

ENVIRONMENT & APPROVALS MANAGEMENT PLAN

Garvan St Vincent's Campus Cancer Centre Works Contract

AIR QUALITY & DUST MANAGEMENT SUB- PLAN

Scope	Garvan St Vincent's Campus Cancer Centre Works Contract
Locations	Victoria St, Darlinghurst
Timing	
DPDA	
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Issue	Date	Prepared By	Approved By	Remarks
1	14.04.09			

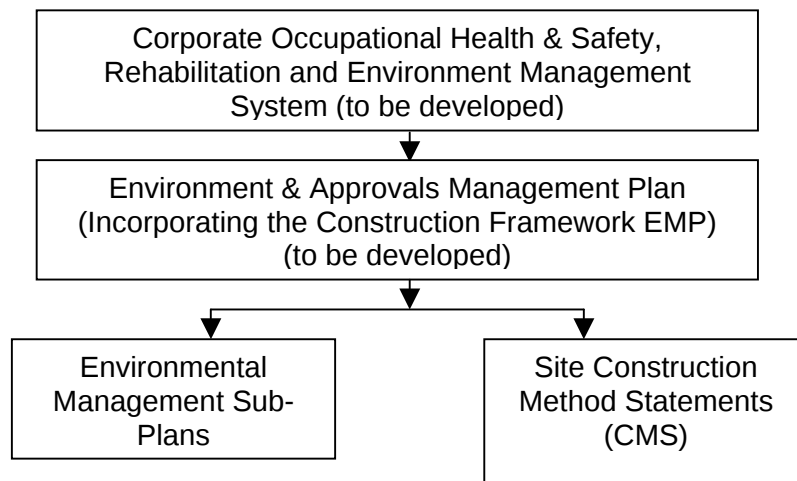
1 OBJECTIVES

A W Edwards is committed to ensuring that dust and exhaust emissions from the Site are managed appropriately to minimise Environmental and Health risks.

The objective of the A W Edwards Garvan St Vincent's Campus Cancer Centre (GSVCCC) Works Dust Management Sub-Plan is to ensure that the air quality surrounding the Site during the course of works is appropriately managed to minimise the Environmental and Health risks associated with dust and exhaust emissions.

2 SCOPE

This Sub-Plan has been developed as part of the GSVCCC Environment & Approval Management Plan (to be developed). The relationship between environmental management documentation can be summarised in the flow chart below:



The scope of this Sub-Plan is to provide Project information regarding air quality and dust management. It is to be applied at the following site:

- Garvan St Vincent's Campus Cancer Centre

Further information will be required at site, detailing specific site requirements and mitigation measures. This information will be attached to the CMS for the site.

3 STATUTORY REQUIREMENTS

Documents and references relevant to the implementation of the Dust Management Sub-Plan include:

- GSVCCC Works Construction Documentation;
- Protection of the Environment Operations Act 1997 and Regulations;
- AS 3580.1.1:2007 Methods for sampling and analysis of ambient air – Guide to siting air monitoring equipment.

Below is a summary of anticipated acceptable levels prescribed for the dust-monitoring methods. These levels proposed are not to be exceeded during the course of the project. The specific levels are:

AIRBORNE DUST LEVELS

Dust Type	Goal	Comment
PM ₁₀	50µg/m ³ /day	Ground level concentrations measured at the nearest receptor boundary
Dust deposition	2g/m ² /month above background levels	Measured at local receptor boundaries. Mitigation measures to commence at 4g/m ² /month Incident process to commence at 10g/m ² /month

4 RISK ASSESSMENT

A site specific risk assessment is to be developed, which will determine the sources and risks associated with dust production and other air quality issues. Details of this risk assessment, including mitigation measures, is to be included in the For Construction version of the Environment and Approvals Management Plan for the project.

The risk assessment process will be reviewed for this aspect at the following times:

- Every six months during a site audit, and including comments from personnel and sub-contractors on site;
- Following monitoring results above goals;
- Following a complaint;
- If new work processes that have not been previously addressed start on site; &
- Should new requirements for the project or new legislation take effect.

5 MANAGEMENT AND TRAINING

5.1 Site Specific Management

Specific management and mitigation measures shall be included in the site specific Construction Method Statement (CMS). The CMS shall include the following information:

- Sensitive receptors in the local area;
- Work activities to be undertaken on site;
- Site specific risk assessment, regarding dust production and other air quality issues;
- Cumulative impacts and their management;
- Specific mitigation measures for assessed risks;
- Information on background air quality;
- Specific monitoring locations and methods;
- Auditing and reporting programs;
- Training requirements for site personnel and sub-contractors.

5.2 Training

A W Edwards Site Manager shall be trained to ensure that they meet the requirements of this procedure. Other personnel shall be trained from time to time to ensure that the requirements of this procedure are met.

6 MONITORING AND REPORTING

6.1 Dust Control Measures

6.1.1 Monitoring

Prior to commencing demolition or construction work on the site all sources of potential dust emission must be identified. These sources may include, but not be limited to:

- Dust disturbed during the movement of construction vehicles and equipment over unsealed surfaces or sealed surfaces that may experience significant dust deposition over the course of works;
- Dust disturbed during construction works that involve the displacement of soil and/or the disturbing of surfaces;
- Excavation works;
- Dust lost from loaded trucks, machinery and plant;
- Dust lost from stationary stockpiles.

Sensitive receptors in the local area shall be identified, in order to assist with targeted monitoring. Receptors may include residential areas, schools and hospitals.

The need for dust monitoring shall be assessed during the development of the site specific CMS, and detailed therein. The program will take into account the following:

- The location of all dust monitoring points. Monitoring shall include PM₁₀ monitors and dust deposition gauges.
- The frequency of PM₁₀ monitoring. Monitoring shall be conducted using the following frequency and method, depending on the amount of dust likely to be produced from the site:
 - o 1 day in every 6, using method AM-1 or AM-18;
 - o Continuously, using the method described in AS 3580.9.8-2001
- Arrangements shall be made to ensure dust deposition gauges are employed continuously during operations.
- Sensitive receptors shall be targeted during monitoring. This may involve placing monitors at the boundary of sensitive receptor properties. This may only be done with the approval of the property owner.
- Should another Contractor employ dust monitoring already on the site, the Contractor will be approached by A W Edwards to share the monitoring results, rather than conduct two monitoring programs at the same site. Should negotiations with the other Contractor fail or the other Contractor leaves the site or hands over control, A W Edwards must implement their own monitoring program.

6.1.2 Dust Suppression

These methods shall be detailed in the Site Construction Method Statement. Mitigation methods include, but are not limited to:

- Vegetation and ground clearing will be kept to a minimum;
- All areas that have undergone vegetation and ground clearing will be stabilised, revegetated and landscaped within four weeks of the completion of works;
- Any exposed areas will be progressively rehabilitated and revegetated within four weeks of the completion of works;
- Soil stockpiles will be temporarily vegetated if they are to be left undisturbed for a period longer than four weeks;
- The size and number of spoil stockpiles on the site should be minimised. Stockpiles will be removed as soon as practicable, in order to reduce the amount of potential air borne dust produced;
- Wind shields, bunds and other types of temporary barriers may be built around large, main stockpiles and exposed surfaces to help contain dust from spoil handling and construction works that disturb soil surfaces;
- The gradient of stockpiles and cut slopes in erodible material will be minimised;
- During dry weather site surfaces, excavation sites, haul roads and spoil stockpiles should be wetted down;
- Vehicular access will be confined wherever possible to appropriately designed roads (i.e. those with sealed or gravelled surfacing);
- Trucks carrying spoil, sand and/or other loose materials will be covered to the requirements of the EPA to avoid generating wind-blown dust, and tailgates will be securely fastened prior to the vehicle being moved;
- Trucks and machinery leaving sites may be required to pass through a wheel washing bay;
- During periods of extreme climatic conditions when high-level dust episodes are likely extra precautions must be taken to reduce dust production. These measures may include:
 - o Adding dust suppressants to water trucks;
 - o Covering stockpiles;
 - o Cease dust-producing works until normal weather conditions prevail. This measure should only occur if it safe to so and there is no threat to safety, property or environment;

6.1.3 Other Airborne Contaminant Control Measures

Prior to commencing demolition or construction work on the site all sources of potential airborne contaminants must be identified. These sources should include but may not be limited to:

- Gaseous emissions from the engines of construction equipment, trucks, plant and machinery.

Measures to be implemented that mitigate the environmental effects of airborne contaminants are as follows:

- Regular checks on exhaust emissions from construction equipment, trucks, plant and machinery will be conducted to ensure that if visible smoke can be seen from any equipment for longer than ten (10) seconds the equipment will be tuned, modified or maintained to prevent this from occurring;
- The use of vehicles and plant on the site will only be permitted if they are registered and comply with NSW vehicle emission requirements;
- The burning of waste will not be permitted on the site.

6.1.4 Records

Records for this sub-plan will be maintained in accordance with the detailed procedures in A W Edwards Management System

All documents requiring sign-off shall be forwarded to the Principal's Representative one month prior to the sign-off being required.

Particular documents required to be maintained in this Sub-Plan include, but are not limited to:

- Dust monitoring results and reports;
- Correspondence with the Principal's Representative and other interested parties regarding dust management issues;
- Records of complaints regarding dust management issues.

6.1.5 Auditing

The procedure shall be audited during the following audits:

- Six monthly system audits of this EMP, including approvals compliance procedures;
- Monthly on-site and EMP audits;
- Weekly Site environmental management audits.

7 NON-COMPLIANCE AND COMPLAINTS

The protocol for the handling, recording and reporting of air quality and dust related complaints will be in accordance with the A W Edwards GSVCCC Works Environment & Approvals Management Plan (to be developed).

Should it be found that dust emissions are exceeding the above criteria reactive measures will be taken to modify demolition/construction operations and minimise the potential for dust production. These measures shall include the following:

- An assessment shall be made of sources of dust production during the monitoring period that are likely to be contributing to the higher than acceptable levels.
- Controls and/or operational modifications shall be determined that will decrease the levels of dust production from those specific sources. Should the activity have ceased once sampling results are obtained, measures shall be put in place to ensure that similar results are not obtained from the same process at different sites.
- Monitoring results following to the reactive measures shall be checked to ensure that actions taken have reduced dust production. Should results still be outside the acceptable limits an assessment shall be made as to the appropriateness of the process. If the process cannot be avoided, and further modifications cannot be implemented, the Principal's Representative shall be consulted to determine the most appropriate course of action.
- An incident form shall be completed if PM₁₀ results significantly exceed the acceptable limit, and dust deposition exceeds 10g/m²/month. All incidents shall be notified to the Principal's Representative as soon as practicable.

8 SUB-CONTRACTOR MANAGEMENT

Subcontractors shall be appropriately managed by A W Edwards to ensure that the requirements of this procedure extend to subcontractor works.

Sub-contractors will be audited at periodic intervals to ensure their compliance with A W Edwards' requirements. Auditing shall be random and based on the length of time sub-contractors are situated on site. Audits may also be the result of non-compliance of the sub-contractor to A W Edwards' requirements.