

APPENDIX C – ENVIRONMENTAL RISK ASSESSMENT AND MITIGATION MEASURES

SSD-35962232: 1-3 BURROWS ROAD, ST PETERS

The following section provides recommendations for mitigation measures in response to potential impacts identified in **Section 6** of the EIS. The structure of mitigation measures is based on the DPE’s hierarchy of approaches for managing impacts identified in the *Draft Environmental Impact Assessment Guidance Series* released by DPE in June 2017, and the November 2021 *State Significance Development Guidelines* as:

- **Performance based measure** – identify performance criteria that must be complied with to achieve an appropriate environmental outcome but do not specify how the outcome is to be achieved.
- **Prescriptive measure** – require action to be taken to specify something that must not be done.
- **Management based measure** – identify one or more management objectives that must be achieved through the implementation of a management plan.

Following the implementation of appropriate mitigation measures as recommended, it is determined that the proposal will not result in any significant adverse impacts on the surrounding environment. The following table illustrates how the matters raised within the SEARs will be addressed.

This analysis comprises a qualitative assessment consistent with AS/NZS ISO 31000:2009 *Risk Management–Principles and Guidelines (Standards Australia 2009)*. The level of risk was assessed by considering the potential impacts of the proposed development prior to application of any mitigation or management measures. In accordance with the SEARs, the Environmental Risk Assessment (**ERA**) addresses the following significant risk issues:

- The adequacy of baseline data;
- The potential cumulative impacts arising from other developments in the vicinity of the site; and
- Measures to avoid, minimise, offset the predicted impacts where necessary involving the preparation of detailed contingency plans for managing any significant risk to the environment.

Risk comprises the likelihood of an event occurring and the consequences of that event. For the proposal, the following descriptors were adopted for ‘likelihood’ and ‘consequence’.

Likelihood		Consequence	
A	Almost Certain	1	Widespread and/or irreversible impact
B	Likely	2	Extensive by reversible (within 2 years) impact or irreversible local impact
C	Possible	3	Local, acceptable or reversible impact
D	Unlikely	4	Local, reversible, short term (<3 months) impact
E	Rare	5	Local, reversible, short term (<1 month) impact

The risk levels for likely and potential impact were derived using the following risk matrix.

		LIKELIHOOD				
		A	B	C	D	E
CONSEQUENCE	1	High	High	Medium	Low	Very low
	2	High	High	Medium	Low	Very low
	3	Medium	Medium	Medium	Low	Very low
	4	Low	Low	Low	Low	Very low
	5	Very low	Very low	Very low	Very low	Very low

The results of the environmental risk assessment for the proposed development are presented in the table below and are based upon the range of technical and specialist consultant report appended to the EIS. The table has directly related mitigation measures responding to each impact also based upon the range of technical and specialist consultant reports appended to the EIS.

N.B. 'O' – Operational; 'C' – Construction

'Pe' – Performance based mitigation measure; 'Pr' – Prescriptive based mitigation measure; 'Ma' – Management based mitigation measure.

SEAR	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
Design Quality	Design Integrity is not maintained and thus design excellence not achieved	C	D	4	Low	<ul style="list-style-type: none"> Present the further developed design scheme back to the DIP post lodgement of the SSDA. Continue engagement with DIP as required. 	Pe / Pr	Very Low
Traffic, Transport and Accessibility	Impacts of the construction activities on the surrounding road network	C	D	3	Low	<ul style="list-style-type: none"> Prepare a Detailed CTMP prior to the commencement of any construction works in accordance with any agency or consent authority requirements. 	Ma	Low
Trees and Landscaping	<p>Tree removal</p> <p>Detrimental impacts to trees proposed to be retained</p>	C and O	A	3	Medium	<ul style="list-style-type: none"> Offset tree planting of over 100 trees to replace the 25 trees being removed within and adjacent to the site. <p><u>Specific mitigation measures for trees 26, 45 and 51 (demolition / excavation within respective TPZs)</u></p> <ul style="list-style-type: none"> Excavation / grade changes including level raising (for Tree 26 retention) is to be carried out only under arborist supervision and should not occur within the SRZ of these trees. Excavation should commence at the outer extent of the TPZ and move inwards to minimise potential root damage. Works should be undertaken using techniques that are sensitive to tree roots to avoid unnecessary damage (refer to <i>paragraph 8.3.3 of Appendix Q</i> for specific techniques). Machine excavation is prohibited within the TPZs of retained trees unless undertaken at the direct consent of the project arborist. Roots discovered are to be treated with care and minor roots (<40mm diameter) pruned with sharp, sterile handsaw or secateurs. Proposed surfacing within the TPZ is to be installed above the existing grade and be of a permeable nature to allow the passage of air and moisture. <p><u>Generic measures for all trees proposed for retention:</u></p> <ul style="list-style-type: none"> Restricting certain activities within the TPZ. Protective fencing. Trunk and ground protection. Tree protection signage. Involvement from the project arborist. 	Pr	Low

SEAR	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						<ul style="list-style-type: none"> Project milestones. Compliance reporting. 		
Air Quality	Adverse impacts (i.e. dust emissions) to surrounding receptors / human health during <u>demolition</u> phase	C	B	3	Medium	<u>Demolition phase measures:</u> <ul style="list-style-type: none"> Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust). Ensure effective water suppression is used during demolition operations. Handheld 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. Avoid explosive blasting, using appropriate manual or mechanical alternatives. Bag and remove any biological debris or damp down such material before demolition. 	Ma	Low
	Adverse impacts (i.e. dust emissions) to surrounding receptors / human health during <u>earthworks, construction and trackout</u> phases	C	D	3	Low	<u>Earthworks, construction and trackout phase measures:</u> <ul style="list-style-type: none"> Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. (Construction) Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. (Trackout) Avoid dry sweeping of large areas. (Trackout) Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. (Trackout) Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. (Trackout) Record all inspections of haul routes and any subsequent action in a site log book. (Trackout) Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned. (Trackout) 	Ma	Negligible

SEAR	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						<ul style="list-style-type: none"> ▪ Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). (Trackout) ▪ 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. (Trackout) ▪ Access gates to be located at least 10 m from receptors where possible. (Trackout) 		
Noise and Vibration	Impact of construction activities on nearby receivers	C	A	3	Medium	<ul style="list-style-type: none"> ▪ Construct during standard daytime construction hours. ▪ Prepare a Construction Noise and Vibration Management Plan (CVNMP) prior to commencement of any construction works. 	Pe / Ma	Low
Noise and Vibration	Operational noise impacts	O	A	3	Medium	<ul style="list-style-type: none"> ▪ Use broadband and/or ambient sensing alarms on forklifts where they are required to reverse during the night-time. ▪ Appropriate specification and location of mechanical plant during detailed design. ▪ Appropriate design of warehouses during detailed design, including materials to minimise noise break-out. ▪ Keeping roller doors closed when loading / unloading is not occurring. ▪ Appropriate design of site layout to minimise the need for trucks to stop or break outside of loading docks with line of sight to residential receivers. ▪ Production of an Operational Noise Management Plan. 	Pr / Ma	Low
Ground and Water Conditions	Impacts from disturbance of soil and groundwater	C	C	3	Medium	<p>Undertake construction in accordance with the Salinity Management Plan (SMP) prepared by PSM (refer Appendix W), including:</p> <ul style="list-style-type: none"> ▪ Importation of soil <ul style="list-style-type: none"> – High saline or contaminated soils should not be imported to the site. ▪ Roads, footpaths and paved areas <ul style="list-style-type: none"> – Roads, footpaths and paved surfaces should be graded and maintain that grade to avoid ponding of surface water. – Connections between the roads, footpath and paved surfaces and the surface water and stormwater drainage infrastructure should be designed, constructed and maintained to restrict infiltration into underlying soils. – Provision for a damp-proof course or membrane beneath slabs should be considered by the slab designer. ▪ Landscaped area 	Ma	Low

SEAR	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						<ul style="list-style-type: none"> - Promotion of successful revegetation is likely to require use of nutrient rich topsoil. Saline topsoils should not be imported to site. - Potential waterlogging should be minimised by: <ul style="list-style-type: none"> • Adopting plant species with minimal watering requirements • Adopting 'waterwise' gardening principles • Minimising use of potable water in landscaped areas • Properly designed and implemented irrigation systems • Establishment of perennial species and deep-rooted trees. ▪ Surface water, stormwater and drainage <ul style="list-style-type: none"> - Disturbance of natural drainage patterns should be reduced. Where these are disturbed or altered appropriate artificial drainage should be installed - Stormwater and surface water should be managed to restrict infiltration - Temporary water retaining structures used during construction should be managed to restrict infiltration - Stormwater and surface water infrastructure should be designed and constructed to minimise the likelihood of leakage - Guttering and down pipes should be connected and maintained - Surface water runoff should be directed around all exposed surfaces, temporary stockpiles and landscaped areas. ▪ Durability of concrete structures in contact with the ground <ul style="list-style-type: none"> - The design of structural concrete members in contact with the ground (excluding piles) adopt an "A2" exposure classification as defined in AS3600:2018. - The design of concrete cast in situ piles adopt a "mild" classification as defined in AS2159:2009. ▪ Sign-off: <ul style="list-style-type: none"> - The designer(s) and contractor(s) responsible for construction of the various development components be required to sign-off their design and the as built, certifying that: <ul style="list-style-type: none"> • "The works have been designed/constructed having given appropriate consideration to the recommendations in the SMP (Ref. PSM2808-013L)" 		
Stormwater and Wastewater	Impacts of construction stormwater, sediment and site run off	C	B	2	High	<p>Erosion and Sediment control plan:</p> <p><u>Sediment Basins</u></p> <p>Sediment basins are to be sized and located to ensure sediment concentrations in site runoff are within acceptable limits. Preliminary basin sizes will be calculated in accordance with the Blue Book and</p>	Ma	Low

SEAR	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						<p>are based on 'Type F' soils. These soils are fine grained and require a relatively long residence time to allow settling.</p> <p>Sediment basins for 'Type F' soils are typically wet basins which are pumped out following a rainfall event when suspended solids concentrations of less than 50 mg/L have been achieved.</p> <p><u>Sediment Fences</u></p> <p>Sediment fences are to be located around the perimeter of the site to ensure no untreated runoff leaves the site. They have should also be located around the existing drainage channels to minimise sediment migration into waterways and sediment basins.</p> <p><u>Stabilised Site Access</u></p> <p>For the proposal, stabilised site access is proposed at any designated site entry to the works area. This will limit the risk of sediment being transported on Burrows Road, Canal Road and other public roads.</p>		
Hazards and Risks	Potential noise or odour impacts from storage of potentially hazardous or offensive goods.	O	D	3	Low	<ul style="list-style-type: none"> ▪ Prepare a Preliminary Hazard Analysis if any future tenant seeks to occupy the development for a purpose that would be classified as potentially hazardous industry or potentially offensive industry. ▪ The storage of any Dangerous Goods (DG) shall be stored in accordance with the Work Health and Safety Regulation 2017 and any documentation required by the Regulation shall be prepared prior to occupying the space with DGs. 	Pe / Ma	Very low
Contamination and Remediation	Management of the potential for contamination during construction	C	D	3	Low	<ul style="list-style-type: none"> ▪ Prior to demolition, further investigation of the site is required to address data gaps, including the potential for landfill gas to migrate onto the site from the neighbouring former landfill and the leachability of contaminants from fill material to groundwater. ▪ Preparation of a revised RAP or an addendum to the RAP should the data gap investigation require a change to the remedial strategy. ▪ Preparation of an AMP and SWMP as part of a CEMP. The documents should be provided to the Auditor for review. ▪ Consideration of comments made in Table 12.1 of the Site Audit Report (refer Appendix BB) during implementation of the RAP, including in relation to depth of capping in deep soil zones and validation of potential USTs. ▪ Preparation of a validation report demonstrating competent and successful implementation of the RAP. ▪ Preparation of an EMP with appropriate public notification and legal enforceability and integration into the site management 	Ma	Very low

SEAR	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						<p>system. It is recommended that implementation of the EMP during site occupation is made a condition of development consent.</p> <ul style="list-style-type: none"> ▪ Preparation of a Section A2 Site Audit Statement and Site Audit Report at the completion of remediation and validation of the site. 		
Waste Management	Impacts from hazardous materials during demolition	C	B	3	Medium	<ul style="list-style-type: none"> ▪ Asbestos Containing Materials <ul style="list-style-type: none"> – Engage a licenced asbestos contractor to repair and/or encapsulate damaged surfaces (e.g. Various locations - Eaves, Unit 3 & Unit 4 – Telecommunications pit) on with a suitable asbestos sealant as soon as practicable. Once sealed maintain in good condition and incorporate into a HMMP. Remove by licence asbestos removal contractor if item is to be impacted by refurbishment or demolition. – Maintain in good condition and incorporate into a HMMP. Remove by a licenced asbestos removal contractor prior to refurbishment or demolition. ▪ Lead Containing Paint and Dust <ul style="list-style-type: none"> – Unit 1 - All dust, dirt and sediment material with lead levels above the adopted standard (i.e. above 300mg/kg) should be removed under controlled conditions. In the interim ensure dust generation is avoided. Works in the area should be conducted in accordance with the site specific HMMP. – Engage an appropriately experienced/trained contractor to remove areas of flaking paint and stabilize (e.g. Unit 1 – door frames, . Once stabilised, maintain in good condition and incorporate into a HMMP. Remove under controlled conditions prior to demolition or refurbishment. – All surfaces painted prior to 1997 should be assumed to contain lead above the current safe concentration of >0.1% w/w (AS/NZS 4361.2:2017). Conduct further testing prior to any refurbishment, remedial or demolition works on painted surfaces that is likely to generate dust or fumes. ▪ Synthetic Mineral Fibres (SMF) <ul style="list-style-type: none"> – Access to exposed/damaged materials (e.g. Unit 1 – Compressed ceiling tiles, debris) should be restricted. Engage an appropriately experienced contractor to undertake remedial/removal works as soon as practicable. – Maintain in good condition and incorporate into a HMMP. Remove under controlled conditions prior to demolition or refurbishment. ▪ General recommendations: <ul style="list-style-type: none"> – Assess areas that were inaccessible during the Assessment for hazardous materials (by a competent person prior to access or disturbance). 		Very low

SEAR	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						<ul style="list-style-type: none"> - If any suspect hazardous materials are found during future works, works should cease pending further investigation and any necessary sampling (by a competent occupational hygienist). - Conduct a destructive asbestos and hazardous materials assessment prior to any demolition or refurbishment works in accordance with Part 8.6 of the NSW Work Health and Safety Regulations 2017. 		
Aboriginal Cultural Heritage	Impacts of construction activities on unexpected archaeological finds	C	D	3	Low	<ul style="list-style-type: none"> ▪ Aboriginal heritage interpretation be undertaken for the site. ▪ Unexpected Aboriginal objects remain protected by the National Parks and Wildlife Act 1974. If any such objects, or potential objects, are uncovered in the course of the activity, all work in the vicinity should cease immediately. A qualified archaeologist should be contacted to assess the find and Heritage NSW and Metropolitan LALC must be notified. ▪ If human remains, or suspected human remains, are found in the course of the activity, all work in the vicinity should cease, the site should be secured, and the NSW Police and Heritage NSW should be notified. 	Pr / Ma	Low
Social Impact	Impact from potential construction and operational noise impacts	C & O	C	3	Medium	<ul style="list-style-type: none"> ▪ Implement all the recommendations in the Noise Impact Assessment (NIA) to reduce noise impacts, focusing on significantly reducing the use of heavy vehicles that use air brakes. ▪ In consultation with City of Sydney, Inner West Council, Bayside Council and the local communities, develop and implement a Communications Strategy to identify clear instructions for noise complaints. 	Ma	Low