

# SYDNEY FOOTBALL STADIUM - DEMOLITION AIR QUALITY MANAGEMENT PLAN

11/01/2019 | Revision No: 2



Sub Plan Revision Status				
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## AIR QUALITY RELATED ACRONYMS & GLOSSARY

<b>Air Monitoring</b>	Sampling for and measuring of pollutants present in the atmosphere
<b>Air Pollutants</b>	Amounts of foreign and/or natural substances occurring in the atmosphere that may result in adverse effects to humans, animals, vegetation, and/or materials
<b>Ambient Level</b>	Existing level of a phenomenon without the influence of construction activities
<b>AQIA</b>	Air Quality Impact Assessment (Wilkinson Murray, 2018)
<b>BoM</b>	Bureau of Meteorology
<b>COA</b>	Development Consent Conditions of Approval
<b>CM</b>	Construction Manager
<b>DP&amp;E</b>	Department of Planning and Environment
<b>Dust</b>	Particles of mostly mineral origin generated by erosion of surfaces and handling of materials
<b>EHS</b>	Environment, Health and Safety
<b>EIS</b>	Environmental Impact Statement
<b>Emission</b>	A discharge of a substance (e.g. dust) into the environment
<b>EPA</b>	Environment Protection Authority
<b>GMRs</b>	Lendlease Global Minimum Requirements
<b>IAQM</b>	Institute of Air Quality Management
<b>Mitigation Measures</b>	Measures employed to reduce (mitigate) an impact
<b>Particulate Matter</b>	Small solid or liquid particles suspended in or falling through the atmosphere – sometimes expressed by the term particulates
<b>PM<sub>10</sub></b>	Particulate matter <10µm in diameter
<b>Pollution</b>	The alteration of air, soil, or water as a result of human activities such that it is less suitable for any purpose for which it could be used in its natural state
<b>RtS</b>	Response to Submissions
<b>TSP</b>	Total Suspended Particulate

## 1. SCOPE OF PROJECT AND PLAN

Project specific information	
<b>Scope</b>	<p>The project involves the Stage 1 redevelopment of the existing Sydney Football Stadium. The construction works generally include:</p> <ul style="list-style-type: none"> <li>• Site establishment, including erection of site protection fencing and temporary relocation of facilities;</li> <li>• Decommissioning and demolition of the Sydney Football Stadium in its entirety;</li> <li>• Decommissioning and demolition of ancillary buildings including the stadium store, Waratahs, Roosters, Sheridan and Cricket NSW Buildings to ground level;</li> <li>• Onsite crushing of demolished concrete material to make suitable for beneficial re-use onsite</li> <li>• Use of the existing Moore Park 1 (MP1) car park for construction staging.</li> <li>• Make good of the site suitable for construction of the new stadium.</li> </ul> <p>Stage 2 of the project involves construction of a new 45,000 seat stadium on the site of the existing stadium, subject to separate Stage 2 application.</p> <p>This <i>Air Quality Management Plan</i> details prevention and management measures for air quality issues associated with demolition. It defines mitigation measures to be implemented during relevant construction activities, a monitoring program that enables assessment of impacts on potentially affected areas, and contingency measures that may be implemented if complaints are received or exceedances are measured.</p> <p>Refer to Sections 1.1 and 3.1 of the Project EHS Management Plan for clarification on how this EHS Sub Plan forms part of the Lendlease Building (LLB) EHS management system.</p> <p>This Sub Plan must be read in conjunction with the Lendlease GMRs, Project Environmental Impacts and Hazards Assessment (IHRA), the Project EHS Plan, and the Lendlease Building Workplace Delivery Code. These documents detail Lendlease's approach and commitment to pro-active and responsible site management.</p>
<b>Objective</b>	<ul style="list-style-type: none"> <li>• Ensure that construction activities are managed to meet air quality requirements as set out in environmental assessments and the development consent.</li> <li>• Implement a reactive monitoring regime to allow early detection of air quality issues associated with demolition.</li> <li>• Effectively manage demolition activities to prevent potential air quality issues.</li> </ul>
<b>Key Issues &amp; Risks</b>	<p><b>Surrounding Land Use &amp; Receptors</b></p> <p>A number of sensitive receptors are located in proximity to the site, including:</p> <ul style="list-style-type: none"> <li>• Residential areas in Paddington, Centennial Park and Surry Hills;</li> <li>• Commercial premises at:             <ul style="list-style-type: none"> <li>○ Rugby AU/ UTS;</li> <li>○ NRL Central;</li> <li>○ The SCG;</li> <li>○ Fox Studios; and,</li> <li>○ The Entertainment Quarter;</li> </ul> </li> <li>• Moore Park</li> <li>• Victoria Barracks;</li> <li>• Kira Child Care Centre; and,</li> <li>• Sydney Boys and Girls High School.</li> </ul>

	<p>The closest receptors are located adjacent to the site, in a multilevel commercial buildings. A childcare centre is located opposite Moore Park Road to the north of the site. Residential areas in Paddington are also located opposite Moore Park Road to the north of the site.</p> <p><b>Construction Activities</b></p> <p>Demolition activities involve:</p> <ul style="list-style-type: none"> <li>• Removal of classified hazardous materials.</li> <li>• Removal of internal fitout.</li> <li>• Demolition of roof structure.</li> <li>• Demolition of concrete structural components.</li> <li>• Breaking up of concrete.</li> </ul> <p><b>Potential Air Quality Impacts</b></p> <p>Dust can be generated from demolition activities, including handling, loading, stockpiling and wind erosion of exposed areas.</p> <p>Construction will involve diesel-powered plant and equipment, which generates pollutants such as oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO) and particulates.</p> <p>The air quality impact assessment (Wilkinson Murray, 2018) found that, in accordance with the IAQM assessment methodology, the demolition works are considered to have a “High Risk” of dust soiling effects and a “Medium Risk” of health impacts. Accordingly, a range of management and mitigation measures were identified to minimise these impacts. These are described in the ‘Mitigation Measures’ table in this sub-plan.</p> <p>Baseline data for the site was not gathered during the design phase, so monitoring data will be compared against NSW EPA air quality criteria.</p>
<p><b>Key Legislation / Standards / Guidance</b></p>	<p>Air quality is regulated by the EPA and the Conditions of Approval (COA) requirements.</p> <p>Protection of the Environment Operations Act 1997 (POEO Act) (NSW):</p> <ul style="list-style-type: none"> <li>• Section 129 provides that the applicant must not cause or permit the emission of any offensive odour from the premises, apart from where the emission is identified in an EPL as a potentially offensive odour and the odour was emitted in accordance with the condition of a licence directed at minimising odour.</li> <li>• Sections 124/125 require that no air pollution is caused by failing to maintain/operate plant, or carry out maintenance work on plant, in a proper and efficient manner.</li> <li>• Section 126 states that soil or dust must not be deposited or blown onto a public place.</li> </ul> <p>Protection of the Environment Operations (Clean Air) Regulation 2010 (NSW):</p> <ul style="list-style-type: none"> <li>• Vehicles must not emit visible air impurities for a continuous period of 10 seconds or more (clauses 8 &amp; 9).</li> <li>• Stack emissions must not exceed the regulatory limits for the type of plant operated on site.</li> </ul>
<p><b>Site Control Measures</b></p>	<p>Site specific controls, monitoring, reporting and performance measurements have been identified in this Sub Plan to minimise and where possible prevent, air quality impacts from demolition on the environment and community. These are as described in the Mitigation Measures table below.</p> <p>All controls are to comply with the <b>LL Building Means &amp; Methods for Physical GMRs</b>.</p>
<p><b>Related documents</b></p>	<p>-</p>

## 2. MITIGATION MEASURES

Ref.	Mitigation Measure	Design	Construction	Relevant Location / Activity	Relevant Approval Conditions	Responsibility	Timing
<b>MINIMISE COMBUSTION EMISSIONS</b>							
AQ1.	Turn vehicle engines off while parked on site.		■	Entire site	AQIA 6.1, EIS	Sub-contractors	Throughout demolition
AQ2.	Regularly maintain equipment, plant and machinery to minimise visible smoke / emissions.		■	Entire site	CMP, EIS	Sub-contractors	Throughout demolition
AQ3.	Use mains power rather than generators where available and suitable.	■	■	Entire site	AQIA 6.1, EIS	CM, Sub-contractors	Throughout demolition
<b>DUST MANAGEMENT</b>							
AQ4.	Limit exposed areas outside of the demolition zones, where feasible.	■	■	Entire site	CMP, EIS	Sub-contractors	Throughout demolition
AQ5.	Limit accessibility to roads for construction vehicles, and implement site speed limits of 25 kph on surfaced and 15 kph on un-surfaced haul roads and work areas.		■	Entire site	AQIA 6.1, EIS	Sub-contractors	Throughout demolition
AQ6.	Locate concrete crushing equipment, and crushed concrete stockpiles, within an enclosure to prevent dust emissions.	■	■	Concrete crushing location (see figure)	COA C29, EIS/RTS	Sub-contractors	Throughout crushing
AQ7.	Cover all truck loads coming onto the site and departing site to prevent spillage / dust emissions. Immediately clean up any spills.		■	Entire site	COA C29, EIS/RTS	Sub-contractors	Throughout demolition
AQ8.	Ensure all vehicles leaving site (or moving from unsealed to sealed roads) pass through a truck wash prior to exiting, with physical removal of dirt / mud using a pressure washer if required.	■	■	Entire site	COA C29, EIS/RTS	Sub-contractors	Throughout demolition
AQ9.	Wet sweep and water haul routes, materials handling areas, site entry points and other areas as needed.		■	Entire site	COA C29, EIS/RTS	CM, Sub-contractors	Throughout demolition
AQ10.	Adjust work practices based on wind and weather conditions, and real time dust monitoring (as outlined in Section 3 below).		■	Entire site	COA B17, EIS/RTS	CM, Sub-contractors	Throughout demolition
AQ11.	Adjust work practices based on 'Event Mode' requirements, as outlined in the Construction Management Plan.		■	Entire site	CMP, EIS	CM, Sub-contractors	Throughout demolition
AQ12.	Use hydraulic shears for demolition instead of rock breakers for suitable roof structures and concrete structural components, where feasible,	■	■	Entire site	COA C29, EIS/RTS	CM, Sub-contractors	Throughout demolition

Ref.	Mitigation Measure	Design	Construction	Relevant Location / Activity	Relevant Approval Conditions	Responsibility	Timing
AQ13.	Use enclosed chutes and conveyors and covered skips. Minimise drop heights from conveyors, hoppers and other loading or handling equipment.		■	Stockpile areas	CMP, EIS	Sub-contractors	Throughout demolition
AQ14.	Use 2.4m high shade cloth fencing at the site perimeter, and wind barriers at internal boundaries where possible.	■	■	Entire site	CMP, EIS	CM	Throughout demolition
AQ15.	Close gates between vehicle movements, and fit them with shade cloth.		■	Site entry points	CMP, EIS	CM, Sub-contractors	Throughout demolition
<b>STOCKPILE MANAGEMENT</b>							
AQ16.	Maintain all stockpiles at manageable sizes to allow covering or spraying. Locate stockpiles to minimise wind erosion.	■	■	Stockpile areas	COA C29, EIS/RTS	Sub-contractors	Throughout demolition
AQ17.	Cover any stockpiled material identified as being Hazardous or Special Waste (Asbestos) whilst not active, including material with potential to generate dust.		■	Stockpile areas	COA C29, EIS/RTS	Sub-contractors	Throughout demolition
AQ18.	Use water sprays to suppress dust emissions from stockpiles, loading and unloading activities, unless the material is damp.		■	Stockpile areas	COA C29, EIS/RTS	Sub-contractors	Throughout demolition
AQ19.	Cover stockpiles of any material to be retained for later stages of construction.		■	Stockpile areas	AQIA	Sub-contractors	Throughout demolition
AQ20.	Undertake emergency dust suppression if needed during dust generating conditions (e.g. dry and windy weather) during longer non-working periods (e.g. long weekends, holidays).		■	Entire site	Best practice	Sub-contractors	Throughout demolition

### 3. MONITORING

The following tables and diagram provide the following details relating to ambient air monitoring:

- Parameters to be monitored, and suitable monitoring equipment;
- Location of monitoring points;
- Assessment criteria, reactive criteria; and contingency measures to be employed should actions limits be reached.

#### Ambient Air Quality Monitoring

Ambient air quality monitoring will be undertaken according to the following table, with locations as specified in the following figure.

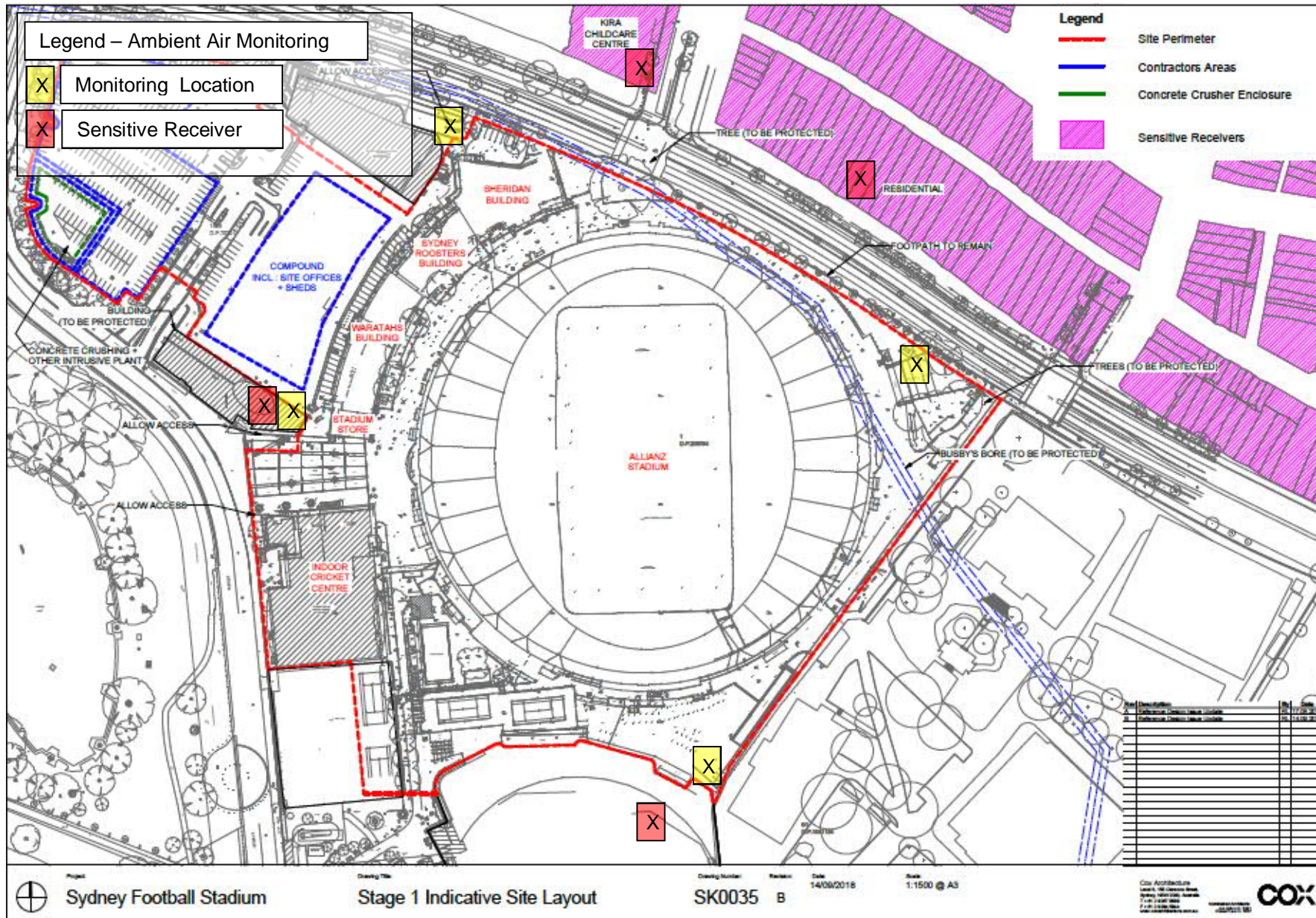
Responsibility for implementation, management and response is the Lendlease EHS Manager, and relevant sub-contractors.

Parameter	Equipment	Frequency	Method	EPA Criteria	Reactive Trigger	Reactive Response
PM <sub>10</sub>	Aeroqual Dust Sentry	Continuous (commence prior to demolition if possible to establish a baseline)	Aeroqual method	50 µg/m <sup>3</sup> 24 hour average (24 hour average of a calendar day defined as midnight to midnight) 30 µg/m <sup>3</sup> annual average	See trigger table below	See trigger table below
Weather conditions	-	Daily	Observations	Nil	Adverse weather conditions (strong winds, storms)	Communicate adverse weather conditions to Foremen to adjust work practices, or stop work, accordingly.

Relevant ambient triggers for response based on continuous PM<sub>10</sub> monitoring are as follows, and as per the Air Quality Impact Assessment (Wilkinson Murray, 2018):

Trigger Stage	Averaging Period	Trigger Value (µg/m <sup>3</sup> )	Action Required
1 Investigate	1 hour	85	EHS Manager & Sub-contractor to undertake review of possible dust sources operating during the average period. Identify specific measures for these activities; action if deemed necessary.
	3 hour	80	
2 Action	1 hour	470	EHS Manager & Sub-contractor to attend site and ensure implementation of the control actions identified in stage 1. Effectiveness of control actions to be reviewed and escalate where appropriate.
	3 hour	160	
3 Stop Work	1 hour	940	Construction Manager to undertake targeted shut down of dust-generating activities until the measured pollutant levels are below the trigger value. Identify additional long-term solutions to dust issues.
	3 hour	320	





Ambient air quality monitoring locations

## APPENDIX A: PLANNING APPROVAL REQUIREMENTS

### SYDNEY FOOTBALL STADIUM – DEMOLITION (SSD9249)

No.	Original Ref.	Relevant Requirement	Reference
1.	B11.	<p>Environmental Management Plan Requirements</p> <p>Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:</p> <p>a) detailed baseline data;</p> <p>b) details of:</p> <ul style="list-style-type: none"> <li>i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);</li> <li>ii) any relevant limits or performance measures and criteria; and</li> <li>iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;</li> </ul> <p>c) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;</p> <p>d) a program to monitor and report on the:</p> <ul style="list-style-type: none"> <li>i) impacts and environmental performance of the development;</li> <li>ii) effectiveness of the management measures set out pursuant to paragraph (c) above;</li> </ul> <p>e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;</p> <p>f) a program to investigate and implement ways to improve the environmental performance of the development over time;</p> <p>g) a protocol for managing and reporting any: i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); ii) complaint; iii) failure to comply with statutory requirements; and</p> <p>h) a protocol for periodic review of the plan.</p>	<p>This plan</p> <p>Key Issues &amp; Risks</p> <p>Key Legislation / Standards / Guidance</p> <p>Monitoring table</p> <p>Mitigation Measures table</p> <p>Monitoring table</p> <p>Monitoring table, trigger table</p> <p>Monitoring table</p> <p>EHS Management Plan Sections, 4.3 &amp; 5.3</p> <p>EHS Management Plan</p>
2.	B17	<p>The Applicant must prepare a Construction Air Quality Management Sub-Plan (CAQMSP) and the plan must address, but not be limited to the following:</p> <p>a) be prepared by a suitably qualified expert, in consultation with NSW EPA and the Council;</p> <p>b) describe the measures that would be implemented on site to ensure:</p> <ul style="list-style-type: none"> <li>(i) the control of air quality and odour impacts of the Development;</li> <li>(ii) that these controls remain effective over time;</li> <li>(iii) that all reasonable and feasible air quality management practice and measures are employed including the relevant measures listed in the Guidance on the assessment of dust from demolition and construction (IAQM, 2014) based on the assessment contained within SFS Response to Submissions (SSD9249) Attachment 11- Air Quality Impact Assessment prepared by Wilkinson Murray dated 2018;</li> <li>(iv) the air quality impacts are minimised during adverse meteorological conditions and extraordinary events; and</li> <li>(v) compliance with the relevant conditions of this consent.</li> </ul>	<p>This plan</p> <p>See separate letter</p> <p>Mitigation Measures table, Monitoring table</p>

No.	Original Ref.	Relevant Requirement	Reference
		<p>c) include performance objectives for monitoring dust and ensuring no off-site air quality impacts to users of Moore Park and nearby residences and businesses;</p> <p>d) includes an air quality monitoring program that:</p> <ul style="list-style-type: none"> <li>(i) is capable of evaluating the performance of the construction works;</li> <li>(ii) includes a protocol for determining any exceedances of relevant conditions of consent and responding to complaints;</li> <li>(iii) adequately supports the air quality performance objectives; and</li> <li>(iv) evaluates and reports on the effectiveness of air quality management for the construction works.</li> </ul> <p>e) details on monitoring weather conditions and communicating changing conditions to the workforce;</p> <p>f) stop work procedures if performance objectives are not being met.</p>	<p>Monitoring table</p> <p>Monitoring table</p> <p>Monitoring table</p> <p>Monitoring trigger table</p>
3.	C28.	The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.	Mitigation Measures table
4.	C29.	<p>During construction works, the Applicant must ensure that:</p> <ul style="list-style-type: none"> <li>a) all demolition waste and concrete crushed stockpiles are covered or otherwise protected at all times;</li> <li>b) exposed surfaces and stockpiles are suppressed by regular watering;</li> <li>c) all trucks entering or leaving the site with loads have their loads sealed and covered;</li> <li>d) trucks associated with the development do not track dirt onto the public road network;</li> <li>e) public roads used by these trucks are kept clean;</li> <li>f) hydraulic shears are used instead of rock breakers in the demolition of some concrete structural components of the existing stadium, where feasible; and</li> <li>g) locating the concrete crushing and related loading/stockpiling operation and processed material stockpiles inside an acoustic enclosure/shed (with the added benefits of protecting those activities and stockpiles from wind action, rainfall and runoff and thus minimising air and water quality impacts as well as noise impacts</li> </ul>	<p>Mitigation Measures: AQ6, AQ16-18</p> <p>AQ18</p> <p>AQ7</p> <p>AQ8</p> <p>AQ9</p> <p>AQ12</p> <p>AQ6</p>
5.	C30.	The Applicant must install and operate equipment in line with best practice to ensure that the construction works comply with all load limits, air quality criteria/air emission limits and air quality monitoring requirements as specified in the CAQMSP required by Schedule 3 condition B17.	Mitigation Measures table
6.	C31.	Dust deposition monitoring must be undertaken during the construction works (as per AS/NZS 3580). This would include monitoring points in appropriate locations on the site boundary and in Paddington and Moore Park. Monitoring locations must include sensitive receivers that are most likely to be affected. The locations and frequency of the monitoring are to be agreed with the EPA and Department and detailed within the CAQMSP.	Monitoring table

## APPENDIX B: EIS MITIGATION MEASURES

### AVER CONSULTING (JUNE 2018) – CONSTRUCTION MANAGEMENT PLAN MITIGATION MEASURES

No.	Original Ref.	Relevant Requirement	Reference
7.	8.4. Dust	<p>Dust emissions will occur through the Works with the on-site concrete crushing the main cause of these emissions. Effective anagement will be put in place to mitigate dust emissions in order to maintain acceptable levels. These measures may include:</p> <ul style="list-style-type: none"> <li>• Locating the crushing activities as far away from the ARDC and NRL buildings and the residents on Moore Park Road, SCG, Fox Studios and Entertainment Quarter as practicable.</li> <li>• Implementation of water sprays to suppress dust emissions</li> <li>• Ceasing or limiting crushing activities during times of adverse winds</li> <li>• Ceasing or limiting crushing activities during Event Mode operating hours.</li> </ul>	Mitigation Measures: AQ6, AQ10, AQ11, AQ16
8.	8.5. Dust control measures	<p>Dust control measures for site preparation which will remain in place for the duration of the Works will include:</p> <ul style="list-style-type: none"> <li>• Erection of site fencing to provide appropriate barriers at the site boundary</li> <li>• Erection of effective screens and barriers around dusty activities. Cleaning of screens and barriers should be completed as necessary.</li> <li>• Communication with neighbouring properties prior to undertaking works in proximity to their premises.</li> <li>• Establishment of a complaints management system to record details of any reason for air quality-based complaints.</li> <li>• Avoidance of dry sweeping in large areas</li> </ul> <p>Dust control measures for Stage 1 Works will include:</p> <ul style="list-style-type: none"> <li>• Sheet and screen buildings with suitable material and where possible strip out internals before demolition begins.</li> <li>• Use of effective water suppression where necessary</li> <li>• Limit demolition activities that will create dust during times of adverse wind</li> <li>• Dusty materials should be removed from site as soon as practicable</li> <li>• Covering of stockpiles</li> <li>• Trucks to have payload covered</li> <li>• Wheel washing system for trucks if necessary</li> </ul>	Mitigation Measures – all Community Communication Strategy
9.	8.6. Monitoring of air quality	<p>Monitoring of air quality can include daily and weekly visual surveillance of dust emissions, dust controls, plant emissions. Weather and physical parameters such as wind speed, rain, temperature and humidity will be utilized to assist in programming works (impact of rain and wind conditions on site) and recorded or works will not be conducted during periods of rainfall where there is the potential to generate runoff, or where heavy rain is forecast.</p> <p>Weather data (such as wind direction) will also be used where complaints are received in relation to dust or noise.</p>	Mitigation Measure AQ10 Monitoring table
10.	8.7. Odour Control	<p>In terms of proposed activity for the Site, odour problems will be minimal. All plant and machinery involved in the Works will be regularly serviced and checked for exhaust emissions.</p>	Mitigation Measure AQ2

## AIR QUALITY IMPACT ASSESSMENT – MITIGATION MEASURES

No.	Original Ref.	Relevant Requirement	Reference
11.	6.1	<p>Communications</p> <ul style="list-style-type: none"> <li>Develop and implement a stakeholder communications plan that includes community engagement before demolition work commences on site, displays the name and contact details of the Responsible Person accountable for air quality and dust issues on the site boundary and displays the head or regional office contact information.</li> <li>Develop and implement a Dust Management Plan (DMP) that considers, as a minimum, the measures identified herein.</li> </ul>	Community Communication Strategy, this plan
12.	6.1	<p>Site management</p> <ul style="list-style-type: none"> <li>Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.</li> <li>Make the complaints log available to relevant authorities (Council, EPA, DP&amp;E).</li> <li>Record any exceptional incidents that cause dust and/or air emissions, either on or off site, and the action taken to resolve the situation in the log book.</li> <li>Hold regular liaison meetings with any other high-risk construction sites within 500 m of the site boundary to ensure plans are coordinated.</li> </ul>	Community Communication Strategy
13.	6.1	<p>Monitoring</p> <ul style="list-style-type: none"> <li>Undertake daily on-site and off-site inspection, where receptors are nearby, to monitor dust. Record inspection results and make available to relevant authorities. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of the site boundary, with cleaning to be provided if necessary.</li> <li>Carry out regular on site and off site inspections to monitor compliance with the DMP, record inspection results, and make inspection log available to relevant authorities.</li> <li>Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during any periods of prolonged dry or windy conditions.</li> <li>Agree any dust monitoring locations with the relevant authority. Where possible, commence baseline monitoring before work commences on site.</li> </ul>	Monitoring table
14.	6.1	<p>Preparing and maintaining the site</p> <ul style="list-style-type: none"> <li>Plan site layout so that machining and dust generating activities are located away from receptors, as far as possible.</li> <li>Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.</li> <li>Fully enclose specific operations where there is a high potential for dust production and the site is active for an extensive period.</li> <li>Avoid site runoff of water or mud.</li> <li>Keep site fencing, barriers and scaffolding clean using wet methods.</li> <li>Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If being re-used, keep materials covered.</li> <li>Cover, seed or fence stockpiles to prevent wind erosion.</li> </ul>	Mitigation Measures table – all
15.	6.1	<p>Construction vehicles and sustainable travel</p> <ul style="list-style-type: none"> <li>Ensure all vehicles switch off engines when stationary - no idling vehicles.</li> <li>Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.</li> <li>Impose and signpost a maximum-speed-limit of 25 kph on surfaced and 15 kph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided).</li> </ul>	Mitigation Measures table – AQ1-5

16.	6.1	<p>Measures for general construction activities</p> <ul style="list-style-type: none"> <li>• Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.</li> <li>• Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.</li> <li>• Use enclosed chutes and conveyors and covered skips.</li> <li>• Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.</li> <li>• Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods</li> </ul>	Mitigation Measures table - all
17.	6.1	<p>Measures specific to demolition</p> <ul style="list-style-type: none"> <li>• Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).</li> <li>• Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.</li> <li>• Avoid explosive blasting, using appropriate manual or mechanical alternatives.</li> <li>• Bag and remove any biological debris or damp down such material before demolition.</li> </ul>	Mitigation Measures table – AQ16-18
18.	6.1	<p>Measures specific to haulage</p> <ul style="list-style-type: none"> <li>• Use water-assisted dust sweeper(s) on the access and local roads, as necessary.</li> <li>• Avoid dry sweeping of large areas.</li> <li>• Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.</li> <li>• Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.</li> <li>• Record all inspections of haul routes and any subsequent action in a site log book.</li> <li>• Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.</li> <li>• Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).</li> <li>• Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.</li> <li>• Access gates to be located at least 10 m from receptors where possible.</li> </ul>	Mitigation Measures table – AQ4-9

## ETHOS URBAN (SEPTEMBER 2018) – RTS FINAL MITIGATION MEASURES

No.	Original Ref.	Relevant Requirement	Reference
19.	S1-CM1	<p>A detailed Demolition and Environmental Management Plan (DEMP) is to be prepared by the appointed contractor prior to the commencement of works in accordance with the principles set out in, and addressing all issues covered by, the Construction Management Plan prepared by Aver Consulting (June 2018) and addressing the Environmental Performance Objectives contained in Section 4.6 of the Response to Submissions Report by Ethos Urban, and the following:</p> <ul style="list-style-type: none"> <li>• Management of dust and odour to protect the amenity of the neighbourhood, generally in accordance with the Air Quality Impact Assessment prepared by Wilkinson Murray (August 2018);</li> </ul>	Mitigation Measures table – all

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## APPENDIX C: LICENCE & PERMIT REQUIREMENTS

Not applicable.



