

MARTIN PLACE INTEGRATED STATION DEVELOPMENT AIR QUALITY - MANAGEMENT PROCEDURE

12/11/2021 | Revision No: 3

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Project Procedure Revision Status				
Date	Revision (in numbers)	Purpose and Summary of Amendments	Reviewed by	Approved by
17/06/2020	1	Initial Copy	Jason Ambler	Mark Dunn
17/12/2020	2	Updated to account for OSD works Prepared by: W. Duffy CEnvP No. 1389	Jason Ambler	Mark Dunn
12/11/2021	3	Include SSD air quality monitoring provisions, update legislation, remove completed works	Angus Northey	Mark Dunn

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1. SCOPE OF PROJECT AND PROCEDURE

Project Details	
Scope of the Procedure	<p>This Air Quality Management Procedure provides strategies and mitigation measures to minimise and control the generation of dust, odour and emissions to the environment during 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 Lendlease Building (LLB) EHS management system.</p>
Objectives of the Procedure	<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 remaining works which are construction of Martin Place Metro Station (MP-ISD), Martin Place North Tower (OSD), and Martin Place South Tower (OSD).</p>
Key Issues and Risks	<p>The construction works described above have the potential to generate dust and emissions primarily associated with construction;</p> <ul style="list-style-type: none">• Traffic movements and plant operation;• Concrete cutting and hammering;• Storage and handling of waste materials. <p>Compliance with the Project EHS Plan and this Air Quality Management Procedure is intended to mitigate 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 Castlereagh Street, Hunter Street, Elizabeth Street, Martin Place; and• One residential apartment block in Hosking Place.

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Site establishment including vegetation trimming/removal, office and compound setup; ¶
Excavation of the MP-ISD north shaft, detailed excavation and associated activities; ¶
Excavation of pedestrian tunnel under 50 Martin Place; ¶
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Spoil handling and stockpiling; ¶

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The set out of the site compound including the location of the site access, internal roads, waste collection, storage and stockpile areas, and the planning of new works will consider the proximity of these receptors and the potential impacts of construction activities on their operation and property.

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Legislation, Project Approval and Guidelines	<p>Federal/National:</p> <ul style="list-style-type: none">National Environment Protection (Ambient Air Quality) Measure (NEPM), <u>as updated 26 May 2021</u>, Deleted: 1998 <p>State:</p> <ul style="list-style-type: none">SSI 15_7400 conditions A18(b), A20, E5REMMs AQ1-AQ9SSD 9270 condition C21SSD 9326 condition C21Protection of the Environment Operations Act 1997Protection of the Environment Operations (Clean Air) Regulation 2021, Deleted: 02 <p>Lendlease requirements:</p> <ul style="list-style-type: none">GMR 4.13: Degradation or Pollution of the EnvironmentGMR 4.15: Uncontrolled Release of Stored Energy (non-electrical), Deleted:)Lendlease Building Workplace Delivery Code (WDC)
Summary of Site Controls	<p>Works must be undertaken in accordance with the Lendlease GMRs, the Project EHS Plan, this Procedure 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 Procedure 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;Controlling dust close to its source by installing sprays and sprinkler systems to prevent off-site migration;Maintaining the site access to prevent dust generation and tracking off-site;No blasting will be performed as part of the construction works program;Construction site layout and placement of plant would consider air quality impacts to nearby receivers; pedestrian, commercial receivers, public and road trafficMinimise traffic on exposed areas – designated haul routes will be <u>used</u> to ensure ground surfaces are well stabilised to minimise dust and tracking of material. Deleted: <#>Spraying exposed work areas to suppress dust using water cannons, misters or other suitable equipment.¶Cover haul vehicles loads & ensure tail gates are closed when operating on public roads.Remove dirt from haul vehicles prior to entering public roads.Remove any spilt material by construction equipment or vehicles on public roads immediately. Street sweepers to be engaged as required to ensure roads are clean.Regular visual monitoring of dust generation will be undertaken by the site supervisors. Deleted: <#>Reprogram dust generating work during periods of high wind or when fugitive dust emissions cannot be controlled.¶ <p>Deleted: 02</p>



- 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.
- Construction stage dust and emission management requirements must be included in relevant specifications, contract agreements, quality assurance documents, and subcontractor work method statements.
- Site inspections, monitoring and reporting will be undertaken by Lendlease and subcontractors as detailed in the Project EHS Plan and the following implementation table.

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OSD C21 requirements

The requirements of C21, and where they are addressed, are below:

Requirement	Addressed
The Sub-Plan must detail management practices to be implemented for all dust and VOC/odour sources at the site.	Section 2
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
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

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2. IMPLEMENTATION OF THE PROCEDURE

Control Measure	Stage of Works		Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measurement
	Station	Towers					
Planning and Site Establishment							
Include information in the Site Induction about the risks and potential impacts of dust and emissions on the environment and community.	✓	✓	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.
Install solid hoardings at the site perimeter.	✓	✓	Site establishment and ongoing	Identify and install hoardings, giving consideration to the location of neighbours, key work zones and prevailing winds.	SM/ Foreman	Daily surveillance. Weekly inspection checklist.	No reported dust monitoring exceedances.
Seal site access, roads, turning and parking areas.	✓	✓	Prior to construction commencing	Retain hardstand areas where existing. Install wheel wash and/or shaker facility	SM	Weekly inspection checklist.	No dust generation from vehicle movements. No tracking of materials onto public roads.
Dust Control During Construction							
Limit speed to 20km/hr on internal roads and access ways to reduce dust and vehicle emissions.	✓	✓	During construction	Stabilise haul roads outside the bulk excavation area. Install speed limit signage.	SM	Daily surveillance to monitor vehicle speed.	Minimal dust generated by traffic on construction roads/access. No speeding vehicles.
Maintain the site access and traffic routes in a clean, dust free condition.	✓	✓	Ongoing	Maintain shaker grid/wheel wash. Engage sweeper. Limited hosing of hard surfaces only. Clean up spilled materials immediately.	SM	Daily inspection of site access and local roads. Weekly inspection checklist. Inspections immediately after rainfall events.	No complaints from public or authorities. No dust generated on public roads.

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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 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 visible loose material. Number of complaints.
Undertake progressive stabilisation and landscaping of disturbed areas, where practical.	✓		Ongoing	Incorporate rehabilitation activities into the construction program where practical. Apply temporary and/or permanent vegetation and mulch to stabilise as required. Public realm landscaping works completed under Station works, not Towers.	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)							
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). No such hazardous building materials used for station and tower construction.	CM/SM	Occupational 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	✓	✓	At all times	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.	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.

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Implement odour control sprays as required.¶

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Turn equipment and plant engines off when not in use for extended periods.	✓	✓	At all times	Verify that plant/equipment has been regularly maintained to minimise visible smoke and emissions. Address in contractors WMS.	SM	Daily surveillance.	No complaints from site personnel or neighbours. 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 limit the creation of contaminants or the transfer of contaminants from designated areas. Repair any seals covering ducts that become compromised. Where HVAC equipment has been operated during construction, replace filtration media by the installation subcontractor prior to building handover.	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 or replaced, at the subcontractors cost.

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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	Continuous	Aeroqual method	50MP – various depending on works	50 µg/m ³ 24 hour average 30 µg/m ³ annual average	470 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.

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