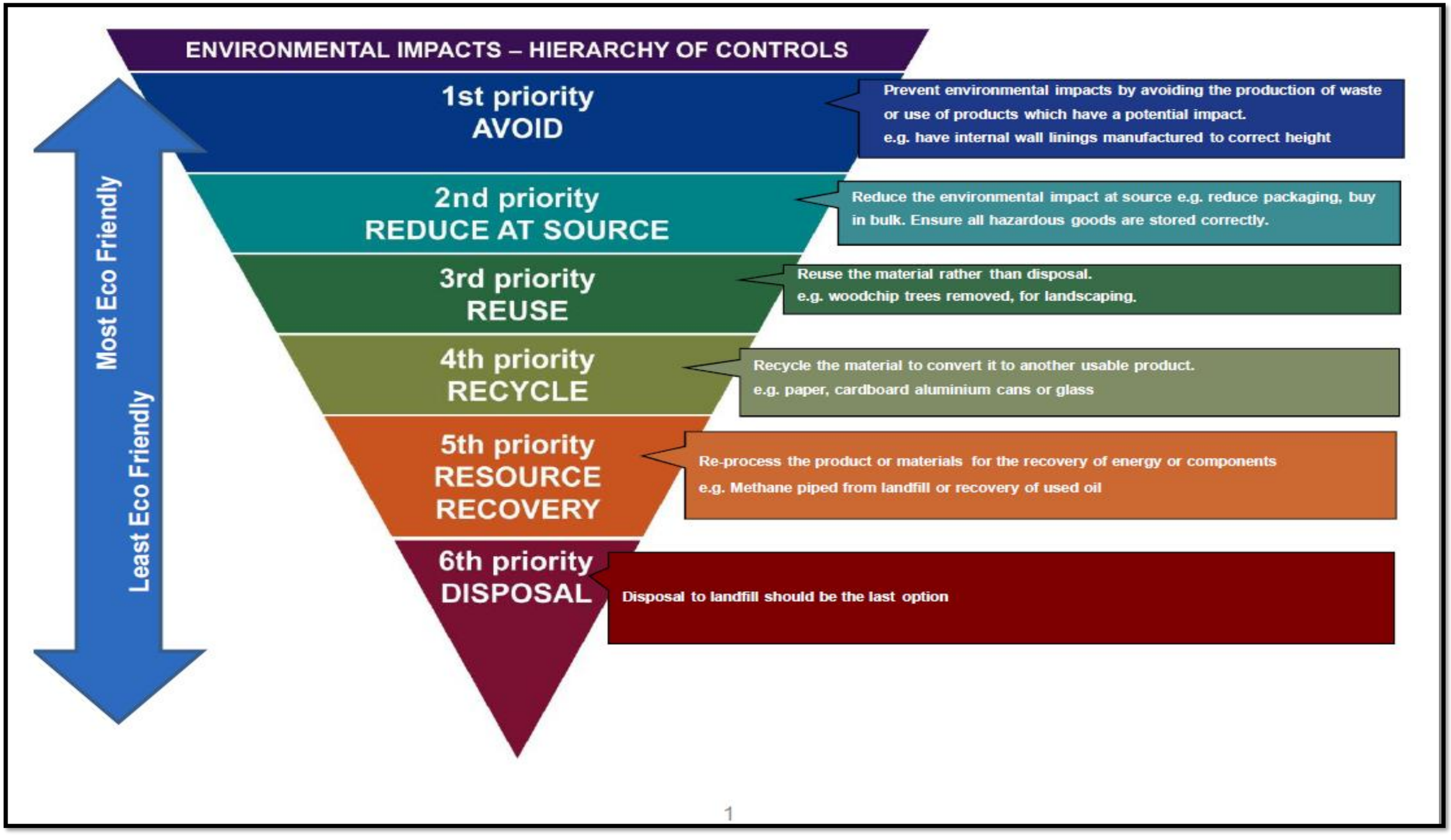
Risk & Opportunity Register

Team members: David Kemp, Sanjin Babalija, Paul Mair			**Date created for this workplace:**		**Date of This Revision: 09/08/2023** **Current Revision:(A)**	**Workplace: Riverside Quay**						**Division: Integrated Investment Portfolio**
LIKELIHOOD (L)			**CONSEQUENCE (C) - IMPACT**			**RISK RANKING (R)**						**Risk Ranking Summary**
							1	**2**	**3**	**4**	**5**	
A	**Almost Certain**	Expected to be the outcome in most cases - **91 - 100% probable**	**1**	**Insignificant**	First aid injury/s (FAI), minor environmental impact. Minor/ medium term social impacts on local population, or expected financial impact = **< $10k.**	**A**	**M** (8)	**M** (13)	**H** (18)	**E** (23)	**E** (25)	**EXTREME**-These risks are Unacceptable. The work activity should be halted until Critical Controls are implemented which reduce the risk to no greater than High. If it is not possible to reduce the risk, the work should remain prohibited.
B	**Likely**	Will probably occur in most circumstances - **51 - 90% probable**	**2**	**Minor**	Medical Treatment Injury (MTI), minor short term environmental impact. Attention from media & heightened concern by local community or expected financial impact = **$10k - $100k.**	**B**	**M** (7)	**M** (12)	**H** (17)	**H** (21)	**E** (24)	**HIGH**-These risks must be reduced where possible by implementing higher levels of Critical Control using the Hierarchy of Controls. Where the residual risk is not able to be reduced lower than High, a controlled work methodology must be in place and reviewed by the HSE Lead and Workplace Manager.
C	**Possible**	Might occur some time **31 - 50% probable**	**3**	**Moderate**	Lost Time Injury (LTI). Serious irreversible injury/disease, serious medium term environmental harm. Adverse local media coverage, or expected financial impact = **$100k - $1 mill.**	**C**	**L** (4)	**M** (11)	**H** (16)	**H** (20)	**H** (22)	**MEDIUM**-Identified Critical Controls must be capable of reducing the risk by eliminating or minimising to an acceptable level. # Critical Activities & Monitoring are to be identified and implemented by Supervisory staff.
D	**Unlikely**	Could occur, but would not be expected - **10 - 30% probable**	**4**	**Major**	Single fatality, permanent localised environmental harm. Substantial risk to corporate reputation, sustained adverse local media coverage, major repairs or project outcomes affected, or expected financial impact = **$1 - 10 mill.**	**D**	**L** (3)	**M** (6)	**M** (10)	**H** (15)	**H** (19)	**LOW**-The work is relatively safe and can be managed by following routine MMRs, procedures, guidelines & JSEA/SWMS. No further action is required, unless additional hazards arise during the work.
E	**Rare**	Rare that this would occur - no previous occurrence in similar circumstances - **< 10% probable**	**5**	**Catastrophic**	Multiple fatalities, permanent long term and extensive environmental harm. Extreme risk to corporate reputation, public outrage & national media coverage, high profile litigation, class action, threat to business division viability or expected financial outcome = **$10 - $100 mill.**	**E**	**L** (1)	**L** (2)	**L** (5)	**M** (9)	**H** (14)	**HIERARCHY OF CONTROLS** Eliminate - remove hazard completely; Substitute - replace with less hazardous; Isolate - separate the worker from the hazard Engineer - guarding, mechanical aids, ventilation; Administrate - reduce exposure, procedures, consultation; PPE - to be used in addition to above.


ENVIRONMENTAL IMPACTS – HIERARCHY OF CONTROLS
Most Eco Friendly
Least Eco Friendly
1st priority
AVOID
Prevent environmental impacts by avoiding the production of waste or use of products which have a potential impact.
e.g. have internal wall linings manufactured to correct height
2nd priority
REDUCE AT SOURCE
Reduce the environmental impact at source e.g. reduce packaging, buy in bulk. Ensure all hazardous goods are stored correctly.
3rd priority
REUSE
Reuse the material rather than disposal.
e.g. woodchip trees removed, for landscaping.
4th priority
RECYCLE
Recycle the material to convert it to another usable product.
e.g. paper, cardboard aluminium cans or glass
5th priority
RESOURCE RECOVERY
Re-process the product or materials for the recovery of energy or components
e.g. Methane piped from landfill or recovery of used oil
6th priority
DISPOSAL
Disposal to landfill should be the last option
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Typical *Significant* Hazards & Aspects Checklist

CONTACT WITH ELECTRICITY - Any contact with electricity by person or by plant /vehicle leading to potential electric shock to a person.

FALLING OBJECTS - Potential for objects, tools, materials to fall to levels below and cause injury or damage.

MOVING PLANT/ VEHICLES - Potential collision between items of moving plant/ machinery, or vehicles or contact with persons

MOVING PARTS & STORED ENERGY - Person hit by suspended / flying object, contact with or entanglement in moving parts.

SUBSTANCES INCLUDING CHEMICALS, GASES & DANGEROUS GOODS - Potential contact to eyes, skin or lungs with Hazardous Substances or Dangerous Goods.

HAZARDOUS MATERIALS - Asbestos, Lead, Polychlorinated Biphenyls (PCBs), synthetic mineral fibres or other as identified causing significant illness.

OCCUPATIONAL NOISE - Workplace noise levels from activities, plant or equipment which has the potential to cause hearing damage to persons in the vicinity.

PROJECTILE FIRING TOOLS - Hilti or Ramset explosive charge tools and air or gas powered Nail guns.

HOT WORK - Any Flame or Spark producing activity · welding, gas-cutting, grinding which may cause fire or injury.

MANUAL HANDLING - Stress to muscles from repetitive movements, sudden loading, incorrect lifting, handling techniques or overloading.

CABLES UNDER TENSION - Pre & Post Stressing of concrete.
Come-along or chain-block use, hoists and slings.

STRUCTURAL FAILURE - Falsework, Formwork & Masonry walls. Collapse or loss of the load-carrying capacity of a component or the structure itself.

EXCAVATION/ PILING/ BORING/ TRENCHING - Fall of material causing engulfment, persons falling, plant overturning, flooding, contact with underground services.

WORK IN CONFINED SPACES - Areas identified as having potential atmospheric contamination, lack or excess of oxygen or engulfment by free-flowing solids or liquids.

WORK AT HEIGHT - Potential for persons to fall from an elevated position and sustain a significant injury.

WORK OVER OR NEAR WATER - Potential for persons/ plant to slip/ fall into water and risk of drowning.

SOIL EROSION & SURFACE RUN-OFF - Loss of ground material due to wind/ water action, causing potential siltation/ pollution of waterways.

CONTAMINATED / ACID SULFATE SOIL - Incorrect management/ identification of contaminated or ASS soils.

SPILLS OR DISCHARGE CAUSING CONTAMINATION - Discharge & transfer of fuels/oils (hydrocarbons), hazardous substances, dangerous goods, concrete truck wash-out.

AIR QUALITY - Potential for pollution by dust, from wind action, disturbance of soil by vehicle/ plant movements. Exhaust emissions from plant/vehicles.

WASTE - Incorrect management of solid/ liquid waste streams leading to contamination of the environment e.g. bulk earthworks, dewatering, concrete & paint.

EFFECTS ON COMMUNITY - Any activities that may lead to actual or perceived degradation of the local community environment e.g. heavy traffic, parking, noise or negative interaction with project personnel.

DISTURBANCE TO FLORA & FAUNA - Disruption, damage or injury to animals, their habitat or local trees, vegetation and plants.

VIBRATION - Vibration from activities that may have a physical effect on the surrounding environment.

ENDANGERED SPECIES - Incorrect management, habitat control & identification of endangered species in the local environment.

HERITAGE ISSUES - Incorrect management, consultation or identification of local cultural or heritage issues.

DEVELOPMENT APPLICATION REQUIREMENTS - Failure to properly evaluate and implement critical controls may lead to environmental harm, non-conformance, fines and damage to Mirvac reputation.

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
ACCESS & EGRESS									
Fire & Emergency egress	Confusion Lack of control Trips and Falls Fatalities	**H17**	• At the time of design and construction the property complied with relevant AS, BCA or construction guidance - (Ordinance 70 if prior to AS). • All Emergency access & egress points must be clear of obstructions at all times. • All emergency and exit lighting is operational. • Regular Tests and Evacuation drills are conducted.	**Engineering**	• Fire audit to confirm compliance. • Workplace Inspections undertaken according to Mirvac schedules. • Emergency lighting maintenance undertaken as per WRMP. • Contracts established to undertake fire drills and inspections to meet regulations.	Records of: • Fire audits and Compliance certificates. • Workplace inspections. • Evacuation drills, current evacuation diagrams and signage. • Evaluation of evacuation.	**M6**	Asset Manager, Facility Management team, Service Providers	https://mirvacau.shar /HealthSafetyandEnvi /Doc.aspx?sourcedc 933D-4BC 716788B656A7%7D8 ter.xlsx&action=defau ue&DefaultIt
Public access around hazardous activities	Public exposure to hazardous activities	**M12**	• Service Provider & maintenance to erect adequate barricades/ hoardings/ signage in accordance with agreed JSEA/SWMS. • Inductions to cover Mirvac's requirements.	**Isolation**	• Mirvac staff aware of all activities in public areas, • JSEA/SWMS checked by facility management team to ensure they are suitable for the designated area.	• Regular workplace inspections.	**M6**	Asset Manager, Facility Management team, Service Providers	
Safe access though public areas/common areas	Slips, trips & falls	**H16**	• Floors to be designed to have complaint slip ratings, non compliant surfaces to be identified and managed accordingly. • Quick response to inclement weather or spills.	**Administration**	• Annual slip testing to take place • Workplace Inspections undertaken according to the WRMP and service provider cleaning agreement.	• Workplace Inspections undertaken according to the WRMP and service provider cleaning agreement. • Discuss and advise tenants to assist in ensuring floors are free from risk where possible. • Cleaning rotation inspections as per SLA. • Records of Workplace inspections.	**M6**	Asset Manager, Facility Management team, Service Providers	
AIR QUALITY									
Indoor and outdoor air quality	Adverse reactions to chemicals, particles and/or substances in the air	**H16**	• Provide clean, healthy, fresh air to facility at all times. • Ensure adequate ventilation. • Ensure recommended chemicals and treatments are used in the correct quantities at all times. • Plant, equipment and filters are inspected and cleaned on a regular basis. • All chemicals to be used in accordance with the Safety Data Sheet (SDS).	**Engineering**	• Annual air quality testing for bacteria, CO's, temp and humidity, or at more frequent intervals if deemed necessary. • Corrective and preventative actions implemented and recorded for any out of parameter levels.	• Monthly testing of water system quality. • Service Provider to be regularly monitored to ensure inspections are completed as per the SLA.	**M6**	Asset Manager, Facility Management team, Service Providers	
BIOLOGICAL									
Infection control	Exposure to blood borne infectious diseases	**H16**	• Ensure blood/faeces are cleaned up immediately after reporting, ensuring cleaners adherence to their own company procedures. • Ensure hypodermic needles, syringes, condoms or other, are collected immediately after they are reported utilising the recommended containers and tools as per SWMS / JSEA.	Elimination	• Provide appropriate training, equipment and PPE for managing biological hazards. • Dispose of biological waste in accordance with SWMS / JSEA.	• Service Provider to be regularly monitored to ensure activities are completed as per the SLA.	**L3**	Asset Manager, Facility Management team, Service Providers	
	Exposure to infectious viruses	**H19**	• Ensure Government guidelines on physical distancing can be achieved in the workplace. • Ensure that appropriate signage is displayed advising of conditions of entry and physical distancing requirements within the asset. People who are unwell will not be permitted access. • Ensure all contractors confirm compliance with control measures prior to accessing the asset. • Ensure that all high touch points are disinfected on a regular basis each day in accordance with Department of Health cleaning standards. • Ensure adequate sanitary, cleaning and PPE supplies are available. • Ensure building occupants are aware that they must report a suspected or confirmed case to building management immediately. • Ensure social distancing is maintained at seating areas (apply signage to fixed furniture, remove furniture where appropriate). • Ensure sanitisation stations are available in each lobby / EOT.	Elimination	• Provide appropriate training, equipment, PPE and resources for managing infectious viruses. • Ensure that potentially contaminated areas are disinfected immediately following a report of a suspected or confirmed case. • Ensure contact tracing is undertaken and relevant parties notified as soon as practicable. • Ensure infected individuals isolate for 14 days and obtain medical clearance before returning to the workplace	• Service Provider to be regularly monitored to ensure activities are completed as per the SLA. • Monitor reports from tenants.	**L3**	Asset Manager, Facility Management team, Service Providers	
COMMUNITY CONTACT									

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
Community contact	Public safety Brand reputation Adverse media coverage	M10	• All contact from the community including complaints, reports etc. are to be registered in iSystain within 24 hours • All media enquiries to be directly managed by the Mirvac Communications Team.	Administration	• Respond to complainant within 48 hrs.	• Records maintained in iSystain.	L3	Asset Manager, Facility Management team, Service Providers	
CONTACT WITH ELECTRICITY									
Electrical tools & equipment	Electrocution or fire	H22	• Industrial rated tools and equipment only including leads and plugs. • Elevation of leads and protection with plastic stand hooks; • Use of portable RCDs as required. • Ensure all electrical equipment is used and maintained as per manufactures recommendations and operational manuals.	Engineering	• Pre-start check of condition of leads and tools and check within test date; • Lock out/tag out all faulty equipment. • Ensure all equipment is currently tagged and tested.	• Electrical tag and testing records	M10	Asset Manager, Facility Management team, Service Providers	
Electrical Installation (switch board) Supply (transformer) Working on Switchboards and TDB	Electrocution Fire Non compliant electrical work	H22	• Adequate and compliant switch boards and wiring provided; • Residual Current Devices (RCD) installed. • Determine if any onsite transformers are owned by either the electrical authority or Mirvac. • Use of rated conduits for temporary wiring;	Elimination	• Annual testing of RCDs. • Annual Thermography Scans undertaken. • Isolation stickers are provided where required. • Implement corrective and preventative actions as required.	• Record of annual Thermoscan Report. • Regular inspection of workplace as per FCR36.	M10	Asset Manager, Facility Management team, Service Providers	
Electric welding	Electrocution Burns Fire Property damage	H22	• Compliance of switchboards with AS3012 with 30Amp socket provided at all switchboards; • Welding earth situated close to welding location and attached to clean & conductive surface; • Voltage Reducing Device (VRD) used in wet conditions or if working on or in conducting material (Cat B & C); • Training and competency; • Electrical PPE (mats, gloves, face shield); • Emergency Management Plan in place and tested.	Engineering	• Performance of VRD tested by qualified electrician quarterly • Welding undertaken by a qualified welder. • Dry welding glass gloves used by person conducting welding.	• Record of competency provided. • Records of testing & inspection.	M10	Asset Manager, Facility Management team, Service Providers	
Overhead power lines	Electrocution Falls from height	H22	• Reroute the work or reroute the overhead service to avoid contact with overhead services; • Use smaller plant (smaller design envelope) or insulated scaffold components; • Selection of insulated plant and equipment; • Power lines isolated when work is within prescribed distances; • Insulated barriers to prevent access within the exclusion zone; • Slewing and height restrictors; • Safe approach distance as per voltage and Work with Services MMR (distance in air from power line and any person, or object held by, or in contact with a person) applies in any direction where metallic scaffold is erected, used or dismantled near overhead power lines up to and including 33,000 volts; • Plant & equipment maintains prescribed distances according to voltage: • Up to & including 132,000 volts - 3.0 metres • Above 132,000 & including 330,000 volts - 6.0 metres • Above 330,000 volts - 8.0 metres;	Engineering	• Power lines highlighted with 'tiger tails' • Exclusion zone marked for overhead cables and signage displayed • Spotter assigned for High Risk work • Hydraulic limiters installed on plant & equipment capable of reaching into exclusion zone. • Electricity Authority permits issued for work within prescribed distances • Earthing of overhead conductors is visible (e.g., earthing clamps)	• On-site observation • Records of Regulatory Authority Permits and training On-site observation	M10	Asset Manager, Facility Management team, Service Providers	

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
			Above 330,000 Volts - 8.0 metres; • Goal posts and bunting on entry points and bunting below wires; • Spotter in place for the work; • Tiger tails on wires; • Training and Competency;						
Underground power cables	Electrocution Loss of power	H22	• Design the work to avoid existing underground services; • Utilise safer digging method (non-destructive digging), ceramic handled shovels for pot holing; • Use of GPR and cable locators to accurately identify existing services; • Etraction of hard barriers to protect from contact with the service; • Use of pot holing to positively identify service routes; • DBYD and As Constructed drawings to identify location and age of service; • Hold points in the work as per Excavation Piling Boring Trenching Permit; • Dedicated safety spotter during the works.	Engineering	• Survey of excavation areas including 'As Executed' drawings and Dial Before You Dig (DBYD) • 'Potholing' to visually confirm location/depth and mark routes/depth on survey pegs. • Issue Mirvac Excavation Permit including up to date drawings	• Records of Survey/Drawings, DBYD, and Drawing Register • On-site observation	M10	Asset Manager, Facility Management team, Service Providers	
Drilling/Saw cutting into slab with energised in-situ electrical cables	Electrocution Loss of power	H21	• No drilling or cutting into slab (> 40mm) with live electrical cables unless approval has been given by Mirvac centre management. • Slab scans to be completed is approval is given • Check at switchboard locations or underside of floors to determine if conduits and / or cables enter / exit the structure / slab etc. • Barricading is to be erected around areas to be cut to ensure only those involved have access. The slab must be cut into block sizes that can be lifted by a crane or a lifting device approved by a competent engineer. • For any work involving cutting, nailing, coring or drilling where work is within 3m of a known electrical, gas, water or telecommunications service the Coring Chasing Concrete Cutting Permit must be completed. A Permit must also be completed where the depth of the penetration is >40 mm or is determined by risk assessment to require one.	Engineering	• In the event of drilling or cutting into a slab that has live electrical cables, once assessed by site electrician and Mirvac Workplace Manager if the area has potential for live cables in that area then a Mirvac Coring permit must be complete, where isolating all power to that area will be ensured. • Toolbox talk and consult service providers on procedure and when slabs are energised, communicate at subcontractors meeting. • All services must be marked-up using a non-water-soluble fluoro marker plus on the site plan before work starts. High voltage cables must also be sign posted with their location.	• Records of Consultation • Coring/Chasing permit • Scan record • On site observations	H15	Asset Manager, Facility Management team, Service Providers	
Undertaking Electrical Work on or near energised services (installation, commissioning, maintaining, fault finding, isolating, testing, re-energising)	Electrocution Explosion	H22	• Person not working on 'live' equipment (e.g., Distribution Board or circuit isolated & locked out); • Hard barriers to maintain safe approach distances and prevent inadvertent contact; • Rated insulation/intrinsically safe tools to protect if contact occurs; • Isolation Lockout Tagout MMR and personal locks; • Earth leakage protectors and inbuilt fault tripping; • Isolation Lockout Tagout Permit; • Training and Competency; • Emergency Recue Kits and Standby Person; • Electrically rated PPE, mats, gloves, multimeter; • Electrical Handover processes and certificate.	Engineering	• Person is licenced electrician using Service • Provider Isolation Procedure or trained in Mirvac Isolation Procedure	• Record of competency & isolation training provided • Physical lock out/isolation system observed in operation • Register of lock out/isolation system implementation	H19	Asset Manager, Facility Management team, Service Providers	
CONFINED SPACES									
Entry into confined space • Grease traps • Pits (Lifts) • Storage & Retention Tanks • Cooling towers • Drainage pits	Entry by unauthorised person	H20	• Design out and eliminate the need to enter confined spaces where possible; • Confined spaces labelled and access restricted (e.g. Key locked, signage, barricade) (isolation); • Maintain a register and risk assessment for Confined Spaces (administrative) • Confined space entry controlled through permitting system (administrative);Design out confined spaces where possible;	Isolation	• Confined space entry permit completed by person trained in confined spaces (by RTO with confined spaces in their scope). • Entry restricted to persons with confined space training certificate. • Person that accepts risk assessment is trained in risk assessment • Standby person at confined space entry point controls entry and exit • Gas monitor has a current calibration and is 'bump tested' in fresh air prior to each use. • Emergency retrieval system has been prepared or authorised by a person that is confined space trained (by RTO with confined spaces in their scope).	• Register of Identified Confined Spaces and risk assessment. • Record of training • Register of persons entry/exit to space	H15	Asset Manager, Facility Management team, Service Providers	
CONSTRUCTION ACTIVITIES									
Principal Contractor construction activities	Injuries to people, damage to property and the environment	H16	All construction works over $250,000 ($350,000 VIC) performed on site must have an appointed Principal contractor. All construction works below this amount must have a licensed builder. Principals Contractors must be appointed in accordance with the Mirvac Principal Contractor Management Procedure. Mirvac Contractor Registration & Qualification Process to be undertaken by Principal Contractor in consultation with HSE. Contractors to follow and abide by their own SWMS/JSEA for specific work being undertaken.	Administration	A representative from the PC is to undertake the Mirvac Contractor Registration and Induction process. All employees and subcontractors of the PC must undertake the PC's induction for the project. If a PC is not required to be appointed, all contractors must follow the Mirvac Contractors Registration and Induction process. A representative from the PC is to log in/ out of contractor management system (CMS) daily whilst works are being undertaken. PC employees and subcontractors conducting building impact works must sign in/out of the CMS terminal.	BM to conduct periodical inspections of construction as per FCR37. Implementation Review to be undertaken by HSE.	M10	Asset Manager, Facility Management team, Service Providers, HSE	

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
Construction activities Refurbishments/Refit etc.	Injuries to people, damage to property and the environment	H16	All construction works under $250,000 ($350,000 VIC) must be completed by a licensed contractor. Mirvac Contractor Registration & Qualification Process to be undertaken by Mirvac contractors and tenant contractors undertaking building impact works. Contractors to follow and abide by their own SWMS/JSEA for specific work being undertaken.	Administration	Contractors to log in/ out of contractor management system (CMS) daily whilst works are being undertaken. BM to review CMS for site access and compliance.	All contractors and tenant contractors conducting building impact works must complete Mirvac registration and induction process prior to starting works. BM to conduct periodical inspections of construction as per FCR37	M10	Asset Manager, Facility Management team, Service Providers	
CONTRACTOR MANAGEMENT									
Mirvac and Tenant Contractors	Injuries to people, damage to property and the environment	H17	• Mirvac Contractor Registration & Qualification Process to be undertaken by contractor. • Contractor audit FCR37 to be conducted twice a month. • Review SWMS to ensure adequate control are identified in SWMS. • Contractor to follow Mirvac HSE Management System	Administration	• Contractors to log in/ out of contractor management system (CMS) daily whilst works are being undertaken. • FM to review CMS for site access and compliance	• Completion of Mirvac General and Workplace Specific inductions prior to attending site. • FCR 37 • HSE Observations	M10	Asset Manager, Facility Management team, Service Providers	
COOLING TOWERS									
Cooling Towers	Legionnaires disease Respiratory failure	H21	• Management of cooling towers to be in line with the Mirvac Retail Cooling Towers Manual to ensure adequate water treatment and cooling tower monitoring process is maintained. • Bacterial water testing to be inducted on a monthly basis.	Administration	• Implementation of the Mirvac Retail Cooling Tower Manual. • Engagement of suitable qualified service provide for water testing and cooling maintenance.	• Inspections as per cooling tower manuals. • Monthly testing of cooling tower water, follow-up of corrective action for any out of parameter readings.	M10	Asset Manager, Facility Management team, Service Providers	
EMERGENCY PREPAREDNESS									
First Aid	Injuries to people, damage to property and the environment, including escalation	M11	• First aid officer to undertake competency-based training form a RTO. • A first aid officer to be on shift at all times. • First Aid Officer poster to be displayed in all visible locations.	Administration	• Site Specific Procedures Manual to be held on site. • BM to ensure evacuation plans (with identified “you are here” stickers) are in place and displayed at Mirvac Retail workplaces.	• Observe that evacuation plans are in place and displayed in prominent locations. • Regular evacuation training is provided to tenant employees including first aid (supplies and training).	L2	Asset Manager, Facility Management team, Service Providers	
Naturals disasters	Loss of life, property and interruption to business operations	H22	• Senior management to be involved to review the location (proximity to hazard – flood prone areas/bush fire zones) and type of asset (structure - to determine if the risks to the asset can be eliminated or minimised. • Flood prevention and mitigation strategies to be developed in line with local government recommendations. All new builds and refurbishments are to undergo the DOOR process to ensure Flood/Bushfire risk may be reduced by the design.	Administration	• Where the risk is present as determine by the DA or council requirements, the development of a flood/bushfire management plan linked to the Emergency Response/business continuity plan (BCP) is to completed and implemented (communicated) into the facility overall site specific procedures.	• Weather events which have the likelihood to impact the property are to be monitored through local and state media (bureau of Meteorology, News (TV/Radio) stations.	L3	Asset Manager, Facility Management team, Service Providers	
Evacuation/Bomb Threats	Damage to Property	H22	• Evacuation and control procedures documented by Mirvac Retail specific emergency evacuation consultant. Documents to be held on site by site team. • Procedures to be practiced regularly. • Document to be reviewed on a regular basis.	Administration	• Where the risk is present as determine by the DA or council requirements, the development of a flood/bushfire management plan linked to the Emergency Response/business continuity plan (BCP) is to completed and implemented (communicated) into the facility overall site specific procedures.	• Weather events which have the likelihood to impact the property are to be monitored through local and state media (bureau of Meteorology, News (TV/Radio) stations.	M9	Asset Manager, Facility Management team, Service Providers	

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
Fire	Fire, loss of life and property	H15	• All buildings to include fire protection systems to detect and prevent the spread of fire. • Fire systems to be identified in Emergency & Evacuation Management Plans • All isolations of fire systems to be recorded by "Isolation Permit" at Building Management as well as isolation log book at FIP.	Administration	• Verification of annual Maintenance requirement – Service Providers to comply with AS1851 (Routine service of fire protection systems and equipment) • Emergency Evacuation training for all employees and use of certain fire equipment (QLD/ fire extinguisher). • All systems and equipment to be tested as per AS 1851 and certified by contractor allow the Annual Fire Safety • Statement to be completed and issued to council, as well as Insurers and National Ops Mgr. advised of impairments and of their return to service.	• Fire system inspection and critical dates maintained as per Mex requirements. • Annual Emergency Evacuation Drills. • Bi- Annual Emergency Control Organisation (ECO) training.	L5	Asset Manager, Facility Management team, Service Providers	
ESCALATORS, TRAVELATORS AND LIFTS									
Escalators, travelators and lifts	Entrapment, falls from heights, crush injuries	H20	• Lifts, escalators and travelator operation and maintenance must be in compliance to Mirvac Retail Lifts, Escalator and Travelators Procedure. • Regular inspections to be undertaken.	Isolation	• Lifts, Escalator and Travelators are to be covered by comprehensive (maintenance) contracts provided by recognised lift maintenance companies.	• FM to carry out routine inspections of lifts, travelators and travelators or as per FCR36 requirements.	M9	Asset Manager, Facility Management team, Service Providers	
EXCAVATION/PILING/BORING/TRENCHING									
Standard Excavation	Injuries to people, damage to property and the environment	H15	• Hazardous/contaminated soils (hot spots) identified; • No contact with underground services (e.g., power cables, gas, communications or other services). • Identification of soft ground/ soil which may be subject to collapse once excavated. • People that are not part of work crew are not in excavation; • Trench is effectively shored, benched or graded at no more than 45 degrees when deeper than 1.5 metres; • Equipment, plant, materials or spoil is not within • 1 metre of edge, or within the "zone of influence". • Any trenches, pier holes, pits, and other penetrations deeper than 1.5 metre are not left opened and unattended, and are backfilled, covered or barricaded and signposted "Penetration Below". • Excavator boom and bucket not slewed over workers. • People clear of area in trench when lifting is being undertaken. • No person to work alone in trench unless spotter is present.	Engineering	• Soil test to be carried out by NATA certified lab (for tests being used) • Survey of excavation areas including 'As Executed' drawings and Dial Before You Dig (DBYD) • 'Potholing' to visually confirm location/depth of services and mark routes/depth on survey pegs. • Use of Excavation Permit including up to date drawings • Access to excavation area is controlled by use of barricades and signage (and spotter if required). • Excavations are accessed at 9 metre intervals along trench. • Ladders/scaffold stairs fixed at top and bottom and to extend 1m above ground level. • Daily inspection of trench walls completed by competent person • Daily inspection of trench walls and surrounding area completed by competent person • Machine operator is licenced • Spotter in sight of operator at all times • Trenches, pits or other penetrations secured at the each of each day or when unattended	• Soil test records • Management plan in place • Records of surveys, drawing registers and DBYD/As Executed drawings available • DBYD/As Executed Drawings attached to permit • Records of Excavation Permits • As Executed Drawings, drawing registers updated with new services installed • On-site observation • Records of inspection	M9	Asset Manager, Facility Management team, Service Providers	
Deep Excavations e.g., greater than 3 metres	Injuries to people, damage to property and the environment	H20	• Controls above • Documented emergency retrieval system exists and is able to be enacted if required (trialled via drills)	Engineering	• Activities above • Emergency retrieval system has been prepared or authorised by a person that is confined space trained	• Activities above • Record of training • Records of evacuations and training drills	H15	Asset Manager, Facility Management team, Service Providers	

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
FALLING OBJECTS									
Stationary Working Platforms (e.g., scaffolds, elevated walkways, trestles) including collapse	Object falling from height Hit / Strike employee or member of public	**H16**	• Use of physical barriers to prevent objects dropping (containment meshing); • Brick guards fitted where potential for falling objects exists; • Protection of the structure from being hit by loads or mobile plant; • Toe boards installed; • Scaffolds, walkways, elevated work areas e.g., slabs, roofs have toe boards installed.; • Work within the design rating of the equipment; • Management of Change process to ensure integrity is maintained when structure changes; • Scaffolding design drawings and plans and checks that construction is compliant.	**Isolation**	• Handover certificate received • Mirvac inspection prior to acceptance.	• Records of Certificates and Inspections • On-site observation	**M10**	Asset Manager, Facility Management team, Service Providers	
Mobile Working Platforms (e.g. Elevated Work Platform (EWP), Scissor Lift, Swinging Stages, mobile scaffolds)	Object falling from height Hit / Strike employee or member of public	**H16**	• Staging of the work when no one else around; • Separated work fronts to avoid simultaneous operations; • Adhere to minimum standards for design compliance; • Exclusion zone implemented • Work within the design rating of the equipment; • Management of Change process to ensure integrity is maintained when structure changes; • OEM requirements complied with; • Processes for the management of Design of Temporary Works; • Plant Arrival Checklist; • Plant Risk Assessment; • Plant maintenance and inspection regime; • Verification of Competency for operators; • High Risk Work Licenses where required (e.g. scissor lift over 11m).	**Elimination**	• Handover certificate received • Mirvac inspection prior to acceptance • Exclusion zone marked and maintained	• Records of Certificates and Inspections • On-site observation	**M10**	Asset Manager, Facility Management team, Service Providers	
HAZARDOUS SUBSTANCES									
Storage and Handling of Hazardous Substances	Spills or discharge causing contamination Injury/Illness of Member of Public, Contractor or Worker	**M10**	• Substances/goods stored and handled in accordance with SDS (Safety Data Sheet). • Appropriate bunding for hazardous chemicals with a minimum of 110% capacity. • Untrained people not to use or determine storage requirements for hazardous substances or dangerous goods • Products stored in approved cabinets or purpose-built containment areas • Hazardous Substance Risk Assessment completed including research and purchase of less hazardous/ dangerous products • All users of hazardous substances appropriately trained and have adequate PPE • Spills kits in stock • Appropriate First Aid facilities including eye wash stations	**Substitute**	• Products & Hazardous Substances Register completed listed • SDS (Safety Data Sheet) for all products in use, issue date less than 5 years old. • Hazardous Substance Risk Assessment completed for all products/substances/goods classified as hazardous • Products/substances labelled • Person trained in storage and use of hazardous substance and dangerous goods as outlined on the HSRA and in the MSDS (SDS) • Appropriate number of spill kit and in appropriate locations	• Records of MSDS (SDS) • Spill Kit stocked and audited. • Records of spill response training available. • On-site observation. • Drainage outlet to bunding locked.	**L5**	Asset Manager, Facility Management team, Service Providers	
HAZARDOUS MATERIALS									
Asbestos, Lead, Polychlorinated Biphenyls (PCBs), synthetic mineral fibres, lead or other as identified (also refer Asbestos in Occupational Exposures Section)	Asthma, skin rashes, allergic reactions, allergic sensitisation, cancer, and other long term diseases from exposure to substances.	**H22**	• Hazardous material survey to be conducted on all assets built before 2003 and if materials found a new survey to be completed every 5 years. • All identified asbestos must be labelled with the type and nature of the material (friable/non-friable). • Removal of asbestos to be conducted by licensed removalist. • Hazardous material to be disposed of in accordance with Local, State and Federal Legislation. • If suspected asbestos is found in asset it is to be treated as Asbestos; • Asbestos is to be wet down, National HSE Manager be notified, tests to be completed to determine if it is Asbestos.	**Administration**	• Hazardous Material Survey to be reviewed prior to any work commencing • Contractor licensed by Environmental Regulatory Authority (ERA) • Transporter and receiver of waste are ERA Licensed • Waste transport certificate is obtained. • Signage and emergency response equipment available relevant to the class of substance/good stored.	• Records of survey/ licenses • Hazardous Materials - 5 yearly inspection of areas containing Asbestos by a competent person. • A Register of all Hazardous Materials to be kept on site.	**H14**	Asset Manager, Facility Management team, Service Providers	
HEAVY VEHICLES									

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
Vehicles with twin axel or greater	Fatigue, motor vehicle accident, unsecured load.	H22	• Ensure that any items packed or loaded by Mirvac personnel are packed and secured safely. .	Administration	• Do not direct or encourage the driver to work unsafely (e.g. speeding or driving while fatigued).	• Monitor vehicle and driver activity on site and address any concerns immediately.	H14	Asset Manager, Facility Management team, Service Providers	
HOT WORKS									
Hot work (welding, burning or angle grinding) -	Fire Burns Property damage Environmental damage	H16	• If possible, redesign the work methodology to a non-heat producing methodology; • Non-flammable screens to protect flammable substances from the work; • If welding/cutting, gas cylinders secured and have flashback arrestors fitted at torch and gas bottle on both hoses; • Hot Work Permit used and copy at location of work; • Trained and competent operator; • Fire equipment working properly and located within 2 metres of hot work; • Spotter in place with firefighting equipment; • Fire Equipment Register and maintenance program	Engineering	• A competent and experienced person has conducted a Risk Assessment of the proposed work and inspected the workplace. • Hot Work Permit issued in accordance with the Hot Work Procedure and discussed with the person undertaking the hot work. • Include potential of falling objects and hot material from overhead Hot Works in JSEA • Review of Hot Work Permit if work conditions or location changes. • Inspection during hot work task. • Permit closed out at conclusion of hot work • 12 monthly testing/ replacement of flashback arrestors Flashback arrestors fitted by competent person (e.g. plumber, welder) • Inspection of fire equipment carried out within last 6 months • Personnel trained in use of fire extinguishers	• On-site observation • Hot Work Permit at work location, all conditions comply • Maintenance records	M10	Asset Manager, Facility Management team, Service Providers	
LIGHTING									
Lighting	Inadequate lighting causing Injuries to people, damage to property	M11	• All designs to comply with Australian Standard Building Fit Out specifications. • Compliance with the relevant Australian Standard for LUX Levels • Task specific lighting in place as per SWMS / JSEA.	Engineering	• DOOR 4 inspection to verify sufficient lighting • Regular inspection of workplace.	• Regular lighting inspections undertaken with defects identified and reported. • Night audits completed	L2	Asset Manager, Facility Management team, Service Providers	
MANUAL HANDLING									
Activities that may include lifting, lowering, pushing, pulling	Sprains, strains and damage to joints ligaments and muscles	H16	• Consider safe access and use in the design phase (DOOR). • Assess the risk prior to any manual handling task. Plan the task and ensure pathways are clear. Use mechanical aid or trolley where possible. • Bulk loads must be secured on trolleys to prevent toppling. • Follow SWMS / JSEA for all hazardous manual tasks.	Elimination	• Training in correct manual handling techniques (incl. on-going toolbox talks, coaching) • Maintain mechanical aids. • Monitor hazardous manual tasks to ensure compliance.	• Records of training • On-site observation • Maintenance records	M10	Asset Manager, Facility Management team, Service Providers	
OCCUPATIONAL EXPOSURES									
Thermal Stress/ UV radiation	Illness to workers from long terms exposure	H16	• Job rotation, provision of PPE, rest breaks, provision of thermally regulated break rooms • Limit physical work to early mornings when temperatures are cooler; • Provide adequate shade and access to drinking water; • Stop work in extreme temperatures; • PPE and sunscreen in use as per SWMS / JSEA; • All persons handling or storing hazardous chemicals/substances must undertake Occupational Exposures Training	Elimination	• Supervision of work design and task rotation; • Workplace inspection; • Monitor BOM forecasts; • Temperature and Humidity monitoring	• On-site observation by Mirvac and regular inspections	M9	Asset Manager, Facility Management team, Service Providers	
Inhalable dust/ Respirable Dust/ Crystalline Silica	Illness to workers from long terms exposure	H21	• Use of dust minimising work practices (e.g. wet cutting) • Use of dust minimising hand tools (grinders/ saws fitted with vacuum extraction) • Use of Respiratory Protection as per SWMS / JSEA; • Project personnel alerted to substances and risk of exposure; • All persons handling or storing hazardous chemicals/substances must undertake Occupational Exposures Training	Engineering	• Workplace inspection to ensure dust suppression is adequate; • Dust monitors to be used where required	• Air quality monitoring by hygienist where required.	M10	Asset Manager, Facility Management team, Service Providers	

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
Diesel particulate	Illness to workers from long terms	H16	• Forced ventilation; • Use of catalytic converter when indoors; • Personnel alerted to substances and risk of exposure; • All persons handling or storing hazardous chemicals/substances must undertake Occupational Exposures Training; • Substitute with Gas power where possible.	Engineering	• Ensure design provides adequate ventilation (DOOR Process); • Plant and equipment is maintained and serviced as per manufacturers recommendations.	• Site Inspections and Audits; • Induction Records	M10	Asset Manager, Facility Management team, Service Providers	
Organophosphate	Illness to workers from long terms	H16	• Use of lowest risk chemicals/ organophosphate free where possible; • Use of PPE; • Project personnel alerted to substances and risk of exposure; • All persons handling or storing hazardous chemicals/substances must undertake Occupational Exposures Training	Substitution	• Required training occurs; • JSEA/SWMS approval process considers required controls.	• Site Inspections and Audits; • Induction Records	M10	Asset Manager, Facility Management team, Service Providers	
VOC's	Illness to workers from long terms	H16	• Hazardous substance pre-purchase risk assessment- low VOC process; • Use of forced/ natural ventilation; • Respiratory protection; • Project personnel alerted to substances and risk of exposure; • HSE Manager trained in Mirvac Occupational Exposures Training • Occupational Exposures covered in Induction Training for all workers	Substitution	• JSEA/SWMS approval process considers required controls • Required training occurs;	• Site Inspections and Audits; • Induction Records	M10	Asset Manager, Facility Management team, Service Providers	
Heavy Metals/ Weld Fume	Illness to workers from long terms exposure	H16	• Forced ventilation • Substitute welding with lower risk work practices • Respiratory protection • Hot works permit • Project personnel alerted to substances and risk of exposure; • HSE Manager trained in Mirvac Occupational Exposures Training • Occupational Exposures covered in Induction Training for all workers	Engineering	• JSEA/SWMS approval process considers required controls; • Required training occurs;	• Site Inspections and Audits; • Induction Records	M10	Asset Manager, Facility Management team, Service Providers	
OCCUPATIONAL NOISE									
Noise	Hearing loss or damage. Discomfort to the community	M11	• Noisy activities isolated from general work areas by noise barriers wherever possible • Personal hearing protection must be work as required in the SWMS / JSEA's • Use of noise minimising tools / equipment where possible. • Appropriate respite periods to be incorporated into the job schedule.	Engineering	• Audiometric testing for at risk employees if required to wear hearing protection on a frequent basis. • Noise monitor to be calibrated according to manufacturer's instructions, and Occupational Noise MMR. • Inspection of isolation barriers • Noise monitoring conducted where changes occur to a property. Relevant information is to be capture during design.	• Records of Noise Monitoring; • Records of Calibration; • Records of hearing test programs • On-site observations	L2	Asset Manager, Facility Management team, Service Providers	

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
PLANT & EQUIPMENT									
Operation of Plant and Equipment in common areas	Injuries to people Damage to property	H20	• Exclusion zone set for all plant operating in common areas • High vis vets, reversing beepers to be used • Spotter required when plant is moving • If more than 1 plant operating in the area, a spotter is required to manage pedestrians. • Operators is licenced and competent. • Plant arrival checklist to be completed including obtaining appropriate licenses • Appropriate permit completed • Rules of operation are established (e.g., speed limits, looking in direction of travel, stopping at blind corners)	Administration	• Requirement for spotter, PPE and reversing beeper included in JSEA • Spotter rotated regularly • Operator is licenced and competent	• On-site observation • Regular inspections • Completion of FCR 36 and 37 • Record of competency • Permit • Plant Arrival Checklist	H15	Asset Manager, Facility Management team, Service Providers	
Plant and equipment with moving / rotating parts	Injuries to people Damage to property	H20	• Design to eliminate the risk or reduce to as low a practicable; • Appropriate machine guarding or exclusions zones must be in place; • Where possible use Interlocks to cut power to moving parts; • Plant arrival/induction checklist to be completed on all plant; • Appropriate Permit issued prior to use; • Operators trained and competent in correct use; • All plant and equipment undergo routine maintenance to OEM requirements; • All signage and warning signs in place: decals, crushing hazards, pinch points etc.; • Plant Risk Assessment; • PPE.as per SWMS/JSEA	Engineering	• Inspection of guards including adequacy of screening and fixings • Pre-operation checks and regular inspections. • Operator is competent to use equipment.	• On-site observation • Lockout Tag our Procedure. • Maintenance Schedule and Reports. • Pre-operational check and inspections.	L5	Asset Manager, Facility Management team, Service Providers	
Maintenance of plant and equipment	Injuries to people Damage to property	H16	• Plant to be de-energised and locked out prior to commencing work. • Maintenance plan as per OEM requirements; • Maintain Plant and Equipment Register and records; • Qualified mechanics performing servicing; • Plant Risk Assessment.	Administration	• 'Test for Dead' before work commences	• Records of isolation - lock out/tag out register	M11	Asset Manager, Facility Management team, Service Providers	
Radio Frequency Hazards	Injury to people	H16	Refer to RFI report on exclusion zones and procedusres	Administration	Access Procedures and Security Controls	Secuirty Sign in Procedures	M11	Asset Manager, Facility Management team, Service Providers	
PLANT ROOMS									
Main Plant Room Sprinkler Valve Room Switch Rooms Lift Motor Rooms Fire Control Rooms	Injuries to people, damage to property	H16	• All plant and switch rooms are to be locked, secure with access keys to be restricted. • Unauthorised access into the plant rooms to be prevented. • Plant rooms to be free from unnecessary items and must contain sufficient lighting.	Elimination	• Access control system to be put in place to monitor access. • Appropriate signage to be installed at entries.	• Regular security checks to be undertaken to ensure enclosures remain locked and secure. • Completion of FCR36 and appropriate tenant inspections where required.	L2	Asset Manager, Facility Management team, Service Providers	
SECURITY									
Security Operations	Armed Hold up Injuries to people, damage to property	H20	• Facility type / tenant profile to be assessed for heightened threats. Additional controls to be included here as required.	Administration	• Discussions with Security contractor for appropriate controls as per level of threat. • Security Operations: Site Specific security procedures for various activities to be in place e.g. patrols, after hours procedure, JSEA for common activities- golf carts.	• Maintaining security procedures and business continuity plans. • Security Operations: Completion of FCR37 at regular intervals.	M9	Asset Manager, Facility Management team, Service Providers	
STORM WATER DISCHARGE									

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
Storm Water Discharge	Environmental Damage	H15	• Ensure that areas draining to the stormwater system are maintained and free from litter and debris. • Ensure that waste containers are provided in appropriate areas to prevent litter entering the stormwater system (for example ash trays and litter bins). • Ensure that all chemicals stored near stormwater drains are bunded to prevent leaks and spills from entering the stormwater system.	Engineering	• Provide a spill kit where appropriate, for example in car park, to ensure that oils, fuels and chemicals do not enter the stormwater system. • If appropriate, install trash racks, drain screens or separators to prevent stormwater becoming contaminated.	• FCR01 • FCR036 • Daily Operational Inspection	M9	Asset Manager, Facility Management team, Service Providers	
TEMPORARY FENCING									
ATF Fencing	Injuries to people, damage to property	H16	• Any temporary fencing must comply with AS 4687-2007 – Temporary fencing and hoardings and be erected as per manufacturers/hirers recommendations to ensure fencing can withstand impact from people and any other forces such as wind. • If shade cloth is applied, the material must allow sufficient wind permeability.	Administration	• Regular inspection and maintenance	• Asset Property Holding Inspection • FCR 01 • FCR 036		Asset Manager, Facility Management team, Service Providers	
TRAFFIC MANAGEMENT									
Car parks Loading docks Pedestrian Management	Vehicular collision, people struck by moving objects, crush injuries and damage to property	H17	• Implement Traffic Management Plan (TMP). • Pedestrians separated from moving plant/vehicles. • Loading Docks to be designed and operated to effectively separate pedestrian and vehicles. • Rules of operation established (e.g. speed limits, looking in direction of traffic, stopping at blind corners).	Isolation	• Where pedestrians and plant/vehicle can be separated- On-site observation/ Record of TMP and certificate of competency. • Where pedestrians and plant/vehicle cannot be separated - On-site observation/ Record of competency. • Issues and safety concerns to be raised and discussed at the tenant / retailer meetings	• Regular inspections undertaken using the MEX system of reporting and defect identification. • Appropriate signage / line marking/ barricades to be in place.	L5	Asset Manager, Facility Management team, Service Providers	

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
WORK AT HEIGHT									
Mobile scaffolds	Falls from a height	**H20**	• Mobile scaffold installed as required including sturdy structure, fully planked, internal access with trapdoor, handrail min 900 mm, mid-rail and toe boards. • Mobile scaffolds are away from edges and penetrations • Personnel removed, tools and equipment secured prior to moving • Brakes/castor wheel locks applied whilst scaffold is in use	**Engineering**	• If over 4 metres, erected by licenced person • Handover certificate provided (for scaffolds over 4 metres) • Inspection of scaffold every 30 days by licenced (if > 4 m) or competent person or after adverse weather conditions • Minimum 1 metre back for every 1 metre in height of the scaffold platform	• Records of Licence (if over 4 metres) • Records of certificates • On-site observation	**H15**	Asset Manager, Facility Management team, Service Providers	
Other Fall Prevention Strategies	Falls from a height	**H16**	• For all tasks 2.0 metres and over, identified as having potential for persons to fall. • Risk Assessment to identify the **most appropriate fall prevention method** for the location specific task, including 'fall restraint' & 'travel restraint' utilising the Hierarchy of Control. • Emergency Rescue Plan (ERP) incorporating a Retrieval Plan developed	**Administration**	• Task personnel are involved and trained in the location/task specific JSEA (or equivalent) & ERP; • Task personnel have attended recognised Fall Equipment training to "Work Safely at Height" • Include potential of falling objects and hot material from overhead Hot Works in JSEA • Correct installation & use of appropriate fall arrest equipment identified above	• JSEA (or equivalent) & ERP with Retrieval Plan for specific task/location • Statement of Attainment - Work Safely at Height • Task personnel have Statement of Attainment - Work Safely at Height	**M9**	Asset Manager, Facility Management team, Service Providers	
Industrial rope access	Falls from height/ falling objects	**H20**	• All working at height equipment to be installed and maintained in accordance with manufacturers recommendations. •Engage appropriately qualified service providers. •All roof access to be controlled. •Rope access permit to be issued prior to commencing work.	**Administration**	• Service Provider to undertake CMS process • Appropriate permit to be in place. • Roof Access Management Plan to be adhered to • JSEA (or equivalent) signed by work crew, for all external tasks to establish effective means of preventing falling objects and preventing injury to personnel. • Certified anchor points.	• Routinely check roof access during property inspections. • On-site observation. • Industrial Rope Access permit • Fall restraint equipment register. • Record of inspection by a competent person at maximum 6 month intervals for safety harness and max 3 months for wire ropes or other fall arrest equipment. • Anchor point(s) certified prior to use or at max. 12 month intervals. • Training in the use of fall arrest equipment verified	**M9**	Asset Manager, Facility Management team, Service Providers	
Building Maintenance Unit (BMU)	Falls from height/ falling objects	**H20**	• Designed in accordance with Australian Standards • Operated by competent persons in accordance with Australian Standards • BMU Platform must have sufficient, clearly designated safety harness anchorage points designed to withstand forces caused by a fall of any person located anywhere on the platform. • BMU Permit issued prior to commencing works.	**Administration**	• Service Provider to undertake CMS process • Appropriate permit to be in place. • JSEA (or equivalent) signed by work crew, for all external tasks to establish effective means of preventing falling objects and preventing injury to personnel. • Certified anchor points. • Registration of BMU.	• Routinely check roof access during property inspections. • On-site observation. • BMU permit • Preoperational checks to be completed before each use (BMU to be taken out of service if faults found). • BMU Operation Log is to be completed and verified before each use. • Record of inspection by a competent person at maximum 3 month intervals. • Registration of BMU. • Anchor point(s) certified prior to use or at max. 12 month intervals. • Record of training in BMU for operators. • Record of Working at Heights training for operators		Asset Manager, Facility Management team, Service Providers	

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
Roof access	Falls from height/ falling objects	H20	• No work within 3 metres of the edge. • If access to edge of roof is required (less than 3 meters) fall arrest is required. • Fall arrest to be tested and in date • All roof access to be controlled through a master key. • Roof access permit required for all roof access.	Administration	• Fall prevention strategy determined. • Scaffold or guardrail or other edge barrier provided. • Fall restraint system for flat roofs for work within 3 metres of the edge where the potential fall height is 3 metres or more. • Safety mesh installed below roof sheet.	• Handover certificate for scaffold or guardrail. • Records of inspection at max. 30 day intervals. • On-site observation. • Roof Access permit • Fall restraint equipment register. • Record of inspection by a competent person at maximum 6 month intervals for safety harness and max 3 months for wire ropes or other fall arrest equipment. • Anchor point(s) certified prior to use or at max. 12 month intervals. • Training in the use of fall arrest equipment verified.	M9	Asset Manager, Facility Management team, Service Providers	
Ladders	Falls from height/ falling objects	H16	• Platform ladders to be used. If platform ladder cannot be used a risk assessment is to be completed. • All ladders to have an annual inspection and have a Mirvac compliance sticker • Restricted use of ladders, especially near open penetrations, edges, stairs or balconies • No climbing above 3rd highest rung, use 3 points of contact and chest to remain within stiles of ladder	Engineering	• Visual inspection of ladders • Ladder rated for industrial use (120 kg max), minimum 1.2 metres and in good condition. • Where repeated access to heights of 2 metres or more is required, an elevated work platform, (e.g. mobile scaffold or other) is used instead of a ladder, or handrail erected where ladder near an edge	• "Inspection before each use" included as Control Measure in JSEA for task • Included in Induction topics • On-site observation	M10	Asset Manager, Facility Management team, Service Providers	
Hoist (Personnel) Hoist (Personnel & Materials)	Falls from height/ falling objects	H22	• Hoist working as designed including bells, limit switches, SWL displayed and moving parts guarded • Hoist operator competent • For personnel hoist, communication system functional • People not underneath areas where objects could fall	Engineering	• Handover certificate provided • Maintenance of hoist carried out as per manufacturer's recommendations • Inspection of hoist carried out (including daily log book) • Operator licenced (specific for materials or people required) • Maintenance of communication system is carried out as per manufacturer's requirements • Exclusion zone in place with a spotter (where required) maintained • Areas around hoist penetration meshed/guarded on all sides to a minimum height of 2.5 metres on each floor	• Records of certificates • Records of maintenance • On-site observation • Records of competency	H14	Asset Manager, Facility Management team, Service Providers	
Penetrations including ducts and risers	Falls from height/ falling objects	H16	• Penetrations greater than 200 x 200mm are covered or provided with edge protection	Engineering	• Minimum 19mm plywood to cover penetrations • Covers are fixed with dyna bolts or similar to prevent unauthorised removal/tampering • Covers are capable of withstanding expected loads from people, plant and equipment or materials • Fall prevention strategy determined for work around ducts or risers • Use of safety harness to be in fall restraint mode for work around ducts or risers • Anchor point to be adequately load bearing	• On-site observation • Training in the use of fall arrest equipment verified.	M10	Asset Manager, Facility Management team, Service Providers	
WORK OVER or NEAR WATER									
Where construction work is required to be carried out over or near water where handrail/barricade is not practicable, and within 1 metre of the water's edge	Injuries to people, damage to property and the environment	H16	• Hand rails & platforms or equivalent fall protection erected where potential of fall into water exists • Equipment, plant, materials is not placed within 1 metre of water's edge. • Appropriate location specific methods implemented to prevent people falling or slipping into the water	Engineering	• Daily inspection of water's edge & fall protection completed by competent person • Fall restraint equipment installed (where applicable). • Personal Flotation Device (PFD) correctly worn by personnel. • Depth of water indicated, lifebuoys with retrieval ropes attached where depth exceeds 1.5 metres	• Records of inspection • On-site observation	M10	Asset Manager, Facility Management team, Service Providers	
UNDERGROUND STORAGE TANKS									

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
Underground storage tanks (UST's)	Soil and Groundwater contamination, confined space (see confined space above)	H20	• Regular inspections and testing. • Install safety and identification signage. • Dangerous Goods licence if quantities exceed the limit	Engineering	• Implement Environmental Management Plan as per EPA requirements. • Implementation of Signage and storage requirements.	• Regular inspections and testing.	M6	Asset Manager, Facility Management team, Service Providers	
Above ground fuel storage tank	Soil and Groundwater contamination, confined space (see confined space above)		• Regular inspections and testing. • Install safety and identification signage. • Dangerous Goods licence if quantities exceed the limit • Ensure bunding is present and would hold 110% volume of the tank capacity.	Engineering	• Implementation of Signage and storage requirements.	• Regular inspections and testing.		Asset Manager, Facility Management team, Service Providers	
Under Petroleum Storage System (UPSS)	Soil and Groundwater contamination, confined space (see confined space above)	H20	• Regular inspections and testing. • Install safety and identification signage. • Dangerous Goods licence if quantities exceed the limit	Engineering	• Implement Environmental Management Plan as per EPA requirements. • Implementation of Signage and storage requirements.	• Regular inspections and testing.	M6	Asset Manager, Facility Management team, Service Providers	
VISITORS									
Visitors	Injuries to visitors	H20	• **ALL** visitors to be escorted while on the premises. • Relevant safety concerns and issues to be advised to visitors by escorting agent. NB: Visitors who frequent (more than once) site must be inducted.	Engineering	• All visitors to sign in and out when entering and exiting the premises.	• FM and HSE to regularly review CMS for compliance.	M6	Asset Manager, Facility Management team, Service Providers	
ENVIRONMENTAL ASPECTS									
AIR QUALITY									
Indoor and outdoor air quality	Adverse reactions by tenant, public and employees to chemicals, particles and/or substances in the air	H16	• Minimise dust released by disturbance of soil and/or gaseous emissions from operation of plant and equipment or vehicles. • Provide clean, healthy, fresh air to facility at all times. • Ensure adequate ventilation. • Ensure recommended chemicals and treatments are used in the correct quantities at all times.	Engineering	• Testing for bacteria, CO's, temp and humidity on an annual basis in accordance with relevant AS. Reports reviewed for any out of parameters levels which require corrective action and the records to be kept on file. • Service provider engaged to carry out testing must provide written report which FM is to review for out of parameter levels, addressing corrective action where required. • Manufacturers recommendations for safe use of products - Safety Data Sheets (SDS) and equipment to be adhered to for processes within buildings that may affect air quality i.e. dry cleaning, generators etc. • Plant inspected on arrival to site. • Daily pre-start completed. • Inspection and maintenance as per manufacturer's requirements. • Minimise stockpile heights. • Stabilise long term stockpiles e.g. grass/ hyrdomulch	• FM to ensure annual testing of IAQ, or at more frequent intervals if deemed necessary. • Monthly testing of water system quality. • Water treatment service Provider to be regularly monitored to ensure the Cooling Tower Manual compliance is maintained and completed as required. • On-site observation • Maintenance records available	M10	Asset Manager, Facility Management team, Service Providers	
CONTAMINATED SOIL									
Acid Sulphate or other	Damage to the environment	H16	• Appropriate location specific methods implemented to avoid spread of contaminated soils and the potential of leachate entering sensitive areas	Engineering	• Survey and history of land prior to works starting • Soil test to be carried out by NATA certified lab (for tests being used) • Treatment processes not undertaken within 50 metres of a water source. • Acid sulphate soils transported to an appropriate treatment area. • The entire ASS stockpile must be bunded to prevent escape of leachate. • Obtain fill materials from certified source Samples of imported fill to be tested • Disposal off site instead of site remediation	• Records of survey and historical data • On-site observation • Soil test records • Records of certificates • Records of tested samples • Records retained of licenced transport and disposal/receipt of waste to EPA Licensed facility	M10	Asset Manager, Facility Management team, Service Providers	
RESOURCE MANAGEMENT									
Potable Water	Depletion of non-renewable resources	M11	• Identify opportunities to reduce potable water consumption in facilities where Mirvac Facility Management have operational control. • Deliver on the Mirvac 'This Changes Everything' strategy to implement a 5% reduction in potable water intensity by FY23.	Administration	• Monitor and report on building potable water consumption. • Perform annual NABERS Water ratings to benchmark performance. • Investigate new water efficiency technologies.	• Monitor building daily usage profiles generated from smart meter data. • Perform a comparison review of monthly water consumption generated from smart meter data. • Review historical quarterly water consumption data from invoices and meter data. • Review and analyse annual NGERS data.	L3	Asset Manager, Facility Management team, Service Providers	

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
Energy	Depletion of non-renewable resources Emissions of Greenhouse Gases	M11	• Identify opportunities to reduce energy consumption and Greenhouse emissions in facilities where Mirvac Facility Management have operational control. • Deliver on the Mirvac 'This Changes Everything' strategy to implement a 5% reduction in carbon intensity by FY21.	Administration	• Monitor and report on building energy consumption and Greenhouse emissions • Perform annual NABERS Energy ratings to benchmark performance. • Investigate new energy and carbon efficiency technologies.	• Monitor building daily usage profiles generated from smart meter data. • Perform a comparison review of monthly water consumption generated from smart meter data. • Review historical quarterly water consumption data from invoices and meter data. • Review and analyse annual NGERS data.	L3	Asset Manager, Facility Management team, Service Providers	

Element	Risk	Untreated Risk	Critical Controls	Hierarchy of Controls	Critical Activities	Monitoring Activities	Treated Risk	Responsible	Legal and Othe
SPILLS OR DISCHARGE CAUSING CONTAMINATION									
Storage and Handling of Hazardous Substances and/or Dangerous Goods	Spills or discharge causing contamination Injury/Illness of Member of Public, Contractor or Worker	H17	• Substances/goods stored in accordance with Safety Data Sheet (SDS)/(MSDS) • Storage area bunded and away from drainage inlets or other sensitive areas. • Substances/goods stored and handled in accordance with SDS (MSDS). • Appropriate PPE made available. • Users trained in correct use of substance.	Engineering	• Signage and emergency response equipment available relevant to the class of substance/good stored. • Nominated personnel trained in spill response. • Bunding designed to meet required 110% of largest individual container. • No fuel storage within 50 metres of a water body. • Spill Kit available. • Minor quantities only stored which do not require licencing. • Pressurised gas cylinders/bottles secured from toppling and stored in ventilated area with restricted access.	• Spill Kit stocked • Records of spill response training available • On-site observation • Drainage outlet to bunding locked	M10	Asset Manager, Facility Management team, Service Providers	
WASTE									
Recycles • general and prescribed waste (solid & liquid)	Non-compliance and breaches of EPA regulations	H16	• Waste is minimised & stored securely • Waste generated is collected and recycled in accordance to the Waste Management Hierarchy. • Waste is managed and stored securely. Waste material is disposed of by reputable contractors in accordance with legislative requirements. • Deliver on the Mirvac 'This Changes Everything' strategy to implement a 85% recycling rate across the Investment portfolio by FY23.	Engineering	• Waste storage facilities established according to estimated volume including paint tanks and recycling bins/skips for all streams. • Waste sorted on site or at the waste depot. • Transporter and receiver of waste are EPA Licensed. • Waste transport certificate is obtained (this verifies waste was disposed of in the correct facility) e.g., Adhesives (excluding solid inert polymeric materials), Lime sludges or slurries, Paint sludges and residues, Pesticides (including herbicides & fungicides), Timber preservative residues. • Mirvac require waste contractors to only utilise appropriately licenced facilities and to declare these facilities to Mirvac with the licencing details. • Mirvac investigate and implement applicable waste management and recycling technologies. • Waste Management Plans for each asset where Mirvac Retail manage waste services. • Perform waste audits to identify waste minimisation and recycling opportunities.	• Monthly waste records including quantities diverted from landfill to recycling • Records of licences. • Review of service provider JSEA for works which constitute a “material risk to environment/ generate significant wastes streams” prior to commencement of work. • Records of certificates of disposal from waste removal contractor which are forwarded to the Sustainability data collection point. • Hold regular meetings with waste contractors. • Review historical quarterly water consumption data from invoices and meter data. • Review and analyse annual NGERS data.	L5	Asset Manager, Facility Management team, Service Providers	

Major HSE Risks from the Risk Register

Asset Name: Riverside Quay.

9/08/2023

Prepared By: David Kemp, Sanjin Babalija, Paul Mair

LIKELIHOOD (L)			CONSEQUENCE (C) - IMPACT			RISK RANKING (R)					Risk Ranking Summary
						1	2	3	4	5	
A	Almost Certain	Expected to be the outcome in most cases - **91 - 100% probable**	1	Insignificant	First aid injury/s (FAI), minor environmental impact. Minor/ medium term social impacts on local population, or expected financial impact = **< $10k.**	A	M (8)	M (13)	H (18)	E (23)	E (25)	**EXTREME**-These risks are Unacceptable. The work activity should be halted until Critical Controls are implemented which reduce the risk to no greater than High. If it is not possible to reduce the risk, the work should remain prohibited.
B	Likely	Will probably occur in most circumstances - **51 - 90% probable**	2	Minor	Medical Treatment Injury (MTI), minor short term environmental impact. Attention from media & heightened concern by local community or expected financial impact = **$10k - $100k.**	B	M (7)	M (12)	H (17)	H (21)	E (24)	**HIGH**-These risks must be reduced where possible by implementing higher levels of Critical Control using the Hierarchy of Controls. Where the residual risk is not able to be reduced lower than High, a controlled work methodology must be in place and reviewed by the HSE Lead and Workplace Manager.
C	Possible	Might occur some time **31 - 50% probable**	3	Moderate	Lost Time Injury (LTI). Serious irreversible injury/disease, serious medium term environmental harm. Adverse local media coverage, or expected financial impact = **$100k - $1 mill.**	C	L (4)	M (11)	H (16)	H (20)	H (22)	**MEDIUM**-Identified Critical Controls must be capable of reducing the risk by eliminating or minimising to an acceptable level. # Critical Activities & Monitoring are to be identified and implemented by Supervisory staff.
D	Unlikely	Could occur, but would not be expected - **10 - 30% probable**	4	Major	Single fatality, permanent localised environmental harm. Substantial risk to corporate reputation, sustained adverse local media coverage, major repairs or project outcomes affected, or expected financial impact = **$1 - 10 mill.**	D	L (3)	M (6)	M (10)	H (15)	H (19)	**LOW**-The work is relatively safe and can be managed by following routine MMRs, procedures, guidelines & JSEA/SWMS. No further action is required, unless additional hazards arise during the work.
E	Rare	Rare that this would occur - no previous occurrence in similar circumstances - **< 10% probable**	5	Catastrophic	Multiple fatalities, permanent long term and extensive environmental harm. Extreme risk to corporate reputation, public outrage & national media coverage, high profile litigation, class action, threat to business division viability or expected financial outcome = **$10 - $100 mill.**	E	L (1)	L (2)	L (5)	M (9)	H (14)	**HIERARCHY OF CONTROLS** Eliminate - remove hazard completely; Substitute - replace with less hazardous; Isolate - separate the worker from the hazard Engineer - guarding, mechanical aids, ventilation; Administrate - reduce exposure, procedures, consultation; PPE - to be used in addition to above.

Note: Insert the top 5 HSE risks for your Asset and or any unusual HSE risk

Risk Hierarchy: E = Extreme, H = High, M = Medium, L = Low

Description Provide a description of the identified task or operation	Upcoming, active or closed	**Hazard/Risk**	Untreated Risk	**Risk Mitigation Strategy** Provide a summary of the risk mitigation strategy action	**Monitoring Activities** Provide a summary of how the risk mitigation strategy action will be monitored	Residual Risk	**Person / Team Member to Monitor**	**Changes/ Reviews**	**Comments** Provide any other general comments as required
Window Cleaning	Ongoing	Object falling from height	H17	Restricted times for abseiling – see Window Cleaning site specific scope for full details	HSE window cleaning check list	L3	FM/SFM		
Asbestos	Ongoing	Working in areas with confirmed asbestos.	M11	Maintain as per Prensa AMP	Asbestos Management plan in reviewed every 5 years. .	L4	FM/SFM		Next Due 2028
Live Edge 1SBB	Ongoing	Fall from heights	H17	Doors to roof on access control/locked at all times	Access control is monitored by 24/7 security, security patrol plant rooms / ensure doors are locked / receive alarms when doors are open	L3	FM/SFM		
Live Edge 4RSQ	Ongoing	Fall from heights	H17	Doors to roof on access control/locked at all times	Access control is monitored by 24/7 security, security patrol plant rooms / ensure doors are locked / receive alarms when doors are open	L3	FM/SFM		
Live Edge 6RSQ	Ongoing	Fall from heights	H17	Doors to roof on access control/locked at all times	Access control is monitored by 24/7 security, security patrol plant rooms / ensure doors are locked / receive alarms when doors are open	L3	FM/SFM		

Live Edge 2RSQ	Ongoing	Fall from heights	H17	Doors to roof on access control/locked at all times	Access control is monitored by 24/7 security, security patrol plant rooms / ensure doors are locked / receive alarms when doors are open	L3	FM/SFM		