

VICTORIA CROSS INTEGRATED STATION DEVELOPMENT AIR QUALITY - MANAGEMENT SUB PLAN

5/05/2022 | Revision No: 4

SMCSWSVI-LLC-SVC-EM-PLN-001002



Project Sub Plan Revision Status				
Date	Revision (in numbers)	Purpose and Summary of Amendments	Reviewed by	Approved by
03/06/2020	1	Initial Copy	Jason Ambler	
11/02/2021	2	Update procedure to separate EHS sub-plan	Jason Ambler	Ian Sheils
14/02/2022	3	Include SSD air quality monitoring provisions, update legislation, remove completed works	Angus Northey	Ian Sheils
05/05/2022	4	Updates to SSD air quality requirements	Angus Northey	Ian Sheils

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1. SCOPE OF PROJECT AND SUB PLAN

Project Details	
Scope of the Sub Plan	<p>This Air Quality Management Sub Plan provides strategies and mitigation measures to minimise and control the generation of dust, odour and emissions to the environment during site establishment, demolition activities and construction of the project.</p> <p>Refer to Section 1.1 and 3.1 of the Project EHS Management Plan for clarification on how the EHS Sub Plans and Procedures form part of the Lend lease Building (LLB) EHS management system.</p>
Objectives of the Sub Plan	<ul style="list-style-type: none"> • To prevent emissions to the environment (air). • To maintain current levels of local air quality during construction activities. • To provide an adequate monitoring regime to allow assessment of various dust generating construction activities on the site. • To prevent nuisance and ecological impacts (associated with air emissions) on the local community and environment. • To achieve compliance with the project approval criteria.
Scope of Works	<p>As all excavation, spoil and stockpiling works have been completed, this Procedure has been revised to address the following remaining works:</p> <ul style="list-style-type: none"> • Structures, fitout and services works for the Victoria Cross Integrated Station Development (VCISD), including public domain works. • Structures, fitout and services works for the South Tower Over Station Development (OSD).
Key Issues and Risks	<p>Construction works have the potential to generate dust and emissions primarily associated with traffic movements and plant operation; concrete cutting and hammering; and storage and handling of waste materials.</p> <p>Compliance with the Project EHS Plan and this Sub Plan is intended to mitigate the risks and potential impacts of these activities on air quality. If appropriate controls are not implemented and maintained on the site, the potential exists for construction related air emissions to:</p> <ul style="list-style-type: none"> • Cause a nuisance or health effects to the local community; • Result in complaints; • Impact on the natural environment; or • Create unsafe working conditions. <p>The closest receptors to the site are located adjacent, including;</p> <ul style="list-style-type: none"> • Commercial buildings along Miller Street, Berry Street, Denison Street. • Residential apartment blocks and houses on Miller St, Berry St and McLaren Street. • North Sydney Council Chambers on Miller Street • Monte Sant' Angelo College and Wenona School. <p>The set out of the site compound including the location of the site access, internal roads, waste collection, storage and stockpile areas consider the proximity of these receptors and the potential impacts of construction activities on their operation and property.</p>

<p>Legislation, Project Approval and Guidelines</p>	<p>Federal/National:</p> <ul style="list-style-type: none"> National Environment Protection (Ambient Air Quality) Measure (NEPM), as updated 26 May 2021. <p>State:</p> <ul style="list-style-type: none"> SSI 15_7400 conditions A18(b), A20, E5; and REMMs AQ1-AQ9. SSD 10294 conditions B47 and B48. Protection of the Environment Operations Act 1997. Protection of the Environment Operations (Clean Air) Regulation 2021. <p>Lendlease requirements:</p> <ul style="list-style-type: none"> GMR 4.13: Degradation or Pollution of the Environment. Lendlease Building Workplace Delivery Code (WDC).
<p>Summary of Site Controls</p>	<p>Works must be undertaken in accordance with the Lendlease GMRs, the Project EHS Plan, this Sub Plan and the Lendlease Building WDC. These documents detail Lendlease's approach and commitment to pro-active and responsible site management.</p> <p>Site specific controls, monitoring, reporting and performance measures have been identified in this Sub Plan to prevent or minimise the impacts of construction related air emissions on the environment and community. These may include but are not limited to:</p> <ul style="list-style-type: none"> Installing site perimeter dust protection measures; Preventing dust generation through minimising ground disturbance where appropriate and the stabilisation of disturbed areas; Maintaining the site access to prevent dust generation and tracking off-site; No blasting will be performed as part of the construction works program; Site layout and placement of plant would consider air quality impacts to nearby receivers; pedestrian, commercial receivers, public and road traffic; Construction traffic to use designated haul routes to ensure ground surfaces are stabilised to minimise dust and tracking of material; Cover haul vehicles loads & ensure tail gates are closed when operating on public roads; Remove dirt from haul vehicles prior to entering public roads, if identified as a risk of tracking material off site; Remove any spilt material on public roads immediately using street sweepers as required to ensure roads are clean; Regular visual monitoring of dust generation will be undertaken by the site supervisors; Water suppression will be used for active concrete cutting/hammering areas, stockpiles, and haul roads to reduce wind-blown dust emissions; The engines of all on-site vehicles and plant would be switched off when not in use for an extended period; Plant would be well maintained and serviced to minimise emissions. Emissions from plant would be considered as part of pre-acceptance checks. <p>Construction stage dust and emission management requirements must be included in relevant specifications, contract agreements, quality assurance documents, and subcontractor work method statements.</p> <p>Site inspections, monitoring and reporting will be undertaken by Lendlease and subcontractors as detailed in the Project EHS Plan and the following implementation table.</p>

OSD SSD
approval
requirements

The air quality-related requirements of SSD 10294, and where they are addressed, are below:

Condition	Requirement	Where Addressed
B47	The Sub-Plan must detail management practices to be implemented for all dust and VOC/odour sources at the site.	Section 2
B47	The Sub-Plan must also detail the dust, odour, VOC and semivolatile organic compounds (SVOC) monitoring program (e.g., frequency, duration and method of monitoring) to be undertaken for the project.	Section 3
B48	The Applicant must also develop and implement an appropriate comprehensive Reactive Air Quality and Odour Management Plan which will incorporate an Ambient Air Monitoring Program and Reactive Management Strategy to ensure that the assessment criteria are met during the works.	Section 3
D16	The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.	Section 2
D17	During construction, the Applicant must ensure that: (a) exposed surfaces and stockpiles are suppressed by regular watering; (b) all trucks entering or leaving the site with loads have their loads covered; (c) trucks associated with the development do not track dirt onto the public road network; (d) public roads used by these trucks are kept clean; and (e) land stabilisation works are carried out progressively on site to minimise exposed surfaces.	Section 2

2. IMPLEMENTATION OF THE SUB PLAN

Control Measure	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measurement
Planning and Site Establishment					
Include information in the Site Induction about dust management.	Before works commence and ongoing	Revise Lendlease induction package to include site specific information.	CM/SM	Subcontractor WMSs address dust, odour and emissions control	Site induction delivered to all workers on site.
Design, document and implement an agreed air quality monitoring program.	Prior to works commencing	Visual monitoring on site for excessive dust. Hygiene air quality monitoring.	CM	Daily surveillance. Weekly/monthly inspection checklist.	Required hygiene monitoring undertaken by a suitably accredited consultant.
Limit ground disturbance for stormwater works to the area/s required for immediate construction.	Prior to works commencing	Identify and fence off areas to be left undisturbed. Detail excavation requirements on staging program. Incorporate relevant requirements into WMS prepared by relevant subcontractors.	SM/ Foreman	Daily surveillance. Weekly/monthly inspection checklist. Review of program.	Staged clearing/disturbance effectively implemented. Acceptable dust levels.
Install solid hoardings at the North and South site perimeter. Install shade cloth or noise barriers for other sites.	Site establishment and ongoing	Identify and install hoardings/ shade cloth giving consideration to the location of neighbours, key work zones and prevailing winds.	SM/ Foreman	Daily surveillance. Weekly/monthly inspection checklist.	No reported dust monitoring exceedances. Number of complaints.
Seal site access, roads, turning and parking areas.	Prior to construction commencing	Retain hardstand areas where existing. Construct new stable areas using road base or sandstone.	SM	Weekly/monthly inspection checklist.	No unacceptable tracking of materials onto public roads.
Dust Control During Construction					
Limit speed on internal roads and access ways to reduce dust and vehicle emissions.	During construction	Stabilise site access and concrete pumping areas.	SM	Daily surveillance to monitor vehicle speed.	Minimal dust generated by traffic on construction access. No speeding vehicles.
Maintain the site access and traffic routes in a clean, dust free condition.	Ongoing	Engage sweeper when required. Limited hosing of hard surfaces only. Clean up spilled materials immediately.	SM	Weekly/monthly inspection checklist.	No complaints from public or authorities. No dust generated on public roads.

Control Measure	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measurement
Avoid excavation and handling for stormwater works during periods of high wind.	As required	Maintain access controls and clean roadways. If dust uncontrolled, stop work until conditions are more favourable if dust and/or tracking cannot be controlled.	SM	Surveillance during unfavourable conditions. Monitor meteorological reports.	Stop works during high wind or where dust cannot be controlled. Number of complaints.
Reduce requirements for the handling and stockpiling of excavated materials.	At all times	Pre-test and validate soils to enable direct transport off-site, where practical (rather than stockpiling). Dampen down materials during handling.	SM/ Foreman	Include requirements in tenders for subcontractors. Daily surveillance of activities.	Controls maintained and effective.
Locate and maintain stockpiles for stormwater works to minimise wind erosion and dust.	At all times	Locate stockpiles away from sensitive receptors. Keep stockpiles to a manageable size and cover. Keep exposed surfaces moist and compacted to reduce erosion potential.	SM	Daily surveillance. Weekly/monthly inspection checklist.	No fugitive dust from stockpiles. Number of reported dust complaints or exceedances.
Dampen down exposed areas and activities with the potential to create dust (eg concrete cutting, handling areas, stockpiles etc)	At all times	Identify the risk of dust/nuisance impacts (IHRA) associated with key activities/areas. Establish appropriate watering/ fogging/misting/spray systems to control dust at the source.	CM/SM	Daily surveillance. Weekly/monthly inspection checklist. Monitoring results.	Limited dust generation. Number of complaints.
Cover trucks transporting loose material to prevent dust generation and spills.	At all times	Include in subcontractor WMS. Cover all loads. Clean up spills immediately.	SM/ Foreman	Vehicle inspection prior to entering and leaving the site.	No dust generation associated with vehicle movements. Number of complaints.
Undertake progressive stabilisation and landscaping of disturbed areas, where practical.	Ongoing	Incorporate rehabilitation activities into the public realm construction program where practical. Apply temporary and/or permanent vegetation/mulch to stabilise as required.	CM/SM	Weekly/monthly inspection checklist. Project planning and design meetings.	Disturbed areas stabilised. No areas left exposed for prolonged periods.
Air Quality Controls (Contamination/Hazardous materials)					
Prevent potentially contaminated dust being generated during the disturbance and handling of contaminated soil.	At all times	Engage a specialist environmental consultant (as required). Implement recommended controls.	SM	Dust monitoring results. Soil test results.	Dust controlled. Acceptable air quality monitoring results.

Control Measure	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measurement
Implement controls for the removal and handling of hazardous building materials (eg asbestos or lead-based paints)	At all times.	Engage a specialist hygienist/ environmental consultant (as required). Install appropriate dust controls and monitoring equipment.	CM/SM	Air quality monitoring during and after works. Clearance by occupational hygienist.	Building and area cleared of hazardous materials. Acceptable air quality monitoring results.
Prevention of odour	OSD construction	No offensive odour sources used as part of the OSD construction.	SM	Based on community feedback; or identified on-site by project workers or management.	No offensive odours outside the boundary of the work site.
Combustion Emission Controls (TSP, PM10, NOx, CO and BTEX)					
Burning of waste on site is banned.	At all times	Address in site induction.	SM	Daily surveillance.	No fires or incineration on site.
Fit plant and equipment with emission control devices and maintain.	At all times	Include requirements in subcontractor documents. Documented plant condition inspections by subcontractors. Verify that plant/equipment has been regularly maintained to minimise visible smoke and emissions.	SM	Routine and random inspections of plant. Emissions not visible for >10secs (as a general rule).	Copies of service records and/ or inspection to be supplied. No complaints from site personnel or neighbours.
Turn equipment and plant engines off when not in use for extended periods.	At all times	Address in contractors WMS.	SM	Daily surveillance.	No excessive (visible) emissions or odour.
Volatile Organic Compounds (VOCs)					
Control odour generation related to contamination including Volatile Organic Compound (VOC) vapours within work areas.	At all times	Addressed in OHHWMP. Engage a specialist hygienist/ environmental consultant (as required).	CM/SM	As required by OHHWMP, or as per Section 3 below.	No elevated VOCs detected during works.
HVAC Equipment					
All HVAC equipment, ductwork, dampers, and open piping shall be protected from collecting dust, debris, or moisture during construction until occupation.	At all times	Ensure all ductwork and HVAC equipment is delivered to site clean and sealed, or immediately sealed on arrival. Store all ductwork and HVAC equipment in a dry, clean environment. Create a low-contaminant / contaminant free environment through work practices that	SM	Compliance will be monitored by Lendlease via regular inspections during construction including the collection of photographic evidence.	All relevant subcontractors must adhere to these requirements. Any HVAC equipment, ductwork, dampers and open piping found to contain significant levels of dirt or water damage must be cleaned to Lendlease satisfaction

Control Measure	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measurement
		<p>limit the creation of contaminants or the transfer of contaminants from designated areas.</p> <p>Repair any seals covering ducts that become compromised.</p> <p>Where HVAC equipment has been operated during construction, replace filtration media by the installation subcontractor prior to building handover.</p>			or replaced, at the subcontractors cost.

3. AIR QUALITY MONITORING

Ambient air quality monitoring will be undertaken according to the following table. Responsibility for implementation, management and response is the Lendlease Environment Manager, and relevant sub-contractors.

Parameter	Equipment	Frequency	Method	Location	EPA Criteria	Reactive Trigger	Reactive Response
Dust	N/A	Weekly during EHS inspection	Visual	All site	N/A	Excessive dust	Corrective actions to mitigate fugitive emissions.
PM ₁₀	Real time monitor	In response to specific dust complaints at the site	Aeroqual method	Various depending on works	50 µg/m ³ 24 hour average 30 µg/m ³ annual average	50 µg/m ³ over a one hour averaging period	Undertake review of possible dust sources operating during the average period. Identify possible measures for these activities; action if deemed necessary.
VOCs, sVOCs (total)	PID (handheld)	In response to specific odour complaints at the site, or significant chemical spill	PID method	As required	N/A	10 ppm	Corrective actions to mitigate fugitive emissions.
Odour	Field Olfactometer (handheld)	In response to specific odour complaints at the site	Nasal Ranger Operational Manual V6.2	As required	N/A	≥ 2 D/T with a character associated with works on two consecutive events	Corrective actions to mitigate fugitive emissions.