



Air Quality Management Plan

Demolition of Hanson's Blackwattle Bay
Concrete Batching Plant

15 October 2018

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Demolition of Hanson's Blackwattle Bay Concrete Batching Plant



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1. INTRODUCTION

ERM Australia Pacific Pty Ltd (ERM) has been engaged by Hanson Construction Materials (Hanson) to prepare an Air Quality Management Plan (AQMP) for the demolition of the Blackwattle Bay concrete batching plant located at 1/1A Bridge Road, Glebe.

The AQMP provides a framework for the management of potential air quality impacts associated with the proposed demolition processes, as a sub-plan to the Demolition Management Plan for the project.

1.1 Background

The Site is owned by Roads and Maritime Service (RMS) and Hanson currently operate a concrete batching plant located on a wharf deck structure over the bed of Blackwattle Bay. The term of the lease agreement for the use of the site as a concrete batching plant is coming to an end. At the end of the lease agreement, Hanson is required to carry out works required to make good the site for vacant possession.

As part of the Bays Precinct Urban Transformation Program the NSW Government is seeking to rejuvenate the Sydney Fish Market. The existing Hanson concrete batching plant is located within the proposed Precinct and is required to be removed for the site to be redeveloped.

A Statement of Environmental Effects (SEE) was submitted to the NSW Department of Planning and Environment, which refers to a Demolition Management Plan (DMP) and includes a brief summary of the potential environmental impacts that may arise during the demolition process.

A Development Application (DA) was submitted by Hanson for decommissioning and demolishing of the Concrete Batching Plant at 1/1A Bridge Road, Glebe. This includes the following:

- Demolition of all the buildings and structures associated with the plant which are fixed to, on or suspended above the existing wharf deck structure (the wharf deck structure will remain).
- Works to reduce the risk to personnel and onsite contamination including the removal of hazardous materials and potentially contaminating residual concrete batching plant materials from the wharf deck structure (if necessary).

1.2 Objectives and purpose

The objectives of the Air Quality Management Plan are:

- To control and minimise fugitive dust from structures as they are decommissioned and demolished
- To minimise the potential for adverse impacts on the surrounding residential and business receptors and the environment around the project area
- To ensure workers are aware of dust generating activities and any required control methods to minimise nuisance impacts

This plan applies to all activities and personnel, contractors and visitors at the site during the demolition.

1.3 Definition of dust species

There are a number of sources of dust and types of emissions from the proposed demolition activities that can generate dust. For the purposes of this document, the following definitions of dust will be used:

PM₁₀ – particulate matter with an equivalent aerodynamic equal to or less than 10 µm in diameter.

TSP (total suspended particulates) – including PM₁₀ and all larger particle size fractions which normally stretches to particles of a size of an equivalent aerodynamic diameter of 30 – 50 µm. Due to

higher settling velocities for larger particles, these tend to settle out of the atmosphere at closer distances than smaller particles which are carried further from the source.

Health impacts from dust have closer links to smaller particle size fractions such as PM₁₀ and finer particulate matter which are inhalable size fractions. TSP dust concentrations and deposition are currently considered to be more of a nuisance issue.

The composition of particle size fractions (between finer and coarser particle size fractions) vary for different dust and particulate matter sources. For instance, higher fractions of finer particulates are generated from combustion processes compared to earthwork and demolition related activities.

2. PROJECT SETTING

2.1 Location and sensitive receptors

The site location, as shown in Figure 2.1, is adjacent to the Blackwattle Bay marina. The site is surrounded by a number of different land uses including nearby sensitive receptors. The nearest of the receptors are the apartments directly across Bridge Road on the corner of Wentworth Park Road, the Sydney Fish Markets, The Boathouse restaurant and Sydney Secondary College, as highlighted in Figure 2.1.



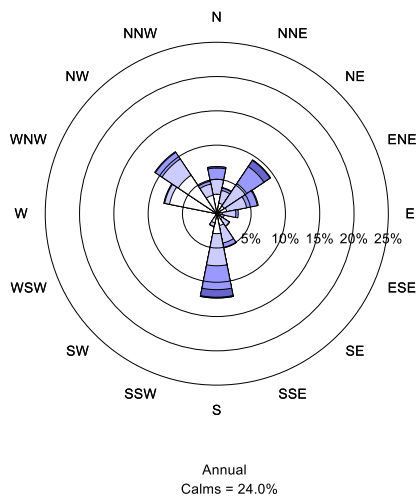
Figure 2.1: Site boundary and nearby sensitive receptors

2.2 Site Wind Conditions

Demolition site wind conditions are relevant for general information on:

- Prevailing wind directions – for indication on areas with greater risk of exposure to dust.
- Wind speeds – for indication of wind erosion dust nuisance potential.

Wind data is available from the Office of Environment and Heritage (OEH) weather station at Rozelle, which is about 2.5 km northwest of the site. Wind roses compiled from these data are shown in Figure 2.2 and show that winds are predominantly from the south, northwest and northwest. The strongest winds are in summer from the south and northeast. Strong winds from the northern quadrant will potentially carry dust towards the nearest receptors across Bridge Road. Particular caution should be taken during those times to keep emissions to a minimum and manage offsite nuisance impacts.



Annual and seasonal wind roses for OEH Rozelle January - December 2016

Wind speed (m/s)

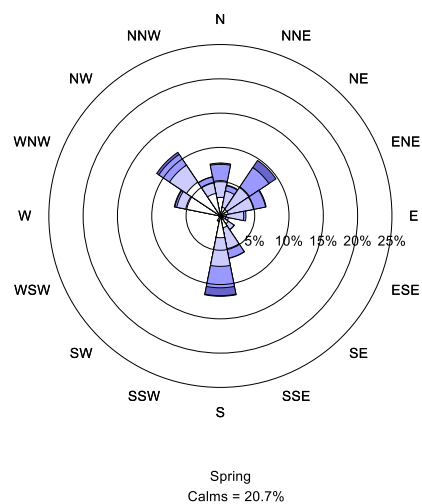
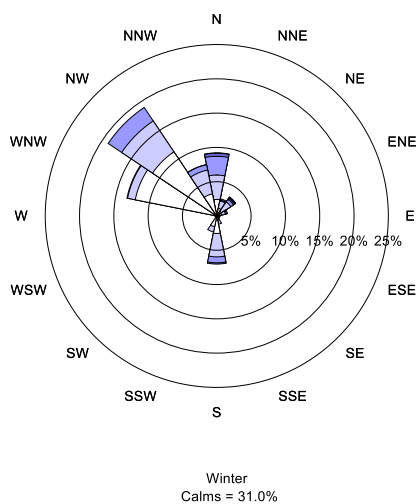
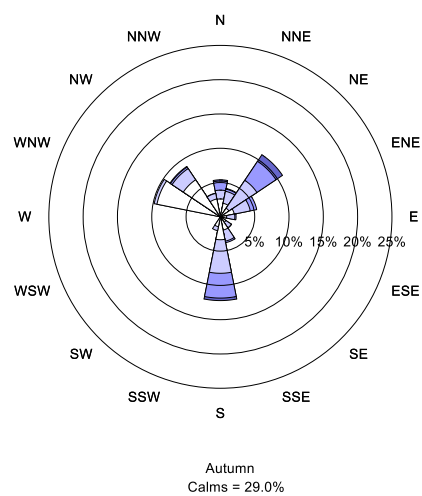
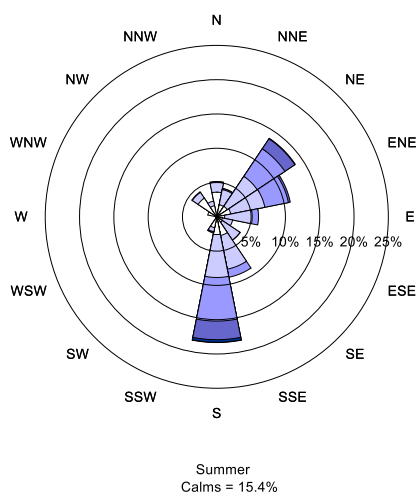
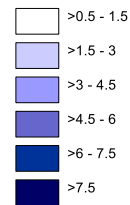


Figure 2.2: Annual and seasonal wind roses for Rozelle

3. PROJECT WORKS

This section provides a brief overview of demolition works, as relevant to the consideration of air quality management requirements.

3.1 Overview

The main demolition works associated with the project consist of the following:

- Establishment of site office facilities including construction of environmental controls such as hay bales, diversion drains.
- All structures and materials however fixed to, on or suspended above the wharf deck structure will be demolished and removed. The building and structures to be demolished consist of the following:
 - Office, switch room and amenities building;
 - Aggregate bin and conveyors;
 - Quarry depot building;
 - Overhead bins and silos;
 - Batch room;
 - Washout pits;
 - Acid and admixture storage areas; and
 - Ground bins.

3.2 Key activities

Brief descriptions of the proposed works in relation to dust are provided in the following sections.

3.2.1 Site establishment

Site sheds will be established on west elevation and to the left of site entrance on terra firma. All inductions, training and risk assessments will be conducted during this first week on site. All services to the site shall be disconnected by prior to commencement of demolition. Power for the contractor's works will be utilised from a generator and water will be tapped via a temporary connection.

3.2.2 Office, switch room, amenities removal

Hazardous materials that have been identified in the Environmental Site & Hazardous Materials Assessment provided will be removed by qualified and trained asbestos removal personnel, all offices, amenities and weighbridges etc. will be soft stripped of loose furnishings prior to mechanical demolition.

3.2.3 Aggregate bin and conveyer removal

Demolition personnel working from elevated working platforms will prepare conveyor C1 & C2 for dual mobile crane lift. Documentation such as lift studies and structural engineering certificates of approval will be provided with every crane lift performed during the works. Once the structure has been lowered to ground level it will then be processed by a hydraulic excavator with shear attachment. The combined offices, amenities and switch room will also be mechanically demolished with the hydraulic excavator. All waste materials will be sourced separated to ensure waste minimisation and maximum recycling is achieved.

3.2.4 Hoarding and protective scaffolding

Concurrently to the above tasks, subcontractors will be utilised to tiger tail power lines on Bridge Road, erect a gantry hoarding and erect protective scaffolding including mesh to the south elevation, east and west returns of the concrete aggregate storage bin structure.

3.2.5 Quarry depot demolition

A mobile crane will be situated on the west of the structure to assist in the dismantling of the steel roof structure. The roof structure will initially be prepared for lifting by demolition personnel working from EWP's and within the structure subject to further on site investigation.

A long reach excavator and hydraulic excavator with pulveriser attachments will work in tandem to demolish the structure. The long reach will be utilised for the safe demolition of the southern wall, working from a rubble mound created by the excavator. This will ensure maximum safety and control during demolition. As the demolition progresses scaffolding will be removed level by level until the precast section of wall has been reached.

This section of wall along with scaffolding protection and hoarding will be utilised as an environmental barrier while the excavator with concrete cracker attachment demolishes the remainder of the aggregate bin storage structure. An excavator will assist in processing the concrete, removing the reinforcement and loading trucks as demolition progresses.

3.2.6 Overhead bins, silos, batch room and washout pits

Depending on the loading limitations on the wharf it may be necessary to utilise a crane mounted barge to demolish the batching plant tanks, silos and associated infrastructure. Demolition personnel will carry out preparation works to the structures including the C1 conveyor. The batching plant infrastructure will be rigged, cut, lifted and lowered to ground level in pre-engineered sections and transferred to the processing area for loadout.

3.2.7 Acid storage, admixture storage, ground bins, slump stands

The last phase of the works involves the demolition of the Acid Storage, Admixture Storage, Fine Sand & Man Sand Ground Bins, Slump Stands, bund walls, ramps, pits, plinths and any remaining structures down to slab level, this will be carried out by a hydraulic excavator with hammer & pulveriser attachment.

3.3 Plant and equipment

Demolition plant and equipment are listed below.

- Concrete Saw
- Crane
- Elevated Working Platform
- Excavator
- Excavator w/ concrete cracker
- Excavator
- Excavator w/ pulveriser
- Jackhammer
- Long Reach Excavator
- Mobile Crane
- Trucks

3.4 Hours of operation

Demolition hours including the removal of materials from the site, will only be carried out between the following hours:

- Between 7:00am and 6:00pm Monday to Friday
- Between 7:30am and 3:30pm Saturdays

No work is permitted on Sunday or Public Holidays.

4. EMISSIONS TO AIR

The Project will involve a range of activities that have the potential to generate dust emissions. The main anticipated sources of these dust emissions include:

- Extensive demolition works including demolition of buildings and other amenities, structures and washout pits
- Dust generation from the loading and transfer of material from trucks
- Vehicle generated dust from paved surfaces
- Wind generated dust from exposed surfaces

Vehicle exhaust emissions and details on the management and mitigation of these emissions is provided in Section 5.

5. DUST MANAGEMENT

Dust emissions are to be managed at the Site through a combination of the following:

- Staff awareness
- Application of dust mitigation measures
- Review of performance

A summary of these measures is provided in the following sections.

5.1 Planning of demolition activities

All demolition activities should be planned with dust controls and mitigations in place appropriate to the nature of the activity and the conditions at the time of year when the activity takes place.

Listed controls of different activities expected onsite are provided in Section 5.3.

Review of the weather forecast is important so that additional controls can be planned for dry, hot and windy conditions.

5.2 Staff awareness

Employees and contractors will be inducted to the site and informed of air quality management requirements including:

- The need to manage potential impacts of dust emissions on nearby sensitive receptors.
- An outline of responsibilities for controls including the need for all personnel to maintain a visual awareness of dust emissions.
- An overview of emission controls to be applied.

Hanson will maintain a record of personnel inducted to the Site in accordance with AQMP protocols. For the duration of the process, employees are to maintain a visual awareness of the potential for dust emissions to occur, such that the appropriate supplementary dust mitigation measures can be applied to the source of interest.

5.3 Control measures

Activity	Potential Air Emission	Mitigation Measure
General Operations	-	Awareness: Induction of all employees and contractors. Daily toolbox talk with review of potential air emissions from demolition activities and weather forecasts.
Demolition of structures and buildings	Mechanically generated dust	<ul style="list-style-type: none"> Wetting down of surfaces during the demolition of pavers. Use of water sprays and/or mists where visible dust emissions may occur. Monitor effectiveness of controls visually and review process if required. Minimise the number of times material is handled/moved. Cease activities in extremely windy conditions. Planning works and required dust controls as appropriate ahead of the activity.
Materials handling	Mechanically generated dust	<ul style="list-style-type: none"> Avoid or minimise dust generating activities during particularly dry and windy conditions. Material moisture control including the pre-wetting of materials prior to movement or removal. Minimising drop heights when loading or unloading material. Installation of wind break fencing where required to reduce off site impacts. Watering of work areas.
Stockpiling	Windblown dust	<ul style="list-style-type: none"> Minimize stockpiling and remove material from site as soon as practicable. Locating required stockpiles away from sensitive receptors wherever possible. Watering of exposed areas if dust is observed leaving the site. Use of wind break fences around the stockpiles, if required. Minimise the transfer of material to or from stockpiles during adverse weather conditions such as high winds.
Hauling of materials	Wheel generated dust and possible vehicle exhaust emissions	<ul style="list-style-type: none"> Vehicle speed limits of 5-10 km/h to be adhered to by all vehicles. All trucks are to cover their loads prior to exiting the site. Prompt removal of material that is spilt or tracked-out onto public roads or other sealed areas via the use of a road sweeper or equivalent. Truck wheels are to be washed down and inspected prior to leaving to site to prevent track-out on public roads. Road sweeper on internal work areas to be considered if required. Regular maintenance of demolition equipment to reduce visible smoke emissions from the exhaust. Unnecessary idling of trucks and plant equipment should be avoided with engines turned off during periods of inactivity. Removal of material should be planned and co-ordinated to avoid congestion and excessive truck queuing/idling.

5.4 Complaints management

Any complaints relating to air quality are to be recorded and addressed promptly. Where relevant, the effectiveness of strategies applied within the AQMP should be reviewed.

The following procedure will be followed to manage complaints:

- Details of the Hanson complaints line telephone number will be displayed and clearly visible from the street.
- A Complaints Register will be set up to record details of individual complaints as they occur. The Register will include:
 - Details of the date and time of the complaint and the staff member who logged the complaint.
 - Details of the incident(s) that led to the complaint, including any photographs if available, if the dust was visible (air borne) or deposited and the location of the observation.
 - Demolition activities at the time of the complaint.
 - Details of any action taken in relation to the complaint.
 - If no action was taken, any reasons why this was the case.
 - Any proposed follow up including a timeframe.
 - Sign off from the Site manager once action has been taken.
- The Site manager will advise of any additional action or further control measures which may need to be undertaken to prevent the same incident from reoccurring.
- The Site manager will sign off on the relevant complaint in the Register once all action has been taken.

5.5 Roles and responsibilities

This AQMP is to be implemented with the following assignment of responsibility.

Task	Responsibility	Timing
AQMP Implementation	Site Manager	Ongoing
Monitoring dust (visual)	Site Manager	Ongoing
Ensure loads are covered as trucks leave the site	Site Manager	Ongoing
Inducting staff on the requirements within the AQMP	Site Manager	As required
Recording and responding to complaints	Site Manager	As required