Clune Street, Lavan Street and Jackson Street to Collier Road and Tonkin Highway. Although the access roads within the new industrial subdivision (Lot 10 Railway Parade) provides additional routes from the site to access the greater road network, materials delivery to the site and concrete export from the site will not change

4. Existing Situation

4.1. Existing Roads

An extract of the Main Roads *Road Information Mapping* web tool is shown in **Figure 3** and shows the road hierarchy surrounding the site. An aerial view showing the latest configuration of adjacent network is shown in **Figure 4**.

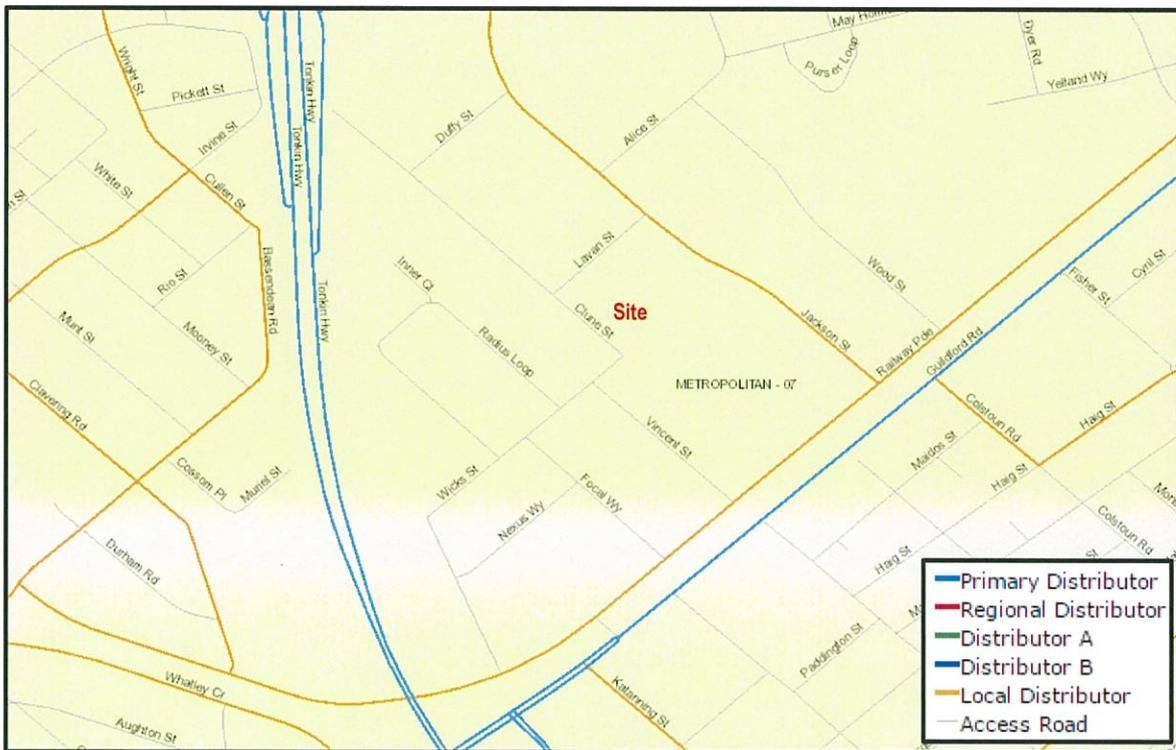


Figure 3 - Road Hierarchy

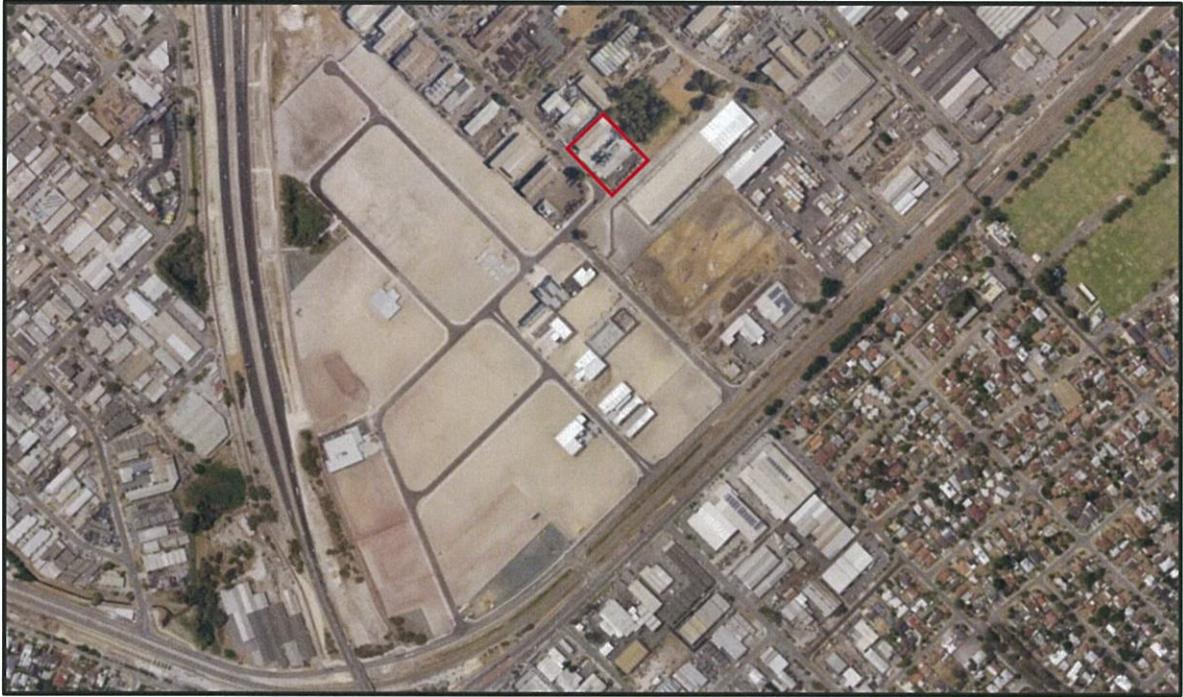


Figure 4 - Adjacent Road Network Aerial View (Jan 2019)

Clune Street

Clune Street is the southwestern boundary of the site. It is a two-way, single carriageway road with a 9.8m kerb-to-kerb width. Clune Street is the only road provides frontage access to subject site. The north-western end of Clune Street terminates at a cul de sac and review of the latest aerial photo indicates the south end of Clune Street has been connected to the access roads of a new industrial subdivision (Tonkin Highway Industrial Estate or THIE). Under the MRWA Functional Road Hierarchy, Clune Street is classified as an Access Road. Clune Street operates with a 50 km/h speed limit.

Lavan Street

Lavan Street is located 120m north of the site. Before establishment of Tonkin Highway Industrial Estate, Lavan Street was the most convenient Access Roads connecting Clune Street to Jackson Street. Lavan Street is classified as an Access Road under the MRWA Functional Road Hierarchy and operates with a 50km/h speed limit.

Jackson Street

Jackson Street a Local Distributor Road provide access between Collier Road and Railway Parade. Jackson Street operates with a 50km/h speed limit.

4.2. Road Hierarchy vs Actual Flows

The latest traffic volumes for Jackson Street were derived from MRWA SCATS Traffic count at Collier Road / Jackson Street / Grey Street signalised intersection (3rd Dec 2018 – 7th Dec 2018). Traffic Data for Clune Street and Lavan Street was not available from Town of Bassendean or City of Bayswater. It is conservatively assumed that Lavan Street volume is equivalent to 60% of Jackson Street volume and Clune Street volume (south of Lavan Street intersection) is equivalent to 40% of Jackson Street volume.

Table 2 shows the daily and peak hour traffic count for Jackson Street and the assumed traffic volumes for Clune Street and Lavan Street. Detailed SCATS traffic data is attached in **Appendix B**.

Table 2 - Road Classification and Indicative Traffic Volumes

Time Period	Jackson Street			Lavan Street (60%)			Clune Street (40%)		
	NB	SB	Total	EB	WB	Total	NB	SB	Total
8:00-9:00 (AM PEAK)	100	175	275	60	105	165	40	70	110
16:00-17:00 (PM PEAK)	285	60	345	171	36	207	114	24	138
Daily	2,013	3,072	5,085	1,208	1,843	3,051	805	1,229	2,034

4.3. Changes to the Surrounding Network

As discussed in **Section 4.1**, Tonkin Highway Industrial Estate (THIE) has been constructed with access roads connecting Clune Street. THIE roads have been constructed recently and the future industrial developments within the subdivision will increase the traffic volume on Clune Street.

For the purpose of this assessment, the Town of Bassendean have provided trip generation and distribution data for prediction of assessment year traffic condition. It is understood that these data were extracted from a traffic report previously prepared for THIE. **Table 3** shows the adopted trip generation rates and calculated traffic volume.

Table 4 shows the adopted inbound and outbound distribution.

Table 3 - THIE Weekday Trip Generation

Land Use	Units	Trip Generation Rate		Estimated Generation	
		Daily	Peak Hour	Daily	Peak Hour
Commercial	Per 100m ² GFA	15.9	2.02	555	70
Warehouse	Per 100m ² GFA	3.1	0.49	6,239	1,209
Factory	Per 100m ² GFA	3.2	0.62		
Showroom (Bulky Goods)	Per 100m ² GFA	16.2	2.31	4,279	610
Total				1,889	11,073

Table 4 - THIE Peak Hour Distribution

Land use	AM Peak In	Peak Distribution		
		AM Peak Out	PM Peak In	PM Peak Out
Tonkin Highway Industrial Estate	80%	20%	20%	80%
	1,511	378	378	1,511

The data provided by Town of Bassendean indicated that the distribution of THIE traffic would be 40% towards Jackson Street and 60% towards Railway Parade. It is understood that the distribution assumption was made based on the consideration that Wicks Street would extend to connect Jackson Street as a main east-west connector road. As this is not the case now, this assessment assumes the 40% of traffic volume would distribute to Jackson Street via Clune Street and then Lavan Street (30%) or Duffy Street (10%). The trip distribution is outlined in **Figure 5**.

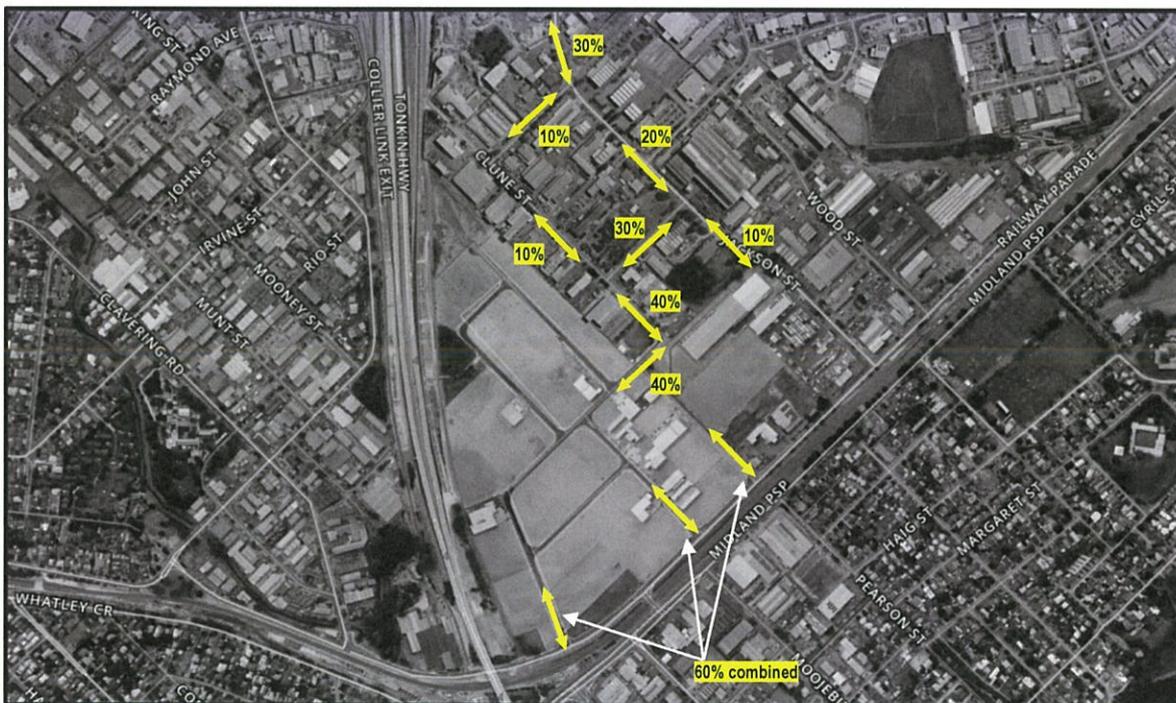


Figure 5 - THIE Trip Distribution



5. Transport Assessment

5.1. Assessment Years

The development is assessed based on the year when the industrial developments are fully established, assumed as 2021.

5.2. Time Periods for Assessment

The time periods adopted for assessment are the peak hours on the adjacent road network (8:00-9:00 and 16:00-17:00), as these represent the worst-case conditions on the wider road network.

To assess the worst-case scenarios, it is conservatively assumed that peak hour generation of the THIE and the concrete batching plant (development site) both correspond to the peak hours of the adjacent road network.

5.3. Peak Hour Traffic Generation

As per **Table 1**, the site operates with max efficiency during the first four hours. Assuming traffic generation evenly distributed over these four hours, the site would generate 39 vehicles during peak hour. (20 movements inbound and 20 movements outbound.)

5.4. Distribution

As per **Section 3.2**, materials delivery to the site and concrete export from the site will be via Clune Street, Lavan Street and Jackson Street. **Table 5** shows the resultant peak hour traffic for the AM and PM peak hour scenarios.

Table 5 - Pre- and Post-Development Traffic Volumes

Road	Scenario	Direction	Background Traffic Volume	THIE Volume Increase	Development Traffic	Total
Clune Street	8:00-9:00	Northbound	40	151	20	211
		Southbound	70	604	20	694
	16:00-17:00	Northbound	114	604	20	738
		Southbound	24	151	20	195
Lavan Street	8:00-9:00	Eastbound	60	113	20	193
		Westbound	105	453	20	578
	16:00-17:00	Northbound	171	453	20	644
		Southbound	36	113	20	169
Jackson Street	8:00-9:00	Northbound	100	113	20	233
		Southbound	175	453	20	648
	16:00-17:00	Northbound	285	453	20	758
		Southbound	60	113	20	193

5.5. Impact on Roads

5.5.1. Austroads Guidelines

Table 5.1 of Austroads *Guide to Traffic Management Part 3: Traffic Studies and Analysis (AGTM06)* as shown in **Table 6** provides the mid-block capacities for urban roads with interrupted flow.

Table 6 - Typical Mid-Block Capacities for Urban Roads with Interrupted Flow

Type of Lane	One-way Mid-Block Capacity (Vph)
Median or inner lane	
Divided Road	1,000
Undivided Road	900
Middle Lane (of a Three-Lane Carriageway)	
Divided Road	900
Undivided Road	1,000
Kerb lane	
Adjacent to Parking Lane	900
Occasional Parked Vehicles	600
Clearway Conditions	900

The resulting peak hour traffic volumes on the road network will be well within the practical capacity of the existing roads and the change of site operation will have minimal impact on the capacity of the road network at mid-block locations.

5.6. Impact on Intersections

5.6.1. Intersections Capacity

SIDRA Intersection 8 has been used to assess the peak hour capacity and performance of the Clune Street / Lavan Street intersection and Lavan Street / Jackson Street intersection.

SIDRA is a commonly used intersection modelling tool used by traffic engineers for all types of intersections. Outputs for four standard measures of operational performance can be obtained, being Degree of Saturation (DoS), Average Delay, Queue Length, and Level of Service (LoS).

- Degree of Saturation is a measure of how much physical capacity is being used with reference to the full capability of the particular movement, approach, or overall intersection. A DoS of 1.0 equates to full theoretical capacity although in some instances this level is exceeded in practice. Design engineers typically set a maximum DoS threshold of 0.95 for new intersection layouts or modifications.
- Average Delay reports the average delay per vehicle in seconds experienced by all vehicles in a particular lane, approach, or for the intersection as a whole. For severely congested intersections the average delay begins to climb exponentially.
- Queue Length measures the length of approach queues. In this document we have reported queue length in terms of the length of queue at the 95th percentile (the maximum queue length that will not be exceeded for 95 percent of the time). Queue lengths provide a useful indication of the impact of signals on network performance. It also enables the traffic engineer to consider the likely impact of queues blocking back and impacting on upstream intersections and accesses.
- Level of Service is a combined appreciation of queuing incidence and delay time incurred, producing an alphanumeric ranking of A through F. A LoS of A indicates an excellent level of service whereby drivers delay is at a minimum and they clear the intersection at each change of signals or soon after arrival with little if any queuing. Values of B through D are acceptable in normal traffic conditions. Whilst values of E and F are typically considered undesirable, within central business district areas with significant vehicular and pedestrian numbers, delays/queues are unavoidable and hence, are generally accepted by road users.

The volumes for these two intersections are assumed as shown in **Figure 6**.

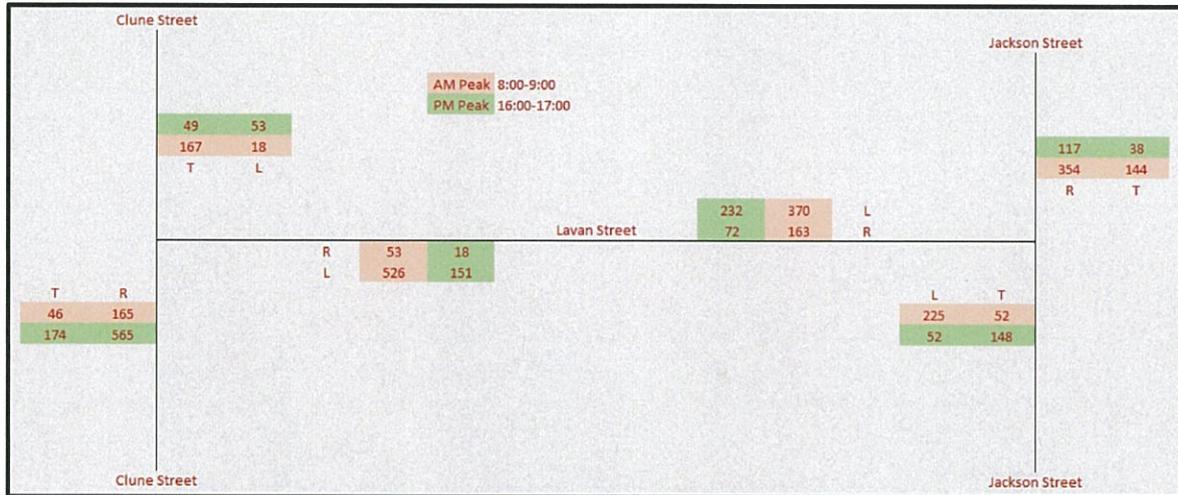


Figure 6 - Typical Peak Hour Intersection Volumes

The results of the assessment are summarised in **Table 7**.

Table 7 - SIDRA Outputs

Intersection	Scenario	Worst DoS	95%ile Queue (m)	Average Delay (s)	Worst Delay (s)	Average LoS	Worst LoS
Clune Street / Lavan Street intersection	8:00-9:00	0.507	33.4	6.0	10.4	A	B
	16:00-17:00	0.495	31.9	5.3	15.9	A	C
Jackson Street / Lavan Street intersection	8:00-9:00	0.615	51.8	8.0	17.7	A	C
	16:00-17:00	0.279	10.7	5.0	8.3	A	A

The results indicate both intersections would perform with adequate degree of saturation, queue distance and delay under all peak hour scenarios.

5.7. Onsite Traffic Queue

As the Town has expressed concern regarding to potential overspill of truck queuing onto Clune Street when the site is operating with 100% output capacity, a desktop assessment of vehicle queue was carried out based on the following assumptions:

- When the site is operating with maximum output efficiency during peak hours, the site will have maximum 15 agitator trucks, 1 cement truck and 4 material trucks entering and exit the site (refer **Table 1**);
- The maximum length of concrete truck is 8.89m, the detailed truck dimensions are shown in **Figure 7**;
- The cement trucks and material trucks are maximum 27.5m long B-doubles;

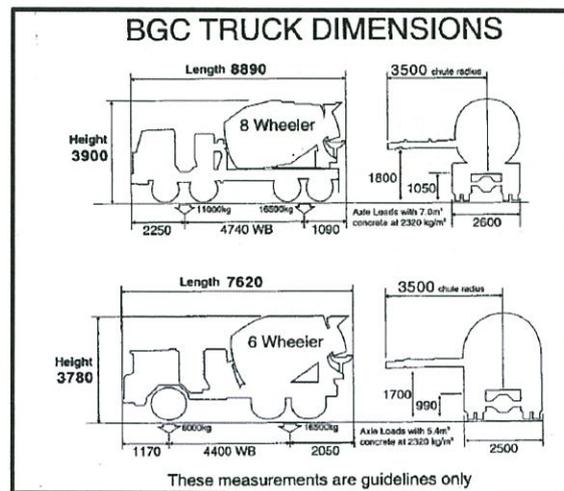


Figure 7 - Agitator Truck Dimensions

Table 8 summarises the on-site circulation and general turn-over of the trucks. Concept sketches as attached in **Appendix D** has been prepared to demonstrate the site operation.

Table 8 - On-site Truck Circulation

Truck Type	Vehicle Manoeuvring	Turn-over
Agitator Truck	Agitator trucks enter via the southern crossover, U-turn around the fuel depot and queue towards the south-eastern boundary. Agitator trucks then manoeuvre into the batch load cell and the slump stand, being serviced and then leave the premises through the central exit.	Realistically the plant could output 100m ³ per hour. With an average truck capacity of 5.5 m ³ , the plant could service 18 trucks per hour
Cement Truck	Cement Trucks enter via the southern crossover, manoeuvre just to the south of the waste bin and unload. The truck will make a U-turn and exit the site via the southern crossover.	It takes typically 1.5 hours for cement trucks to unload.
Material Truck	Material Trucks also enter via the southern crossover, un-couple the back-trailers south of fuel depot, drive to the front yard, unload front trailer into the material bins and loop around to unload the back trailer. Once both trailers are unloaded. The re-coupled trucks exit the site via the northern crossover.	Material trucks are typically 20 minutes on site to unload (both trailers) and leave the site.

Based on the above, Cement Trucks will have minimum impact to the on-site circulation as there will be only one truck onsite at a time to unload for 1.5 hours. The site operator has scheduled arrival times for cement trucks. They also prioritise Cement Trucks and require Agitator Trucks and Material Trucks to give-way to the Cement Trucks.

The client has advised that the site has sufficient space for two material trucks to temporarily decouple one of their trailers while unloading the other one. The site also has sufficient queuing to accommodate 2 material trucks (with one trailer) before unloading materials into the Material Bins. Considering the site accommodates 4 material trucks during the peak hour and it typically takes material truck 20 minutes on site to unload (both trailers) and leave the site, a one-hour period is more than sufficient to accommodate 4 material trucks to unload all trailers.

As per the sketch, the site has at least 6-truck capacity for agitators to queue onsite. Using a queuing theory model (M/M/s) the expected queue length can be determined.

An M/M/s queue is a stochastic process to consider the number of customers in the system, including any currently in service. Arrivals occur according to a Poisson process. The results of the queue model are shown below in **Figure 8** and indicates the expected queue length is 5 vehicles (round-up from 4.17). The available 6-truck capacity will be able to accommodate the peak hour operation of agitator without overspill onto Clune street.

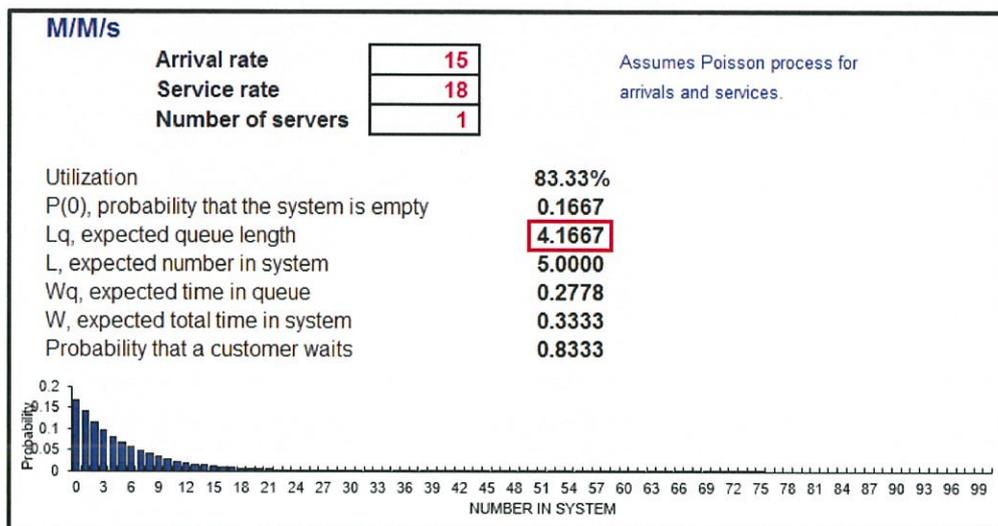


Figure 8 - Queue Model for Agitator Trucks

It should also be noted that the site has 18 Agitator Trucks parking bays providing additional queuing area for a minimum of 24 trucks.



6. Site Specific or Safety Issues

6.1. Crash History

Crash data for the adjacent roads and major intersections were sourced from MRWA Crash Analysis Reporting System (CARS) for the 5-year period ending 31/12/2017. The report is summarised in **Table 9**.

Table 9 - Crash History

Location	Number of Crashes	MR Nature	Severity
Clune Street SLK 0.00 (Wicks Street) to SLK 0.18 (Lavan Street)	1	1 "Right Angle"	1 "Property Damage - Minor"
Clune Street / Lavan Street intersection	1	1 "Right Angle"	1 "Medical"
Lavan Street SLK 0.00 (Clune Street) to SLK 0.24 (Jackson Street)	0	N/A	N/A
Jackson Street / Lavan Street intersection	0	N/A	N/A
Jackson Street SLK 0.56 (Lavan Street) to SLK 0.92 (Jackson Street)	1	1 "Rear End"	1 "Property Damage - Major"

No atypical crash patterns were identified and there is no indication that the proposed change in operating hours of development would change the risk profile to an unacceptable level.



7. Conclusion

An assessment of traffic impact and onsite circulation of an existing concrete batching plant under peak periods of the adjacent road network concluded the following:

- The proposed operating schedule will not have unacceptable impact on the adjacent intersections and road segments; and
- The site has sufficient space to accommodate onsite operation and circulation of all types of vehicles; queuing of trucks will not overspill onto Clune Street.

The proposal to remove the approval condition which restricts operating hours to be between 6:00am-6:00pm is supported from the traffic engineering perspective. The proposal to remove the conditions which restrict the production of the approved plant is also considered acceptable provided that the output amount is consistent with this report.



Appendix A - Site Layout

LOT 105

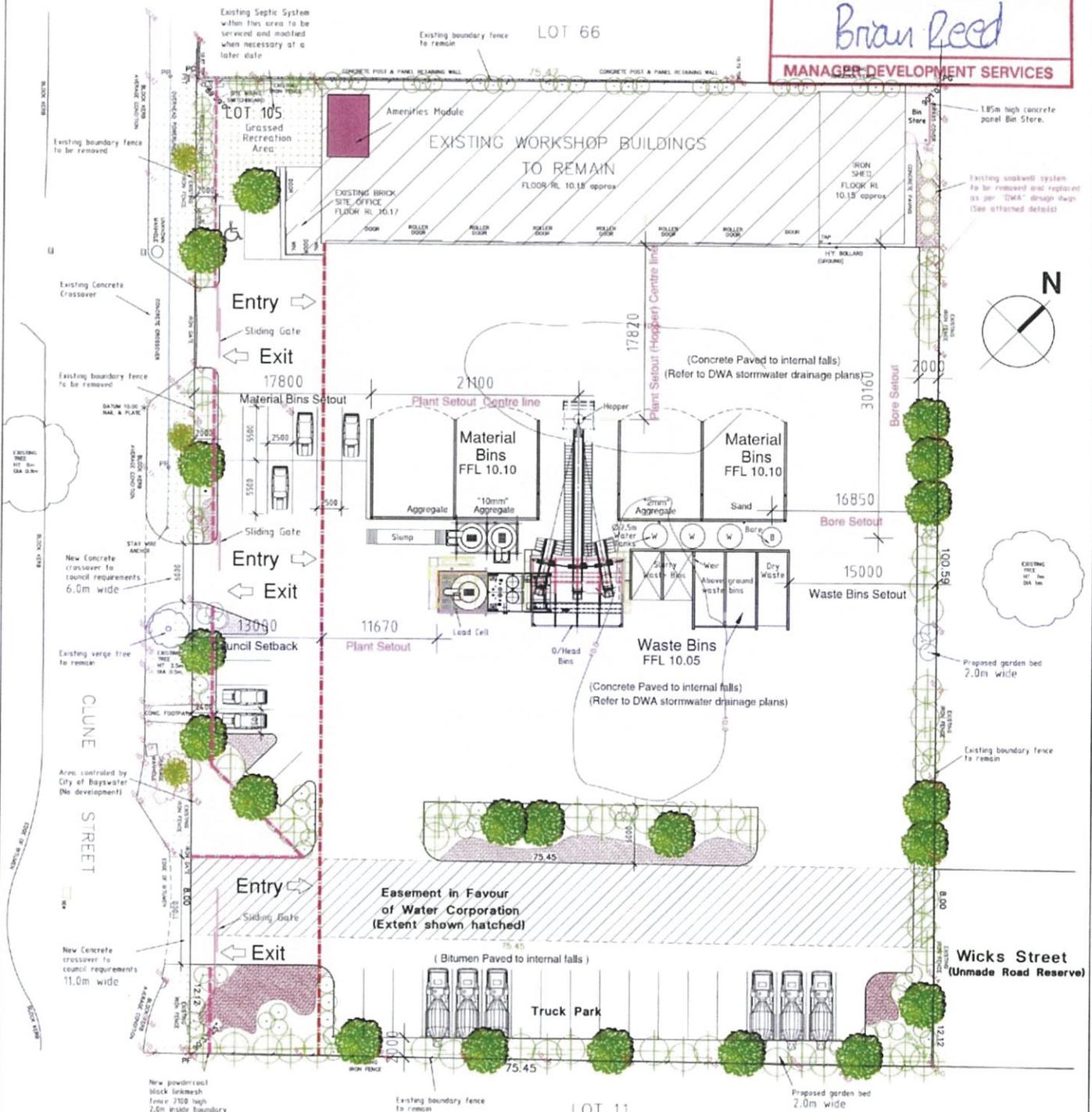
754 Juge
SANDY

NOTE: BOUNDARY POSITION APPROXIMATE ONLY. ALIGNMENT TO CURB REQUIRES REBUS SURVEY

NOTE: APPROXIMATELY 1:1.5 FROM EAST LINE

TOWN of BASSENDEAN
APPROVED 27 / 04 / 2018
 REF: 2018-019 REFER TO DECISION NOTICE

Brian Reed
MANAGER DEVELOPMENT SERVICES

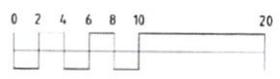


Note-
 Garden Beds to be planted with Native shrubs, reticulated and mulched to council requirements.
 Street verge to be grassed & reticulated via site bore.
 Yard area to be concrete paved to internal falls except where noted otherwise.
 Extent of existing metal fence.
 Extent of new powdercoat linkmesh fence.
 Extent of area controlled by City of Bayswater.
 Garden beds with shrubs and ground covers.

Tree Schedule (1 Tree per 4 sq m)

- Existing Mature Tree to remain
- Eucalyptus Leukosydon Resea or similar (105.00 pot)
- Eucalyptus Comalidensis Silverton or similar (5.00 pot)
- Melaleuca Rhaphanophylla or similar (2.00 pot)

Remaining garden beds to be planted out with native shrubs and ground covers
 i.e. - Grasses Red Landers, Grasses Sanda Garden, Melaleuca lateralis or similar
 reticulated via dripper system fed off bore.
 Street verges to be grassed and reticulated via site bore and 'Pop Up' sprays



DESCRIPTION	NO.	DATE	INT.	DRG. NO.	DESCRIPTION	REVISION	DATE	INT.
Plant and dimension adjustments	1	11/08/19						
"Bottlebrush" trees added to agree to soil report	2	10/04/19						
For Builders Permit Application	3	11/08/19						

Landscape Plan

BGC Australia
 4/78 Wood Street
 Park VIC 3000
 Tel: 08 425 1466
 Fax: 08 425 1467
 Email: info@bgc.com.au
 www.bgc.com.au

SCALE: 1:100
 DRAWN: MKC
 CKD
 Job No.
 DATE: NOV-2018

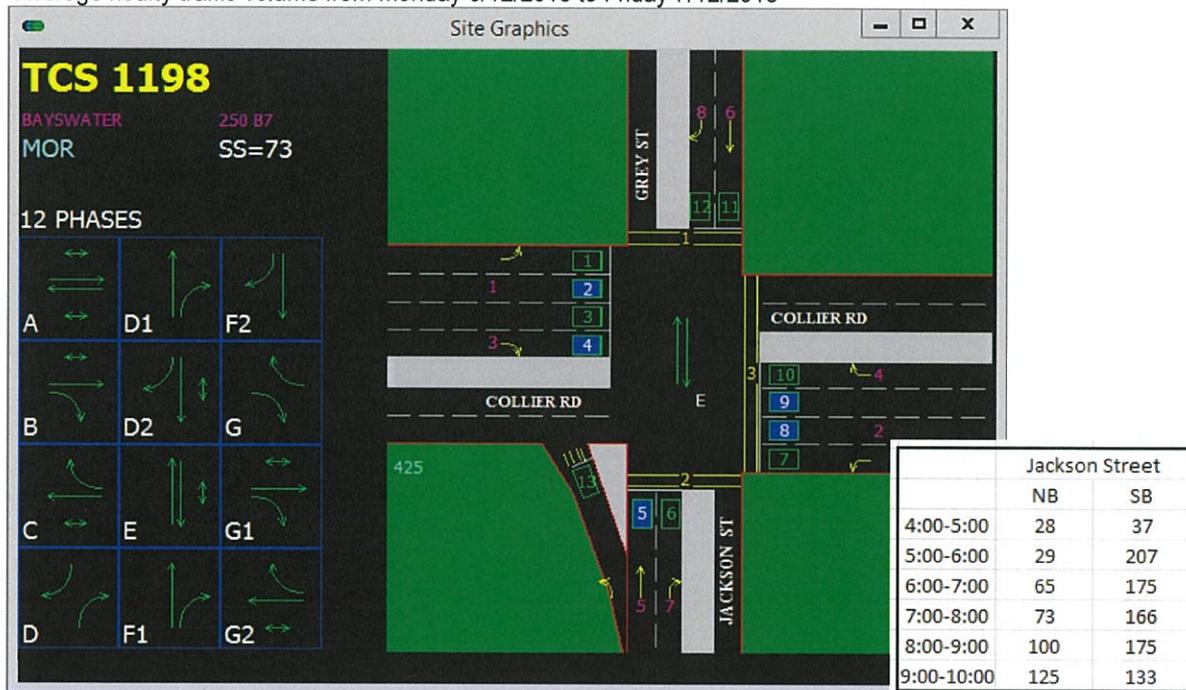
BGC Concrete-Proposed Concrete Batch Plant
 Lot 105 (No 2-8) Cune St, Bassendean

NO. OF SHEETS	1	REV	A1
DRG. NO.	A 66	REV	E



Appendix B - Traffic Count

MRWA SCATS traffic count for Collier Road / Jackson Street / Grey Street
Average hourly traffic volume from Monday 3/12/2018 to Friday 7/12/2018

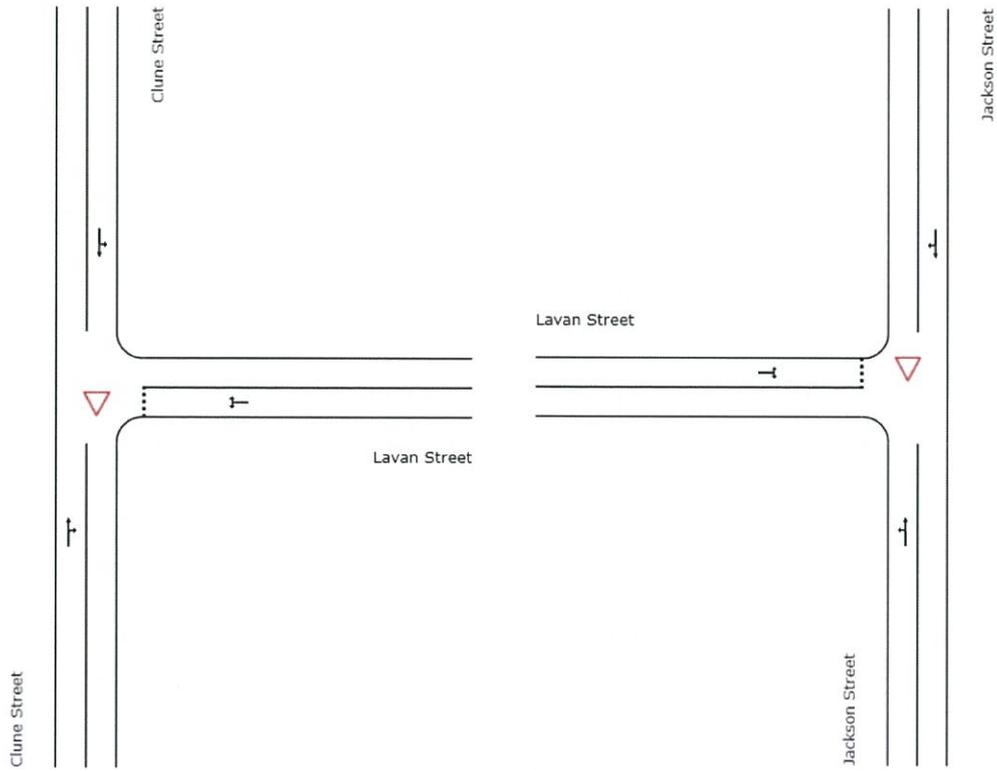


	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
1:00	8	11	5	2	2	0	0	6	10	2	1	3	6	56
2:00	7	6	4	0	0	0	1	2	6	0	1	4	1	34
3:00	6	9	5	4	2	0	1	5	4	1	1	5	6	48
4:00	4	11	13	23	0	0	3	11	5	1	2	9	6	87
5:00	15	31	28	28	3	1	3	23	14	3	12	23	24	210
6:00	61	145	150	146	7	4	27	67	46	18	66	63	19	819
7:00	72	208	193	110	10	10	23	136	98	17	84	122	45	1128
8:00	101	253	208	102	11	11	15	187	147	25	99	173	51	1384
9:00	111	277	189	109	19	13	24	212	180	29	84	176	68	1491
10:00	110	225	152	79	23	13	20	230	172	31	67	140	89	1350
11:00	115	224	164	80	25	12	18	225	178	36	58	130	88	1353
12:00	121	234	162	74	27	12	19	219	170	36	57	128	100	1361
13:00	122	228	156	88	35	19	20	199	181	51	70	145	113	1426
14:00	113	235	161	89	24	11	19	205	167	48	63	136	111	1383
15:00	145	236	163	66	35	20	14	209	211	45	63	165	165	1539
16:00	164	246	168	55	47	15	12	271	259	43	50	163	175	1667
17:00	145	238	148	28	53	22	8	290	255	56	49	184	210	1684
18:00	144	204	109	17	39	10	3	192	189	38	38	134	73	1191
19:00	92	142	69	12	19	3	2	103	100	22	24	87	26	700
20:00	62	112	44	9	9	1	2	70	75	14	16	48	12	474
21:00	48	86	35	5	7	0	1	53	49	8	10	35	9	346
22:00	40	68	30	6	5	1	1	37	42	8	10	31	10	288
23:00	28	40	15	2	7	1	1	24	28	4	6	22	9	185
24:00:00	19	20	8	2	3	0	1	11	15	2	3	11	3	99
Total	1854	3491	2378	1136	413	179	237	2988	2602	536	935	2137	1420	



Appendix C - SIDRA Outputs

Intersection Layouts





MOVEMENT SUMMARY

▽ Site: [8-9am Clune Street / Lavan Street With THIE]

Site Category: -
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Clune Street												
2	T1	46	25.0	0.154	0.9	LOS A	0.8	6.7	0.36	0.46	0.36	54.8
3	R2	165	25.0	0.154	6.8	LOS A	0.8	6.7	0.36	0.46	0.36	52.4
Approach		211	25.0	0.154	5.5	NA	0.8	6.7	0.36	0.46	0.36	52.9
East: Lavan Street												
4	L2	526	25.0	0.507	7.6	LOS A	3.9	33.4	0.45	0.67	0.52	51.1
6	R2	53	25.0	0.507	10.4	LOS B	3.9	33.4	0.45	0.67	0.52	51.1
Approach		579	25.0	0.507	7.9	LOS A	3.9	33.4	0.45	0.67	0.52	51.1
North: Clune Street												
7	L2	18	25.0	0.102	5.8	LOS A	0.0	0.0	0.00	0.06	0.00	56.6
8	T1	167	25.0	0.102	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	59.5
Approach		185	25.0	0.102	0.6	NA	0.0	0.0	0.00	0.06	0.00	59.2
All Vehicles		975	25.0	0.507	6.0	NA	3.9	33.4	0.34	0.51	0.39	52.8

MOVEMENT SUMMARY

▽ Site: [4-5pm Clune Street / Lavan Street With THIE]

Site Category: -
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Clune Street												
2	T1	174	25.0	0.495	0.8	LOS A	3.8	31.9	0.37	0.43	0.37	54.8
3	R2	565	25.0	0.495	6.6	LOS A	3.8	31.9	0.37	0.43	0.37	52.4
Approach		739	25.0	0.495	5.3	NA	3.8	31.9	0.37	0.43	0.37	53.0
East: Lavan Street												
4	L2	151	25.0	0.163	6.0	LOS A	0.7	5.6	0.13	0.55	0.13	51.6
6	R2	18	25.0	0.163	15.9	LOS C	0.7	5.6	0.13	0.55	0.13	51.6
Approach		169	25.0	0.163	7.1	LOS A	0.7	5.6	0.13	0.55	0.13	51.6
North: Clune Street												
7	L2	53	25.0	0.058	5.8	LOS A	0.0	0.0	0.00	0.30	0.00	54.7
8	T1	49	25.0	0.058	0.0	LOS A	0.0	0.0	0.00	0.30	0.00	57.3
Approach		102	25.0	0.058	3.0	NA	0.0	0.0	0.00	0.30	0.00	55.9
All Vehicles		1010	25.0	0.495	5.3	NA	3.8	31.9	0.29	0.44	0.29	53.0



MOVEMENT SUMMARY

Site: [8-9am Lavan Street / Jackson Street With THIE]

Site Category: -
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Jackson Street												
7	L2	225	25.0	0.160	5.8	LOS A	0.0	0.0	0.00	0.47	0.00	53.3
8	T1	52	25.0	0.160	0.0	LOS A	0.0	0.0	0.00	0.47	0.00	55.8
Approach		277	25.0	0.160	4.8	NA	0.0	0.0	0.00	0.47	0.00	53.8
North: Jackson Street												
2	T1	144	25.0	0.391	2.1	LOS A	2.8	23.6	0.53	0.51	0.58	54.5
3	R2	354	25.0	0.391	8.0	LOS A	2.8	23.6	0.53	0.51	0.58	52.1
Approach		498	25.0	0.391	6.3	NA	2.8	23.6	0.53	0.51	0.58	52.7
West: Lavan Street												
4	L2	370	25.0	0.615	8.5	LOS A	6.1	51.8	0.21	0.63	0.35	48.7
6	R2	163	25.0	0.615	17.7	LOS C	6.1	51.8	0.21	0.63	0.35	48.7
Approach		533	25.0	0.615	11.3	LOS B	6.1	51.8	0.21	0.63	0.35	48.7
All Vehicles		1308	25.0	0.615	8.0	NA	6.1	51.8	0.29	0.55	0.36	51.2

MOVEMENT SUMMARY

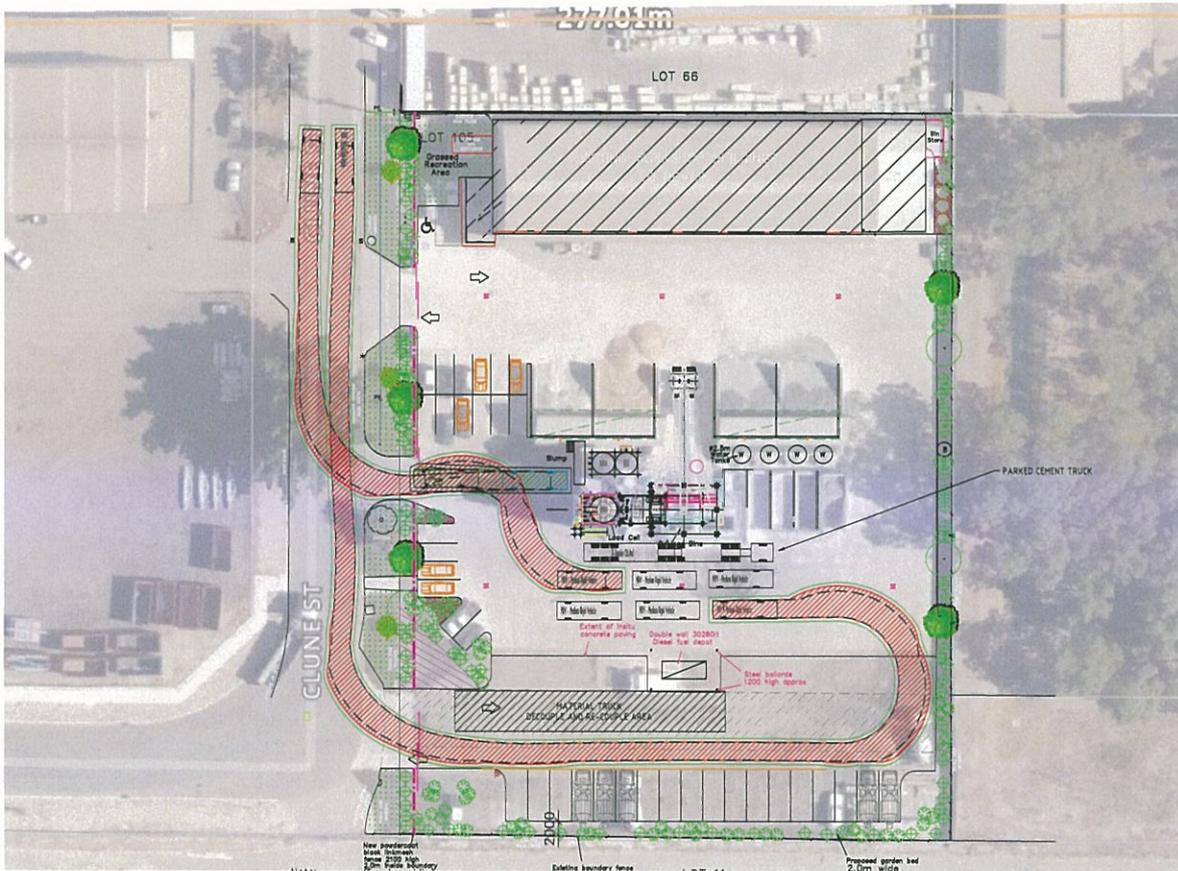
Site: [4-5pm Lavan Street / Jackson Street With THIE]

Site Category: -
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Jackson Street												
7	L2	52	25.0	0.111	5.8	LOS A	0.0	0.0	0.00	0.15	0.00	55.8
8	T1	148	25.0	0.111	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	58.6
Approach		200	25.0	0.111	1.5	NA	0.0	0.0	0.00	0.15	0.00	57.9
North: Jackson Street												
2	T1	38	25.0	0.114	0.9	LOS A	0.6	4.8	0.36	0.45	0.36	54.9
3	R2	117	25.0	0.114	6.8	LOS A	0.6	4.8	0.36	0.45	0.36	52.5
Approach		155	25.0	0.114	5.4	NA	0.6	4.8	0.36	0.45	0.36	53.0
West: Lavan Street												
4	L2	232	25.0	0.279	6.7	LOS A	1.3	10.7	0.34	0.61	0.34	51.5
6	R2	72	25.0	0.279	8.3	LOS A	1.3	10.7	0.34	0.61	0.34	51.5
Approach		304	25.0	0.279	7.0	LOS A	1.3	10.7	0.34	0.61	0.34	51.5
All Vehicles		659	25.0	0.279	5.0	NA	1.3	10.7	0.24	0.43	0.24	53.7



Appendix D - Site Operation Concept Sketches



LEGEND

- TURNING TEMPLATE - VEHICLE BODY FORWARD MOVEMENT
- TURNING TEMPLATE - VEHICLE BODY REVERSE MOVEMENT
- TURNING TEMPLATE - WHEEL PATH
- TURNING TEMPLATE - 85% CLEARANCE FROM VEHICLE BODY

REV	DATE	DESCRIPTION	APPROVED

CLIENT
BGC

LOCAL GOVERNMENT AUTHORITY
TOWN OF BASSEDEAN

SCALE BAR
HORIZ. 1:200
VERTICAL: N/A



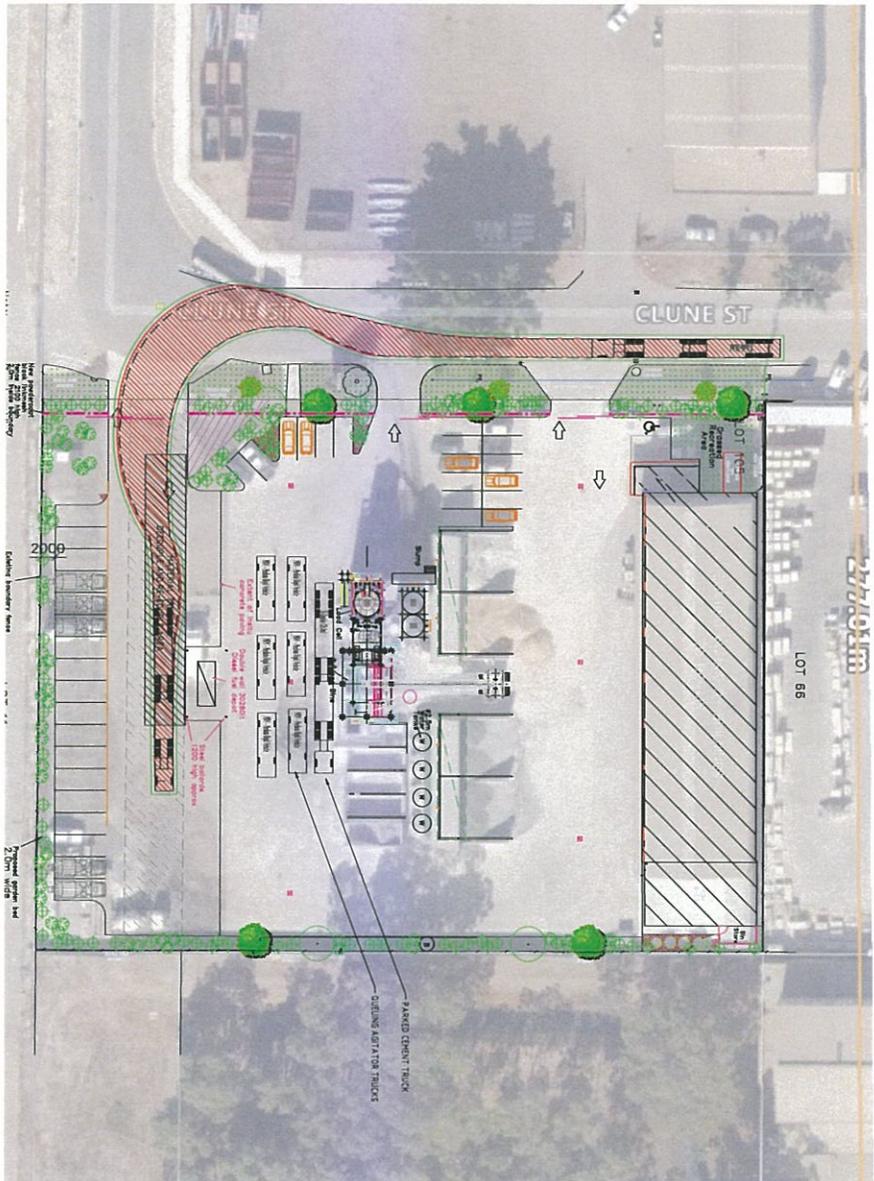
INFORMATION ONLY

DATE DRAWN: 22/05/19
DESIGNED: N/A
DRAWN: KL
CHECKED: LD
APPROVED: LD

LOT 105 (NO. 2) CLUNE STREET
EXISTING CONCRETE BATCHING PLANT
TRUCK CIRCULATION
AGITATOR TRUCK INBOUND, QUEUE AND OUTBOUND

DRAWING NUMBER: **1901011-SK-001**

REV. **A**

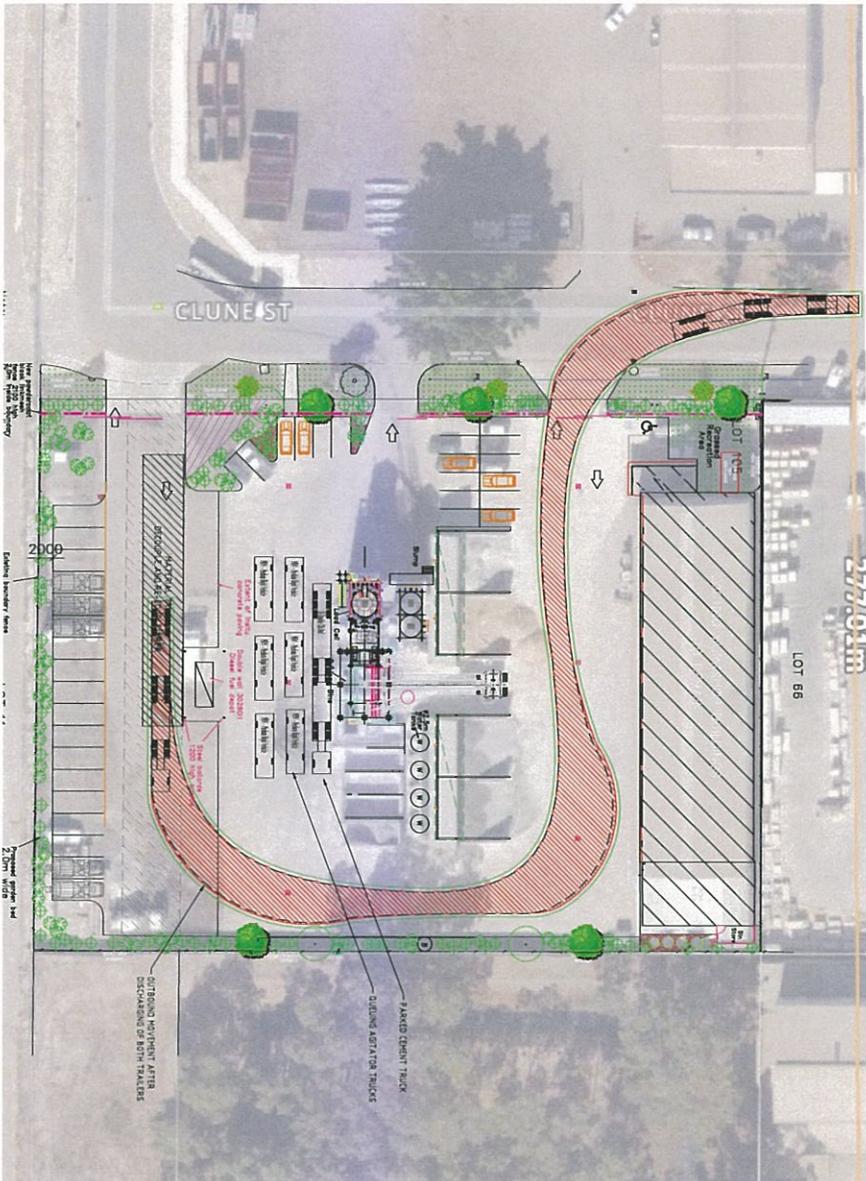


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BY: [Signature]	DATE: 10/10/2023	PROJECT: TOWN OF BASENDEAN	CLIENT: TOWN OF BASENDEAN
CHECKED: [Signature]	DATE: 10/10/2023	PROJECT: EXISTING CONCRETE BATCHING PLANT	CLIENT: TOWN OF BASENDEAN
APPROVED: [Signature]	DATE: 10/10/2023	PROJECT: MATERIAL TRUCK INBOUND MOVEMENT	CLIENT: TOWN OF BASENDEAN
DATE: 10/10/2023	SCALE: 1:250	PROJECT: LOT 105 NO. 21 CLUNE STREET	CLIENT: BGC
BY: [Signature]	DATE: 10/10/2023	PROJECT: EXISTING CONCRETE BATCHING PLANT	CLIENT: TOWN OF BASENDEAN
CHECKED: [Signature]	DATE: 10/10/2023	PROJECT: MATERIAL TRUCK INBOUND MOVEMENT	CLIENT: TOWN OF BASENDEAN
APPROVED: [Signature]	DATE: 10/10/2023	PROJECT: LOT 105 NO. 21 CLUNE STREET	CLIENT: BGC

INFORMATION ONLY

- LEGEND**
- CONCRETE TRUCKS - VEHICLE BAY
 - CONCRETE TRUCKS - WHEEL BAY
 - CONCRETE TRUCKS - WHEEL BAY
 - CONCRETE TRUCKS - HIGH CLEARANCE

SCALE 1:250



- LEGEND**
- TRADING TRUCKS - 15' - FINISH 100%
 - TRADING TRUCKS - 15' - FINISH 100%
 - TRADING TRUCKS - 15' - FINISH 100%
 - TRADING TRUCKS - 15' - FINISH 100%
 - TRADING TRUCKS - 15' - FINISH 100%
 - TRADING TRUCKS - 15' - FINISH 100%



PROJECT TITLE	DESCRIPTION
DATE	ISSUED

CLIENT
BGC

LOCAL GOVERNMENT AUTHORITY
TOWN OF BASSENOIDAN

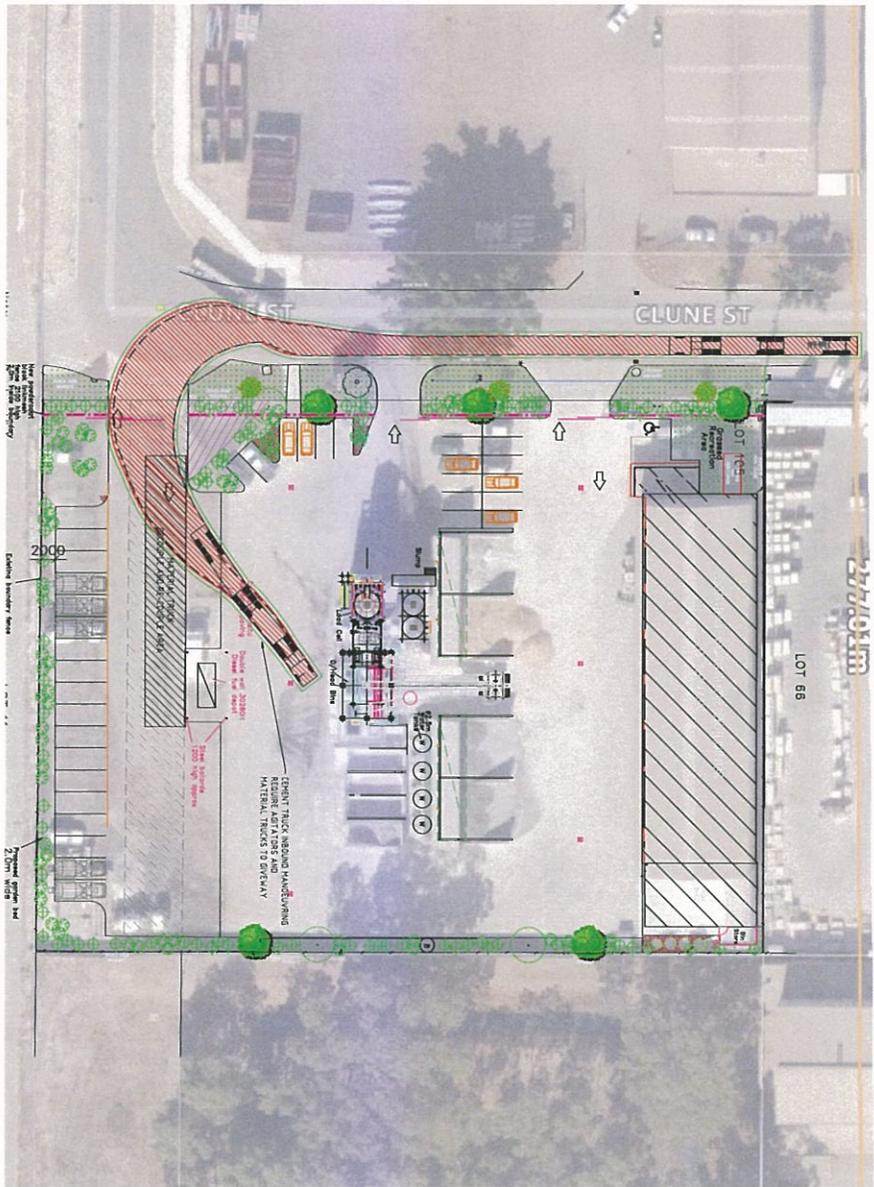
EXISTING PROJECT NO.
DATE PREPARED
BY



INFORMATION ONLY

DRAWN BY
CHECKED BY
APPROVED BY

LOT 105, NO. 21 CLUNE STREET
EXISTING CONCRETE PARKING PLANT
MATERIAL TRUCK OUTBOUND MOVEMENT
PROJECT NO. 1901011-SK-003
REV. A



LEGEND

- THICK SOLID LINE - VEHICLE BOY FORWARD MOVEMENT
- THICK SOLID LINE - VEHICLE BOY TURNING MOVEMENT
- THICK SOLID LINE - VEHICLE BOY TRUCK MOVEMENT
- THICK SOLID LINE - WHEEL MARK
- THICK SOLID LINE - 15M CLEARANCE
- THICK SOLID LINE - 2.0M CLEARANCE

SCALE 1:250

DATE		SCALE		DRAWN		CHECKED		DATE	
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PROJECT NAME		CLIENT		DRAWING NO.		PROJECT NO.		REV.	
LOT 105, NO. 21 CLUNE STREET		EXISTING CONCRETE PARKING PLANT		EXISTING TRUCK TURNING MOVEMENT		190/014-SK-004		A	
DESIGNER		TOWN OF BASENDEAN		SCALE		DATE		DRAWN	
BGC		TOWN OF BASENDEAN		1:250		1/10/24		M.A.	
LOCAL GOVERNMENT APPROVAL		SCALE		DATE		DRAWN		CHECKED	
BGC		1:250		1/10/24		M.A.		M.A.	
DATE		SCALE		DRAWN		CHECKED		DATE	
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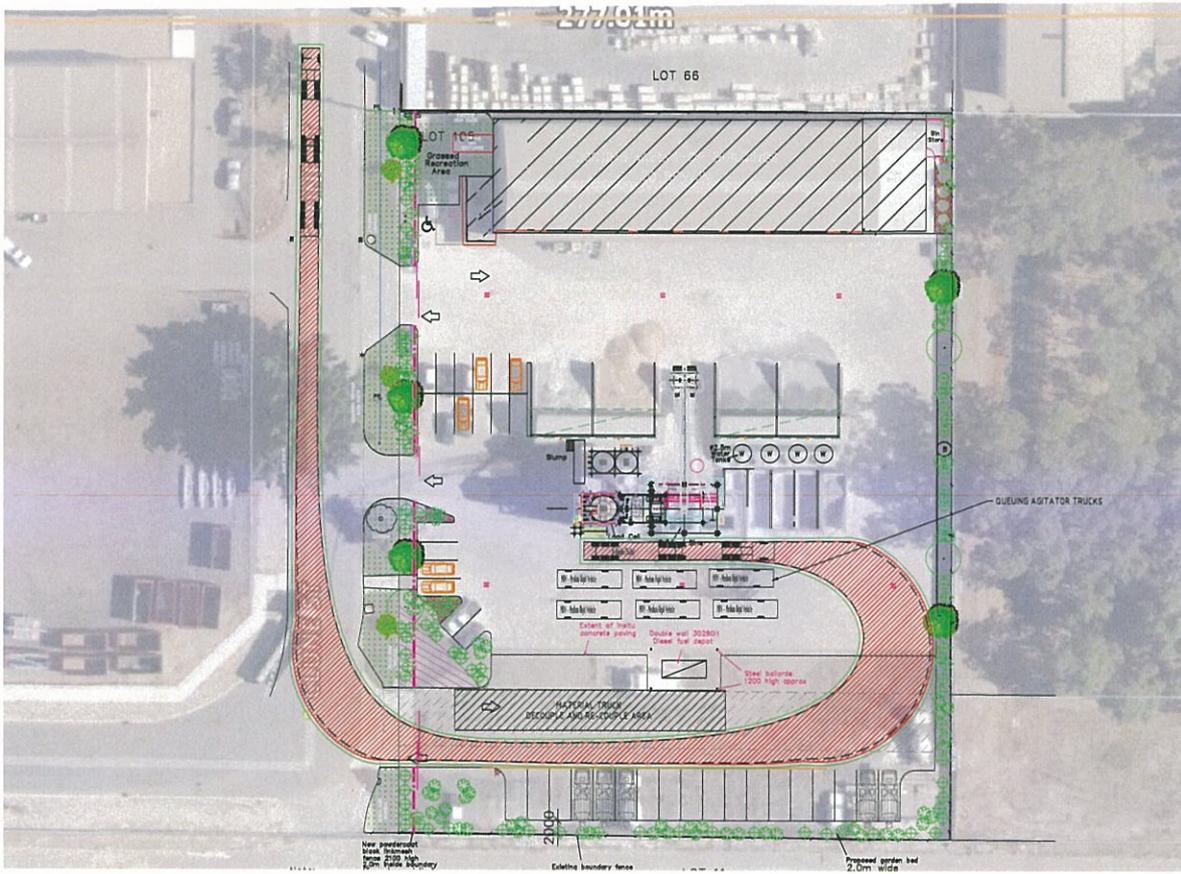
INFORMATION ONLY



SCALE 1:250

TOWN OF BASENDEAN

DATE	SCALE	DRAWN	CHECKED	DATE
2024	1:250	1/10/24	M.A.	1/10/24



LEGEND

- TURNING TEMPLATE - VEHICLE BODY FORWARD MOVEMENT
- TURNING TEMPLATE - VEHICLE BODY REVERSE MOVEMENT
- TURNING TEMPLATE - WHEEL PATH
- TURNING TEMPLATE - 350mm CLEARANCE FROM VEHICLE BODY

REV	DATE	DESCRIPTION	APPROVED
1		ISSUE FOR INFORMATION	
2		ISSUE AND REVISION HISTORY	

CLIENT
BGC

LOCAL GOVERNMENT AUTHORITY
TOWN OF BASSEDEAN

SCALE (BA1)
HORIZ: 1:200
VERTICAL: N/A



INFORMATION ONLY

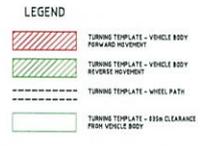
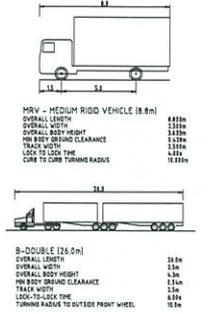
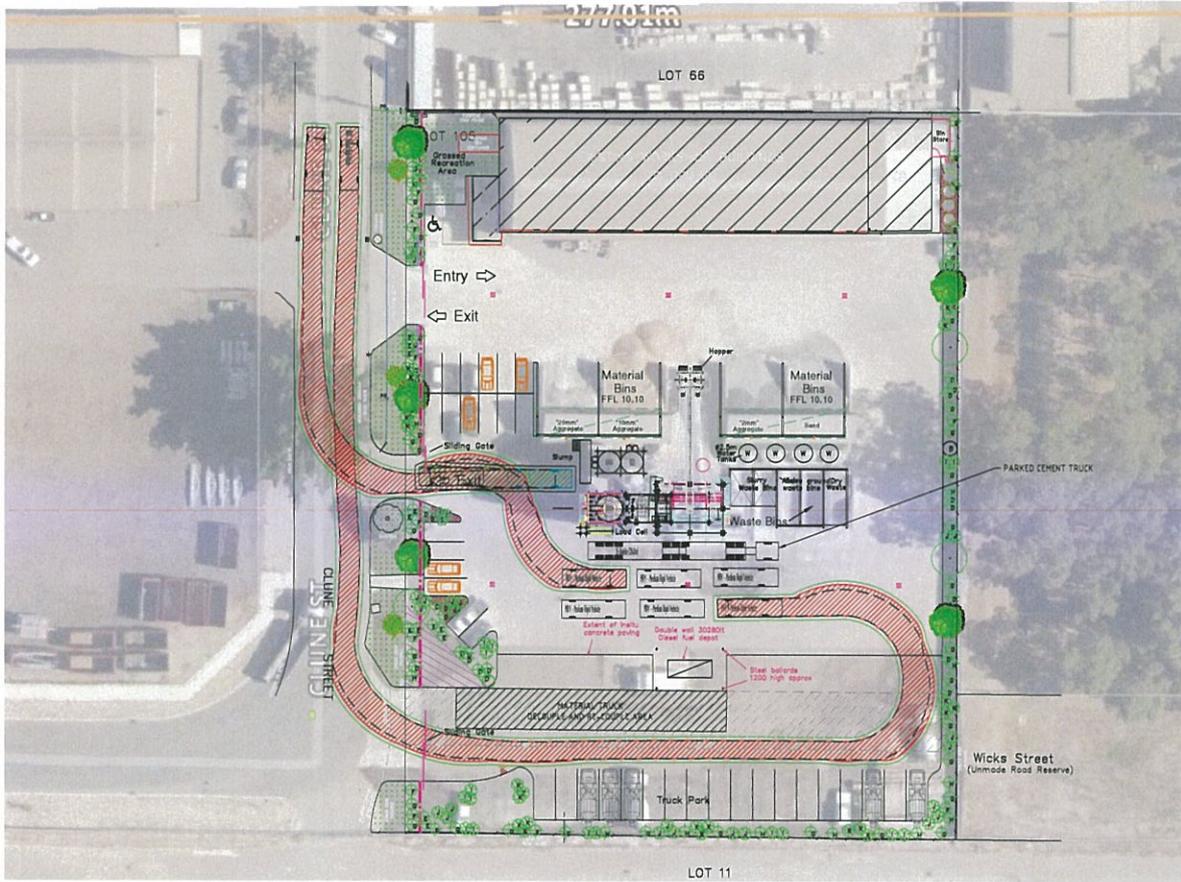
DATE DRAWN: 22/05/19
DESIGNED: N/A
DRAWN: KL
CHECKED: LD
APPROVED: LD

LOT 105 (NO 2) CLUNE STREET
EXISTING CONCRETE BATCHING PLANT
TRUCK-CIRCULATION
CEMENT TRUCK OUTSILING MOVEMENT

DRAWING NUMBER: **1901011-SK-005**

REV: **A**

ATTACHMENT D



REV	DATE	DESCRIPTION	APPROVED

CLIENT
BGC

LOCAL GOVERNMENT AUTHORITY
TOWN OF BASSENDEAN

SCALE: 1:500
DATE: 10/01/2024
SATIN
HORIZONTAL: N/A
VERTICAL: N/A

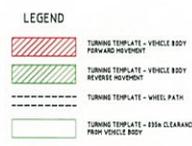
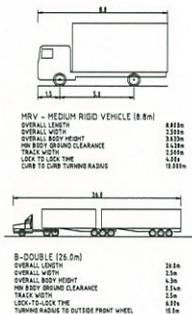
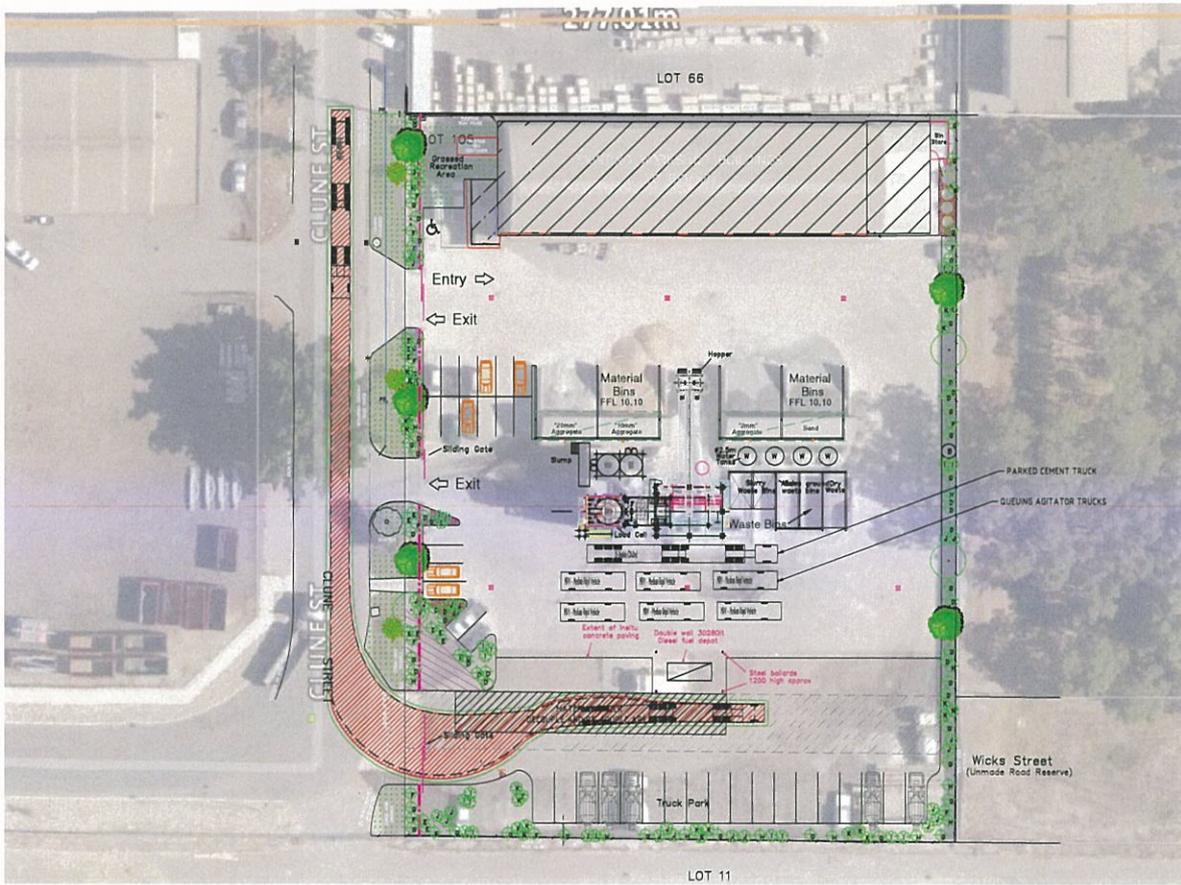


INFORMATION ONLY

DATE DRAWN: 22/01/24
DESIGNED: N/A
DRAWN: KL
CHECKED: LD
APPROVED: LD

LOT 105 (NO. 2) CLUNE STREET
EXISTING CONCRETE BATCHING PLANT
TRUCK CIRCULATION
AGITATOR TRUCK INBOUND, QUEUE AND OUTBOUND
DRAWING NUMBER: 1901011-SK-001
REV: C

SCALE: 1:500



REV	DATE	DESCRIPTION	APPROVED

CLIENT
BGC

LOCAL GOVERNMENT AUTHORITY
TOWN OF BASSEDEAN

SCALE (BAT)
HORIZONTAL: 1:200
VERTICAL: N/A



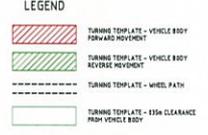
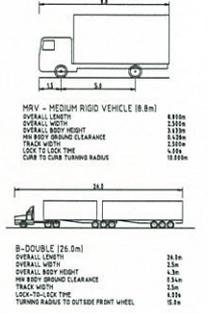
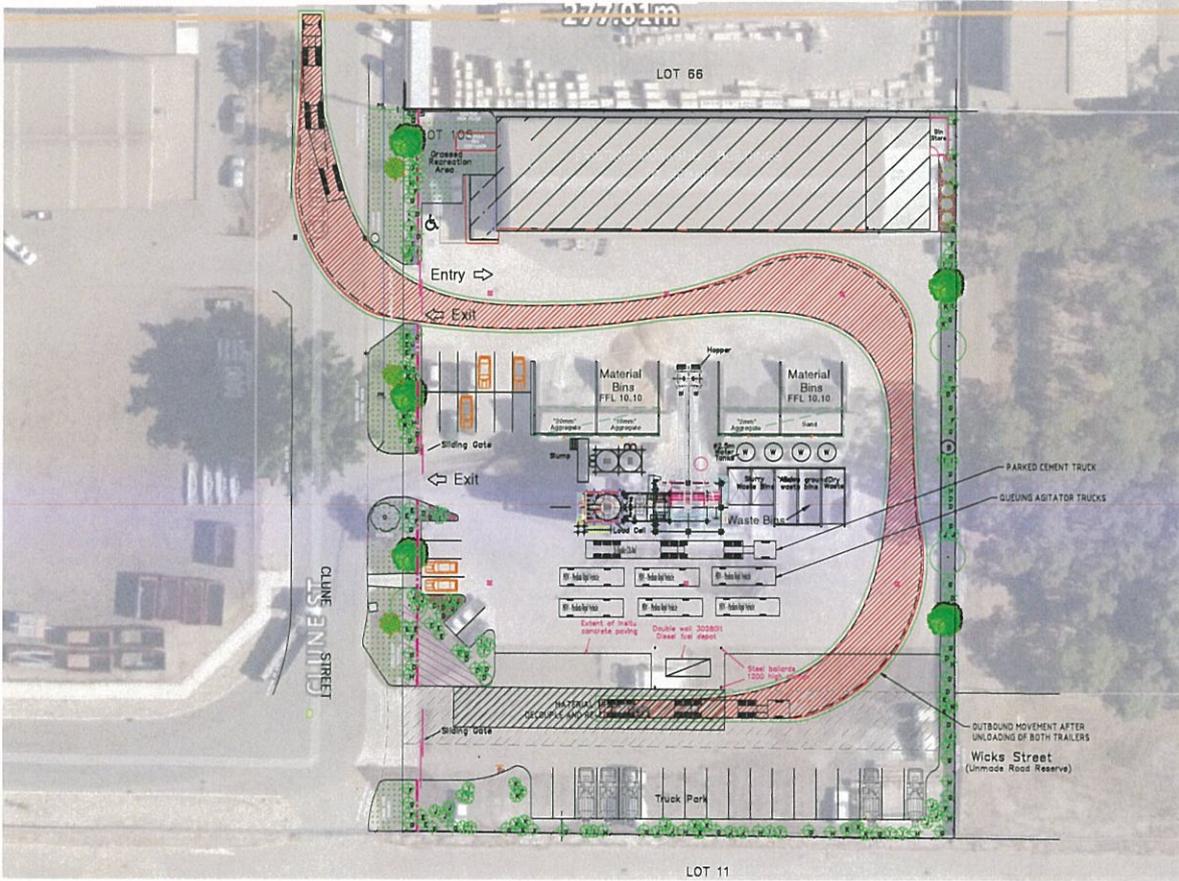
INFORMATION ONLY

DATE DRAWN: 22/11/19
DESIGNED: N/A
DRAWN: KL
CHECKED: LS
APPROVED: LS

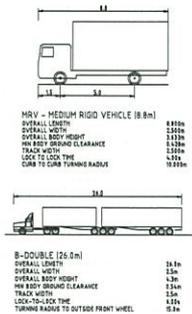
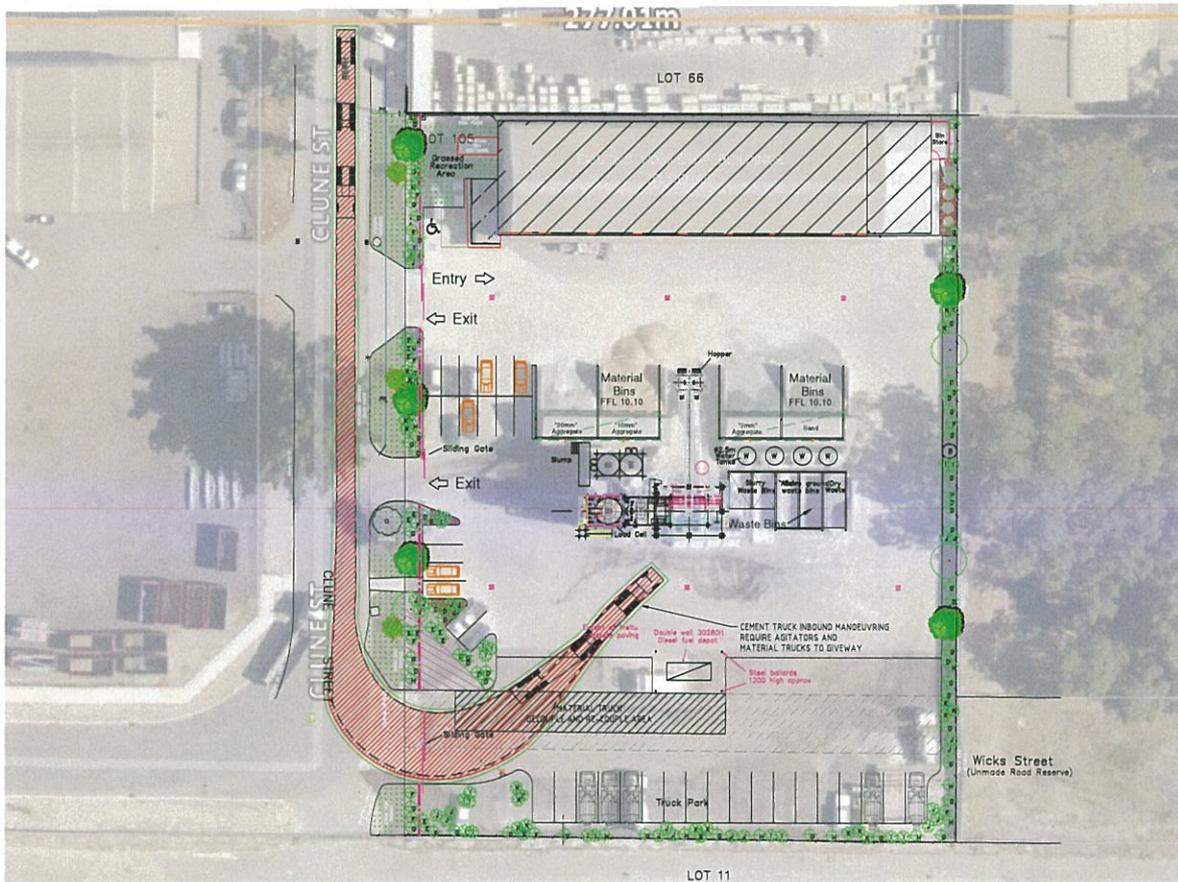
LOT 105 (NO. 2) CLUNE STREET
EXISTING CONCRETE BATCHING PLANT
TRUCK-CIRCULATION
MATERIAL TRUCK INBOUND MOVEMENT

DRAWING NUMBER: 1901011-SK-002
REV: C

SCALE: 1:200



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	REV	DATE	DESCRIPTION	APPROVED																					
DESIGNED	N/A	DRAWN	KL	CHECKED	LD	APPROVED	LD	DRAWING NUMBER	1901011-SK-003																
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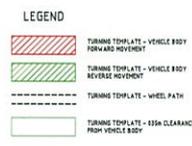


MEDIUM RIGID VEHICLE (8.8m)

OVERALL LENGTH	11.0m
OVERALL WIDTH	2.5m
OVERALL BODY HEIGHT	4.3m
OVERALL GROUND CLEARANCE	1.3m
TRACK WIDTH	2.05m
LOCK TO LOCK TIRE	4.8m
CURB TO CURB TURNING RADIUS	10.25m

B-DUBLE (26.5m)

OVERALL LENGTH	26.5m
OVERALL WIDTH	2.5m
OVERALL BODY HEIGHT	4.3m
OVERALL GROUND CLEARANCE	1.3m
TRACK WIDTH	2.05m
LOCK-TO-LOCK TIRE	4.8m
TURNING RADIUS TO OUTSIDE FRONT WHEEL	9.2m



REV	DATE	DESCRIPTION	APPROVED
C	15/11/20	ISSUE CHANGE	
B	15/11/20	REVISED FOR PERMITTING	
A	15/11/20	ISSUE FOR INFORMATION	
REV	DATE	DESCRIPTION	APPROVED

CLIENT	BGC
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LOCAL GOVERNMENT AUTHORITY	TOWN OF BASSEDEAN
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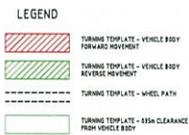
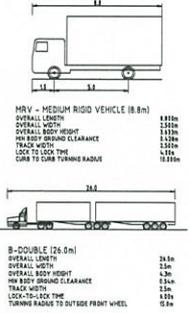
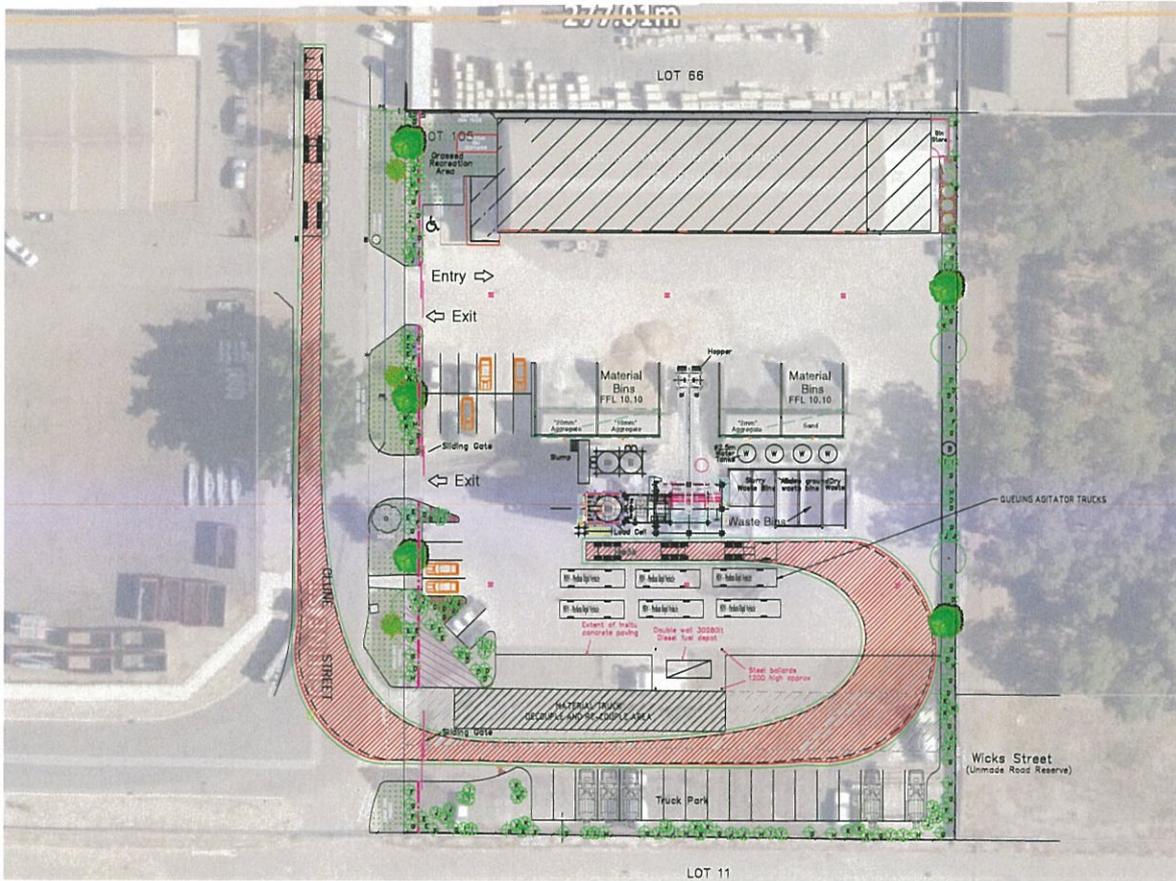


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EXISTING CONCRETE BATCHING PLANT	
TRUCK-CIRCULATION	
CEMENT TRUCK INBOUND MOVEMENT	
DRAWING NUMBER	1901011-SK-004

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ATTACHMENT E

Dust Management Plan
BGC Concrete
2-8 Clune Street
BASSENDEAN



Version	Written By	Reviewed By	Issued By
DMP-001	CB	PH	PH
	9 Apr 2019	10 Apr 2019	10 Apr 2019

Disclaimer

This Dust Management Plan has been prepared in a manner that can be easily read by a person with a legitimate interest in the environmental status of the site, such as the owner, the occupiers, advisors and regulatory agencies. It has been prepared internally by BGC (Australia) Pty Ltd using all professional skill and care in the timeframes afforded. The authors have relied upon reports, data, surveys, plans, photos, interviews and other information provided by external organisations and individuals within the organisation. This plan must be read in its entirety as key sections are inextricably linked. No other warranty, expressed or implied, is made as to the content of this document.

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DUST MANAGEMENT PLAN BGC CONCRETE BASSENDEAN

1. INTRODUCTION

1.1 Background

BGC (Australia) Pty Ltd entities have been a long term manufacturer of construction products and held over 25 licenses for prescribed activities. BGC Concrete currently holds 13 licences for concrete manufacturing.

BGC Concrete has recently commissioned a batch plant facility at 2-8 Clune Street, Bassendean, Western Australia. The batch plant has a capacity to produce 100 m³ of concrete per hour.

The plant has a silo storage capacity of 350 t across five silos. The silos store GP cement, crème cement and ground granulated blast furnace slag.

The leased premise is located in the general industrial zone within the Town of Bassendean Local Government Area.

The main elements of the facility are listed below:

- Parker concrete batch plant of 100 m³ per hour capacity;
- 2 x 90 tonne, 1 x 75 tonne and 2 x 45 tonne welded silos;
- Silo high and low level alarms, reverse pulse cleaning with Duscotech 35m² silo top filters;
- 4 x aggregate and sand material bins each of 250 m³ capacity;
- Enclosed radial conveyor and feed hopper;
- 2 x above ground wet waste bins of approx. 90 m³ capacity;
- 2 x below ground slurry waste bins of approx. 60 m³ capacity;
- 1 x above ground dry waste bin of approx 40 m³ capacity;
- 80 kL storage tank to store returned waste water;
- 30 kL self-bunded diesel refuelling facility;
- 900 m² site workshop, office and amenities;
- Concrete and bitumen hardstand;
- Vehicle parking.

1.2 Purpose of this Plan

The purpose of this Dust Management Plan (DMP) is to ensure appropriate site management of dust in order to minimise the:

- Risk to human health; and
- Impacts of dust generating activities on surrounding sensitive receptors.

The DMP has been prepared as part of BGC Concrete's MYOSH management system and is consistent with the BGC Group Environmental Policy.

The scope of this DMP covers the following:

- Relevant legislation and regulatory requirements for air quality associated with dust;
- Site setting and dust contextual information;
- Site aspects and risk assessment of potential air quality impacts arising from operations;
- Safeguards and mitigation measures to manage air quality impacts during operations;
- Roles and responsibilities of those involved in the design and implementation of air quality management and controls;
- An effective monitoring framework to assess the effectiveness of the controls implemented.

2. LEGISLATIVE AND REGULATORY COMPLIANCE

2.1 Relevant Legislation

Key legislation relating to air quality management at BGC Concrete's Bassendean site are:

- Environmental Protection Act 1986;
- Environmental Protection Regulations 1987;
- Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998;
- Environmental Protection Act 1986 – Environmental Protection (Unauthorised Discharges) Regulation 2004;
- Local Government Act 1995;
- National Environment Protection Council Act 1994;
- National Environment Protection Measure for Ambient Air Quality 2003, reviewed 2011.

Ambient air quality goals set in the National Environmental Protection (Ambient Air Quality) Measure (NEPM) 2003 recommends that PM₁₀ concentration should not exceed 50µg/m³ over a 24 hour averaging period.

3. **SITE SETTING**

3.1 **Location and Surrounds**

BGC Concrete's Bassendean site is located on 7,563 m² of leased land in the Town of Bassendean approximately 500 m east of the Tonkin Highway and 1.3 km north-west of the Swan River with the following coordinates:

- W: E398755; N13531234
- E: E398879; N13531251
- N: E398807; N13531181
- S: E398827; N13531304

Figure 1 shows the general location of the site. Figure 2 shows the premise boundary and layout in more detail.

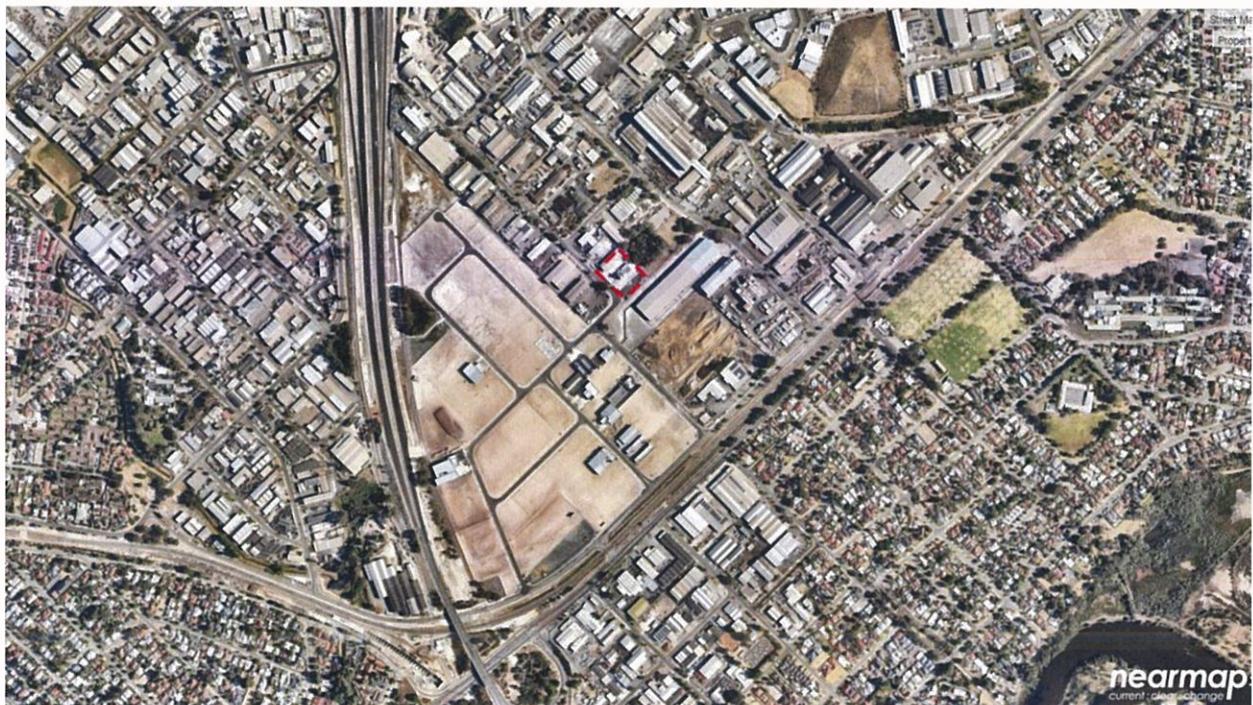


Figure 1. Location of BGC Concrete Bassendean



Figure 2. Premises boundary and layout

3.2 *Current Planning Zones*

According to the PlanWA database (DPLH 2019), the following planning zones are applicable:

- Metropolitan Regional Scheme (MRS): Industrial Zone
- Local Planning Scheme (LPS): Town of Bassendean Local Planning Scheme No. 10: General Industrial Zone

3.3 *Climate*

The climate of the south western region of Western Australia is characterised by the Koppen and Geiger Climate Classification as cSA – a Mediterranean climate featuring long, hot, dry summers, and mild, rainy winters.

The closest official Bureau of Meteorology (BoM) weather station data is from Perth Airport (#9021) approximately 5.1 km south-east where quality controlled climate data is available between 1944 and 2019. The minimum average monthly temperature ranges from approximately 8°C to 17.5°C and maximum average monthly temperature ranges approximately 17.9°C to 31.9°C (Figure 3).

Rainfall of >1mm averages 85.6 days per year, with the maximum mean rainfall being 156 mm during June. The annual average rainfall received at this station is approximately 765.3 mm per annum (Figure 3).

Winds are prevailing easterlies in the morning and south westerly in the afternoon (Figure 4).

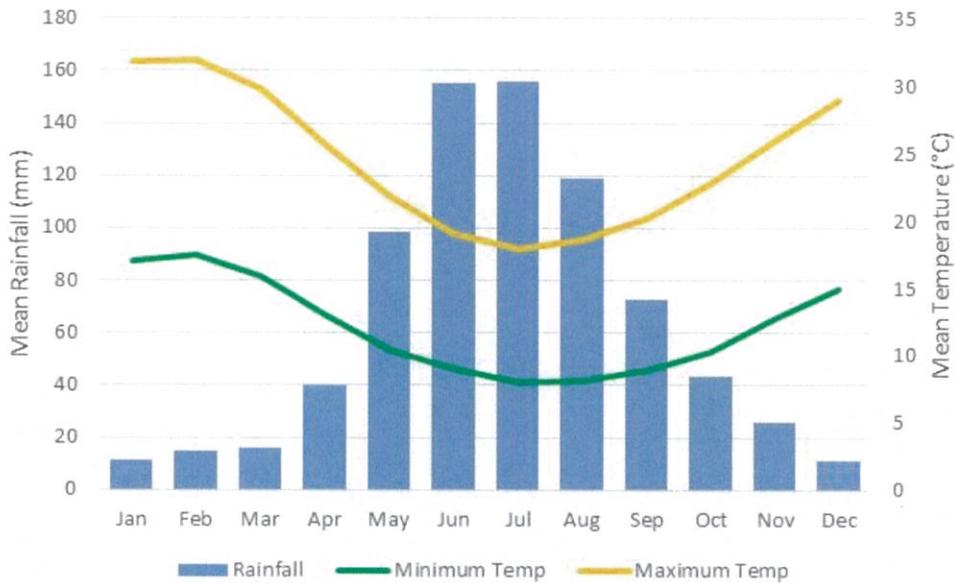


Figure 3. Rainfall and Temperature Averages at closest BoM Weather Station – Perth Airport

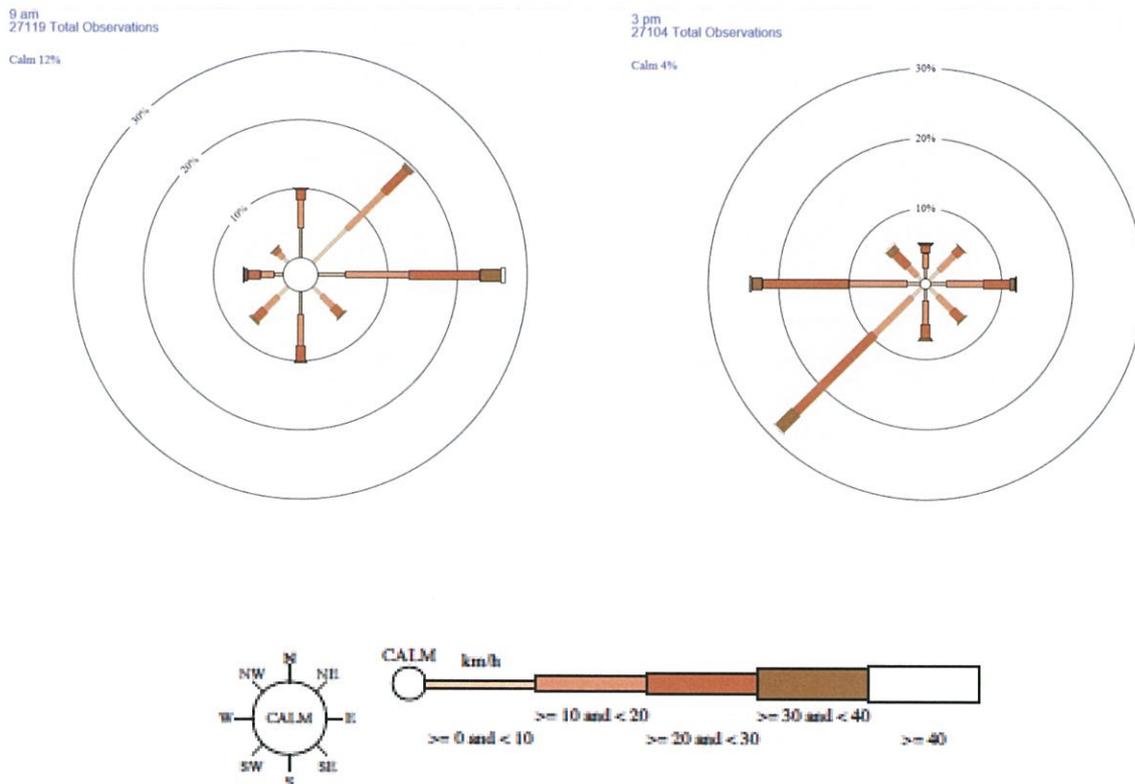


Figure 4. Predominant Wind Speed and Direction at closest BoM Weather Station – Perth Airport

3.4 Sensitive Receptors / Separation Distance

Sensitive land uses are defined as those where people live or regularly spend time and which are therefore sensitive to emissions from industry (Environmental Protection Authority 2015). Sensitive land uses include, but are not limited to residences, hospitals and nursing homes, short-stay accommodation, schools, childcare and other educational facilities and some public buildings. The sensitivity of a land use may also be proportionate to the size of the population affected by the activity.

Table 1 below shows the closest distances to sensitive receptors.

Table 1. Closest Sensitive Receptors.

Type of Receptor	Closest Distance to Premises Boundary
Residence	428 m south-east
School	978 m E Ashfield Primary School
Hospital	4.9 km SW St John of God Mt Lawley
Childcare Centre	1.6 km SW Great Beginnings Bayswater
Nursing Home	1.0 km W Juniper Tranby

The Environmental Protection Authority (WA) published guidelines in 2005 to address generic separation distances between industrial and sensitive land uses to avoid conflicts between these land uses (EPA 2005). In 2015, the DWER sought to increase the separation distances, but withdrew the guidance to avoid confusion. More recently, the DWER has proposed “screening distances” as they relate specifically to odour impacts on sensitive receptors (draft only) (DWER 2018). All are shown below in Table 2.

Table 2. Separation and Screening Distances by Premises Type

Industry Category	Separation Distance (EPA 2005)	Separation Distance (DWER 2017 withdrawn)	Screening Distance (DWER 2018 - draft)
Category 77	300 m – 500 m	500 m	N/A

3.5 Other Receptors

Currently, BGC Concrete's neighbours within 500 m are (from nearest to farthest):

- North-west
 - Easy retaining walls – concrete products*
 - Loman Car Removals Perth - light vehicle storage
 - Grant Elevators
 - Boltmakers – Steelwork manufacturer*
 - Donhad – Steelwork manufacturer*
 - Plascorp – Distribution service
 - Mas Australasia – Scaffolding hire
 - GHEMS Holdings – Environmental consultant
 - Paull and Warner Body Builders – Car manufacturer*
 - Eilbeck Cranes – Crane dealer
 - ECL Group – fuel technical services
- North-east
 - Vacant, vegetated land
 - Federal Sheet Metal Works - Steelwork manufacturer*
 - Jackson Street Lunch Bar
 - Hoffman Engineering - Steelwork manufacturer*
 - Pressform Engineering - Steelwork manufacturer*
 - Floveror - manufacturer
 - UGL – engineering services
- South-west
 - Centurion Framing Systems – Steelwork manufacturer
 - Vacant, cleared land
 - Mostly cleared land with warehouse currently under construction
 - Mostly cleared land with warehouse currently under construction
 - Tonkin Highway
- South-east
 - Tranen Revegetation Systems – Environmental consultant
 - Vacant, cleared land
 - Advance Press – Printer*
 - West Coast Suspensions – Spring supplier
 - Royal Wolf – Container storage
 - Guildford Road
 - Residences

* Potentially contaminating activities according to DoE (2004).



Figure 5. Other receptors near BGC Concrete Bassendean

4. DUST OVERVIEW

4.1 Dust Definition

The Department of Water and Environmental Regulation (DWER) defines dust as: the generic term used to describe solid airborne particles generated and dispersed into the air by processes such as handling, crushing and grinding of organic or inorganic materials such as rock, ore, metal, coal, wood or grain and stockpiling of materials and wind blown dust (DEC 2011). Most dust particles are categorised based on their size (equivalent aerodynamic diameter) and the ability to cause potential adverse environmental and human health effects in certain circumstances (Tillman 2007).

4.1.1 Total Suspended Particulate (TSP)

Total Suspended Particulates (TSP) are airborne particles less than 50 µm in size. The larger particles of this fraction (PM₁₀-PM₅₀) may be referred to as “nuisance dust” and refer to potential impacts on aesthetic environments rather than human health impacts.

4.1.2 Particulate Matter (PM₁₀)

Particulate matter smaller than 10 µm (PM₁₀) remains suspended for longer periods and can penetrate into the lungs, causing adverse health effects. The PM₁₀ fraction is termed “thoracic particles” and may be inhaled into the upper part of the airways and lung (DEC 2011).

4.1.3 Particulate Matter (PM_{2.5})

Particulate matter smaller than 2.5 µm (PM_{2.5}) are fine particles that are inhaled more deeply and lodge in the gas exchange region (alveolar region) of the lung and are commonly known as “respirable dust”. It is considered that these particles are of most concern to human health and if contaminated, may pose further risk through absorption of chemicals in the blood. (DEC 2011).

5. SITE ASPECTS AND IMPACTS

5.1 Site Processes

The batching plant produces concrete by mixing cement with sand, aggregate, additives and water. The mixture is combined in agitator trucks onsite and transported offsite for use. A schematic overview of the process is presented as part of the conceptual site model in Figure 6.

5.1.1 Raw Material Delivery

Raw materials (cement, sand, aggregate and various additives) are delivered to the premises via the existing Clune Street entrance. The delivery trucks are fitted with tarpaulin covers that can be activated electrically or manually to cover the material to control dust emissions. In addition, aggregates and sand are pre-moistened at the source to further reduce dust emissions when unloading onsite. The raw materials are tipped from the covered trucks directly into one of four material bins: 20mm aggregate, 10mm aggregate, 2mm aggregate and sand. Each three-sided material bin has a roof and is fitted with sprinklers to minimise fugitive dust emissions.

5.1.2 Hopper and material feeding

A front end loader is used to load pre-moistened aggregates and sand into the feed hopper. The feed hopper is connected to a radial conveyor which has the ability to be moved laterally and fill each overhead feed bin individually. The radial conveyor is fully enclosed and the overhead feed bins are covered by a roof.

5.1.3 Cement Storage

Cement used in the manufacturing process is delivered by a cement pneumatic tanker and stored in one of five silos comprising 350 tonnes of storage capacity. The dry cement is pumped from the truck via a hose into the cement silos under slight negative pressure. During filling of the cement silos, displaced air is passed through a baghouse to capture cement dust. Cement silo filters used are Dustcotech filters with an area of 35m² of filter medium. BGC Concrete holds readily accessible spare filter bags at its maintenance subcontractors premises. The cement silos are fitted with high and low level alarms to prevent overfilling and visual instrumentation is installed in the office/control room to inspect cement levels prior to filling.

5.1.4 Concrete Manufacture

Agitator trucks are used to prepare batches of concrete. As required, the concrete agitator trucks reverse into the load cell and are loaded with weighed quantities of aggregate, sand and cement which were been dispensed using the automatic control system. Dust generated from agitator charging is recycled back into the silos via a hooded vacuum. The concrete agitator trucks then move to the slump stand where water is added to adjust the workability of the concrete mixture. The water used in the batching process is a mixture of bore water and partially cleaned process wastewater. The wastewater is stored in two above ground tanks. Additives are also stored in tanks which are connected to flow meters, enabling the batch water to be dosed for the correct amount of admixture prior to discharge to truck agitator. A computer system is used to enable regulation of the automated production facility from the plant control room and office. The computer system is designed to monitor the operation of conveyors, material levels in silos, storage bins and admixture tanks.

5.1.5 Recycling

Agitator trucks returned from job sites wash out at the recycle area. Stone and sand drop out in the recycle pit while the wash water is vented into one of two above ground settlements pits. Suspended solids are allowed to settle through a primary and secondary stage tank treatment connected by a weir. The partly cleaned wastewater is then pumped from the secondary stage treatment basin into two water tanks for re-use in the production process. Solid recyclables are reused back in the production process of block manufacture at BGC's Hazelmere premises.

5.2 Summary of Potential Dust Sources.

The following site operations have the potential to cause off-site dust emissions:

- Aggregate and sand movement – loading and unloading, conveyor transfer points;
- Cement and GGBFS unloading
- Discharging from silos;
- Vehicle movement onsite (fully hardstanded); and
- Vehicles leaving the premises with dust on wheels.

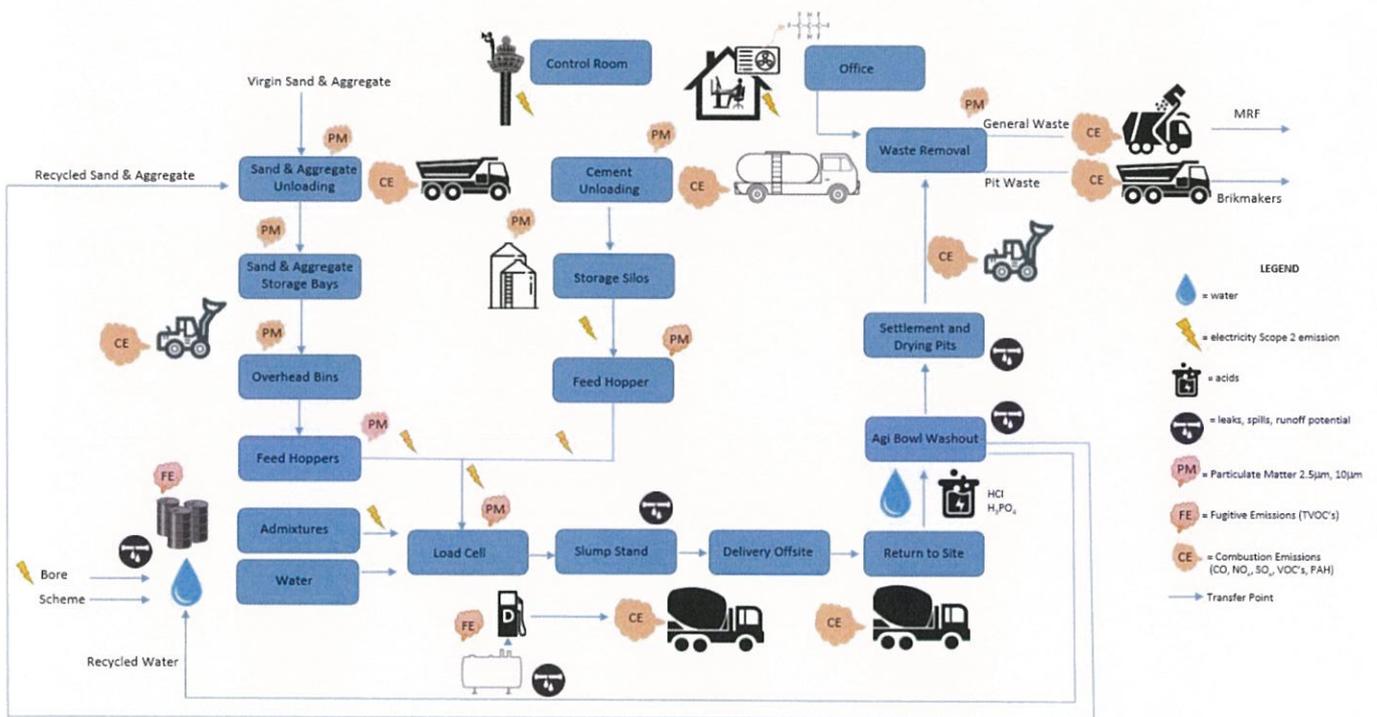


Figure 6. Conceptual Site Diagram BGC Concrete Bassendean

5.3 Potential Impacts

Potential impacts from dust generated by vehicle movements, material transfer, material processing, and storage, are as follows (Table 3).

Table 3. Potential impacts from dust emissions.

Amenity	Receptors adjacent to the premise could regard dust emanating from the premise to be a nuisance and impact their visual amenity if dust is deposited on their property, or public infrastructure.
Health	Cement dust is deemed hazardous according to Safe Work Australia criteria. It can irritate the skin, the mucous membrane of the eyes and if inhaled, the respiratory system.
Contamination	Cement and dried concrete pit waste is alkaline by nature and if mixed with rainfall, runoff of high pH could be discharged to land, groundwater or public drainage.
Property damage	Cement dust is corrosive on contact with moisture and can change the colour of paint on vehicles, form pitting on glass windows and affect electronics.
Resource efficiency	Cement is valuable and if it escapes as dust it results in an economic loss to the business. It is also an inefficient use of resources used in the upstream manufacturing of cement.

5.4 Summary of Aspects and Impacts

Table 4: Site Activities, Aspects and Impacts

Activity	Aspect	Impact
Materials movement - trucks	Transporting aggregates and sand by road from quarries to the site and unloading of materials from the trucks onsite can release dust.	Receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health.
Cement transport - receivals	Unloading cement into silos can release dust if the flexible hose coupling is not secured properly or silos are overfilled or silo top filters fail.	Receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health. Potential for property damage on and offsite. Resource efficiency is lost as cement is unused and valuable.

Storage of materials	Storage of aggregates and sand and drying out pit waste can release dust to the air particularly in windy events.	Receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health.
Materials processing - conveyors	Transfer of materials by radial conveyor can release dust if not adequately enclosed.	Receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health.
Transport on site	Vehicle movement on the hardstand surface can mobilise dust deposited on the hardstand.	Receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health.
Transport off-site	Vehicles leaving the premises can release dust from cementitious materials attached to tyres.	Receptors offsite could be exposed to dust which has the potential to impact on amenity and health.
Windy events	Strong winds can mobilise dust deposited on the hardstand	Receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health.
Rainfall events	Rain can mix with dust deposited on the hardstand and enter drainage	Stormwater can become contaminated with high pH from alkaline particles and discharge to land or interconnected water bodies. Drains can become blocked with dust and sediments.

6. DUST MANAGEMENT

6.1 Environmental Policy

BGC Concrete operates under the BGC Group's Environmental Policy which includes specific and measurable commitments relevant to its operations (Appendix).

6.2 Management Systems

BGC Concrete operates under the following management systems.

- ISO 9001 Quality Management System.
- MYOSH Management System

6.3 Site Controls

Table 5 outlines site controls in order to reduce the potential impact of dust emissions. Further detail is provided in the Operational Risk Assessment (Appendix). New or improved methods will become available and current best practice should always be followed to ensure that control measures are effective in minimising dust. Best practice means there is no case for unnecessary discharges or degradation of the environment, even where an environmental standard is not exceeded.

Table 5. Dust controls at 2-8 Clune Street Bassendean.

Control	Details	Location
Dust suppression during truck movement.	<p>Tarpaulin covers applied during aggregate and sand transportation.</p> <p>Qualified & Authorised drivers.</p> <p>Driver Verification of Competency.</p> <p>Work Instructions describing methodology to prevent dust emissions & contact with product.</p> <p>Mobile sweeper service.</p> <p>Dedicated traffic routes</p> <p>10 kmh speed limit.</p> <p>Hardstanded roads and site surface.</p>	Public Roads & on site.
Dust mitigation during operations.	<p>Sand & aggregates not to exceed height of bunker bays.</p> <p>Pumped transfer of cement using airslide under slight negative pressure.</p> <p>Fully welded silos (no flanged weak points) with High/Low level alarms to prevent overfilling.</p> <p>Fully enclosed radial conveyor.</p> <p>Dust collectors are installed at all transfer points.</p> <p>Scheduled preventative maintenance on all equipment that handle dust generating material at the site.</p> <p>Reverse pulse cleaning systems in the cement silos, differential pressure monitoring.</p> <p>Stocks of spare filter bags stored at it's maintenance sub contractor's premises.</p> <p>Scheduled dust filter bag replacement/servicing</p> <p>Specification of all dust collection equipment is available.</p> <p>Trained & authorised operators.</p> <p>Verification of Competency for all operators.</p> <p>Fully enclosed conveyors.</p> <p>Documented Inspection process.</p> <p>Fully welded silos.</p> <p>Work Instructions & Training.</p> <p>Operators trained in material handling.</p> <p>Maintenance regimes / inspections.</p>	Site.

Sweepers	A sweeper truck will be used to ensure materials remain on site within the storage areas.
Weather monitoring	Wind strength, direction and site activities are observed daily to assess the potential for offsite dust emissions. Figure 4 is also used for forecasting.

6.4 Monitoring and Maintenance Schedule

Table 6 outlines the monitoring and maintenance schedule implemented onsite to ensure the effective control of dust emissions that have potential to leave the premises.

Table 6. Monitoring and maintenance

Item	Site Location	Frequency	Responsible Personnel
Visual Dust Monitoring	All site locations	Opportunistic observation of visual dust lift-off or emissions	Site Supervisor.
Weather	N/A	Weekly	Site Supervisor.
Record Keeping	Divisional	Inspections & Maintenance records in MYOSH.	Production Manager.
Complaints Register	N/A	Logged within 24-hours of receipt	Personnel to refer all complaints to Production Manager. Logged by Production Manager.
Dust collectors	Silos. Receival Bay.	Weekly Inspections Maintenance & cleaning as required.	Site Supervisor. Production Manager

6.4.1 Visual Monitoring

Visual monitoring of dust emissions is the primary mechanism for dust management following an observation of dust lift off or emission. Mitigation actions are instigated without delay at the observed source of dust emission. In the case of material loading or processing, this would include ceasing the operation immediately to allow dust to settle, and only restarting operation at a low intensity and slowly increased to ensure dust emissions are minimised.

6.4.2 Weather Monitoring

The Bureau of Meteorology (BoM) forecast will be reviewed at the start of each week to determine if there are any strong winds forecast that may impact high risk dust emission activities on site and increase the likelihood that dust will be emitted off site. This is an internal process that will not be logged. Historical wind data will also be utilised to determine the highest risk periods on an annual scale (refer Figure 4). The risk wind periods are morning easterlies and afternoon sea breezes between September and April.

6.4.3 Record Keeping

Routine checks and maintenance for control measures identified in Table 6 is scheduled and recorded on Divisional MYOSH software. A Complaints Register will also be maintained.

6.4.4 Complaints Register

A complaints register will be maintained to verify that operating parameters are effective. Any external complaints received regarding the Batch Plant will be referred to the Production Manager for central coordination.

Any dust complaints that may be received will be evaluated against the wind direction and wind speed data from the closest open BoM station (Perth Airport ~5km away) and compared against any on site activity being conducted at the time of complaint.

The complaints register will record any complaints received, the meteorological conditions, site conditions at the time and will track any trends that occur in regard to complainants' amenity.

The Production Manager will communicate immediately with the Regulator if reportable incidents occur.

6.4.5 Dust Collectors

The Maintenance / Production Manager will ensure that dust collectors are inspected routinely and replaced if required to ensure that they are operating at optimal levels and their effectiveness is not compromised.

Should a dust collector not be operating at an optimal level, all operations shall cease operating in the affected area until the issue has been rectified. This will be an internal process with a formal log not required unless an issue is identified.

6.5 Management Actions

Table 7 outlines the management actions that will be implemented on site as a result of the identification of a trigger breach. A minor potential dust event will be regarded as a trigger or series of triggers that are unlikely to give rise to emission of dust over the site boundary. A major potential dust event will be regarded as a trigger or series of triggers that have the potential to

result in dust transgression over the site boundary.

Table 7. Management actions

Item	Trigger	Management Action
Visual Dust Monitoring	Observation of dust lift off or dust emission	Opportunistic observation of visual dust lift-off or emission. All operations personnel to receive training to report any major dust emission observations to the relevant Supervisor. The Supervisor is to take appropriate action to minimize dust emissions that may impact the environment.
Adverse Weather	Strong winds forecast during high risk dust emitting activities (eg unconfined unloading, material transfer etc)	Maintenance / Production Manager to notify operations personnel to take preventative measures during periods of forecast strong winds. Management may include water spray measures and scheduling of material transfers to less windy periods can also be implemented as required.
Complaints Register	Dust complaint	Review and assess against wind data and onsite activities at the time of the complaint to verify the issue. If the complaint is justified, take appropriate remedial action and notify complainant of the outcome.
Dust Collector	Operational less than optimal due to dust build up	Maintenance / Production Manager is to ensure that appropriate action (e.g. cleaning or maintenance) is undertaken to ensure the ongoing effectiveness of the dust collector.

6.5.1 Dust Monitoring

In the event that any of the triggers outlined in Table 7, occur on a regular basis, perimeter dust monitoring during operations will be considered, to ensure that there is no impact on the surrounding environment, or human health.

Site monitoring may be undertaken for PM₁₀ using high volume samplers and results compared to 24 hour triggers, in accordance with the NEPM for Ambient Air Quality.

Should further monitoring be required for a human health impact assessment, other sampling tools may be implemented, in accordance with AS/NZS 3580.1.1:2007.

6.5.2 Monitoring Review

The effectiveness of this DMP will be reviewed periodically according to roles and responsibilities outlined in Table 5.

Any corrective actions undertaken during the year will be reviewed for effectiveness immediately after implementation, and also at the annual review for longitudinal assessment. If the longitudinal assessment reveals systemic ineffectiveness at any part of the premise, more regular inspections or audits shall be implemented.

6.5.3 Roles and Responsibilities

The roles and responsibilities of all site personnel are outlined in Table 8.

Table 8. Roles and Responsibilities

Role	Responsibilities
BGC Corporate	<ul style="list-style-type: none">• Provide ongoing support and advice to management and site personnel.• Assist with any licensing matters for the site.• Assist in audits as required.• Liaise with regulatory authorities as required.
BGC Concrete General Manager	<ul style="list-style-type: none">• Ensure that adequate resources are provided to ensure compliance with this DMP.
Site Supervisor	<ul style="list-style-type: none">• Liaison with Regulatory Authorities, as required.• Assist all personnel, including managers and contractors, to remain compliant with the DMP.• Review and update DMP periodically.• Identify areas of opportunity for improvement of dust management which may lead to improved performance.• Act as the central registrar of any complaints received and ensure appropriate action is taken in the event of a complaint relating to nuisance or human health• Conduct regular audits to validate that compliance with this dust management plan is achieved.• Cease any activity that may constitute a breach to this dust management plan.• Ensure that potential environmental hazards are identified and reported.• Assist in the development of any relevant Work Instructions required for the safe operations of the Batch Plant.
Production Manager	<ul style="list-style-type: none">• Assist Site Supervisor with overall review and compliance of the DMP• Lead overall compliance with the DMP• Ensure contract documentation specifies responsibilities of contractors consistent with the DMP• Ensure monitoring requirements are met• Ensure ongoing effective communication with all site personnel, including development of work procedures and ensuring staff are trained in their use.

- Review breach, or potential breach, of any legislation and potential environmental hazards, and take action where appropriate
 - Conduct inspections on a regular basis of potential dust sources and implemented control measures, more often during high risk periods
 - Ensure that potential environmental hazards are identified and reported
 - Liaise with regulatory authorities as required.
- Site Personnel
- Familiarise and remain compliant with the DMP
 - Meet general environmental duties, facilitated and supported through appropriate training, work practices and event reporting.
 - Report all incidents relating to dust, including visual dust observations and infrastructure maintenance requirements.
 - Ensure all contractors, visitors and personnel remain compliant with the DMP at all times
 - Any person left in charge of the premises is aware of the conditions of the Registration and has access at all times to a copy of the Registration

6.6 Premises Pollution Liability Insurance

In the event that an environmental incident ever transpired, 2-8 Clune Street Bassendean is insured by Chubb Insurance Australia Ltd (formerly Ace Insurance Ltd) with limits of liability set at \$10m for both i) pollution conditions or indoor environmental conditions and ii) transportation (Policy No. 05CL011116). This insurance policy applies to all of BGC sites and is available on request.

7. STAKEHOLDER CONSULTATION

Details of external stakeholders consulted to inform the development of this DMP, and for future reference in the event of a need to communicate are as follows:

Stakeholder	Contact	Comments
Town of Bassendean	Alexander Snadden. asnadden@bassendean.wa.gov.au	Planning guidance
Rowe Group	Nathan Stewart. Nathan.Stewart@rowegroup.com.au	Project Planning
Keppel Holdings	Sam Mangione sam@instantwaste.com.au	Site owner
ShawMac	Rian McIlduff rmcilduff@shawmac.com.au	Traffic Engineers
David Wills & Associates	David Wills. davidwills@dwaconsulting.com.au	Site engineering.
360 Environmental	Alysia Woodward AlysiaWoodward@360environmental.com.au	Environmental Consultants.

8. REFERENCES

Australian Standard AS/NZS 3580.1.1:2007. Methods for the Sampling and Analysis of Ambient Air – Guide to Siting Air Monitoring Equipment.

Bureau of Meteorology (BoM) 2019, *Climate data on line Bureau of Meteorology*, viewed 5 April 2019. <<http://www.bom.gov.au/climate/data/>>

Department of Environment and Conservation (DEC) 2011, *A guideline for managing the impacts of dust and associated contaminants from land development sites, contaminated sites remediation and other related activities*, viewed 5 April 2019, <https://www.der.wa.gov.au/images/documents/your-environment/air/publications/Guideline_for_managing_impacts_of_dust.pdf>

DEE 2017, Ambient Air Quality Standards, viewed 5 April 2019, <<http://www.environment.gov.au/protection/air-quality>>

Department of Environmental (DoE) 2004, *viewed 5 April 2019*, <https://www.der.wa.gov.au/images/documents/your-environment/contaminated-sites/guidelines/potcont_v3_080205.pdf>

Department of Planning, Lands and Heritage (DPLH) 2019, *Plan WA* online, viewed 5 April 2019, <<https://espatial.planning.wa.gov.au/mapviewer/Index.html?viewer=planwa>>

Department of Water and Environmental Regulation (DWER) 2018, *Odour guideline for prescribed premises (Draft)*, viewed 5 April 2019, <https://www.der.wa.gov.au/images/documents/our-work/consultation/OdourGuideline/17-01-2018_Odour_GdL_external_consult.pdf>

Environmental Protection Authority (EPA) 2005, *Separation Distances between Industrial and Sensitive Land Uses*, viewed 5 April 2019, <http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/GS3-Separation-distances-270605.pdf>

Environmental Protection Authority (EPA) 2015. *Environmental Assessment Guideline: Separation distances between industrial and sensitive land uses (Draft)*, viewed 5 April 2019, <https://consultation.epa.wa.gov.au/policy-and-guideline-development-and-review/draft-separation-distanceseag/supporting_documents/DRAFT%20EAG%20X%20Separation%20buffers%20September%202015.pdf>

Tillman, C. 2007. Principles of Occupational Health and Hygiene- An Introduction. Allen and Irwin Australia.

9. OPERATIONAL RISK ASSESSMENT.

Step 3 - Assess the Risk		Consequence				
Probability	5	4	3	2	1	
A	M 11	H 7	H 4	L 2	L 1	
B	M 16	M 12	H 5	H 3	L 2	
C	L 10	M 17	M 13	H 6	L 3	
D	L 15	M 21	M 18	M 14	H 13	
E	L 20	L 24	M 22	M 19	H 18	

Matrix Legend	
	Critical
	High
	Medium
	Low

REF	Step/Area /Activity	Potential Incident Unwanted Event	Type of Impact etc.	Unmanaged Hazard			Current or Proposed Control	Managed Hazard			Status
				Prob	Conseq	Inherent Risk Ranking		Prob	Conseq	Final Risk Ranking	
1.0 Management											
1.1	Personnel Selection	<ul style="list-style-type: none"> Incorrect person for the job / position Poor environmental attitude. Adverse Safety / environmental impact due to incorrect operations. 	Environmental. Health & Harm Property Damage.	C	3	M13	<ul style="list-style-type: none"> BGC Concrete employment selection procedures Training and Inductions. Work Instructions. Verifications of Competency. Adequate Supervision. Daily instructions. Trained / Authorised Persons. Authorised Persons Register in place. Daily Risk Assessments. 	D	5	L23	
1.2	Management / Supervision Control	<ul style="list-style-type: none"> Poor / Inadequate Supervision. Unsafe activities / conditions. Due to unclear instructions for the operator. 	Health & Harm.	C	3	M13	<ul style="list-style-type: none"> Supervisor allocated to the operations. Maintenance / Production Manager supports Supervisors. Qualified Supervisors. Daily co-ordination and progress meetings Education for Line management on HSE requirements Dedicated Safety resource / support. 	D	5	L23	
1.3	Safety and Environmental Systems Implementation	<ul style="list-style-type: none"> Injuries due to poor safety practices / awareness. Adverse environmental impact due to poor safety and environmental practices. Insufficient awareness, inadequate hazard identification, non-compliance with legal requirements. 	Environmental. Health & Harm	C	3	M13	<ul style="list-style-type: none"> Full Safety /Environmental system in place. Clear concise Procedures in place. Work Instructions for all operational Tasks. Inspection process embedded. Mature hazard reporting process in place. Training process in place. HSE Management Team Implementation of Risk Assessment and reviews Inductions prior to commencing work. HSE Communication (site notice board, toolbox meetings) Competent supervisors Incident and investigation procedure. Risk Assessments conducted daily. 	D	5	L23	

REF	Step/Area/Activity	Potential Incident Unwanted Event	Type of Impact etc.	Unmanaged Hazard			Current or Proposed Control	Managed Hazard			Status
				Prob	Conseq	Inherent Risk Ranking		Prob	Conseq	Final Risk Ranking	
2.0 Material Receivals.											
2.1	Product movement – on site. - Cement receivals.	Vehicle movement on site can lift dust settled on the paved surface and release particles to the air. Unloading of cement materials from trucks on site can release dust particles to the air. Receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health. Loss of valuable product.	Environmental. Health & Harm. Resource inefficiency.	C	3	M13	<ul style="list-style-type: none"> • Fully sealed pneumatic tankers. • Qualified & Authorised drivers. • Driver Verification of Competency. • Drivers trained in Cement handling. • Pre-start checks conducted. • Pneumatically controlled cement transfer from tanker to silo via air slide under slightly negative pressure. • Fully welded silos. • Silo top filters • Overflow pressure relief valves • Spare filter cartridges held on site • Work Instructions describing methodology to prevent contact with product. • Full suite of PPE & First Aid equipment. • Work Instruction – Unloading methodology. • Dust Collectors installed at transfer points. • Site Traffic Plan with 10kmh speed limit with signage in place and site radar deployed occasionally. • Hardstand Roads within the site. • Mobile sweeping service. 	C	5	L20	
2.2	Product movement – on site. - Sand & Aggregate receivals.	Vehicle movement on site can lift dust settled on the paved surface and release particles to the air. Unloading of BRM materials from trucks on site can release dust particles to the air. Receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health.	Environmental. Health & Harm	B	4	S12	<ul style="list-style-type: none"> • Tarpaulin covers applied up until point of unloading. • Deliveries ideally scheduled for non-windy periods. • Materials are purchased as slightly wetted prior to receipt. • BRM tipped into three-walled bunker bays with overhead roof. • Bunker bays raked by FEL so that materials do not extend above the height of the bays or in front. • Sprinkler system fitted to bunker bays to be turned on at delivery and on hot windy days. • Work Instruction – Unloading methodology. • Driver training & verification of competency. • Mobile sweeping service. • Pre-start checks conducted. • Hardstand Roads within the site. 	B	5	M16	

REF	Step/Area/Activity	Potential Incident Unwanted Event	Type of Impact etc.	Unmanaged Hazard			Current or Proposed Control	Managed Hazard			Status
				Prob	Conseq	Inherent Risk Ranking		Prob	Conseq	Final Risk Ranking	
3.0 Operations											
3.1	Materials processing – Transfer of BRM from bunker bays to hoppers	<p>Loading of BRM materials with FEL can release dust particles to the air.</p> <p>Vehicle movement on site can lift dust settled on the paved surface and release particles to the air.</p> <p>Unloading of BRM materials from FEL into hoppers can release dust particles to the air.</p> <p>Receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health.</p>	Environmental. Health & Harm.	B	4	M12	<ul style="list-style-type: none"> Trained & authorised operators. Verification of Competency for all operators. Site designed for minimum distance between bunker bays and hoppers Sprinkler system fitted to bunker bays. Mobile sweeper service. Work Instructions & Training. 	C	4	M17	
3.2	Material Processing Concrete manufacture	<p>Processes undertaken on site may release dust particles.</p> <p>Receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health.</p> <p>Loss of valuable product.</p> <p>Equipment breakdown.</p>	Environmental. Health & Harm. Resource inefficiency. Loss of Reputation. Property Damage.	B	4	M12	<ul style="list-style-type: none"> Fully enclosed radial conveyor to elevated hoppers. Mixing process is a wet process which occurs in enclosed load cell. PLC control system provides precise quantities of material inputs. Hooded vacuum in load cell returns any dust back into silo. Trained & authorised operators. Verification of Competency for all operators. Scheduled preventative mechanical maintenance. Dust Collectors installed at all transfer points. Dust filter replacement program. Documented inspection process. Fully welded silos. High/Low level alarms to prevent overfilling. Mobile sweeper service. <ul style="list-style-type: none"> Routine cleaning included in operational requirements. Working with Concrete work instruction. 	D	4	M21	
3.3	Recycling - Drying of Settlement Pit Waste	<p>Recycling processes undertaken on site may release dust particles.</p> <p>Sensitive receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health.</p> <p>Loss of valuable product.</p>	Environmental. Health & Harm. Resource inefficiency.	C	4	M17	<ul style="list-style-type: none"> Drying occurs in above ground 3-walled settlement pit. Process does not completely dry and forms a lumpy crust on surface. Scheduled removal of recovered resource to BGC Hazelmere operations as input into Blokstone manufacture. Tarpaulin covered vehicles used to remove resource from site. 	D	4	M21	

REF	Step/Area/Activity	Potential Incident Unwanted Event	Type of Impact etc.	Unmanaged Hazard			Current or Proposed Control	Managed Hazard			Status
				Prob	Conseq	Inherent Risk Ranking		Prob	Conseq	Final Risk Ranking	
3.4	Traffic on site	Vehicle movement on site can lift dust settled on the paved surface and release particles to the air. Receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health	Environmental. Health & Harm	C	4	M17	<ul style="list-style-type: none"> Hardstand roads. Scheduled sweeping services. Traffic Management Plan. 10kmh speed limit on site. Signage in place. CCTV installed. 	E	4	L24	
3.5	Transport off-site	Receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health. Possible Chain of Responsibility breach.	Environmental. Health & Harm	C	4	M17	<ul style="list-style-type: none"> Tarpaulin covers on tipper vehicles. Enclosed pneumatic tankers. Concrete agitator bowls is a wet process. Chain of responsibility process in place. Trained personnel loading trucks. Tyre wash down at slump stand if required. 	E	4	L24	
4.0 Storage & Maintenance											
4.1	Silos	Silo malfunction in an external environment can release dust particles to the air. Receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health	Environmental. Health & Harm. Resource Inefficiency. Property Damage.	C	3	M13	<ul style="list-style-type: none"> Pneumatically controlled pumped from tanker to silo via airslide under slightly negative pressure. Dust Collectors at each transfer point. Silo top filters replaced periodically according to MEX maintenance regime/inspections. High/Low level alarms to prevent overfilling Overflow pressure relief valves. Spare filter cartridges held on site. Operator training and verification of competency conducted on tanker transfer. Welded silos. (No flanged weak points.) Preventative maintenance program in place. 	E	4	L24	
4.3	Bunker bays	Fine materials can lift off from bunker bays in dry, windy conditions. Receptors adjacent to the site and personnel on site could be exposed to dust which has the potential to impact on amenity and health.	Environmental. Health & Harm.	B	4	S12	<ul style="list-style-type: none"> Materials are purchased as slightly wetted prior to receipt. BRM tipped into three-walled bunker bays with overhead roof. Bunker bays raked by FEL so that materials do not extend above the height of the bays or in front. Sprinkler system fitted to bunker bays to be turned on at delivery and on hot windy days. 	C	4	M17	

REF	Step/Area/Activity	Potential Incident Unwanted Event	Type of Impact etc.	Unmanaged Hazard			Current or Proposed Control	Managed Hazard			Status
				Prob	Conseq	Inherent Risk Ranking		Prob	Conseq	Final Risk Ranking	
5.0	Moisture Events										
5.1	Moisture Events including rain and dew	If dust escapes and settles and mixes with water the resulting alkaline solution can cause damage to property. Discharge to land, groundwater or surface waters via public drainage network could potentially amount to contamination.	Environmental. Health & Harm. Resource Inefficiency. Property Damage. Contamination.	B	3	H8	<ul style="list-style-type: none"> - All of the above. - Site Stormwater Plan designed by David Wills & Associates. - High point ridges direct any contaminated water in immediate vicinity of production to slurry waste bins. Which is then pumped to storage tanks for re-use in production. - Extended catchment outside of production area grades to soakwells with HD gully connected to wedge pit. - Wedge pit has removable concrete beams to treat dirty water. - Mobile sweeper service. - Regular inspection of property and cleaning regime. 	D	3	M18	



ENVIRONMENTAL POLICY

Purpose

BGC (Australia) Pty Ltd seeks excellence in every aspect of business including minimising the impact our business operations may have on the environment. This Policy outlines our commitments in balancing the economic, social and environmental needs of sustainable development throughout our quarrying, transport, manufacturing, construction, contracting and administration activities.

Application

Responsibility for the application of this Policy rests with all BGC employees and sub-contractors engaged in activities under our operational control. This policy will be reviewed periodically.

BGC (Australia) Pty Ltd is committed to:

- Reduce, reuse and recycle our waste, and ensure appropriate disposal;
- Increase our energy efficiency per volume production, kilometre travelled & m² of office space;
- Conserve water use per volume production and m² of office space;
- Reduce the greenhouse gas emissions intensity of our activities;
- Measure and monitor our waste, water and energy use, and greenhouse gas emissions;
- Prevent pollution of the environment;
- Integrate environmental considerations into our purchasing decisions;
- Influence our supply chain to realise mutually beneficial environmental outcomes;
- Meet relevant environmental legislation, regulations and standards;
- Ensure that staff, customers & suppliers are made aware of our Environmental Policy;
- Continually improve our environmental performance.

BGC (Australia) Pty Ltd is dedicated to the fulfilment of the above commitments and seeks the full support of all employees, sub-contractors and visitors to BGC (Australia) Pty Ltd sites. Instructions, procedures and training will be resourced as necessary to support this policy.

A handwritten signature in blue ink, appearing to read 'S. Buckeridge'.

Sam Buckeridge
Director

5 June 2017

ATTACHMENT F

Waste and Dust Management Plan

BGC

Concrete Batching Plant

1. Servicing and Management

Waste:

- Washout system to suit 5m³ and 7m³ agitator trucks, anticipate that the system will need to be cleaned out on a two (2) week cycle, dry material removed from site.

Discharges:

- Not anticipated, see below for controls.

2. Control Methods

Refer to following management plans.

We do not anticipate holding large quantities of fuel on site, all vehicles will use local service stations for fuel, charge card facility currently established by BGC for such purposes, this will be extended to plant based trucks. Small above ground self-bunded diesel tank approximately 10,000 litres to service loader and emergency truck requirements.

Operating Hours:

Anticipated hours are (generally) 12 to 14 hours per day, six (6) days a week. There may be rare occasions where the plant will operate on a Sunday or public holiday. We are aware of the need to comply with *Environmental Protection (Noise) Regulations 1997*.

If any further information is required please contact Phil Hobbs (08) 6220 4718 or 0417 181 022.

3. Waste Management Objectives

The following Waste and Dust Management Plan ('WDMP') addresses the general operation of the proposed concrete batching plant within Lot 105 (No. 2) Clune Street, Bassendean.

The content and requirements of the *Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998* ('the Regulations') (Attachment One) has been considered in the formulation of this WDMP.

The design, operation and management of the proposed development must comply with the Regulations at all times.

This WDMP effectively addresses the appropriate containment and disposal of waste. The WDMP has been prepared to ensure that waste is entirely contained within the subject site boundaries.

4. Waste Generation

It is acknowledged that waste generation will occur from the use of the site.

4.1 Waste Systems

The following provides guidance for 'best practice' with the most common materials that will be segregated on site and disposed of via the contracted waste removal service.

4.1.1 Colour Pigments, Steel Fibres, Silica Fume and Waterproofing Admixtures

Designated material bins to collect packaging from colour pigments, steel fibres, silica fume and waterproofing admixtures, contained within bin enclosures constructed of masonry/concrete material.

4.1.2 Silt Free Water

Settlement ponds and above ground bins will be used to accept concrete 'wash out' water. Silt free water will be recycled and reused in the manufacturing process.

4.1.3 Concrete Waste

Concrete waste will be removed from site when moisture content is less than 20% by the landowner's contractors or in the alternate BGC Transport

4.1.4 Recycling Water and Water Management

Recycling pumps with level switches will transfer waste water for storage and reuse in the manufacture of concrete. Water source for the facility will be from an approved bore to be constructed at the subject site. Licences from the Department of Water to construct a bore and take water have been obtained. The estimated annual bore water take is approved for up to 45,000kL.

All excess water draining off the loading area, used to wash out agitator trucks, or to clean up slit, drained off sealed or paved areas is to be directed into the slurry waste bin area.

4.1.5 Aggregate Recycling Facility

A recycling plant may be incorporated to recover aggregates and encourage reuse.

5. Waste Collection

Waste will be collected by the waste contractor from the waste bin locations. The waste contractor will have direct access to these areas. The waste contractor will be responsible for collecting the bins from the bin enclosures. The waste contractor will be made aware of any specific management requirements.

5.1 Waste Contractors

Waste will be collected through a private waste contractor, under BGC contract.

5.2 Frequency

The final frequency of the collection and disposal of waste will be collected as frequently as required to ensure that waste does not overflow by the stores contractor.

6. Vehicle Types and Movements

6.1 Imported Material

The following vehicles will deliver materials to the subject site:

- Aggregate deliveries (up to 27.5m in length) – approximately 29 per day;
- Cement deliveries (up to 27.5m in length) – approximately 5 per day; and
- Admixture/pigment deliveries (light trucks 3-5 tonne) – approximately 2 visits per week.

All vehicles will enter/exit the subject site via Clune Street.

6.2 Exported Material

The following vehicles will export material from the subject site:

- Concrete agitator trucks 115 vehicles per day;
- Concrete waste approximately 1 vehicle (road train) per fortnight; and
- Waste collection vehicles as required.

All vehicles will enter/exit the subject site via Clune Street.

7. Dust Management Plan

The following outlines the measures incorporated into the concrete batching plant design to ensure compliance with the Regulations.

7.1 Introduction

Airborne dust in concrete plants is associated with raw materials namely aggregates and cement. It has the potential to occur when material is transported onto site, transferred on site and is affected by wind conditions. Controls are required to ensure dust is managed through sound procedures, systems and the implementation of specific plant design features.

7.2 Training

All supervisory and site personnel are to receive training on dust (and noise) management as required by the Regulations.

In-house training of personnel on dust control issues will form part of the site induction process. Reinforcement of such will occur on a daily basis by supervisory plant personnel and management during routine visits. The company currently has a Production Manager, two (north and south) Plant Supervisors who are responsible for dust control in the company's existing facilities.

7.3 Plant/Equipment

The proposed plant/equipment will be fitted with the following design features to minimise dust:

- Reverse pulse cement filters x 2 (34m²);
- High and low level audio alarm indicating levels to eliminate equipment from over filling and the filter bag being inundated;
- A Dustotech vacuum system at point of loading to direct all visual fine cement dust into silos;
- Relief valves to be attached to the filters to ensure safe operation of plant;
- Cement filters will be serviced/replaced as necessary at six (6) month intervals;
- A spare set of filter bags to be held on-site at all times for emergency replacement; and
- Sealed penetrations to the cement silos and weigh hoppers, including inspection and service hatches.

7.4 Aggregate Delivery

All aggregate trucks will be equipped with the following measures to prevent dust:

- All aggregate trucks will be covered when arriving and departing the subject site;
- Coarse aggregate from stock piles at quarry will be moistened; and
- A water truck will be on-site to wet the ground, suppressing dust in the summer months.

It should be noted that the yard will be fully sealed to eliminate dust during on-site vehicle movements.

7.5 Raw Materials Transfer and Storage

When raw materials are to be transferred to or from the subject site, covers to the main stacker radial conveyor will be used. When storing raw materials the following measures will be in place to prevent dust:

- Reticulated ground bins to facilitate dust free loading;

- Dust covers to overhead bins to eliminate windblown dust at higher level; and
- Height limit signs will be placed on the ground bins to ensure all raw materials remain below the height of the walls.

7.6 Truck Loading and Slumping

The following measures will be used when loading trucks at the subject site:

- The loading cell will be equipped with a 'hood' which is connected to a Dustotech vacuum system to minimise dust emissions at the point of loading;
- A slump stand positioned near the exit will be used to wash down trucks prior to exiting the subject site;
- All trucks are to be free from dust on exiting the subject site.

Attachment A

Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998



Western Australia

Environmental Protection Act 1986

**Environmental Protection (Concrete Batching
and Cement Product Manufacturing)
Regulations 1998**

As at 06 Feb 2004

Version 01-a0-08

Extract from www.slp.wa.gov.au, see that website for further information

Reprinted under the
Reprints Act 1984 as
at 6 February 2004

Western Australia

Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998

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Defined terms



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Environmental Protection Act 1986

Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998

1. Citation

These regulations may be cited as the *Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998*¹.

2. Interpretation

In these regulations —

agitator means a tank attached to a concrete mixing truck, or other plant, in which the ingredients of concrete are mixed;

aggregate means broken stone, brick or gravel which forms one of the ingredients of concrete;

cement means argillaceous and calcareous materials used in cement products;

cement product manufacturing means the manufacturing of products in which cement or concrete is the principal ingredient;

concrete means a mixture of cement, sand, aggregate and water;

concrete batching means the production, or batching and loading for transport, of concrete;

r. 3

filter means a bag, cartridge or other device used in an air cleaning system to collect dust;

operator means a person carrying on concrete batching or cement product manufacturing;

premises, in relation to an operator, means the premises at which the operator carries on concrete batching or cement product manufacturing;

weigh hopper means plant or equipment by which the ingredients of concrete are weighed before being loaded into an agitator.

3. Minimization of dust

- (1) An operator must not carry on concrete batching or cement product manufacturing unless it is carried on in such a manner that no visible dust escapes from the premises (or if there are no defined boundaries to the premises, no such dust escapes onto any place to which the public has access).
- (2) An operator must immediately clean up any material spilt during concrete batching or cement product manufacturing.

4. Control of dust from trafficable areas

- (1) An operator must ensure that all parts of the premises to which vehicles have access —
 - (a) are either —
 - (i) paved or sealed; or
 - (ii) treated with water or surfactants as often as is necessary;
 - and
 - (b) are swept, hosed or otherwise cleared of any loose aggregate, sand, cement, concrete or other material as often as is necessary,

to prevent loose material adhering to vehicles and to minimize dust.

- (2) An operator must not allow any vehicles carrying concrete, or any of the ingredients of concrete, to leave the premises until it has been washed free of cement slurry and dust.

5. Storage of aggregate and sand

- (1) An operator must store all aggregate and sand kept on the premises in storage bins or bays which are designed to minimize airborne dust, or where the use of such bins or bays is not practicable, in stockpiles on the ground.
- (2) An operator must not allow the height of aggregate or sand in a storage bin or bay to exceed the height of the bin or bay (including any windshields fitted to it).
- (3) Where aggregate or sand is stored in a stockpile on the ground the operator must keep it covered or damp, or otherwise treat it, so as to minimize airborne dust.
- (4) If, during the unloading of aggregate or sand, any visible dust escapes from the premises the operator must ensure that unloading stops immediately and does not resume until appropriate measures have been taken to prevent the escape of the dust from the premises.

6. Storage of cement

- (1) An operator must store all cement kept on the premises —
 - (a) in bags; or
 - (b) in a cement storage silo —
 - (i) which complies with subregulation (2); or
 - (ii) which is one of a series of interconnected silos at least one of which complies with subregulation (2).
- (2) To comply with this subregulation a cement storage silo must be fitted with —
 - (a) an air cleaning system, which complies with regulation 7, through which all air extracted from the

r. 7

silo while it is being filled must pass before it is discharged into the environment; and

- (b) either —
 - (i) a level indicator which complies with regulation 8(1); or
 - (ii) a relief valve, which complies with regulation 8(3).

- (3) An operator must seal all inspection ports, hatches and other openings to a cement storage silo while cement is being unloaded into the silo.
- (4) If, during the filling of a cement storage silo, any visible cement dust escapes from the silo the operator must ensure that no further loads of cement are unloaded into the silo until appropriate measures have been taken to prevent the escape of dust from the silo.

7. Air cleaning system for cement storage silo

- (1) The air cleaning system for a cement storage silo must —
 - (a) be either —
 - (i) a mechanical rapping air cleaning system with a minimum filter area of 23 square metres; or
 - (ii) a reverse pulse air cleaning system which reduces dust emissions to less than 50 milligrams of particulate matter per cubic metre;
 - and
 - (b) discharge air from the system into a weigh hopper or to an outlet which is within one metre of the ground.
- (2) An operator must inspect the filters, or if the system is fitted with pressure gauges for the detection of blockages or leaks, check those gauges, at least weekly and immediately clean, repair or replace any filter which is blocked or damaged or has an excessive build-up of dust.

- (3) An operator must test the air cleaning system for a cement storage silo at least weekly and if it is not working efficiently, must not unload any cement into the silo until the system is repaired.
 - (4) An operator must keep on the premises, or in a readily accessible place, sufficient spare filters to replace all such bags or cartridges used in the air cleaning systems of all cement storage silos on the premises.
- 8. Level indicator system or relief valve for cement storage silo**
- (1) A level indicator system for a cement storage silo must include —
 - (a) an audible alarm which sounds if cement stored in the silo reaches —
 - (i) 0.6 m below the inlet to the silo's air cleaning system; or
 - (ii) 2 tonnes less than the silo's maximum capacity;and
 - (b) a test circuit which indicates whether the level indicator and alarm are working correctly.
 - (2) Where a level indicator is used to comply with regulation 6(2)(b) the operator must ensure that the test circuit is activated before a load of cement is unloaded into the silo and that no cement is unloaded into the silo if the level indicator or alarm are not working correctly.
 - (3) A relief valve for a cement storage silo must be designed —
 - (a) to automatically prevent the level of cement in the silo rising above the level referred to in subregulation (1)(a)(i) or (ii); and
 - (b) so that any excess cement is piped into a weigh hopper or to an outlet which is within one metre of the ground.

r. 9

9. Movement of materials on premises and loading of agitators

- (1) An operator must not use —
- (a) a hopper, conveyor, chute, bucket elevator or transfer point to move material on the premises; or
 - (b) any area of the premises to load agitators,

unless it is —

- (c) enclosed;
- (d) fitted with wind shields, water sprays or a dust extraction system; or
- (e) otherwise designed and operated,

so as to prevent the escape of any visible dust.

- (2) An operator must maintain in good working order all wind shields, water sprays, dust extraction systems and other devices used to comply with subregulation (1).

10. Cement product manufacturing premises to be cleaned

- (1) An operator carrying on cement product manufacturing must regularly clean all inside areas on the premises to prevent the accumulation of dust on any surface.
- (2) An operator must not use water to carry out the cleaning referred to in subregulation (1) unless all fittings and electrical installations in that area of the premises are waterproof or otherwise designed to withstand water.
- (3) Subregulation (2) does not apply in relation to a building in which cement product manufacturing was being carried on before these regulations came into operation.

11. Control of waste water

- (1) An operator must ensure that —

- (a) all water draining off any area where agitators, mixers or moulds are loaded or where concrete is batched drains into a slurry pit;
 - (b) all water used to wash out agitators, mixers or moulds or to clean up spilt material drains into a slurry pit;
 - (c) all other water draining off sealed or paved areas of the premises and which is likely to contain waste material drains into a slurry pit or settling pond; and
 - (d) any water removed from, or which might overflow from, a slurry pit drains into a settling pond.
- (2) An operator must ensure that no water used in concrete batching or cement product manufacturing is discharged from the premises until —
- (a) it has been —
 - (i) through a silt trap; or
 - (ii) contained in a settling pond for long enough to allow all particulate matter to settle out;
 - and
 - (b) if the water is likely to contain hydrocarbons, it has been through an oil interceptor.

12. Slurry pits, settling ponds, silt traps and oil interceptors

- (1) An operator must not allow settled material in a slurry pit to —
- (a) dry out (except when the pit is dried out to allow the settled material to be removed); or
 - (b) be higher than 30 cm below the top of the slurry pit walls.
- (2) An operator must ensure that a settling pond is large enough to contain all water which might drain into it for long enough to allow all particulate matter to settle out.

r. 13

- (3) An operator must ensure that slurry pits, settling ponds, silt traps and oil interceptors are maintained, and emptied or cleaned as often as necessary, to ensure their efficient operation.

13. Disposal of waste

An operator must ensure that all waste created during concrete batching or cement product manufacturing (including material removed from slurry pits, settling ponds, silt traps and oil interceptors) is —

- (a) recycled; or
- (b) disposed of at an appropriate landfill site or waste treatment facility the occupier of which holds a licence under Part V of the Act in respect of that site or facility.

14. Offences and penalties

A person who contravenes any of these regulations commits an offence.

Penalty: \$5 000.

[Regulation 14 amended in Gazette 11 Dec 1998 p. 6614.]

[15. Omitted under the Reprints Act 1984 s. 7(4)(f).]

16. Transitional

- (1) Regulations 6(2), 7, 8 and 11 do not apply in relation to an existing facility until the day that is 6 months after the day on which these regulations come into operation.
- (2) In subregulation (1) —
existing facility means —
 - (a) a cement storage silo in which cement was being stored; or
 - (b) a premises at which concrete batching or cement product manufacturing was being carried on,immediately before the commencement day.

**Environmental Protection (Concrete Batching and Cement Product
Manufacturing) Regulations 1998**

Notes

- ¹ This reprint is a compilation as at 6 February 2004 of the *Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998* and includes the amendments made by the other written laws referred to in the following table. The table also contains information about any reprint.

Compilation table

Citation	Gazettal	Commencement
<i>Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998</i>	26 May 1998 p. 2958-61	26 May 1998
<i>Environmental Protection (Miscellaneous Amendments) Regulations 1998 Pt. 8</i>	11 Dec 1998 p. 6597-614	8 Jan 1999 (see r. 2)
Reprint 1: The <i>Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998</i> as at 6 Feb 2004 (includes amendments listed above)		

Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998

Defined terms

Defined terms

*[This is a list of terms defined and the provisions where they are defined.
The list is not part of the law.]*

Defined term	Provision(s)
aggregate.....	2
agitator	2
cement.....	2
cement product manufacturing	2
concrete.....	2
concrete batching	2
existing facility	16(2)
filter	2
operator	2
premises	2
weigh hopper	2

ATTACHMENT G

Contact: Steven De Piazzi (9272 0627)

Reference: 2015-246 & 2017-103



16 April 2019

Development Services
Town of Bassendean
mail@bassendean.wa.gov.au

61 Broun Avenue, Morley WA 6062
PO Box 467, Morley WA 6943

P: (08) 9272 0622
F: (08) 9272 0665
mail@bayswater.wa.gov.au

National Relay Service:
1800 555 660

www.bayswater.wa.gov.au

Dear Sir/Madam

**CONCRETE BATCHING PLANT - AMENDED APPLICATION (REMOVAL OF CONDITIONS)
LOT 105, 2-8 CLUNE STREET, BASSENDEAN**

Thank you for the opportunity to provide comment on the proposed amendments to the above mentioned development. The City has reviewed the proposed amendments and can provide the following comments:

- Reverse beepers have not been captured in the acoustic assessment (for vehicles associated with the company as well as their suppliers/contractors), and may impact on noise levels, particularly those in table 4-1 which is described to 'marginally comply'. The City is not convinced compliance with the noise regulations has been definitively demonstrated.
- The dust management plan does not indicate any dust monitoring or sprinkler system to suppress dust on site.
- It needs to be clearly demonstrated that an increase in hours of operation and intensity of the use will not result in non-compliance with the relevant regulations and/or unduly impact on adjoining properties.
- The Transport Impact Statement (TIS) should be based on the maximum concrete output the facility can produce to determine the vehicle movements and establish impact on the surrounding road network. The TIS has only applied a percentage of efficiency at a certain number of hours per day, however operation will not necessarily be restricted to that amount if the conditions are removed in their entirety. It may be more appropriate to amend the conditions to reflect the hours and efficiency indicated in the TIS.
- In modelling for projection of future traffic volume a percentage increase has been provided, however a more accurate model should be used where there is a known future development adjacent (Tonkin Highway Industrial Estate).
- Consideration should be given to the compliance of current operations at the site and regularity/severity of any complaints when contemplating increased intensity of operation.
- The proposal should be referred to the Department of Water and Environmental Regulation for comment.
- No objection to removal of conditions 6, 7, 8, 9, and 10, subject to the above and operation of the facility satisfactorily demonstrated to comply with the relevant regulations, and the TIS is amended to satisfactorily address the inadequacies outlined in the comments above.

Should you have any queries in relation to the above matter, please do not hesitate to contact Steven De Piazzi in the City's Development Approvals via steven.depiazzi@bayswater.wa.gov.au.

Yours faithfully



HELEN SMITH
DEVELOPMENT APPROVALS

Cc: Alexander Snadden <asnadden@bassendean.wa.gov.au>

Alexander Snadden

From: Annarie Boer <annarie.boer@dwer.wa.gov.au>
Sent: Friday, May 10, 2019 4:19 PM
To: Alexander Snadden
Subject: RE: Referral from the Town of Bassendean - 2-8 Clune Street, Bassendean
Attachments: image003.jpg; image004.jpg; image005.jpg; image006.jpg

Hi Alex,

It is the formal advice from DWER.

Regards,

Annarie Boer
Appeals Advisor
Regulatory Services

Department of Water and Environmental Regulation

Prime House

8 Davidson Terrace, JOONDALUP WA 6027

Locked Bag 10, JOONDALUP DC WA 6919

T: (08) 6364 6415 | reception: (08) 6364 7000

email: annarie.boer@dwer.wa.gov.au | web: www.dwer.wa.gov.au | www.epa.wa.gov.au

Twitter: [@DWER_WA](https://twitter.com/DWER_WA) | [@EPA_WA](https://twitter.com/EPA_WA)

From: Alexander Snadden [mailto:asnadden@bassendean.wa.gov.au]
Sent: Friday, 10 May 2019 2:43 PM
To: Annarie Boer <annarie.boer@dwer.wa.gov.au>
Subject: RE: Referral from the Town of Bassendean - 2-8 Clune Street, Bassendean

Hi Annarie,

Can I assume this is the formal response from DWER?

Regards,

Alex Snadden
Planning Officer
Development Services

 9377 8024

 mail@bassendean.wa.gov.au

 www.bassendean.wa.gov.au



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From: Annarie Boer [<mailto:annarie.boer@dwer.wa.gov.au>]
Sent: Thursday, May 9, 2019 2:51 PM
To: Alexander Snadden <asnadden@bassendean.wa.gov.au>
Subject: RE: Referral from the Town of Bassendean - 2-8 Clune Street, Bassendean

Dear Alex,

Apologies for the delay in responding.

Our regional delivery team has forwarded this application to the DWER's Regulatory Services section to comment on requirements under Part V of the *Environmental Protection Act 1986* (EP Act).

I have reviewed the provided application and can advise that the applicant holds a registration for the operation 'Concrete batching of cement production manufacturing' for the premises at 2 Clune Street, Bassendean with the Department of Water and Environmental Regulation (DWER). Registrations are issued for activities covered in Part 2 of Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) and generally are associated with a lesser degree of risk of environmental harm than activities covered in Part 1 of Schedule 1 of the EP Regulations. Registrations do not contain conditions.

The premises are regulated under the *Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998*, the *Environmental Protection (Noise) Regulations 1997* and the *Environmental Protection (Unauthorised Discharges) Regulations 2004*, including infringement notices.

Best regards,

Department of Water and Environmental Regulation Prime House
8 Davidson Terrace, JOONDALUP WA 6027
Locked Bag 10, JOONDALUP WA 6919
T: (08) 6364 7000 | F: (08) 6364 7001
E: info@dwer.wa.gov.au | www.dwer.wa.gov.au

From: Alexander Snadden [<mailto:asnadden@bassendean.wa.gov.au>]
Sent: Tuesday, 12 March 2019 2:37 PM
To: Info <info@dwer.wa.gov.au>
Subject: Referral from the Town of Bassendean - 2-8 Clune Street, Bassendean

Dear Sir/Madam,

Please be advised the Town has received an application to request to remove conditions of approval on an existing development for the BGC concrete batching plant at No. 2 – 8 Clune Street, Bassendean. The proponent seeks to remove conditions that currently restrict their operational capacity.

A brief summary of the application is as follows:

- The proponent seeks the deletion of conditions that primarily restrict the operational capacity, namely:
 - Condition 6, which relates to the restriction of operating hours;

- Condition 7, 9 and 10, which relate to the annual output of the facility, the average & maximum daily production capacity, and reporting requirements to the Town; and
 - Condition 8, which relates to the restriction of access to and from the site on Sundays and public holidays by trucks and semi-trailers.
- In support of the application the proponent has submitted a detailed justification letter, accompanied by an acoustic report, waste and dust management plans (electronic versions attached for your reference), and a revised traffic management plan.

Prior to the Town making a determination on the application, we would like to extend the opportunity to the Department to provide comment on the matter.

Attached is a copy of the Towns request for Land Use Planning Advice, and a copy of the relevant development plans and technical documents.

It is requested that your comments are provided to the Town at your earliest convenience, however, if comment is not received from the Department, within 42 days from the date of this email (being the 23 April 2019) it will be assumed you have no comment or objection on the matter and the Town will make a determination accordingly.

Should you have any queries please do not hesitate to contact myself on 9377 8024.

Kind Regards,

Alex Snadden
Planning Officer
Development Services

☎ 9377 8024

✉ mail@bassendean.wa.gov.au

🌐 www.bassendean.wa.gov.au



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ATTACHMENT NO. H



Minister for Environment; Disability Services
Deputy Leader of the Legislative Council

Your Ref: DABC/BDVAPPS/2015-246; OLET-6649217
Our Ref: 62-01190

Mr Bob Jarvis
Chief Executive Officer
Town of Bassendean
PO Box 87
BASSENDEAN WA 6934

Document #: ILET-12202017
Date: 12.06.2017
Officer: BRIAN REED
File: DABC/BDVAPPS/2015-246



Dear Mr Jarvis

Thank you for your letter dated 1 May 2017 regarding the approval for the construction of a concrete batching plant at Clune Street in Bassendean.

I understand that you are seeking a review of the works approval granted by the Department of Environment Regulation (DER) to BGC (Australia) Pty Ltd on 19 January 2017.

Concrete batching plants can be a source of significant public concern, due to the possibility of health and amenity impacts from dust and noise emissions if not properly managed. On receipt of your letter I asked DER to provide me with an explanation of the decision-making that led to the grant of the works approval.

I am advised that the proposed premises at Clune Street have been the subject of a risk-based assessment carried out by DER. The assessment included consideration of the risks associated with noise and dust emissions from the premises, and concluded that those emissions could be acceptably managed with design and operation requirements and given the location of the premises within an industrial area, separated from residences by other industrial sites and a road and rail corridor. I have attached a copy of the works approval and DER's decision report for your information.

I am also advised that the operator of the premises will be required to construct and operate the facility in accordance with the requirements of the works approval and the *Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998* (Concrete Batching Regulations). Those regulations contain a number of requirements for the control of dust emissions, including a requirement that the plant must be operated in such a way that no visible dust escapes from the premises.

I am further advised that DER will continue to monitor the premises to ensure compliance with the works approval and the Concrete Batching Regulations.

I recognise the level of concern in the community around concrete batching plants. In this instance, in considering the works approval application by BGC (Australia) Pty Ltd, the Department did assess the risk associated with dust emissions, which I understand to be the principal concern of your constituents, and found that the risk can be acceptably managed. In the circumstances, it would not be appropriate for me to intervene in DER's regulatory functions.

Yours sincerely



Hon Stephen Dawson MLC
MINISTER FOR ENVIRONMENT

Att.

12 JUN 2017



Works Approval Number W5986/2016/1

Works Approval Holder BGC (Australia) Pty Ltd

Works Approval Holder ACN 005 736 005

Registered business address 18 Mount Street
PERTH WA 6000

Address for notifications PO Box 7223
CLOISTER SQUARE WA 6850

Duration

Commencement date	Expiry Date
23/01/2017	22/01/2020

Prescribed Premises Category 77 – Concrete batching or cement products manufacturing

Premises BGC Clune Street
2 Clune Street
BASSENDEAN WA 6054

Being Lot 105 on Diagram 62913
Certificate of Title Volume 2110 Folio 480

This Works Approval is granted to the Works Approval Holder, subject to the following conditions, on 19/01/2017, by:

Date Signed: 19 January 2017

Danielle Eyre

Senior Manager – Industry Regulation (Resource Industries)

an officer delegated under section 20 of the Environmental Protection Act 1986 (WA)

Premises Description

The **Works Approval Holder** is proposing to construct a concrete batching plant at 2 Clune Street, Bassendean.

The **Works Approval Holder** will be carrying out activities at the Premises which fall within *Category 77 – Concrete batching or cement products manufacturing*, and as such the **Premises** are deemed Prescribed Premises under the **EP Act**.

Conditions

Environmental compliance

1. The **Works Approval Holder** must comply with the EP Act and all regulations prescribed under the EP Act applicable to the Premises including:
 - (a) The duties of an occupier under s 61;
 - (b) The duty to notify the CEO of discharges of waste under s 72; and
 - (c) Not causing, or doing anything that is likely to cause, an offence under the EP Act,

except where the **Works Approval Holder** does something in accordance with a **Condition** which expressly states that a defence under s 74A of the **EP Act** may be available.

Premises

2. The **Works Approval Holder** must carry out the Works within the **Premises** in accordance with the requirements set out in Schedule 2.
3. This **Works Approval** applies to the **Premises** defined in the *Premises Description Table*, and as depicted in the Premises Map in Schedule 1.

Premises Description	
General Location	Legal land description, reserve or tenement
2 Clune Street Bassendean WA 6054	Lot 105 on Diagram 62913 Vol 2110 Folio 480

Location of Works

4. The **Works Approval Holder** must locate the Works generally in accordance with the Site Plan in Schedule 3 and the Stormwater Management Plan in Schedule 4.

Infrastructure and Equipment

5. Subject to Condition 7, at least 10 business days prior to the commencement of the Works, The **Works Approval Holder** must provide to the **CEO** engineering or building certification from a suitable qualified professional confirming that the detailed construction drawings and plans for the Works include each item of infrastructure or component of infrastructure specified in column 1 with the requirements specified in column 2, as set out in the Infrastructure Requirements Table below.
6. Subject to Condition 7, on completion of the Works, the **Works Approval Holder** must provide to the **CEO** engineering or building certification from a suitably qualified professional confirming each item of infrastructure or component of

infrastructure specified in column 1 with the requirements specified in column 2, as set out in the Infrastructure Requirements Table below have been constructed with no material defects.

7. The **Works Approval Holder** must not depart from the requirements specified in column 2 of the Infrastructure Requirements Table except:
- (a) where such departure does is minor in nature and does not materially change or affect the infrastructure; or
 - (b) where such departure improves the functionality of the infrastructure and does not increase risks to public health, public amenity or the environment;
- and all other Conditions in this **Works Approval** are still satisfied.
8. If Condition 7 applies, then the **Works Approval Holder** must provide the **CEO** with a list of departures which are certified as complying with Condition 7 at the same times, and from the same professional, as the certifications under Conditions 5 and 6.

Infrastructure Requirements Table	
Column 1	Column 2
Infrastructure	Requirements (Design and Construction)
Trafficable areas	Bitumised or paved yard with designated parking, buildings and equipment areas.
	Paved areas graded to direct water to stormwater and wastewater management systems.
Material Bins for the storage of sand and aggregate	<p>Material Bins:</p> <ul style="list-style-type: none"> - Four concrete above-ground bins, one each for 20mm aggregates, 10mm aggregates, 2mm aggregates and sand. - Three sided; dimensions of 3m high x 8.25m width each; and - Each fitted with a sprinkler system.
Feed Hopper	With an enclosed transfer point to conveyor.
Radial conveyor	Fully covered radial conveyor used to transport raw material from the Feed Hopper to the Overhead Feed Bins.
Overhead Feed Bins	Overhead Feed Bins equipped with a raised wind shield for dust control.
Cement Silos	<p>Cement Silos:</p> <ul style="list-style-type: none"> - Two 45 tonne cement silos integrated within the Batch Plant Body. - Designed in accordance with Regulation 8 of the <i>Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998</i>, including: <ul style="list-style-type: none"> • High and low level alarms for filling; • Overflow pressure relief valve; and • Visual instrumental monitoring cement filling operating from control room/office.

Infrastructure Requirements Table	
Column 1	Column 2
Infrastructure	Requirements (Design and Construction)
Baghouse	Designed in accordance with Regulation 7 of the <i>Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998</i> . Dust emissions concentration to be less than 50 mg/m ³ .
Concrete batching plant with incorporated computer system to control and monitor flow	Steelfields Major 60 design standalone mobile plant.
Slurry Waste Bins	Two below ground level Slurry Waste Bins: <ul style="list-style-type: none"> - Graded to allow collection of storm water and wash water ; - Concrete lined to ensure no discharge to the environment occurs; and - Total volume of approximately 60m³. Pipework and associated fittings to allow wastewater from the Slurry Waste Bins to be transported to the Water Tank.
Wet Waste Bins	Two above ground Wet Waste Bins: <ul style="list-style-type: none"> - Volume of approximately 90m³ combined; - Concrete walls and floor; and - Containing weir to allow overflow into Slurry Waste Bins.
Dry Waste Bin	One above ground Dry Waste Bin: <ul style="list-style-type: none"> - Volume of approximately 40m³; and - Concrete walls and floor.
Water Tank	A 50 000L tank used to store returned waste water from the Slurry Waste Bins.
Stormwater System	Designed in accordance with <i>Schedule 4 Storm Water Plan</i> including: <ul style="list-style-type: none"> • Settlement Chamber: <ul style="list-style-type: none"> - Located to collect stormwater runoff from the materials storage and handling area; - Concrete-lined and designed to remove suspended solids by sedimentation; - Have a treatment chamber designed for storage requirements based on a 1 in 1 year, 1-hour average recurrence interval (ARI) storm event; and - Designed to allow access by machinery to facilitate the removal of suspended solids. • Soakwells • Associated piping.

Records and Information

9. The **Works Approval Holder** must maintain accurate records including information, reports and data in relation to the Works.
10. All information and records required under this **Works Approval** must:
 - (a) be legible;
 - (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval; and
 - (c) be retained for 6 years after the expiry of this **Works Approval**.

Reports

11. If requested by the **CEO** from time to time, the **Works Approval Holder** must provide the **CEO** with reports or information relating to the Works, the Premises or any condition in this **Works Approval** (including data from any monitoring conditions or environmental risk assessment studies).
12. Reports or information must be in such form as the **CEO** may require in a **CEO Request**.

Requests for Information

13. The **Works Approval Holder** must comply with a **CEO Request**, within 7 days from the date of the **CEO Request** or such other period specified in the **CEO Request**.

Definitions and Interpretation

Definitions

In this Works Approval, the following terms have the following meanings:

CEO Request means a request made by the CEO to the Works Approval Holder in writing, sent to the Works Approval Holder's address for notifications, as described at the front of this Works Approval, in relation to:

- (a) information, records or reports in relation to specific matters in connection with this Works Approval including in relation to compliance with any conditions and the calculation of fees (whether or not a breach of condition or the EP Act is suspected); or
- (b) reporting, records or administrative matters:
 - (i) which apply to all Works Approvals granted under the EP Act; or
 - (ii) which apply to specified categories of Works Approvals within which this Works Approval falls.

Condition means a condition to which this Works Approval is subject under s 62 of the EP Act.

discharge has the same meaning given to that term under the EP Act and, in relation to waste or other matter, includes deposit it or allow it to escape, or cause or permit it to be, or fail to prevent it from being, discharged, deposited or allowed to escape.

EP Act means the *Environmental Protection Act 1986 (WA)*.

EP Regulations means the *Environmental Protection Regulations 1987 (WA)*.

Premises refers to the premises to which this Works Approval applies, as specified at the front of this Works Approval and as shown on the map in Schedule 1 to this Works Approval.

Works Approval refers to this document, which evidences the grant of Works Approval by the CEO under s 57 of the EP Act, subject to the conditions.

Works Approval Holder refers to the occupier of the Premises being the person to whom this Works Approval has been granted, as specified at the front of this Works Approval.

Interpretation

In this Works Approval:

- (a) the words 'including', 'includes' and 'include' will be read as if followed by the words 'without limitation';
- (b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- (c) where tables are used in a Condition, each row in a table constitutes a separate Condition; and
- (d) any reference to an Australian or other standard, guideline or code of practice in this Works Approval means the version of the standard, guideline or code of practice in force at the time of granting of this Works Approval and includes any amendments to the standard, guideline or code of practice which may occur from time to time during the course of the Works Approval.

Schedule 1: Maps

Site Location Map



Premises Map

The *Premises* are shown in the map below. The pink line depicts the boundary to the *Premises*.

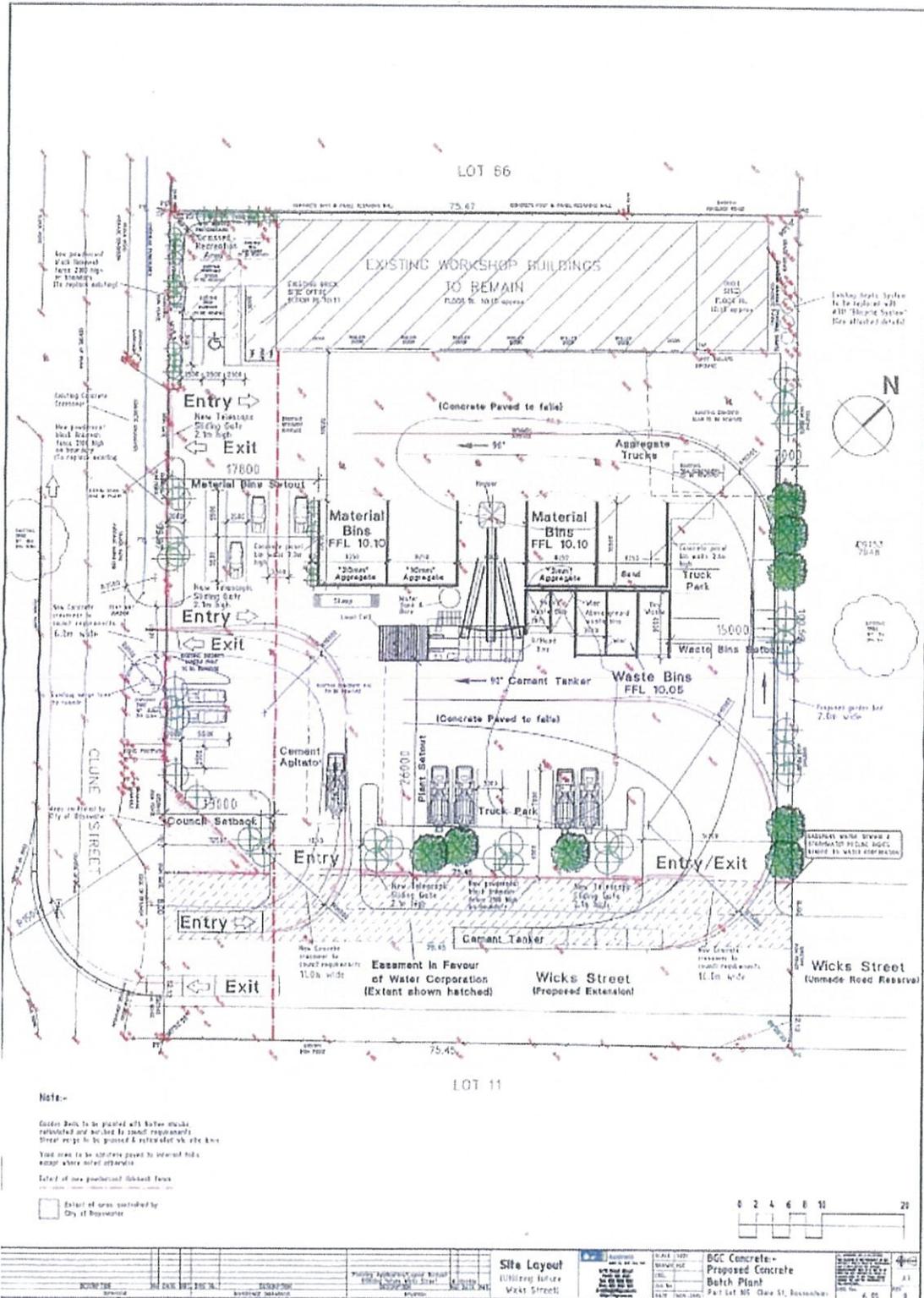


Schedule 2: Works

The Works to be carried out on the Premises are specified in the table below:

Item	Works	Specifications/Drawings
1	Site works and construction of remaining paving.	BGC (Australia) Pty Ltd works approval application and supporting documentation received 26 August 2016 and supporting documentation received 30 September 2016. Site Stormwater Management Plan from David Wills and Associates Consulting Engineers date 18 November 2016.
2	Delivery and positioning of mobile concrete batching plant including overhead feed bins, cement silos, feed hopper and radial conveyor.	
3	Construction of stormwater management system including Settlement Chamber, soak wells and associated piping.	
4	Construction of concrete below ground Slurry Waste Bins, and above ground Wet Waste Bins and Dry Waste Bins.	

Schedule 3: Site Plan





Application for Works Approval

Division 3, Part V *Environmental Protection Act 1986*

Applicant:	BGC (Australia) Pty Ltd
ACN:	005 736 005
Works Approval Number:	W5986/2016/1
File Number:	DER2016/001753
Premises:	BGC Concrete (Bassendean) Lot 105 on Diagram 62913 Certificate of Title Volume 2110 Folio 480 Being 2 Clune Street BASSENDEAN WA 6054
Date of report:	19 January 2017
Status of Report	Final

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Appendix 3: Site Location Map

Attachment 1: Issued Works Approval W5986/2016/1

Definitions of terms and acronyms

Term	Definition
Category/Categories (Cat.)	Categories of prescribed premises described in Schedule 1 of the EP Regs
DER	Department of Environment Regulation
EP Act	means the <i>Environmental Protection Act 1986</i>
EP Regs	means the <i>Environmental Protection Regulations 1987</i>
Premises	As defined in the EP Act. Means residential, industrial or other premises of any kind whatsoever and includes land, water, and equipment
Prescribed Premises	Premises of the types listed in Schedule 1 of the EP Regs.
ToB	Town of Bassendean
DoW	Department of Water
SAT	means the State Administrative Tribunal, Western Australia

1. Purpose and Scope of Assessment

BGC (Australia) Pty Ltd submitted a Works Approval application on 26 August 2016, to construct and operate a concrete batching plant at Lot 105 on Diagram 62913 being 2 Clune Street, Bassendean.

2. Background

BGC (Australia) Pty Ltd (BGC) is a Western Australian privately owned group of companies with interests in residential and commercial construction and product supply.

BGC proposes to operate a concrete batching plant for residential and commercial supply of concrete for a *Category 77: concrete batching or cement products manufacturing* under the *Environmental Protection Regulations 1987*. The proposed premises in Bayswater will be constructed on land leased by BGC from Keppel Holdings Pty Ltd. The term of the lease is 10 years with an option to renew for another 10 years.

Table 1 describes the prescribed premises category and the infrastructure that will be constructed. The existing workshop buildings will be used to conduct office and workshop activities for the new business.

Table 1: Prescribed Premises Categories

Classification of Premises	Description	Estimated annual production	Schedule 1 Category Threshold
Category 77	Concrete batching or cement products manufacturing: premises on which cement products or concrete are manufactured for use at places or premises other than those premises.	192, 000 tonnes per year	100 tonnes or more per year

3. Overview of premises

3.1 Infrastructure

The facility infrastructure, as it relates to Category 77 activities, is detailed in Table 2, with reference to the Site Plan (attached in the issued Works Approval).

Table 2: BGC Facility Category 77 Infrastructure

	Infrastructure
	Prescribed Activity Category 77
1	Graded hardstand
2	Four raw material bins to store 20mm aggregate, 10mm aggregate, 2mm aggregate and sand, with 3m high concrete panel walls and 8.25m width.
3	A hopper with a covered inclined conveyor to overhead material feed bins.
4	Two above ground waste bins with weirs to separate silt and water and a separate dry waste bin. All waste bins are 8m by 3.6m.
5	Two slurry waste bins 5m by 2.8m each, with a 2.5m concrete panel walls on sides.

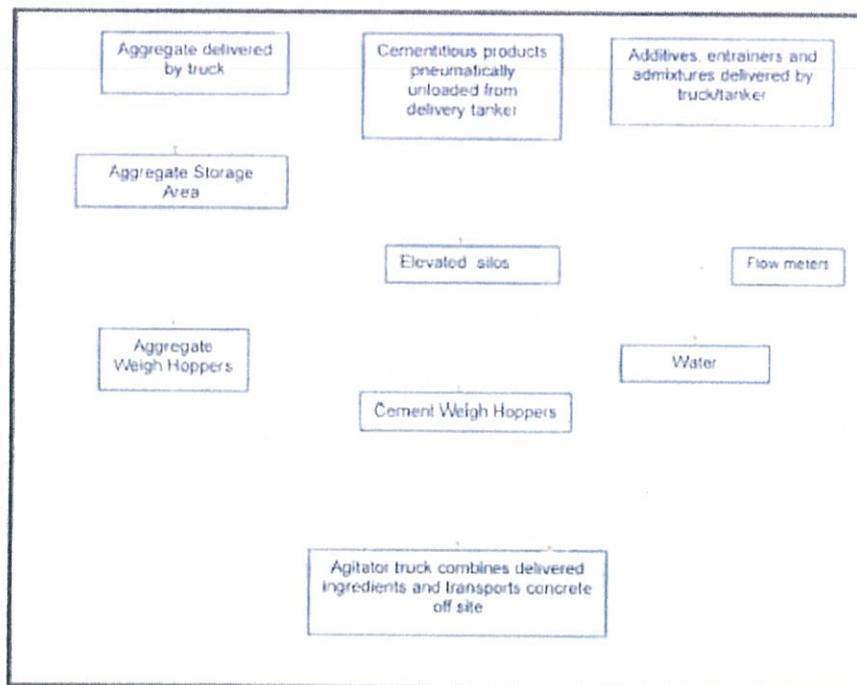
Infrastructure	
6	A slump area to suit 5m ³ and 7m ³ agitator trucks, with two-weekly clean out cycle.
7	Mobile Batching Plant
8	2 x 45 tonne cement storage silos integrated within the Mobile Batching Plant.
9	Additive storage tanks
10	Office/control room incorporated with a computer system to monitor production facility, cement silos levels, and storage bins and regulate admixture flow.
11	Site drainage including: <ul style="list-style-type: none"> • sedimentation chamber; • soakwells; • gullies; and • associated pipework.

3.2 Operational Aspects

3.2.1 Overview

The batching plant produces concrete and concrete products by mixing cement with sand, rock, aggregate and water. The mixture is combined in an agitator truck onsite and transported offsite for use. An overview of the process is presented in Figure 1. A site plan showing the layout of critical infrastructure is shown in Figure 3. The full site plan has been provided in Schedule 3 of the Works Approval document.

Figure 1: Schematic diagram of process



Source: BGC supporting documents – date 30 September 2016

3.2.2 Raw material delivery

Raw materials (cement, sand, aggregate and various additives) are delivered to the premises by BGC Transport Service via the existing Clune Street entrance. The delivery trucks are fitted with tarpaulin covers that can be activated electrically or manually to cover the material to control dust emissions. In addition, aggregates and sand have been pre-moistened at source to further reduce dust emissions when unloading onsite.

The raw materials are tipped from the covered trucks directly into one of four Material Bins: 20mm aggregate, 10mm aggregate, 2mm aggregate and sand. Each three-sided material bin is fitted with a windshield and sprinklers to minimise fugitive dust emissions.

3.2.3 Hopper and material feeding

A front end loader is used to load pre-moistened aggregates and sand into the Feed Hopper. The Feed Hopper is connected to a Radial Conveyor which has the ability to be moved laterally and fill each Overhead Feed Bin individually (see Figure 2). The Radial Conveyor is fully enclosed and the Overhead Feed Bins are covered at the top.

Figure 2: A typical radial stacker and conveyor delivering to overhead feed bins



Source: BGC supporting documents – date 30 September 2016

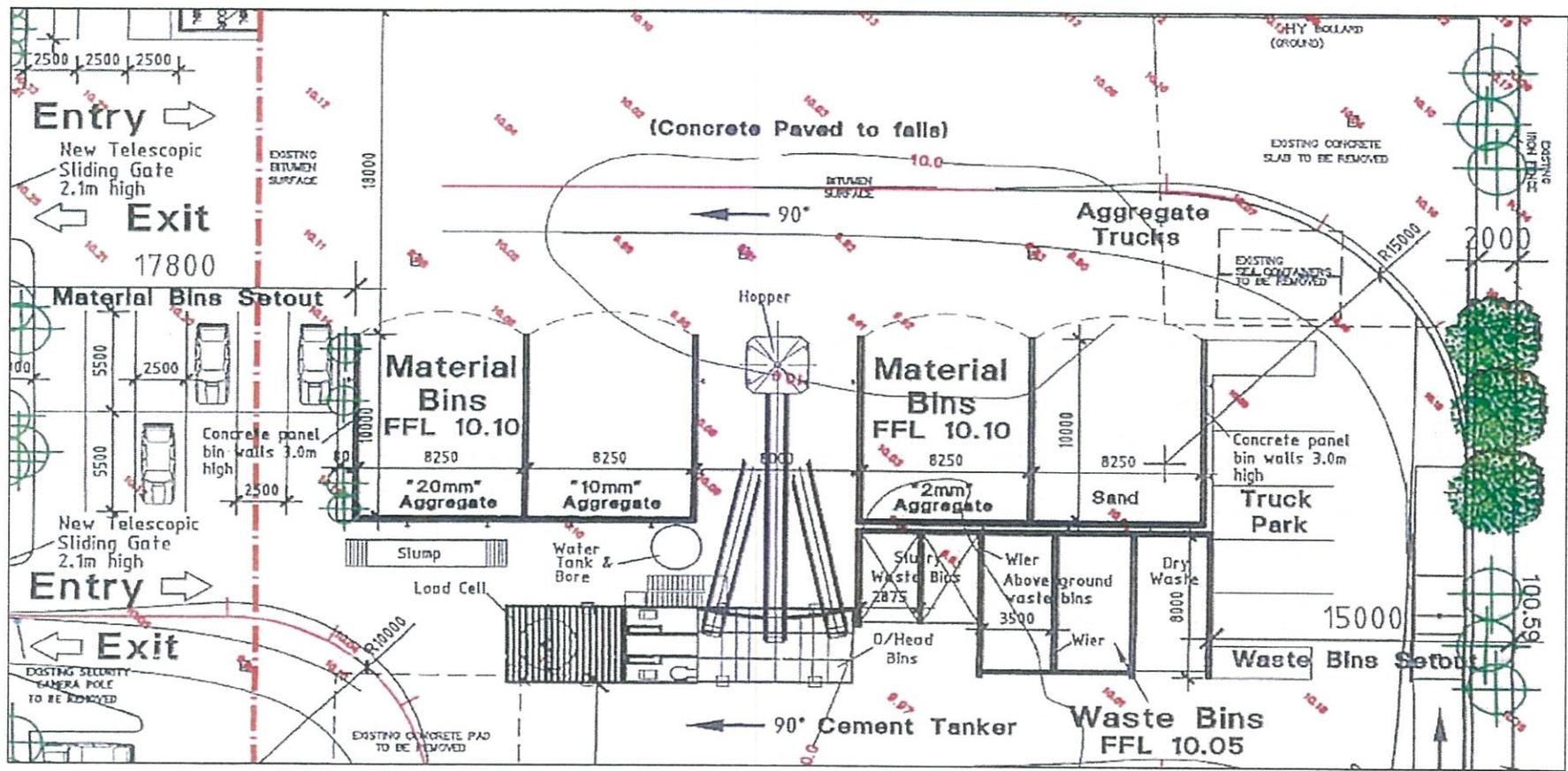
3.2.4 Cement storage

Cement used in the manufacturing process is delivered by cement tanker and stored in two 45-tonne Cement Silos housed within the batching plant body. The dry cement is pumped from the truck via a hose into the Cement Silo.

During filling of the Cement Silo, displaced air is passed through a baghouse to capture cement dust. For the proposal, cement silo filtration will use *Dustcotech* filters with an area of 34m² of filter medium. The operator will hold spare filter bags on site.

The cement silos will be fitted with high and low level alarms to prevent overfilling and visual instrumentation will be installed in the office/control room to inspect cement levels prior to filling.

Figure 3: Site layout showing critical infrastructure



Source: Site plan from BGC works approval application supporting documentation

3.2.5 Concrete manufacture

Agitator trucks will be used to prepare batches of concrete. As required, the concrete agitator trucks will reverse into the Load Cell and be loaded with weighed quantities of aggregate, sand, water and cement which have been dispensed using the automatic control system.

The concrete agitator trucks will then move to the Slump Area where water is added to adjust the workability of the concrete mixture; trucks are washed down before leaving the premises. The water used in the batching process is a mixture of bore water and partially cleaned process wastewater. The wastewater is stored in an above ground tank near the Slump Area. The additives are also stored in tanks which are connected to flow meters, enabling the batch water to be dosed for the correct amount of admixture prior to discharge to truck agitator.

A computer system is used to enable regulation of the automated production facility from the plant control room and office. The computer system is designed to monitor the operation of conveyors, material levels in silos, storage bins and admixture tanks.

3.2.6 Waste management

The Premises will use three types of bins to manage waste generated on site:

- 1) Two below ground Slurry Waste Bins to manage wash water and potentially contaminated stormwater;
- 2) Two above ground Wet Waste Bins to manage wet concrete waste; and
- 3) One above ground Dry Waste Bin to manage dry concrete waste.

Trucks are washed down in the Slump Area prior to leaving the premises. The wash water drains into two below ground Slurry Waste Bins, where concrete solids are allowed to settle. The partly clarified wastewater is pumped from the Slurry Waste Bins into the Water Tank for re-use in the process.

Saturated waste material collected from agitator trucks and sumps is temporarily stored in the above ground Wet Waste Bins. This waste material will be kept at 300mm below the top metal clad bin walls. The Wet Waste Bins are each equipped with a weir to allow water to overflow into the Slurry Waste Bins, prior to collection in the Water Tank and re-use in the concrete manufacturing process.

Dry solid concrete waste will be stored in the Dry Waste Bin. This material will be kept moist until it is disposed to licensed waste facilities.

3.2.7 Water management

Water for the concrete manufacturing process will be obtained from a combination of bore water and re-used process water. Recycled process water is contained in a Water Tank located near the Slump Area.

The site is fully paved and graded to ensure that stormwater is directed to the appropriate infrastructure based on its contamination risk. Specifically, the site is graded to separate stormwater as indicated below. (See Works Approval Schedule 4 for plan of stormwater disposal infrastructure).

1. Clean stormwater, including runoff from the roof of the existing building, is directed towards the Clune Street boundary where a series of soakwells are located.
2. Stormwater runoff from the central lot area is directed via drainage gullies to a Settlement Chamber prior to discharge to on-site soak wells. The Settlement Chamber has been sized to remove cement fine suspended solids. Flows up to a 1 in 1 year ARI storm event can be treated.
3. Stormwater potentially contaminated with cement dust and wash water generated in the

Slump Area is directed to the concrete-lined Slurry Waste Bins for recycling into the process.

4. Legislative Context

4.1 Part IV of the EP Act

4.1.1 Background

The proposal was referred by the Applicant to the EPA for consideration of potential environmental impact under Part IV of the EP Act. EPA determined that the environmental impact of the proposal was not so significant as to require assessment by the EPA and issued a notice under s39A93), dated 18 July 2016 (reference number CMS16122).

4.2 Contaminated Sites

The proposed site has not been classified under the *Contaminated Sites Act 2003*.

4.3 Planning

Development approval was granted by the State Administrative Tribunal (SAT) on 5 December 2016, subject to conditions. The Delegated Officer noted planning approval included the following conditions:

- Operation in accordance with the *Waste and Dust Management Plan* and the *Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998*;
- Operating hours restricted to 6 am to 6pm Monday to Saturday (public holidays excluded), however no front end loader may operate prior to 7am;
- annual facility output limited to 105,300m³;
- Average daily production limit (350m³) and maximum daily production limit (375m³) including reporting to the Town of Bassendean;
- fugitive dust management controls; and
- wash down water management.

4.4 Department of Water

The premises was issued with licence GWL 182137(1) by Department of Water (DoW) on 20 January 2016 to allow abstraction of groundwater from the Swan superficial aquifer.

4.5 Applicable Regulations, Standards and Guidelines

- *Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998*
- Guidance Statement: Regulatory Principles (July 2015)
- *Guidance Statement: Environmental Standards* (September 2016)
- *Guidance Statement: Land Use Planning* (October 2015)
- *Guidance Statement: Licensing and Works Approvals Process* (August 2016)

- *Guidance Statement: Setting Conditions* (October 2015)
- *Regulatory Complaints Policy* (July 2013)
- *Enforcement and Prosecution Policy* (July 2013)
- *Environmental Protection (Noise) Regulations 1997*
- *Environmental Protection (Unauthorised Discharges) Regulations 2004*
- *Environmental Protection (Controlled Waste) Regulations 2004*

4.6 Part V of the EP Act

BGC has applied for a works approval to construct a concrete batching facility at 2 Clune Street, Bassendean. The facility is a Category 77 prescribed premises, as outlined in schedule 1 of the Environmental Protection Regulations 1987.

4.7 Assessment of operator

The applicant holds thirteen registrations for Category 77 premises in Western Australia. While there have been occasional complaints, there are no outstanding issues relating to concrete batching plants operated by the applicant in DER's Incidents and Complaints Management System (ICMS).

5. Consultation

The application was advertised in the *West Australian* on Monday 19 September 2016. Letters were sent to the Town of Bassendean and a neighbour with a direct interest who resides within 500m of the proposed premises.

The Town of Bassendean replied in a letter received on 13 October 2016 advising that the application would most likely be supported subject to compliance with the relevant regulations and final planning conditions. DER was advised that planning approval was to be the subject of a SAT hearing.

The Delegated Officer wrote to the Applicant on the 23 November 2016 advising of the intent to grant a works approval, subject to conditions, and provided draft copies of the works approval and Decision Report. The Delegated Officer advised the Applicant that in accordance with DER's *Guidance Statement: Land use planning*, the works approval would not be granted until the relevant planning approvals are in place and put the Application on hold. The SAT granted planning approval on 5 December 2016, subject to conditions.

6. Location and Siting

6.1 Siting Context

The Premises is located in Bassendean, approximately 10 kilometres east of Perth CBD. The Premises is situated within an industrial area. The Premises occupies a land area of 7563 m², of which 7514m² falls within the City of Bassendean and 49m² falls within City of Bayswater; there are no buildings proposed for the section of the Lot that falls within the City of Bayswater. The Premises is located in an area zoned "general industry" under the Local Planning Scheme 10.

The nearest residential properties are in the suburb of Ashfield, approximately 430m south-east and separated from the premises by Guildford Road, Railway Parade and Midland train line. A large parcel of land is located to the south of the Premises, at approximately 120m

distance. This parcel of land is subject to future development; at the time of this decision document the development status was unknown.

A map of the site location is provided in Figure 4.

Figure 4: Site location map



6.2 Residential and Sensitive Premises

The distance to residential and sensitive receptors is listed in Table 3.

Table 3: Receptors and distance from prescribed activity

Residential and Sensitive Premises	Distance from Prescribed Activity
Residential Premises	430 metres south-east of the Premises – suburb of Ashfield
Noise sensitive receptors	430 metres south-east of the Premises – suburb of Ashfield and other industries adjacent to the Premises

6.3 Specified Ecosystems

There are no surface water bodies or threatened ecological communities within 1 kilometre of the premises.

6.4 Groundwater and water sources

The premises is located over a superficial aquifer, with the depth to ground water being approximately 10m below ground level. The groundwater is considered to be marginally saline with 500-1000mg/L TDS. The information presented in Table 4 was extracted from the Groundwater Atlas (*Department of Water – 2016*).

Table 4: Groundwater and water sources

Groundwater and water sources	Distance from Premises	Environmental Value
Groundwater resource in the subject area is known as Perth-Superficial Swan.	Depth to groundwater encountered at approximately 10 metres. The Premises is licensed to construct a bore on the Premises as per Department of Water's Guidelines.	Groundwater is considered marginally saline and water is not potable. Groundwater system linked to Swan River.
A surface waterbody Swan River - managed in accordance with the <i>Swan and Canning Rivers Management Act 2006</i>	Swan River is located 1.2 kilometres east of the Premises.	The Swan River is ecologically important to Perth region for both its aesthetic and environmental benefits.

Groundwater licence GWL182137(1) from DoW allows the Premises to extract up to 45,000 kilolitres of groundwater per annum.

6.5 Soil Type

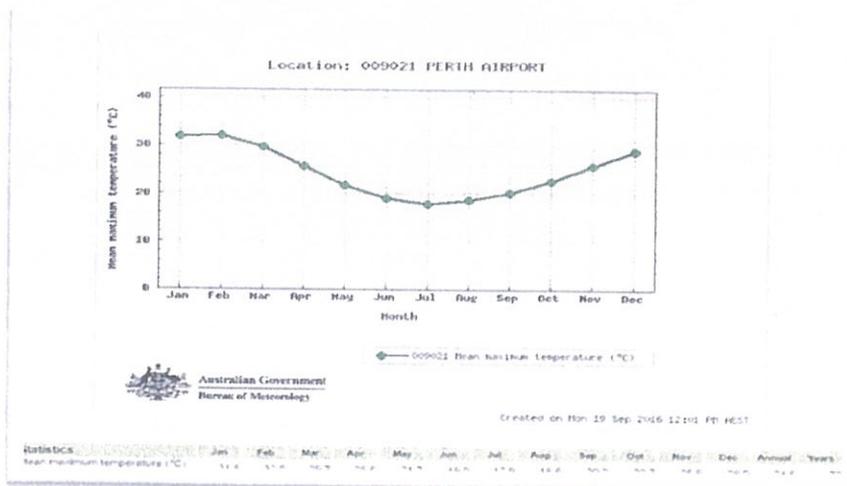
The soil type in the area is considered to be Bassendean sand which is mainly quartz sand with the poor water retention capacity. The soil type is thought to be mostly leached and infertile (*Earth Science Western Australia accessed 19 September 2016*).

6.6 Meteorology

6.6.1 Regional climatic aspects and temperature

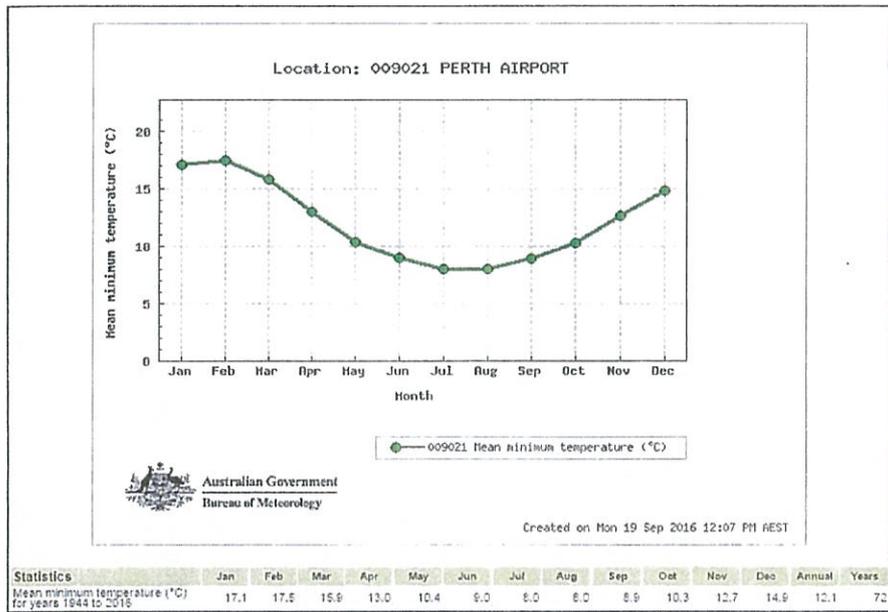
The nearest weather station is located at Perth Airport and the mean maximum and minimum day time temperature data is presented in Figure 5 and Figure 6.

Figure 5: Mean Monthly Maximum Temperatures



Source: Bureau of Meteorology accessed 19 September 2016.

Figure 6: Mean Monthly Minimum Temperatures

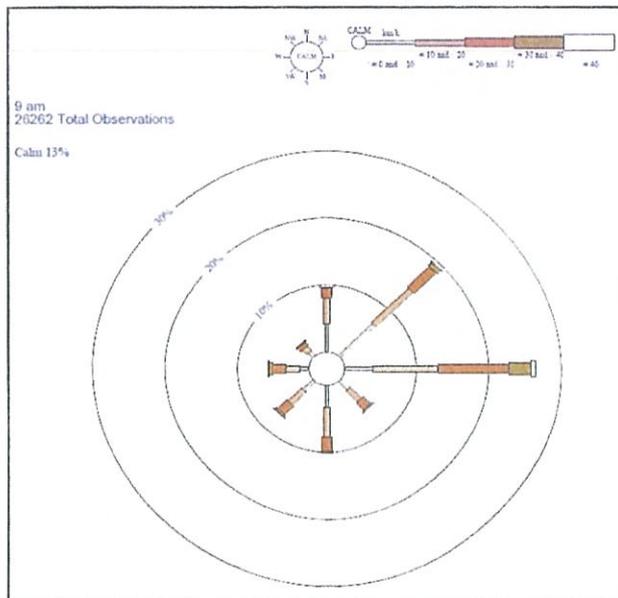


Source: Bureau of Meteorology accessed 19 September 2016.

6.6.2 Wind direction and strength

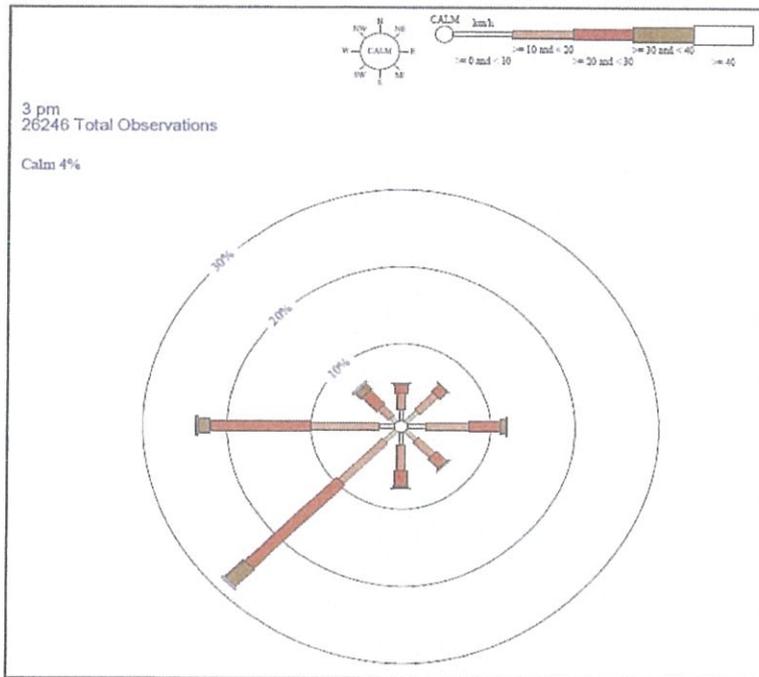
The 9am annual wind rose for Perth is shown in Figure 7 and the 3pm wind rose is depicted in Figure 8.

Figure 7: 9am Wind Rose based on Perth Airport data



(Sourced: Bureau of Meteorology – Australian Government: accessed 19 September 2016)

Figure 8: 3 pm Wind Rose based on Perth Airport data

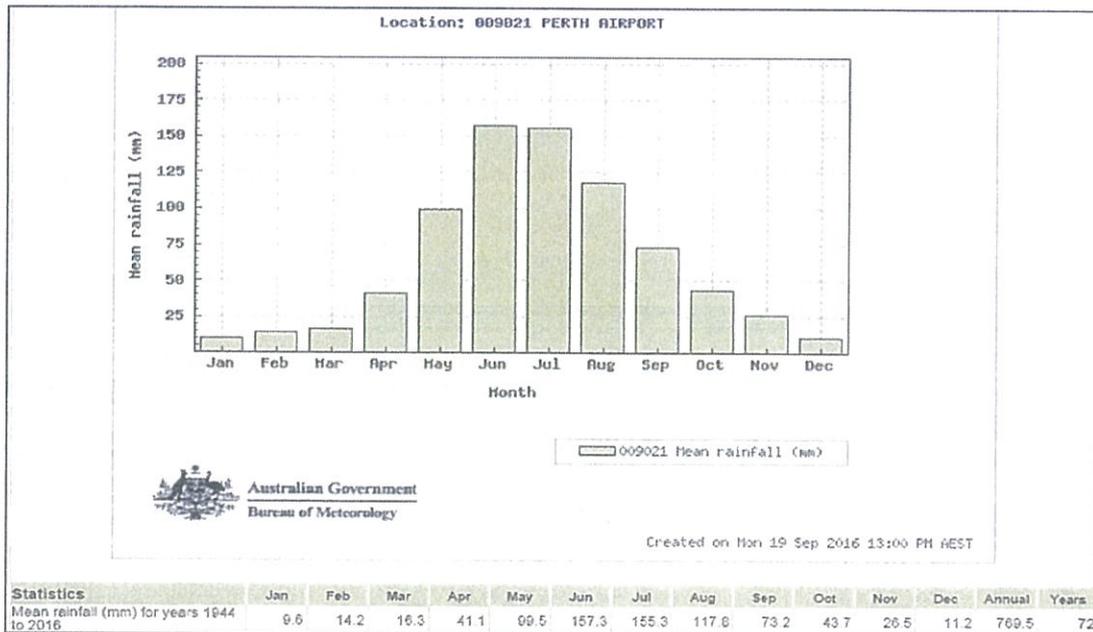


(Sourced: Bureau of Meteorology – Australian Government: accessed 19 September 2016)

6.6.3 Rainfall

The mean monthly rainfall data generated from the Perth Airport station is presented in Figure 9.

Figure 9: Perth Airport monthly average rainfall



Source: Bureau of Meteorology – Australian Government: accessed 19 September 2016

7. Risk Assessment

7.1 Confirmation of potential impacts

Identification of key potential emissions, pathways, receptors and confirmation of potential impacts are set out in Table 5 and Table 6.

Table 5: Identification of key emissions during construction

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Source (see Section 3.1 for infrastructure references)	Construction, mobilisation and positioning of infrastructure	Vehicle movements on unsealed access roads	Noise	Residential receptors approximately 430m south-east	Air / wind dispersion	Amenity impacts	No	The Delegated Officer considers that the separation distance between the source and potential receptors is sufficient and the activity will be carried out in an established industrial area. Construction will occur over a short period.
			Dust			Amenity/health impacts	No	The premises is located within an industrial area and most of the existing site is paved or bituminised. The Delegated Officer considers that dust impacts will be minimal and short-term in duration.
		Construction of new buildings, plant and infrastructure	Noise	Residential receptors approximately 430m south-east	Air / wind dispersion	Amenity impacts	No	The premises is located in an industrial area. The Delegated Officer considers that Railway Parade, Guildford Road and Midland Train line provide a physical barrier between the premises and the nearest residential receptors .
			Dust			Amenity/health impacts	No	The premises is located within an industrial area and most of the existing site is paved or bituminised. The Delegated Officer considers that dust impacts will be minimal and short-term in duration.

Table 6: Identification of key emissions during operation

		Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning	
Source (see Section 3.2 for infrastructure references)	Delivery and storage of raw materials	Transportation/delivery of raw material by trucks	Noise	Residential receptors approximately 430m south-east	Air / wind dispersion and the use of common access designated roads	Potential amenity/ health impacts	No	The premises is located within an industrial area. The nearest residential receptors are separated from the premises by Railway Parade, Guildford Road and Midland Train line. The Delegated Officer considers that this provides a physical barrier for noise impacts.
		Storage of raw material includes sand, aggregates and cement	Dust	Residential receptors approximately 430m south-east	Air / wind dispersion	Potential amenity/ health impacts	Yes	See section 7.4.
	Concrete batching plant	Raw material feed and mixing includes sand, aggregates, cement and water	Dust	Residential receptors approximately 430m south-east	Air / wind dispersion	Potential amenity/ health impacts	Yes	See section 7.4
			Noise	Residential receptors approximately 430m south-east	Air / wind dispersion	Potential amenity/ health impacts	Yes	See section 7.5
		Mixing of cement products in agitator trucks	Dust	Residential receptors approximately 430m south-east	Air / wind dispersion	Potential amenity/ health impacts	No	The finished final product is moist/wet and in slurry form and loaded onto agitator trucks. The Delegated Officer considers dust impacts to be negligible.
			Noise	Residential receptors approximately 430m south-east	Air / wind dispersion	Potential amenity/ health impacts	Yes	See section 7.5

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
	<i>Waste water run off</i>	<i>Containment and storage of wastewater generated by washdown and other activities</i>	<i>Contaminated wastewater runoff</i>	<i>Groundwater and surface water</i>	<i>Land contour and through soil profile into groundwater</i>	<i>Contamination due to alkaline material such as cement or other substances (eg. Hydrocarbons from truck washdown).</i>	Yes	<i>See section 7.6</i>
	<i>Stormwater</i>	<i>Site drainage and stormwater runoff</i>	<i>Stormwater runoff contaminated with cement and other substances</i>	<i>Groundwater and surface water</i>	<i>Land contour and through soil profile into groundwater</i>	<i>Contamination due to alkaline material such as cement</i>	Yes	<i>See section 7.6</i>

7.2 Risk Criteria

During the assessment the risk criteria in Table 7 below will be applied to determine a risk rating set out in Section 7.4 and Section 7.6.

Table 7: Risk Criteria

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High

Likelihood		Consequence		
The following criteria has been used to determine the likelihood of the risk / opportunity occurring.		The following criteria has been used to determine the consequences of a risk occurring:		
			Public Health	Ecosystem/ Environmental
Almost Certain	The event is expected to occur in most circumstances	Severe	<ul style="list-style-type: none"> Loss of life Exposure to hazard with permanent prolonged adverse health effects expected to large population Health criteria is significantly exceeded 	<ul style="list-style-type: none"> Irreversible impact to significant high value or sensitive ecosystem expected Irreversible and significant impact on a wide scale Total loss of a threatened species expected Ecosystem criteria is significantly exceeded
Likely	The event will probably occur in most circumstances	Major	<ul style="list-style-type: none"> Exposure to hazard with permanent prolonged adverse health effects expected to small population Significant impact to amenity for extended periods expected to large population Health criteria is exceeded 	<ul style="list-style-type: none"> Long-term impact to significant high value or sensitive ecosystem expected Long-term impact on a wide scale Adverse impact to a listed species expected Ecosystem criteria is exceeded
Possible	The event could occur at some time	Moderate	<ul style="list-style-type: none"> Exposure to hazard with short-term adverse health effects expected requiring treatment Impact to amenity expected for short periods to large population Health criteria is at risk of not being met 	<ul style="list-style-type: none"> Minor and short-term impact to high value or sensitive ecosystem expected Off-site impacts at a local scale Ecosystem criteria is at risk of not being met
Unlikely	The event is unlikely to occur	Minor	<ul style="list-style-type: none"> Exposure to hazard with short-term adverse health effects expected Impact to amenity expected for short periods to small population Health criteria are likely to be met 	<ul style="list-style-type: none"> Moderate to minor impact to ecosystem component (physical, chemical or biological) Minor off-site impacts at a local scale Ecosystem criteria are likely to be met
Rare	The event may only occur in exceptional circumstances	Insignificant	<ul style="list-style-type: none"> No detectable impacts to health No detectable impacts to amenity Health criteria met 	<ul style="list-style-type: none"> None or insignificant impact to ecosystem component (physical, chemical or biological) expected with no effect on ecosystem function Ecosystem criteria met

7.3 Risk Treatment

DER will treat risks in accordance with the Risk Treatment Matrix below:

Table 8: Risk Treatment

Risk Rating	Acceptability	Treatment
Extreme	Unacceptable	Risks will not be tolerated. DER will refuse proposals.
High	Acceptable subject to primary and secondary controls.	Risks will be subject to multiple regulatory controls including primary and secondary controls. This will include both outcome-based and management conditions.
Moderate	Acceptable, generally subject to primary controls.	Risks will be subject to regulatory controls with a preference for outcome-based conditions where practical and appropriate.
Low	Acceptable, generally not requiring controls beyond the proponents controls.	Risks are acceptable and will generally not be subject to regulatory controls.

7.4 Risk Assessment – Dust

7.4.1 General Hazard Characterisation and Impact

Dust may be generated by activities associated with the Material Bins, Cement Silos and Feed Hopper. Dust may be generated when raw materials (aggregates and sand) are transferred from the delivery trucks to the Material Bins, or when cement is transferred from the cement tanker to the Cement Silos. Further fugitive dust emissions may occur during storage.

Dust can be carried by the wind, uplifted by wind gust and vehicle movements. Dust generation can potentially affect the nearest /sensitive receptors. The sensitive receptors are located in the suburb of Ashfield along Guildford Road.

Exposure to dust can cause irritation, visibility issues, and deposition on neighbouring infrastructure causing amenity impacts.

7.4.2 Criteria for Assessment - NEPM

The Australian *National Environmental Protection Council* has developed national ambient air quality standards as per National Environmental Protection Measures (NEPM) for ambient air quality. The NEPM standard includes six key air pollutants to which most Australians can potentially be exposed. The six pollutants described in the NEPM standards are carbon monoxide, ozone, sulfur dioxide, nitrogen dioxide, lead and particulate matter.

Accordingly, NEMP air quality criteria is applicable to assess/determine air quality within the subject area in reference to dust/particulate matter. The NEPM sets ambient particles as PM₁₀ being 50µg/m³ over one day averaging period with the maximum allowable exceedance not more than 5 days a year.

7.4.3 Applicant Controls

The Applicant has proposed a range of controls for dust management which have been included in the Dust Management Plan provided as supporting information for their works approval application. Key controls are presented in Table 9 below.

Table 9: Applicant infrastructure controls for fugitive dust emissions

Infrastructure/Activity	Infrastructure Details	Operational Details	Reference to Works Approval Plan (Schedule 3)
Trafficable areas	Sealed /paved roads.	Maximum speed of at 20 km per hour is to be observed.	Site Plan
Delivery trucks	Trucks to be fitted with tarpaulins	Raw materials are pre-moistened at the quarry. Tarpaulins will be lowered during tipping.	Site Plan
Storage area for raw materials	Sand and Aggregate: Three sided bins with wind shields will be used.	Bins are not filled beyond the height of the walls and materials is _____ sprayed with sprinklers for dust suppression Additional water truck to wet the grounds.	Site Plan
	Cement Silos: Two 45-tonne cement storage silos to be installed in an enclosed building. Visual instrumentation such as cameras to be installed for inspection prior to silo filling. Dustotech vacuum system at the point of cement loading to direct cement fines back to silos, relief valves on the filters. Silos to be equipped with reverse pulse baghouse system with a 28 filter cartridge dust extractor unit. High level alarms to be installed to prevent overfilling. Overflow pipes to be installed and directed within 1m of the ground.	Replacement of cement filters on six monthly basis. Collected dust from the unit is returned to silos for re-use.	The silos are within the Batching Plant on the Site Plan.

Infrastructure/Activity	Infrastructure Details	Operational Details	Reference to Works Approval Plan (Schedule 3)
Transfer and weighing of raw materials	Feed Hopper	Aggregates loaded into the feed hopper are pre-moistened at the quarry	Site Plan
	Movable Radial Conveyor is enclosed. Transfer point between Feed Hopper and Radial Conveyor is enclosed.	--	Site Plan
	Overhead Feed Bins are covered to prevent dust emissions when transferring material into bins at height.	--	Site Plan
Concrete agitator trucks	Concrete agitator trucks are fully enclosed.	Agitator trucks are loaded in enclosed load cell.	Load Cell on Site Plan
Waste Bins	Two Wet Waste Bins and one Dry Waste Bin, with a total volume of 130m ³ . Wet Waste Bins each equipped with a weir to allow overflow of water from Wet Waste Bins to Slurry Waste Bins.	Material in Dry Waste Bin will be kept moist until removed from the premises. Overfilling prevented by maintaining waste level at least 300mm below the top of the bin.	Site Plan

7.4.4 Key findings

The Delegated Officer has reviewed the information regarding the dust emission impacts from the premises and has found:

1. Dust emissions from the premises have the potential to cause limited impact;
2. Operational controls implemented by the Applicant are satisfactory; and
3. Premises is subject to the *Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998*.

7.4.5 Consequence

Based upon operational controls at the premises, proximity of receptors, and surrounding land use, the Delegated Officer has determined that dust may cause off-site impacts at a local scale.

Therefore, the Delegated Officer considers the consequence to be **Moderate**.

7.4.6 Likelihood of Consequence

Based upon information provided in the application and operator controls, the Delegated Officer has determined that consequence is unlikely to occur considering operator controls.

Therefore, the Delegated Officer considers the likelihood to be **Unlikely**.

7.4.7 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above to the Risk Matrix (Table 7) and determined that the overall risk rating for dust emissions impact on sensitive receptors during operation is **Moderate**.

7.5 Risk Assessment - Noise

7.5.1 General Hazard Characterisation and Impact

Generation of noise from a concrete batching plant is expected due to movement of vehicles (80-100 vehicles per day transporting product offsite), mixing of material in concrete agitators, and the operation of other plant and equipment such as pumps, power equipment and material handling.

As discussed in Section 6.2, sensitive residential receptors are located approximately 430m south-east from the proposed premises. Railway Parade, Guildford Road and the Midland train line, all sources of noise themselves, separate the two areas, potentially providing a buffer against noise impacts from the proposed premises.

7.5.2 Criteria for Assessment

The applicant has not undertaken noise modelling or demonstrated that total sound power level for all sources on site during daytime at sensitive receptors would be acceptable. The Delegated Officer has determined that assigned noise levels as specified in *the Environmental Protection (Noise) Regulations 1997* (EP (Noise) Regulations) are the applicable criteria for assessment.

7.5.3 Applicant Controls

The controls proposed by the applicant to reduce and manage noise emissions are presented in Table 10.

Table 10: Proponent controls for noise

Control	Description
Siting	The premises is located within an existing industrial area. A physical barrier (Railway Parade, Guildford Road and Midland train line) exists between the premises and the noise sensitive residential receptors within the suburb of Ashfield.
Engineering – Fixed Plant	Implementation of engineering designs and controls to reduce operational noise including enclosure of equipment
Engineering - Mobile Plant	Equipment and machinery will be enclosed to minimise noise emissions.

7.5.4 Consequence

The Delegated Officer has had regard to the noise levels within the industrial estate vicinity, the proposed infrastructure controls, the distance to sensitive receptors and the presence of Railway Parade, Guildford Road and the Midland train line, and has determined that noise impacts will be minor and local in scale. Therefore, the Delegated Officer considers the consequence to be *minor*.

7.5.5 Likelihood of Consequence

The Delegated Officer has determined that the impacts from noise will be *unlikely* to occur.

7.5.6 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above against the risk criteria and have determined that the overall rating for the risk of noise emissions on sensitive receptors during operation is **Low**.

7.6 Risk Assessment – Wastewater and Stormwater

7.6.1 General Hazard Characterisation and Impact

Water is used on the premises for mixing with cement and aggregates, washing and cleaning of plant and equipment, and for dust suppression. Wastewater generated from these activities will contain cement and could potentially contain traces of hydrocarbons from vehicle wash and runoff water from the dust suppression and cleaning equipment containing cement.

7.6.2 Criteria for Assessment

Australian and New Zealand (ANZECC) Guidelines for Fresh and Marine Water Quality are considered appropriate assessment criteria to assess the potential impact on groundwater or surface water quality.

7.6.3 Applicant controls

The Applicant's controls to reduce and manage stormwater runoff and wastewater generated from premises operations are set out in Table 11.

Table 11: Applicant controls for contaminated runoff

	Infrastructure Details	Operation Details	Reference to Issued Works Approval Plan (Schedule 3)
Site Surface	Graded hardstand, either paved, bituminised or concreted.	All operations are conducted on hardstand.	Supporting information received on 30 September 2016
Drainage systems for potentially contaminated stormwater and wastewater from the plant and truck wash	Hardstand areas are graded to direct stormwater, according to its risk of contamination, to either the Slurry Waste Bins or Settlement Chamber. Two concrete-lined Slurry Waste Bins. A single Settlement	Stormwater runoff potentially impacted by the materials storage and handling area is directed to a Settlement Chamber prior to discharge to the soakwells. Stormwater from the area of the batching plant, overhead feed bins and	Application document received 26 August 2016

	Infrastructure Details	Operation Details	Reference to Issued Works Approval Plan (Schedule 3)
	<p>Chamber.</p> <p>Water Storage Tank holds excess runoff water and wash water which is supplemented with bore water for the plant use.</p>	<p>slump area is directed to the concrete-lined Slurry Waste Bins.</p> <p>Water collected in the Slurry Waste Bins is recycled back into the plant and used for truck washing.</p> <p>The water system is automatically controlled via floats and shut off valves.</p> <p>Transfer of material outside the plant does not occur. No fuel will be held on site and local fuel station will be used for refuelling.</p>	
Drainage systems for uncontaminated stormwater	<p>Stormwater from areas that are considered uncontaminated is disposed to a series of soak wells.</p> <p>Note: Uncontaminated stormwater areas are those not impacted by the concrete batching process including materials delivery and despatch.</p>	<p>Clean stormwater from the roof of the existing building is directed to the soakwells on site.</p> <p>Should the capacity of the soakwells be exceeded in an extreme stormwater event, there will be a discharge to the Water Corporation drainage system. David Wills and Associates advise that this has been approved in principle by the Water Corporation.</p>	
Material storage	<p>Raw material is stored within concreted areas with the concrete cladding walls on three sides.</p>	<p>Sprinkler water from this area is captured in the Slurry Waste Bins.</p>	
Concrete waste	<p>Concrete waste from the plant includes solids from unused product and sediments captured in the sedimentation sumps.</p>	<p>This waste will be taken off site by a road train on fortnightly basis.</p>	

7.6.4 Key Findings

The Delegated Officer has reviewed the information regarding impacts from stormwater and runoff wastewater and has found:

1. Site activities will take place on concrete hardstand;
2. The proposed Stormwater Management Plan indicates that potentially contaminated stormwater will be treated in either the Slurry Waste Bins or the Settlement Chamber to remove sediment; and
3. Only uncontaminated stormwater will be directed to the soakwells.

7.6.5 Consequence

The Delegated Officer has had regard to the management of process waste water and the infrastructure controls in place, and has determined that contaminated material and stormwater may impact on ground, groundwater and surface water on a minor and local scale. Therefore, the Delegated Officer considers the consequence to be **Minor**.

7.6.6 Likelihood of consequence

Based upon the proponent control and the key findings, the Delegated Officer has determined that the impacts from contaminated material and stormwater will be **unlikely** to occur.

7.6.7 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above against the risk criteria (Table 7) and has determined that the overall rating for the risk of hazardous liquids and contaminated stormwater on sensitive receptors during operation is **Moderate**.

7.7 Summary of Risk Assessment and Acceptability

The risk items identified in section 7.8 including the application of risk criteria and the acceptability with treatment are summarised in Table 12 below.

Table 12: Risk rating of emissions

	Emission		Pathway Receptor and	Proponent controls	Impact	Risk Rating	Acceptability with treatment (conditions on instrument)
	Type	Source					
1.	Dust	Aggregates, sand and cement	Air/ wind dispersion.	Infrastructure and management controls.	Visibility Amenity	Moderate	Acceptable subject to proponent controls and regulations
2	Noise	Plant and equipment Vehicles Agitator truck	Air/ wind dispersion	Infrastructure and management controls	Amenity	Low	Acceptable and subject to Environmental Protection (Noise) Regulations 1998

	Emission		Pathway and Receptor	Proponent controls	Impact	Risk Rating	Acceptability with treatment (conditions on instrument)
	Type	Source					
3	Wastewater and Stormwater	Runoff from storage bins, vehicle wash.	Seepage through soil Receptors: • Groundwater • Surface water	Infrastructure and management controls	Water quality	Moderate	Acceptable subject to proponent controls and regulations

8. Determined Regulatory Controls

8.1 Summary of Controls

The regulatory controls within Table 13 will be applied through Works Approvals conditions.

Table 13: Summary of determined regulatory control

		Controls	
		8.2 Specified infrastructure and equipment	8.3 Specified Action
Risk Items (see section 7)	1. Dust from aggregates and cement	•	•
	2. Noise from infrastructure and operations	Low risk. Subject to the Environmental Protection (Noise) Regulations 1997	
	3. Wastewater and stormwater control	•	•

8.2 Specified Infrastructure and Equipment Controls

8.2.1 Dust infrastructure and equipment

The following infrastructure and equipment should be maintained and operated onsite for the control of dust on the premises.

Table 14: Infrastructure requirement for dust control

Infrastructure Requirements	
Infrastructure	Requirements (Design and Construction)
Trafficable areas	Bitumised or paved yard with designated parking, buildings and equipment areas. Paved areas graded to direct water to stormwater and wastewater management systems.
Material Bins for the storage of sand and aggregate	Material Bins: Four concrete above-ground bins, one each for 20mm aggregates, 10mm aggregates, 2mm aggregates and sand. Three sided; dimensions of 3m high x 8.25m width each; and Each fitted with a sprinkler system.
Feed Hopper	With an enclosed transfer point to conveyor.
Radial conveyor	Fully covered radial conveyor used to transport raw material from the Feed Hopper to the Overhead Feed Bins.
Overhead Feed Bins	Overhead Feed Bins equipped with a raised wind shield for dust control.
Cement Silos	Cement Silos: - Two 45 tonne cement silos integrated within the Batch Plant Body. - Designed in accordance with Regulation 8 of the <i>Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998</i> , including: - High and low level alarms for filling; - Overflow pressure relief valve; and - Visual instrumental monitoring cement filling operating from control room/office.
Baghouse	Designed in accordance with Regulation 7 of the <i>Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998</i> . Dust emissions concentration to be less than 50 mg/m ³ .
Concrete batching plant with incorporated computer system to control and monitor flow	Steelfields Major 60 design standalone mobile plant.

Infrastructure Requirements	
Infrastructure	Requirements (Design and Construction)
Dry Waste Bin	One above ground Dry Waste Bin: - Volume of approximately 40m ³ ; and - Concrete walls and floor.
Water Tank	A 50 000L tank used to store returned waste water from the Slurry Waste Bins.

8.2.2 Wastewater infrastructure and equipment

The following infrastructure and equipment should be maintained and operated onsite for the control of waste water and storm water on the premises.

Table 15: Infrastructure requirements for management of wastewater and stormwater

Infrastructure Requirements (Waste Water and Storm Water)	
Infrastructure	Requirements (Design and Construction)
Trafficable areas	Bitumised or paved yard with designated parking, buildings and equipment areas. Paved areas graded to direct water to stormwater and wastewater management systems.
Slurry Waste Bins	Two below ground level Slurry Waste Bins: - Graded to allow collection of storm water and wash water ; - Concrete lined to ensure no discharge to the environment occurs; and - Total volume of approximately 60m ³ . Pipework and associated fittings to allow wastewater from the Slurry Waste Bins to be transported to the Water Tank.
Wet Waste Bins	Two above ground Wet Waste Bins: - Volume of approximately 90m ³ combined; - Concrete walls and floor; and - Containing weir to allow overflow into Slurry Waste Bins.
Dry Waste Bin	One above ground Dry Waste Bin: - Volume of approximately 40m ³ ; and - Concrete walls and floor.
Water Tank	A 50 000L tank used to store returned waste water from the Slurry Waste Bins.
Stormwater System	Designed in accordance with Schedule 4 Storm Water Plan including: <ul style="list-style-type: none"> • Settlement Chamber:

Infrastructure Requirements (Waste Water and Storm Water)	
Infrastructure	Requirements (Design and Construction)
	<ul style="list-style-type: none"> - Located to collect stormwater runoff from the materials storage and handling area; - Concrete-lined and designed to remove suspended solids by sedimentation; - Have a treatment chamber designed for storage requirements based on a 1 in 1 year, 1-hour average recurrence interval (ARI) storm event; and - Designed to allow access by machinery to facilitate the removal of suspended solids. <ul style="list-style-type: none"> • Soakwells • Associated piping.

Note: The Applicant specified a 1 in 1 year ARI design specification for the settlement treatment chamber but did not specify the storm duration. The Delegated Officer specified a 1 hour average which is expected to be reasonable based on the consideration of the contaminated (suspended solids) and the Department of Water published guidance in *Water sensitive urban design, Stormwater design considerations*, Department of Water, June 2011.

8.3 Specified Actions

The specified actions are set out in the *Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998*.

9. Setting Conditions

The conditions in the Issued Works Approval have been determined in accordance with DER's *Guidance Statement on Setting Conditions*.

Condition Ref	Grounds
Environmental Compliance Conditions 1, 2, 3 and 6	Environmental compliance is a valid, risk-based condition to ensure appropriate linkage between the works approval and the EP Act.
Infrastructure and Equipment Conditions 4 and 5	These conditions are valid, risk-based and contain appropriate controls.
Departure from specified works Condition 7	This condition is valid, risk-based and enables flexibility in operations
Information Conditions 8,9,10, 11, 12 and 13	These conditions are valid and are necessary administration and reporting requirements to ensure compliance.

10. Applicant's Comments on Risk Assessment

The applicant was provided with the draft decision report and draft works approval on 15 November 2016. The applicant provided comments on 16 November 2016 requesting minor changes relating to the name of certain equipment and confirming operational details as requested by DER. Further information regarding storm water management was received on 18 November and 21 November 2016. Full details are provided in Appendix 2 of this Decision Report.

11. Conclusion

This assessment of the risks of activities on the premises has been undertaken with due consideration of a number of factors, including the documents and policies specified in this decision report (summarised in Appendix 1).

Based on this assessment, it has been determined that the Issued Works Approval will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements. The Applicant may apply for a registration instead of a licence with respect to the operational phase of the premises at the completion of works.

Danielle Eyre

Senior Manager – Industry Regulation (Resource Industries)

delegated Officer under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Key Documents

	Document Title	Availability
1	BGC (Australia) Pty Ltd Works Approval Application Received 26 August 2016	der.wa.gov.au
2	BGC (Australia) Pty Ltd Supplementary information Works Approval Application Received 30 September 2016	der.wa.gov.au
3	Site Stormwater Management Plan by David Wills and Associates Consulting Engineers, 18 November 2016.	der.wa.gov.au
3	DER <i>Guidance Statement on Regulatory principles</i> (July 2015)	der.wa.gov.au
4	DER <i>Guidance Statement on Setting conditions</i> (September 2015)	
5	DER <i>Guidance Statement on Licence duration</i> (November 2014)	
6	DER <i>Guidance Statement on Licensing and works approvals processes</i> (September 2015)	
7	SAT citation DR:68/2016	www.sat.justice.wa.gov.au

Appendix 2: Summary of Applicant's Comments on Risk Assessment and Draft Conditions

Applicant Comments	Delegated Officer consideration of Applicant comments
Various clarifications regarding the activities on site were provided.	Decision Document was updated to accurately reflect activities on site.
Storm water plan was provided.	Based on this information, risk assessment of waste water and stormwater was reviewed.

Appendix 3: Site Location Map

