| Hazard | Possible Cause | Suggested Risk Control Measure |
| --- | --- | --- |
| **Lack of oxygen** | Enter into a confined space | * **No Department employee is to enter a confined space** * Isolate and lock out water / steam systems * Isolate and lock out mains gas / gas systems * Isolate and lock out hydraulic / electrical equipment * Isolate and lock out mechanical / electrical drives * Isolate and lock out flammable and combustible materials * Breathing apparatus is worn * Eye protection is worn * Hand protection is worn * Hearing protection is worn * Safety helmet is worn * Slip resistant footwear is worn * Harness is worn * Communication equipment is available and is in good working order * A safety observer has been established * Oxygen / Flammable gas monitor to be worn at all times * Emergency lifesaving apparatus (ELSA -15 minutes) and other emergency rescue equipment * Respiratory protection * Atmosphere has been tested for:   + Oxygen %   + Flammable gases   + Toxic gases * Permit to Work for confined space entry has been completed and is displayed * Barricades are positioned around work area * Adequate lighting is available * First Aid trained personnel is available to assist, if required |
| **Traffic hazards** | * Working in close proximity to roads * Vehicles including trucks entering, exiting or moving on site | * Eliminate the need for vehicles to enter school grounds * Mark pathways, parking bays, install physical barriers and speed humps * No entry to grounds during times of high pedestrian traffic i.e. school drop off/ pick up times or class breaks * If vehicles must enter the grounds during these times ensure it is not during times of peak pedestrian times (e.g. recess or lunch) * Use of witches hats or temporary barriers to cordon off sections of road * Closure of road * Speed restriction and safety signs displayed and enforced * All contractors, volunteers, visitors and delivery personnel report to front office prior to driving on site * Site specific Traffic Management Plan * Personal Protective Equipment (e.g. high visibility vest) |
| **Manual handling** | * Handling of large items * Use of heavy hand held tools e.g. jack hammer * Handling of heavy objects | * Re-design task * Use of lifting aids (e.g. trolley, hoist) * Break up the load * Requirements for two person lifts or team lifting * Plan the transfer including checking to ensure a clear pathway and correct manual handling techniques are used (e.g. bending knees) * Personal Protective Equipment (e.g. gloves and enclosed footwear) * Safe Work Procedures are available |
| **Contact with heat / radiation** | * Use of Welder / Soldering Iron * Use of Angle Grinder * Fire in the workplace * Exposure to sun | * Eliminate ignition sources from flammable atmospheres * Isolate and tag-out Pipes / valves * Isolate and tag-out Electrical outlets / appliances * Isolate and tag-out Tanks / vessels * Isolate fuel sources (e.g. flammable or combustible chemicals) * Use spark / flash screens when required * Remove flammable materials or store correctly * Enforce a spotter/fire watch during hot work * Provide personal protective equipment/clothing and training * Work area is barricaded and signage is posted * Water pump / fire brigade on standby * Provide firefighting equipment * Reduce sun exposure time in the middle of the day * Provide sunscreen * Provide shade structures * Time frame for work to be carried out has been agreed to by Workplace Manager and contractor and communicated to employees and community, where required * Weather conditions have been considered including fire bans and wind direction |
| **Contact with electricity** | * Faulty electric leads and tools * No earth leakage detectors * Electric leads on ground * Electrical leads in damp areas * Electric leads tied to metal rails * Items of plant not isolated * Contact with underground or overhead cables | * Electrical work only conducted by A Grade licenced electrician * Isolate and lock out mains electricity / electrical equipment, where required * Disconnect batteries and capacitators * Isolate and lock out tanks/ vessels, where required * Tools and leads used by contractors are inspected every three months by company as per testing and tagging requirements * Use of portable residual current devices * Residual current devices in all circuits * Residual current devices tested monthly * Electrical leads kept elevated and clear of work areas * All electric leads kept dry and off the ground * All electric leads are kept insulated * Lock-out and equipment tag procedure * Location of services to be established * Establish safe clearance distances * Weather conditions have been considered * Time frame for work to be carried out has been agreed to by Workplace Manager and contractor and has been communicated to employees and community, where required * Certificate of Electrical Capacity provided for any relevant changes or upgrades |
| **Exposure to noise** | * Plant and equipment not silenced * Not wearing appropriate protection * Excessive exposure time to noisy areas | * Select equipment with consideration of lowest practicable decibel (dBA) level * Isolate noisy area as far as reasonably practicable, e.g. close doors, erect screens * Fit noise suppression to noisy plant and equipment * All personnel to wear appropriate Personal Protective Equipment-PPE (hearing protectors) * Regulate employee and students exposure to noise * Conduct very noisy procedures out of schools hours or away from classroom where practicable |
| **Contact with high pressure** | * Burst air lines * Hoses becoming uncoupled * Using compressed air to clean clothing * Improper handling of gas cylinders   Pressure gauges | * Air hoses in good condition and regularly inspected * All hose couplings fitted with pins or chains * Cylinders stored upright and secured * All pressure gauges inspected regularly for defects * Review relevant Safety Data Sheet |
| **Contact with chemicals** | * Incorrect handling procedures Lack of information * Not wearing appropriate PPE * Incorrect storage * Elevated exposure levels | * Safety Data Sheet (SDS) is readily available * Review SDS and assess risks in consultation with contractor * All personnel provided with appropriate PPE * Hazardous substances stored and labelled correctly * Provide mechanical ventilation and extraction * Provision of spill kits or equipment to contain accidental spill |
| **Struck against** | * Protruding objects in access routes * Not wearing appropriate PPE * Personnel running in the workplace | * Protruding objects are removed, marked or protected * Provide appropriate PPE (hard hat, safety boots) |
| **Struck by object** | * Objects falling from work platforms * Debris from grinding operations * Wind-blown particles | * All work platforms fitted with toe-boards * Isolate area where there is a potential for persons of objects to fall and injure persons. * Hand tools and materials are secured / tethered * All personnel wear appropriate PPE (hard hats) * Shield grinding operations * Consider weather conditions e.g. forecast including wind conditions and fire bans |
| **Potential to fall two metres or more** | * No handrails * Working outside handrails * Floor penetrations not covered * Ladders not secured * Trench has not been supported or secured | * Work from ground so far a reasonably practicable. * Safe Work Method Statement is provided * Use of passive fall prevention devices e.g. scissor lift by a licenced contractor * All work platforms have secure handrails * Persons wear full fall arrest type harness secured to anchorage points or static lines * Persons working at height and using fall arrest systems have been properly trained * All work platforms, scaffolds are fitted with toe boards * Barricade area below to prevent access to work area * Secure the construction site * Bench or shore the trench * Installation of support systems to brace the trench * Use of trench covers to secure trench when unattended * All ladders secured to prevent movement * All ladders have a load rating of 120kg, are industrial rated and comply with Australian Standards * Ladders to extend at least 1 metre above upper landing or roof * All ladders are inspected for damage * Spotter is positioned at bottom of ladder * Roof condition is assessed prior to accessing * Signage is available indicating works are being carried out * PPE is worn at all times * Loose objects are secured * Rescue from height procedures are in place |
| **Slips, trips and falls on same level** | * Access routes obstructed by materials/objects * Leads and hoses across access routes * Slippery surfaces * Safety footwear not appropriate * Poor visibility | * All access routes kept clear of materials and debris * All leads kept clear of ground or covered * All surfaces used for access kept dry and in good condition * Wear appropriate PPE e.g. enclosed footwear * Provide adequate lighting |
| **Caught between** | * Operating plant * Moving plant * Moving loads * Loads tipping or swinging * Materials being positioned | * Guarding of rotating plant and hand tools * Safe work procedures to be followed * Provide roll over cage protection * Pre-start daily safety inspection * Personnel kept clear when operating plant * Fit reverse alarms to plant and check operation (including vehicles) * All personnel kept clear during crane operations * Load slings properly secured * Safe Work Procedures (SWP) for moving heavy loads * Use of a spotter when reversing |
| **Overstress of lifting equipment** | * Safe Working Loads (SWL) exceeded during lifting operations * Sprains and strains | * Compliance with SWL and radius charts on cranes * All lifting gear is inspected regularly and records maintained * All personnel trained in manual handling techniques * Regular testing of structural integrity of load bearing components and records maintained |
| **Ergonomic hazards** | * Poor work posture * Use of excessive force * Repetitive movements | * Work station design and set-up to conform with ergonomic standards * Seating design and set-up to conform with ergonomic standards * Provide adequate task lighting * Provide mechanical aids * Modify workplace design * Modify task requirements * Job rotation |
| **Biological hazards** | * Needle stick injury * Potential exposure to HIV, hepatitis * Potential exposure to Legionella bacteria | * Provide appropriate biological waste disposal containers * PPE is available and used (e.g. eye protection, masks, gowns/overalls and gloves * Implement infection control procedures * Workplace to provide Cooling Tower Risk Management Plan to contractor * Cooling tower to be audited by a certified auditor |
| **Emergency management/ evacuation** | * Inadequate access/egress routes * No exit signage * Blocked access ways * Inoperable emergency equipment | * Access/egress routes are communicated and signed * Ensure access ways are clear * Follow emergency evacuation procedures/plans * Provide appropriate signage * Location of fire equipment is communicated |