

RICHARD CROOKES

CONSTRUCTIONS

ALEXANDRIA PARK COMMUNITY SCHOOL
NO:1161

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

14 March 2019

Document Information

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CEMP Objectives

This document is considered to be an operational CEMP which provides the framework necessary to implement the required management measures associated with the proposed excavation and construction works. Once implemented the objective of the management measures will be to ensure that the excavation of materials present at the site can be carried out without significant adverse impact on the environment or the health of the site workers and neighbouring residence. The management and monitoring aspects and Principal Contractor responsibilities covered in this CEMP include air quality, sediments, surface water, waste, noise, vibration, traffic, site security and emergencies.

RCC notes that this CEMP will focus on mitigating and managing environmental and human health issues associated with the excavation works proposed at the site. The appointed Civil Works Contractor will provide task specific (i.e. operational hours, noise mitigation, traffic control, environmental management, erosion sediment control plan) measures for the proposed construction works.

The primary objective of the CEMP is to provide a management framework to mitigate potential environmental and human health risks associated with excavation and early construction works. The objectives can be summarised as follows:

- Prevent, reduce and effectively manage potential impacts to the environment resulting from excavation works, material handling and associated spoil disposal;
- Ensure that environmental management is undertaken in accordance with relevant legislative and policy requirements
- To ensure the Site is suitable for the proposed land use, in reference to contamination; and
- Promote environmental awareness amongst employees and contractors.

Reports Relied Upon in Preparing this EMP

The CEMP framework provided in this document has relied upon information provided in the following reports;

- Geotechnical Report prepared by JK Geotechnics. Date: 1/12/17, Ref: 309072.rpt.
- Detailed Site Assessment prepared by Coffey. Date: 26/10/17, Ref: SYDEN 199382.R01.
- Asbestos and Hazardous Materials Survey prepared by Coffey. Date: 10/2/17, Ref: SYDEN 200566.
- Acid Sulfate Soil Assessment prepared by EIS. Date: 23/10/17, Ref: E30907Klet-ASS.
- Acid Sulfate Management Plan prepared by Coffey. Date: 26/10/17, Ref: SYDEN 199382.L03.
- Geotechnical Report prepared by GeoEnviro Consultancy. Date: 5/9/17. Ref: JG16980A-r1.
- Environmental Impact Statement prepared by Urbis. Date: Dec 17, Ref: SA6700.
- Arborist Report and Tree Management Plan prepared by Redgum. Date: 1/9/17, Ref: 2781.
- Pedestrian Wind Environment Statement prepared by Windtech. Date: 11/12/17, Ref: WD71103F03.

- Outline Construction Management Report prepared by ARUP. Date: 1/12/17, Ref: 256193.
- Preliminary Construction Management Report prepared by Savills. Date: 1/12/17, Ref: 171201.
- Construction and Demolition Waste Management prepared by Foresight Environmental. Date: 11/9/17.
- Operational Waste Management Plan prepared by Foresight Environmental. Date: 4/12/17.
- Remedial Action Plan prepared by Coffey. Date: 8/12/17, Ref: SYDEN 199382.R03.

a) Project Details

Project Overview

The APCS is a K-12 school located at 13 Belmont Street Alexandria. The APCS was previously made up of separate primary and secondary campuses known as 'Mitchell Road' (Secondary) and 'Park Road' (Primary).

The Project consists of the construction of a new permanent school on the Park Road Campus to combine both previous schools onto one campus. The new school will provide flexible future-focused learning spaces for 1000 primary school students and up to 1200 secondary school students.

The site is bounded by Buckland Street in the north, Park Road in the east and a shared pedestrian path connecting Belmont Street and Buckland Street in the west. Alexandria Park is located just east of the school which is segregated by Park Road. The site is surrounded by residential dwellings and commercial warehouses along the Western and Southern boundaries. Access to site is off Belmont St.

The School is to be constructed from reinforced Concrete, masonry, Steel, CFC cladding and anodised aluminium screening. The main structure is reinforced concrete, with a combination of masonry and FC cladding façade systems. The roof will be a combination of a metal clad, lightweight steel structure and shaded area that will form one of the recreational areas being provided for the new school.

The works consist of the design & construction of a new public school at Alexandria Park for up to 2200 students including but not limited to:

- Complete all design elements required for a fit for purpose building which conforms to the intent of the Principal's documents.
- Demolition of all existing buildings on-site, including the temporary pop-up schools;
- Remediation of specific areas of the site containing contaminated fill;
- Construction of multiple school buildings of up to four stories, arranged along the western and southern parts of the site
- Construction of a sports hall and multiple outdoor sports courts;
- An all-weather multipurpose synthetic sports field;
- Informal play spaces and Covered Outdoor Learning Space or COLA;
- A community centre

i) Hours of Work

The works are to be carried out within the operating hours of 7am to 6pm Monday – Friday, and 7.30am to 3.30pm Saturday.

ii) 24 Hour Contact details of site manager

John Peacock
0414 601 547
peacockj@richardcrookes.com.au

Site Location

Alexandria Park Community School - 13 Belmont Street Alexandria



iii) Management of dust and odour

Summary of Potential Impacts

Potential impacts to air quality resulting from the works include emissions from exposed soils, asbestos dust, groundwater, plant and equipment and dust generated during earthworks and land clearance and demolition work.

Contamination has been identified within the existing site fill as outlined in *“Detailed Site Investigation – Alexandria Park Community School, Park Road, Alexandria (Coffey 2017). Ref SYDEN199382 R01Rev02”*, and there is a large quantity of suspected ACM in the existing buildings on site as outlined in *“Asbestos and Hazardous Materials Survey – Alexandria Park Community School (Coffey 2017). Ref SYDEN200566 R01Rev1”*. The project asbestos management plan will outline the management procedures to be put in place to effectively monitor air quality levels during construction.

Potential odour / vapour impacts may also occur as a result of the release of odours from impacted soils / groundwater / gases and exposure from unexpected finds, hydrocarbon hotspots and soil gas pathways within any uncontrolled fill. However; the *“Soil Vapour Investigation – Alexandria Park Community School, Park Road, Alexandria (Coffey 2017). Ref: SYDEN199382-L02”* did not identify the presence of VOCs, but trichloroethene2 (TCE) was detected above the adopted soil vapour screening levels at SS3 and SS7. A subsequent preliminary health risk assessment revealed that the potential future indoor vapour risk associated with a slab on ground building is considered to be low, and acceptable at those locations.

The *“Acid Sulfate Soils Assessment – Proposed New School Facilities, Alexandria Park Community School (EIS, 2017). Ref: E30907KletASS”* noted that:

- Acid sulfate soil samples were collected from two borehole locations (BH1 in northern part of site and BH7 in southern part of site).
- The investigation did not identify the presence of actual acid sulfate soils (AASS) in the soil samples collected.
- However, the investigation identified potential acid sulfate soils (PASS) within two soil samples, with peroxide oxidisable sulfur (SPOS) detected up to 0.2% w/w. The two soils samples collected are within soil strata located below RL5m AHD.

However; in the *“Acid Sulfate Soils Management Plan – Alexandria Park Community School, Park Road, Alexandria (Coffey 2017). Ref: SYDEN199382-L03Rev01”* It was assessed that, based on the information provided to Coffey with regards to the proposed development, it was unlikely that soils beneath RL5mAHD would be disturbed, or that the water table would be lowered beneath RL5mAHD.

Ambient Air Levels will likely vary as earth works proceed. Earth works will also be conducted up to the site boundaries in some areas and odour / soil gas will be subject to changes in wind direction and weather conditions. The application and effectiveness of odour suppressant mitigation will need to be well managed under the discretion of the Principal Contractor and the environmental consultant.

Summary of Air Quality Management Procedures

Element	Air Quality
Performance Objectives	<p>The objective of this management measure is not to generate any odours or gasses and to adopt the necessary management strategy and PPE if presented with the occurrence to minimise the impacts of odours and/or vapours if encountered.</p> <p>Avoid or minimise the potential for odour and/or vapour emissions during the handling of exposed soils.</p> <p>Maintain plant and equipment such that exhaust emissions are minimised.</p> <p>Avoid or minimise disruption to amenity of residents and other land users in the vicinity of site works.</p>
Management Actions	<p>Use of surfactant spray (onsite in close proximity of the earth works and at the site boundary/fences) is required for odour suppressant during works (this is up to the discretion of the Project Manager and the environmental consultant).</p> <p>Heavy equipment and vehicles will be appropriately maintained to minimise exhaust emissions.</p> <p>Appropriate methods of dust suppression will be implemented, such as ensuring earthworks materials remain moist to ensure dust is minimised during works.</p> <p>Evaluate weather conditions prior to works commencing and during any change in wind direction.</p> <p>Cease works if dust or odour generation is excessive.</p> <p>Covering of any stockpiles that are to remain for greater than two days (Waste reclassification or ENM stockpiles, ACM demolition stockpiles), or if weather forecasts predict strong winds; with plastic, Hessian or Geotechnical fabric material.</p> <p>All dust/odour control measures will be kept in good operating condition and functional at all times, with regular maintenance.</p> <p>All loads are to be covered and appropriately fitted with tarpaulins to contain dust and/or odour during transport.</p> <p>A complaints register will be established and maintained to receive and address complaints from the community regarding the detection of nuisance odour during the works.</p> <p>Residents in the vicinity of the proposed works will be informed of potential dust/odour impacts prior to the commencement of works.</p>
Performance Indicator	<p>No complaints from location residents, surrounding businesses or site personnel.</p> <p>Goal of nil complaints relating to dust quality issues. Vapour emissions (Chlorinated VOCs) are likely to occur however the number of complaints should be kept to a minimum.</p> <p>All complaints will be responded to within 2 business days</p> <p>No onsite observation of dust generation during excavation works by Project team.</p> <p>No visual evidence of exhaust smoke during idle of equipment. No visual evidence of tracked material on public roads.</p> <p>A reduction in the number of complaints received in relation to air quality each month.</p>
Monitoring	<p>Implementation of visual monitoring of dust, material tracking, truck tarping, water spray use, exhaust plumes and stockpile covering. If unexpected fines protocol detects contaminants a review of air born testing is to be undertaken.</p>
Responsibility	<p>The Principal Contractor is responsible for ensuring that if a monitoring program is required to be implemented by appropriately trained/qualified staff. This program may be sub-contracted out to a specialist sub-consultant as required.</p> <p>The Principal Contractor is to ensure responsible personnel are suitably qualified.</p>
Reporting	<p>Maintenance of records on site of visual, PID and Asbestos monitoring undertaken if required.</p>

Corrective Action (as required)	<p>If required replace or repair emission control devices. Provide equipment to enable wetting of exposed soils if required. Should excessive dust be generated during works will also cease, until weather conditions improve and/or additional dust suppression measures have been implemented. The use of PPE with appropriate filters, inside the works zone will be mandatory, in the event that PID readings exceed the limits set by the environmental consultant for the Site/area. The level set by the environmental consultant is exceeded the following action shall be undertaken:</p> <ul style="list-style-type: none"> § Backfill any excavation or cover with plastic sheeting; § Temporarily cease works until levels drop; and § Increase the use of suppressant near the excavation. <p>In the event that boundary monitoring exceeds the daily works shall be stopped immediately. The earthworks shall be quickly backfilled and the situation reassessed if odour / gasses are identified and deemed excessive by the environmental consultant, the application of odour suppressants should be used / increased and then works can recommence once suitably qualified environmental consultant has assessed ambient air quality to be satisfactory.</p>
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Asbestos Dust

Summary of Potential Impacts

Possible asbestos dust-generating activities include the mechanical removal of building materials, demolition and earth disturbance works along with vehicle movement over asbestos impacted soils. The generation of asbestos dust should be minimised and meet relevant air quality standards as specified in the NOHSC:1003 (1995) *Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment*. Additional information is outlined in detail in the Asbestos Management Plan attached in **Appendix B**.

Air monitoring when disturbing contaminated soils across the site will be implemented in line with the report generated by the project's environmental consultant. Any air monitoring of asbestos should be performed in accordance with the NOHSC:3003 (2005) *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*.

Summary of Asbestos Dust Management Procedures

Element	Asbestos Dust
Performance Objectives	<p>The objective of this management measure is not to generate any asbestos dust and to adopt the necessary PPE if presented with the occurrence of asbestos dust and to minimise the impacts of dust levels encountered.</p> <p>Avoid or minimise the potential for dust emissions during the handling of exposed soils and asbestos containing material (predominantly located within the existing buildings as identified in the hazardous building materials survey).</p> <p>Maintain plant and equipment such that decontamination procedures are followed and cross contamination outside the impacted work areas are minimised.</p> <p>Avoid or minimise disruption to amenity of residents and other land users in the vicinity of site works.</p>

Management Actions	<p>Use of water spray (onsite in close proximity of the earthworks <u>and</u> at the site boundary/fences) is required for dust suppressant during earthworks. Water sprays might be used during demolition works on the removal of ACM within the current buildings on the site (this is up to the discretion of the Project Manager and the environmental consultant).</p> <p>Once the earthworks of each area is finished, this area of the site should be covered with and separation barrier (e.g. geotechnical fabric) and the use of water spray to minimise dust generation (this to the discretion of the Project Manager and the environmental consultant).</p> <p>Potential use of enclosed and over-pressurized cabins on excavation equipment and trucks entering the site or work area (if required by the environmental consultant). This should prevent ambient air (potentially contaminated with asbestos dust) and dust to intrude into the cabin.</p> <p>Appropriate methods of dust suppression will be implemented, such as ensuring earthwork and material removal. Soils and materials are to remain moist to ensure dust is minimised during works.</p> <p>Evaluate weather conditions prior to works commencing and during any change in wind direction.</p> <p>Cease works if dust generation is excessive.</p> <p>Covering of any stockpiles that are to remain for greater than two days (Waste reclassification stockpiles), or if weather forecasts predict strong winds; with plastic, Hessian or geotechnical fabric material.</p> <p>All dust control measures will be kept in good operating condition and functional at all times, with regular maintenance.</p> <p>All loads are to be covered and appropriately fitted with tarpaulins to contain dust during transport. Where asbestos soils and materials are to be removed offsite, loads are to be encapsulated in black plastic, prior to tarpaulins covering being fitted.</p> <p>A complaints register will be established and maintained to receive and address complaints from the community regarding the detection of nuisance dust during the works.</p> <p>Residents in the vicinity of the proposed works will be informed of potential dust impacts prior to the commencement of works.</p>
Performance Indicator	<p>No complaints from location residents, surrounding businesses or site personnel. Goal of nil complaints relating to dust quality issues.</p> <p>All complaints will be responded to within 2 business days</p> <p>No onsite observation of dust generation during excavation works by Project team.</p> <p>No visual evidence of tracked material on public roads.</p> <p>A reduction in the number of complaints received in relation to air quality each month.</p>
Monitoring	<p>The air quality will be evaluated by the Project Manager and assessed by a suitably qualified environmental consultant. Continuous exclusion zone boundary monitoring during excavation works using asbestos air monitoring equipment is required. The air pumps should be calibrated to the required flow rate in accordance with Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC:3003(2005)].</p> <ul style="list-style-type: none"> ▪ Fence line sampling for Asbestos. Four (1) samples/day, airborne fibres testing in accordance with the NOHSC: 3003 (2005) method. Action level is 0.1 fibres/mL (with air monitoring filters to be situated within 10m of the location of asbestos removal work)

	Implementation of visual monitoring of dust, material tracking, truck tarping, water spray use, exhaust plumes and stockpile covering.
Responsibility	The Principal Contractor is responsible for ensuring that the monitoring program is implemented by appropriately trained/qualified staff. This program may be sub-contracted out to a specialist sub-consultant as required. The Principal Contractor is to ensure responsible personnel are suitably qualified.
Reporting	Maintenance of records on site of visual dust and Asbestos monitoring must be undertaken by a suitably qualified environmental consultant. Daily asbestos air monitoring results should be made available 24hr after collection and notification of the results made available at the site lunch shed.
Corrective Action (as required)	<p>Replace or repair dust control devices.</p> <p>Provide equipment to enable wetting of exposed soils and materials if required.</p> <p>Should excessive dust be generated works will also cease, until weather conditions improve and/or additional dust suppression measures have been implemented.</p> <p>The use of PPE with appropriate filters, inside the works zone will be mandatory, in accordance with the requirements outlined in the AMP. The level presented in the CEMP prevails. When the 0.1 f/mL (Fibres per millilitre of air) level with the work area is exceeded the following action shall be undertaken:</p> <ul style="list-style-type: none"> ▪ Backfill any excavation or cover ground surface with plastic sheeting; ▪ Temporarily cease works until levels drop; and ▪ Increase the use of suppressant near the excavation. <p>In the event that boundary monitoring exceeds the 0.1 f/mL (Fibres per millilitre of air) works shall be stopped immediately. The earth works shall quickly backfill any excavation and the area cover with black plastic and the situation reassessed if by the Principal Contractor, the application of dust suppressants should be used/increased and then works can recommence once suitably qualified environmental consultant has assessed ambient air quality to be satisfactory.</p>

iv) Storm water control and discharge

*A construction soil and water management sub-plan has been prepared for this project by SCP Consulting (see attached “**Construction Noise and Vibration Management Sub-plan**”).*

For project and RCC general information see below:

Works must comply with requirements for storm water management in accordance with Managing Urban Storm water – Soils and Construction (Landcom, 2004) to minimise direct or indirect un-authorised release of surface water during site works to minimise impacts to surface water quality of surrounding environs. A written agreement of Sydney Water is to be obtained if discharge of certain substances to sewer is required.

In the event groundwater is intercepted during excavation works, a temporary water collection pit shall be excavated in the bottom of the excavation pit or graded surface. Water samples should be collected and tested for chemical

of concern prior to discharge/disposal. The principal contractor should assess if the volume of expected groundwater requires relevant authority approval. Excavation pump out water (if any) shall be pumped from the excavation by a licensed contractor and disposed of off-site as “liquid waste” in accordance with NSW EPA (2014). The Principal Contractor will need to obtain the relevant approvals (from discharge authorities like Sydney Water etc.) should be obtained prior to the commencement of dewatering.

Summary of Potential Impacts

The following potential impacts from surface water may occur as part of the works program:

- Complaints from local residents;
- Breaches in Regulatory requirements;
- Increased turbidity and sediment concentrations due to accidental release;
- Increased sediment load on storm water drains and infrastructure;
- Ruts and gullies in soil surfaces;
- Unsuitable conditions for construction works;
- Safety and Health related issues; and
- Damage to local ecological receptors.

Any impacts would be expected to be temporary only in nature and generally localised to the area of adjoining active works, but may have longer term impacts to local ecological communities.

Summary of Water Quality Management Procedures

Element	Water Quality
Performance Objectives	<p>Avoid or minimise the disturbance to, and release of potentially contaminated soil or sediment laden water to the surrounding environs.</p> <p>Prevent increased water flows causing erosion damage to drainage infrastructure and water ways.</p> <p>Prevent safety related incidents associated with wet or slippery work conditions.</p>
Management Actions	<p>Assessment of weather during excavation operations and consideration of temporarily halting works until more favorable conditions are encountered.</p> <p>Install sediment control structures (i.e. silt fencing and/or hay bales) should be implemented in accordance with Managing Urban S – Soils and Construction (Landcom, 2004) prior to the commencement of works. This would include strategic placement of such structures down-gradient of temporary stockpiles and slopes to minimise sediment entrainment. These measures should also be placed on the up-slope side of any storm water collection channels.</p> <p>Control of drainage on the site by interception and redirection of clean storm water in a controlled manner.</p> <p>Collection of storm water on-site in trenches and sumps for appropriate management.</p> <p>Provide inlet protection to be provided for any potentially impacted locations.</p> <p>Site contractors will be required to observe any sediment control and/or storm water control measures to ensure that they are working at a</p>

	<p>satisfactory level.</p> <p>Provision of a Spill cleanup kit on all sites where bulk fuel is stored or is being transferred.</p> <p>Maintain a hardstand or lined and bunded area for the refueling and storage of equipment.</p> <p>Cease works if excessive surface water makes conditions unsuitable for construction works.</p> <p>Cease works if excessive surface water makes creates safety concerns.</p>
Performance Indicator	<p>The prevention of increased storm water runoff is the best approach.</p> <p>Site contractors will be required to observe any increases in sediment loads and volumes in storm water drains when working close to surface drains and report any discharges beyond the site boundaries.</p> <p>Site contractors will be required to observe any sediment control and/or storm water control measures to ensure that they are working at a satisfactory level.</p> <p>Zero records of near miss or injury in relation to wet conditions.</p>
Monitoring	<p>Regular observations will be made by the Site Contractors and the Project Manager and mitigation measures put into place if sediment loaded runoff is likely to occur or a rainfall event is predicted.</p> <p>Monitoring requirements from a pump-out-permit or other required license shall be adhered to at all times.</p>
Responsibility	<p>The Project Manager is responsible for ensuring that each of the monitoring programs is implemented by appropriately trained/qualified staff. These programs may be sub-contracted out to a specialist sub-consultant as required.</p>
Reporting	<p>Records of all corrective actions and known sediment releases will be kept.</p> <p>Records of Near Miss and Injuries will be kept.</p> <p>The Project Manager will immediately report to the Contract Administrator any incidents of water discharging off site.</p>

v) Sediment Measures

*A construction soil and water management sub-plan has been prepared for this project by SCP Consulting (see attached “**Construction Noise and Vibration Management Sub-plan**”).*

For project and RCC general information see below:

Summary of Potential Impacts

Potential impacts from sediments resulting from the works include dust emissions generated during earthworks/land clearance and construction.

The following potential impacts from sediments may occur as part of the works program:

- Complaints from local residents;
- Breaches in Regulatory requirements;
- Increased turbidity and sediment concentrations due to accidental release;
- Increased sediment load on storm water drains and infrastructure;

- Damage to local ecological receptors.

Any impacts would be expected to be temporary only in nature and generally localised to the area of adjoining active works and transport routes, but may have longer term impacts to local ecological communities.

Sediment control procedures specific to this project are outlined in the Soil and Water Management plan as prepared by SCP consulting.

Summary of Sediment Management Procedures

Element	Sediment
Performance Objectives	<p>The objective will be to avoid an impact on water quality in surface water and drains which eventually discharge offsite by implementing prevention measures to control any sediment that is generated.</p> <p>Avoid or minimise soil migration and loss to surface waters and drains. Avoid or minimise pollution of creeks and waterways.</p> <p>Avoid or minimise increased sediment load on storm water drains and infrastructure.</p>
Management Actions	<p>Prior to the start of the works a stormwater and sediment control plan will be prepared by the Contractor. This Plan should be in accordance with Councils regulations.</p> <p>Site contractors will be required to observe any increases in sediment load in storm water drains when excavations are close to surface drains or waterways.</p> <p>Sediment control structures (i.e. silt fencing and/or hay bales) should be implemented in accordance with the Stormwater and Sediment Control Plan prior to the commencement of works.</p> <p>Evaluate weather conditions prior to works commencing and during any change in wind direction.</p> <p>Cease works if dust generation is excessive (by visual assessment). Covering of any stockpiles that are to remain for greater than two days, or if weather forecasts predict strong winds; with plastic or Hessian material. All sediment control measures will be kept in good operating condition and functional at all times, with regular maintenance.</p> <p>Strategic placement of such structures down-gradient of stockpiles and slopes to minimise sediment entrainment. These measures should also be placed on the up-slope side of any storm water collection channels.</p> <p>If a significant rain event occurs, fieldwork will cease. There will be sediment control measures available for placement down gradient of the work area; and</p> <p>Works will also be conducted in a manner to minimise the potential for sediment and soil migration, whereby excavated material will be hauled offsite as soon as practicable and/or reinstated and compacted.</p>
Performance Indicator	<p>The prevention of sediment runoff is the best approach.</p> <p>Site contractors will be required to observe any increases in sediment load in storm water drains when excavating close to surface drains and site boundaries.</p> <p>No complaints from location residents, surrounding businesses or site personnel. Goal of nil complaints relating to sediment issues.</p> <p>No onsite observation of dust generation during excavation works by Project team.</p> <p>No visual evidence of tracked material on public roads.</p>

Monitoring	<p>Regular observations will be made by the Site Manager and mitigation measures put into place if sediment loaded runoff is likely to occur or a rainfall event is predicted.</p> <p>Records of all corrective actions and known sediment releases will be kept.</p> <p>Implementation of visual monitoring of dust, material tracking, truck tarping, water spray use, exhaust plumes and stockpile covering.</p>
Responsibility	The Project Manager is responsible for ensuring that the monitoring program is implemented by appropriately trained/qualified staff.
Reporting	Maintenance of records on site of visual monitoring undertaken
Corrective Action (as required)	<p>Clean-up of sediment.</p> <p>Installation of sediment and erosion controls.</p> <p>Additional storm water control measures.</p> <p>Altered excavation works.</p> <p>Cease works if a major storm event is likely to occur.</p> <p>Replace or repair sediment and erosion control devices.</p> <p>Should excessive dust be generated excavation works will also cease, until weather conditions improve and/or additional dust suppression measures have been implemented.</p>

vi) Groundwater management plan including measures to prevent groundwater contamination

*A construction soil and water management sub-plan has been prepared for this project by SCP Consulting (see attached “**Construction Noise and Vibration Management Sub-plan**”).*

vii) External Lighting

Due to item C6 of SSD 8373 Development Consent, the operating hours of the site will be:

- 7am to 6pm Monday – Friday
- 7.30am to 3.30pm Saturday.

As a result, the large majority of works are expected to occur within daylight hours on the project site.

If in the unlikely event works are required to be completed outside of these hours, all approvals and lighting compliance will be provided to the relevant authorities.

viii) Community consultation and complaints handling

*Under item B16 of the SSD 8373, a Community Communications Strategy has been prepared for this project. (See attached “**Community Communications Strategy**”).*

b) Construction Traffic and Pedestrian Management Sub-Plan

A Construction Traffic and Pedestrian Management Sub-plan has been prepared for this project by Sydney Traffic Control (See attached “Construction Traffic and Pedestrian Management Sub-Plan”).

For project and RCC general information see below:

The Principal Contractor will undertake a traffic management study by a suitably qualified consultant prior to completing a detailed Traffic Management Plan. The findings and recommendations in the Traffic Management Plan will supersede the minimum requirements outlined below. A summary of the minimum plan requirements is provided in Table 11. These requirements are a minimum and are in addition to the TMP.

Summary of Potential Impacts

The following potential impacts from Traffic may occur as part of the works program:

- Complaints from local residents;
- Breaches in Regulatory requirements;
- Safety and Health related issues; and
- Damage to local infrastructure.

Any impacts would be expected to be temporary only in nature and generally localised to the area of adjoining active works and transport routes, but may have longer term impacts to Safety and Health related issues.

Summary of Traffic Management Procedures

Element	Construction Traffic
Performance Objectives	Minimise the effect project related traffic movements (including parking availability and pedestrian movement) has on the local area and chosen haulage routes.
Management Actions	<p>Truck loading to be provided for on-site where possible.</p> <p>Truck movements to and from the site to be restricted to designated truck routes through the area.</p> <p>The management of the site works will be the responsibility of the site contractor.</p> <p>Pedestrian warning signs to be utilised in the vicinity of the site access points.</p> <p>Pedestrian arrangements, construction activity and erection of safety fencing will be provided in accordance with Safework requirements.</p>
Performance Indicator	Goal of nil complaints relating to traffic issues during the project
Monitoring	Low potential for impacts, however a log of all truck and other heavy equipment (cranes etc.) movement to be retained by the Principal Contractor.

Responsibility	The Principal Contractor is responsible for ensuring that the traffic management plan is implemented by appropriately trained/qualified staff. The Principal Contractor is to ensure responsible personnel are suitably qualified.
Reporting	Maintenance of records relating to any complaints received, including subsequent non-compliance forms and corrective actions. A log of all truck and heavy equipment movements to be retained by the Principal Contractor.
Corrective Action (as required)	Revision of the traffic plan including revision to working hours as necessary, staggering truck access or adopting alternate haulage routes.

c) Construction Noise & Vibration Management Sub-Plan

*A Construction Noise & Vibration Management Sub-plan has been prepared for this project by Acoustic Logic Pty Ltd (See attached “**Construction Noise & Vibration Management Sub-Plan**”).*

For project and RCC general information see below:

Noise Management

The Principal Contractor may wish to undertake a noise management study by a suitably qualified consultant prior to undertaking a detailed Noise Management Plan. The findings and recommendations in the Noise Management Plan will supersede the minimum requirements outlined below.

Site works will be conducted from 7:30 a.m. to 6:00 p.m. Monday to Friday, with work on Saturdays between 7:30 a.m. and 3:30 pm if required. Work outside these hours will be in accordance with local council regulations and approvals.

Summary of Potential Impacts

The following potential impacts from Noise may occur as part of the works program:

- Complaints from local residents;
- Breaches in Regulatory requirements; and
- Safety and Health related issues.

Any impacts would be expected to be temporary only in nature and generally localised to the area of adjoining active works and transport routes, but may have longer term impacts to Safety and Health related issues.

Summary of Environmental Noise Management Procedures

Element	Noise Management
Performance Objectives	Avoid or minimise the impact of noise emissions from plant, equipment and vehicles used in the works.
Management Actions	<p>Plant and equipment will not be permitted to ‘warm-up’ before the nominated working hours.</p> <p>Where possible, plant and equipment will be located / orientated to direct noise away from the closest sensitive receivers.</p> <p>Undertake regular maintenance of plant and equipment to minimise noise emissions.</p> <p>All machinery will be kept in good working order and will comply with noise attenuation standards.</p> <p>Other noise control measures, including acoustic barriers, will be examined and put in place should the need arise.</p> <p>Selection of the quietest suitable machinery reasonably available for each work activity.</p>

	<p>All plant and equipment to have efficient low noise muffler design and be well-maintained.</p> <p>Offset distance between noisy items of plant/machinery and nearby sensitive receivers to be maximized where possible.</p> <p>Where practicable, ensure that noisy plant/machinery are not working simultaneously in close proximity to sensitive receivers.</p> <p>Queuing of trucks is not to occur adjacent to any residential receiver.</p> <p>Where queuing is required engines are to be switched off.</p> <p>Trucks to be fitted with efficient low noise mufflers and be well maintained.</p> <p>Trucks will follow the designated haulage route between locations.</p> <p>Trucks will adhere to the designated speed limits.</p> <p>Trucks will refrain from using compression breaking where possible.</p> <p>Any pumps or generators used will be encapsulated or appropriately encased to ensure noise generation is minimised and emissions are muffled.</p>
Performance Indicator	No complaints from surrounding residents.
Monitoring	Noise generation is considered to be minimal if no complaints are received from the neighbours and areas of excavator use are in isolated areas away from any onsite facilities or neighbours.
Responsibility	The Principal Contractor is responsible for ensuring that the monitoring program is implemented by appropriately trained/qualified staff. This program may be sub-contracted out to a specialist sub-consultant as required. The Principal Contractor is to ensure responsible personnel are suitably qualified.
Reporting	Maintenance of records on site of equipment inspections undertaken, and results of noise surveys.
Corrective Action (as required)	Revision of the works plan including revision to working hours as necessary or staggering use of noisy equipment to minimise impacts.

Vibration

Due to the large number of structures within a close proximity to the site boundary, a construction noise and vibration monitoring plan will be developed to outline the control measures that will be put in place during demolition, excavation and construction.

Summary of Potential Impacts

The following potential impacts from Vibration may occur as part of the works program:

- Complaints from local residents;
- Breaches in Regulatory requirements;
- Safety and Health related issues; and
- Damage to local infrastructure.

Any impacts would be expected to be temporary only in nature and generally localised to the area of adjoining active works and transport routes, but may have longer term impacts to local infrastructure and surrounding buildings.

Summary of Vibration Management Procedures

Element	Construction Vibration
Performance Objectives	Minimise the effects of the project has on adjacent public utilities, structures and buildings from vibration.
Management Actions	<p>Prior to activities that may pose a risk to adjacent public utilities, structures and buildings a visual inspection will be undertaken to access potential damage associated with vibration impacts including cracks and other indications of settlement. This dilapidation report will be submitted prior to commencement on site.</p> <p>Select appropriately sized machinery and equipment and design procedures for use in order to comply with vibration limits and to reduce vibration generation.</p> <p>Establish communication with relevant authorities and local residents.</p> <p>Ensure machinery used is appropriately sized to prevent over- loading and over-revving.</p>
Performance Indicator	<p>Goal of nil complaints relating to vibration issues during the project.</p> <p>Zero damage to adjacent public utilities, structures and residential buildings from vibration.</p> <p>Zero detrimental health problems to personnel in the vicinity of the vibration source.</p>
Monitoring	Vibration monitoring to be adopted upon receiving a complaint or under direction from a government agency.
Responsibility	The Principal Contractor is responsible for ensuring that vibration control is implemented. The Principal Contractor is to ensure responsible personnel are suitably qualified to inspect buildings and infrastructure for structural integrity.
Reporting	<p>Inspection, monitoring and surveillance by the project manager and contractors.</p> <p>Maintenance of records relating to any complaints received, including subsequent non-compliance forms and corrective actions.</p>
Corrective Action (as required)	<p>Where vibration results in damage to structures, temporary protection/ rectification works will be completed prior to recommencement of site works.</p> <p>Work practices will be reviewed and modified as appropriate to ensure ongoing damage is minimised.</p>

d) Construction Waste Management Sub-Plan

i) Waste Quantities, Type, Proposed Reuse, Recycling & Disposal Locations

See form 18.2b, and the attached subcontractor documents:

- Construction Waste Management Plan Rev 1 prepared by DECC.

18.2b Waste Management Plan - Construction

Project: Alexandria Park Community School

Project No. 1161

TYPE OF WASTE ONSITE	REUSE & RECYCLING			DISPOSAL	
Type of Material	ONSITE	OFFSITE	Accumulated Volume (update Bi-monthly)	CONTRACTOR	Accumulated Volume (update Bi-monthly)
Contaminated soils					
Excavated VENM					
Green Waste					
Bricks					
Concrete					
Plasterboard					
Metals					
Other: glass, appliances/fittings					

Total			Total	TBC	Total	TBC
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% WASTE REUSED (TARGET 80%)			% WASTE REUSED (TARGET 80%)	
% WASTE DISPOSAL TO LANDFILL			% WASTE DISPOSAL TO LANDFILL	

ii) Removal of Hazardous Materials

See the below and the attached subcontractor documents:

- *Asbestos Management Plan Rev 1 prepared by DECC.*
- *Hazardous Materials Management Plan prepared by Coffey.*

Summary of Waste Management and Minimisation Procedures

Element	Waste Management & Minimisation
Performance Objectives	<p>The objective will be to minimise and control any wastes and waste categories that are generated, and ensure that they will be appropriately disposed of.</p> <p>Avoid or minimise environmental impacts related to waste management and handling of potentially contaminated soils.</p> <p>Avoid or minimise impacts due to unexpected finds.</p> <p>Avoid or minimise health risks associated with potentially contaminated soil exposure and dust generation.</p>
Management Actions	<p>Provision of a Spill cleanup kit on all sites where bulk fuel is stored or is being transferred.</p> <p>Maintain a hardstand or lined and bunded area for the refueling and storage of equipment.</p> <p>Visual assessment of excavated material by the Environmental Specialist. The Environmental Specialist shall direct the Excavator Operator if the soil has to re-assessed onsite or disposed off-based on the in-situ waste classification.</p> <p>Trucks to be used for transport of soil are to be fitted with cover tarpaulins to contain the load.</p> <p>Each truck prior to exiting site, shall be inspected prior to dispatch and either logged out as clean (wheels and chassis), or hosed down within a wheel wash down bay.</p> <p>Provide waste receptacles for all waste types and ensure that personnel use these correctly.</p> <p>All trucks leaving the site should be accompanied with a waste transportation form (Appendix B).</p> <p>Cease site works until the Project Manager has been notified of any unexpected finds and appropriate instructions have been provided to field personnel to address the issue.</p> <p>Project Manager to inform the Contract Administrator of any unexpected finds.</p>
Performance Indicator	<p>All waste materials are handled and stored in a safe and appropriate manner</p> <p>Material for off-site disposal is transported to an appropriate landfill facility.</p> <p>A completed transportation form and waste dockets shall be returned to the Environmental Specialist who shall maintained a record</p> <p>No environmental impact on, and disturbance to, the surrounding area from waste, no leaks or spills of oil or fuel.</p> <p>No waste is to be disposed of in the surrounding environment.</p>

Monitoring	<p>Regular observations will be made by the Project Manager and measures put into place if sediment loaded runoff is likely to occur or a rainfall event is predicted.</p> <p>Records of all corrective actions and known sediment releases will be kept. An up to date record of waste tracking shall be kept by the Environmental Specialist.</p>
Responsibility	<p>The Principal Contractor is responsible for ensuring that the monitoring program is implemented by appropriately trained/qualified staff. This program may be sub-contracted out to a specialist sub-consultant (the Environmental Specialist) as required. The Principal Contractor is to ensure responsible personnel are suitably qualified.</p>
Reporting	<p>Maintenance of records on site of equipment inspections undertaken and landfill disposal/waste tracking and weigh bridge dockets, and any council approvals should be maintained onsite for inspection.</p>
Corrective Action (as required)	<p>Revision of the works strategy including relocation and alteration to the operating procedure if waste is shown to be entering the surrounding environment.</p>

e) Construction Soil & Water Management Sub-Plan

*A Construction Soil & Water Management Sub-plan has been prepared for this project by SCP Consulting (See attached “**Construction Soil and Water Management Sub-Plan**”).*

f) Unexpected Finds Protocol - Contamination

See attached 'Hazardous materials Management Plan prepared by Coffey dated 03/04/2019.

Unexpected Finds

Ground conditions between sampling points can vary, and further hazards may arise from unexpected sources once remediation commences. To manage the potential for unexpected occurrences of contamination, an unexpected finds protocol has been prepared.

The nature of any undiscovered hazards which may be present at the site are generally expected to be detectable through visual or olfactory means, for example:

- Additional hydrocarbon contaminated soils (staining / discolouration visible);
- Additional excessive VOC contaminated soils (odorous (sweet/chemical);
- Fragments of asbestos-containing materials (visible) or potential friable material;
- Significant ash and/or slag contaminated soils / fill materials (visible); and
- Additional USTs or uncovering of an existing UST that have not been previously identified or location approximated precisely.

As a precautionary measure to ensure the protection of the workforce and surrounding environment, should any unexpected potentially hazardous substance be encountered the works should cease immediately before being assessed by a suitably qualified environmental consultant. In addition, City of Sydney Council and other relevant regulator (i.e. Safework) should also be informed of any potential immediate risk to either human health or the environment (except for issues relating to UPSS or groundwater impacts where the NSW EPA should be informed).

The Site Auditor should be notified in relation to any unexpected finds to discuss the assessment, remediation and validation procedures required.

The sampling strategy for each 'unexpected find event' and remediation works shall be designed by a suitably qualified environmental consultant. The strategy will, however, be aimed at determining the nature of the substance, that is, is it hazardous and, if so, does it exist at concentrations which pose an unacceptable risk to human health or the environment. The sampling frequency of the identified substance / materials meeting the minimum requirements the listed in the NEPM ASC 2013, Australian Standard AS4482.1-2005, AS4482.2-1999 and NSW EPA Sampling Design Guidelines (1995).

The Principal Contractor will ensure that in the event that an unexpected find is of cultural or historical nature, a nominated archaeologist would be available to attend the site, to ensure that there are no extended delays to the program. Should an unexpected relic, archaeological feature or deposit is exposed during works, where an archaeologist is not already on site, work should cease in that area and a suitably qualified archaeologist should be contacted for advice. Depending on the level of integrity and/or significance of the relic, the relic/feature would be assessed and recorded and, if relevant, excavated manually to ensure that important information is not lost, and monitor adjacent works. If the relic/feature is assessed as having state significance the

archaeologist would consult with the Heritage Council to develop an appropriate strategy to manage the relic.

Where an unexpected find is of a potential acid sulphate soils (PASS) or acid sulphate soils (ASS) material matter, then an Acid Sulfate Soil Management Plan, in alignment with NSW Acid Sulfate Soils Management Advisory Committee (August 1998) guidelines, must be prepared.

Summary of unexpected Finds Procedures

Element	Unexpected Finds
Performance Objectives	<p>Avoid or minimise impacts related to management and handling of potentially contaminated soils.</p> <p>Avoid or minimise impacts due to unexpected cultural finds.</p> <p>Avoid or minimise health risks associated with potentially contaminated soil exposure.</p>
Management Actions	<p>Visual assessment of uncovered unexpected finds by the Environmental Specialist. The Environmental Specialist shall direct the Excavator Operator if the soil has to re-assessed onsite or disposed off-based on the waste classification.</p> <p>In the event that an unexpected find is of cultural or historical nature, a nominated archaeologist would be available to attend the site.</p> <p>Cease site works until the Project Manager has been notified of any unexpected finds and appropriate instructions have been provided to field personnel to address the issue.</p> <p>Project Manager to inform the Contract Administrator of any unexpected finds.</p>
Performance Indicator	<p>All unexpected finds are to be disclosed to the Site Auditor for advisement on the suitability of the management and any sampling regime prior to remediation / validation works proceeding.</p> <p>All unexpected finds are to be handled and stored in a safe and appropriate manner</p> <p>Unexpected finds for off-site disposal is classified and transported to an appropriate landfill facility.</p> <p>A completed transportation form and waste dockets shall be returned to the Environmental Specialist who shall maintained a record</p> <p>No environmental impact on, and disturbance to, the surrounding area from waste, no leaks or spills of oil or fuel.</p> <p>No waste is to be disposed of in the surrounding environment.</p>
Monitoring	<p>Regular observations of the earth work surface and excavations will be made by the Project Manager and Excavator Operator or spotter.</p> <p>Records of all unexpected finds will be kept (any asbestos burial pits uncovered during earth works should be surveyed and a geotextile warning layer placed on it).</p> <p>An up to date record of waste tracking and / or PASS/ASS treatment rates (if treated onsite) shall be kept by the Environmental Specialist.</p>
Responsibility	<p>The Principal Contractor is responsible for ensuring that appropriately trained/qualified staff. This program may be sub-contracted out to a specialist sub-consultant (the Environmental Specialist and archaeologist) as required. The Principal Contractor is to ensure responsible personnel are suitably qualified.</p>

Reporting	All unexpected Finds are to be documented, and included into the validation report. Maintenance of records on site of equipment inspections undertaken and landfill disposal/waste tracking and weigh bridge dockets, and any council approvals should be maintained onsite for inspection. A survey of any asbestos burial pits discovered on site should be recorded.
Corrective Action (as required)	Revision of the works strategy including relocation and alteration to the operating procedure if waste/leachate is shown to be entering the surrounding environment from the disturbance of the unexpected find.

Capping Design

The Remediation Action Plan prepared by Coffey (Ref – SYDEN199382.R03 – 8/12/2017) states the below:

“Based upon a review of relevant remedial technologies and discussions with TKD, the preferred remedial strategy is capping and on-going management following regrading works. It is considered likely that some excavation and off-site disposal will be also be required to achieve design levels.

Excavation and off-site disposal (Bulk Removal) would also be the contingent option in the event that capping and on-going management to cover for unforeseen situations where the ‘cap and contain’ option is not viable.”

As a result, the capping design will consist of the following key elements:

- Collection of visible fragments from the graded fill surface prior to placement of the marker layer by a licensed Asbestos Assessor who should issue a Clearance Certificate at completion of the inspection.
- A marker layer (Geotextile fabric) immediately above the graded fill surface.
- A cap for the relevant situation (may consist of imported fill, hard finishes such as concrete slabs and bitumen or paved surfaces, and grass covered areas OR a mix of these methods, depending on the specific design for that area of site and its operational requirements.)

g) Unexpected Finds Protocol – Aboriginal and Non Aboriginal Heritage

See attached 'Heritage Management Plan' prepared by Heritage 21.

h) Waste classification and validation

See the attached subcontractor documents:

- *Asbestos Management Plan Rev 1 prepared by DECC.*
- *Construction Waste Management Plan Rev 1 prepared by Coffey.*
- *Hazardous Materials Management Plan prepared by Coffey.*

i) RCC Management System

Roles and Responsibilities

The following sections set out the organisational structure for the project:

Project Organisational Structure

All personnel including the Consultants, Contractors, Subcontractors and all other personnel associated with undertaking excavation and construction works on the project at Alexandria Park Community School, ultimately report to the Principal Contractor.

The Principal Contractor will be responsible for implementing this CEMP. This will specifically involve monitoring the environmental performance of the works and ongoing compliance with legislative requirements, this CEMP, and all other associated environmental management documentation, development of a construction management plan (CMP), operational and post-construction monitoring and reporting.

Parties and Responsibilities

The parties involved with, and their responsibilities during, the environmental management of the works are provided below:

Project Parties and Responsibilities

Party	Responsibilities	Reports to
The Principal Contractor Richard Crookes Constructions	<ul style="list-style-type: none"> - Ensure all works are implemented in accordance with the CEMP. - Promote awareness of appropriate environmental management and occupation health and safety (OHS) practices to the Project Manager. - Ensure the Project Manager is aware of the CEMP and site specific issues. - Review risks and identify potential opportunities and issues with the project. - Monitor and inspect activities for compliance with relevant environmental requirements, including ensuring suitable management plans have been submitted and approved prior to undertaking works. - Ensure environmental incidents and non-compliances are reported promptly and investigated. - Undertake environmental audits on the project at a frequency deemed appropriate to the length of the project. - Periodically review the performance of the Project Manager in meeting the objectives of their CEMP via regular audits. The audits will review the Project Manager's activities to ensure that environmental hazards have the appropriate mitigation controls in place. Improvement requests and non-compliances will be monitored and corrective action undertaken. - Maintain an environmental audit register to record close out of any actions issued. 	The Client/Project Manager (Savills Sydney on behalf of Schools Infrastructure NSW)
The Clients/Project Manager Savills Sydney	<ul style="list-style-type: none"> - The Project Manager is appointed by the Client (Schools Infrastructure NSW) as a primary contact overseeing the day to day operations at the Site. - Primary contact for all personnel in relation to site works and environmental management. - Review risks and identify potential opportunities and issues with the project. - Monitor and inspect activities for compliance with relevant environmental requirements, including ensuring suitable management plans have been submitted and approved prior to undertaking works. - Ensure environmental incidents and non-compliances are reported promptly and investigated. 	Schools Infrastructure

<p>Environmental Specialist / Engineer</p> <p>Environmental Strategies</p>	<ul style="list-style-type: none"> - Comply with this CEMP. - Provide advice where required to the Principal Contractor in relation to environmental issues associated with the works, if requested. - Responsible for implementing this CEMP and all required environmental controls. - Undertake onsite and offsite air monitoring. - Conduct environmental incident investigations, if requested by the Project Manager. - Demonstrate an understanding and management of the potential environmental impacts associated with the project. - Review risks and identify potential opportunities and issues with the project. - Ensure all Subcontractors under their control are appropriately informed of the relevant components of environmental management documentation. - Report all environmental incidents, hazards, non-compliances and near misses to the Project Manager immediately. - Implement corrective action responses to environmental incidents and non-compliances in consultation with the Project Manager. - Provide a validation report at the end of the project for review of the Site Auditor. 	<p>The Principal Contractor</p>
<p>Sub-Contractors</p>	<ul style="list-style-type: none"> - Implement and comply with relevant components of this CEMP. - Report all environmental incidents, hazards, non-compliances and near misses to the Principal Contractor immediately. - Implement corrective action responses to environmental incidents and non-compliances as required by the Contractor. 	<p>The Principal Contractor</p>

Implementation of CEMP

WHS Site Induction

All personnel including the Principal Contractor's staff and subcontractors who will be working on the project or will require regular access to the sites will be required to undertake training and site inductions including environmental requirements as required by the Principal Contractor. All personnel should demonstrate an understanding of potential environmental issues and the measures that will be implemented to protect the environment and local community, as detailed in this document.

CEMP Induction

The CEMP awareness induction will cover:

- 1 Outlining the objective and purpose of the works; and
- 2 Contents of the CEMP and their (the workers) responsibility.

All site workers will sign the CEMP induction register acknowledging receipt and understanding of this CEMP. All induction sessions will be recorded in the induction register.

In addition to this, the civil contractor managing the works will provide their own Construction Management Plan (CMP), which will be adhered to for the duration of the works.

Daily Toolbox Meetings

The Principal Contractor will also conduct weekly toolbox meetings with all personnel to review management procedures and identify / discuss daily site conditions and potential hazards. Site inductions and toolbox talks will highlight specific environmental requirements and activities being undertaken at the worksite each day.

A record of issues covered in weekly toolbox meetings should be maintained for future audit.

Personal Protective Equipment

All site personnel will be provided with, utilise, and be appropriately trained in the requirements of personal protective equipment (PPE). PPE requirements will depend on the activity or situation, but may include the following:

- High visibility clothing;
- Protective clothing and footwear;
- Eye protection;
- Respirable (half-face) masks as required;
- Hard hat as required (i.e. in the vicinity of the working excavator or other overhead plant); and
- Sun protection as required (long sleeves, sunscreen, hat or hard hat fitted with wide brimmed sun protection).

Personnel will be trained in the requirements and use of PPE to an appropriate level according to responsibilities.

PPE requirements should be detailed in the Safe Work Method Statements (or similar) which will be provided to the Principal Contractor for review and endorsement. Additional PPE will be required to carry out some aspects of the construction process and the PPE outline above should only be considered as the basic requirements. Additional PPE will be required if works are to be conducted in asbestos work environs.

Responsibility and Reporting

The Principal Contractor is responsible for ensuring that all personnel under their jurisdiction have been provided with adequate training in the areas outlined in this document.

The Principal Contractor will maintain records of all personnel who have undergone training in relation to the CEMP and general environmental responsibilities. Records of trained personnel will be maintained in a log to be kept on site. A record of issues covered in daily toolbox meetings should be maintained.

The Principal Contractor will ensure that anyone who appears to lack an understanding in the above areas undergoes adequate retraining.

Legislation

The following is a summary of statutory requirements to be satisfied by RCC. Table 2 includes the required permits, licenses and consents under the relevant acts, regulation or policy.

Summary of Acts, Regulations and Guidelines Applicable to Project

Act/ Regulation/ Planning Policy	Key Project Requirements	Jurisdiction
<i>Protection of the Environment Operations Act 1997 (POEO Act) and Regulations</i>	Undertake all activities so as to minimise harm to the environment (in particular pollution of air and water and noise emissions) and not cause an offence under the Act. Discharge to stormwater may require a license under the Act. Some transporters of waste are required to be licensed under the Act. Some waste disposal/processing facilities are required to be licensed under the Act.	State
<i>Protection of the Environment Operations (Waste) Regulation 2014</i>	Requirements in relation to transportation, collection, storage or disposal of waste including asbestos waste.	State
<i>Protection of the Environment Operations (Clean Air) Regulation 2010</i>	Requirements in relation to emission from vehicles and general obligations that the occupiers of non-residential premises do not cause air pollution by failing to operate or maintain plant, carry out work or deal with materials in a proper and efficient manner.	State
<i>Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2014</i>	Requirement for the removal / in-situ abandonment of Underground Storage Tanks.	State
<i>Environmental Protection and Biodiversity Conservation Act 1999</i>	Requirements in relation to protection and management of nationally and internationally important flora, fauna, ecological communities and heritage places.	Commonwealth
<i>Work Health and Safety Act 2011</i>	Requirements in relation to ensure work safety that are enforceable by law.	Commonwealth
<i>Roads and Rail Transport (Dangerous Goods) Act 1997</i>	Transport of waste classified as Dangerous Goods in accordance with Regulations	State

<i>NSW EPA Asbestos and Waste Tyres Guidelines (2015).</i>	Outlines the legal requirements that consignors, transporters, and occupiers of premises must meet in addition to their obligations under the Waste Regulation.	State
<i>The Waste Avoidance and Resource Recovery Act 2001</i>	Minimise the amount of waste for disposal, where possible recycle	State
<i>Environmental Planning and Assessment Act 1979</i>	Compliance with Development Consent Conditions issued by Consent Authority (Cumberland Council) to manage effects on the environment.	State
<i>Sydney Water Act (NSW) 1994</i>	Written agreement of Sydney Water is to be obtained if discharge of certain substances to sewer is required. Approval required for any works that will affect Sydney Water's sewer, water mains, storm water and or easements.	State
<i>NSW ASMAC Acid Sulfate Soil Manual (August 1998)</i>	Outline a stepwise process for site assessment and management of proposals in areas containing acid sulfate soils	State
<i>NSW EPA (2014) Waste Classification Guidelines</i>	Requirements in relation to permits required-soil/water that may need to be transported to landfill and appropriate waste classification will be required.	State
<i>NSW Heritage Act 1977.</i>	Requirements in relation to Protection of heritage listed items	State
<i>Environmentally Hazardous Chemicals Act 1985</i>	Requirements in relation to a legal framework capable of regulating priority/high-risk chemicals throughout their entire life cycles	State

All work shall be conducted, as appropriate, in accordance with (but not limited to) the following environmental codes of practice:

Australian Standard (AS) 2436-1981: Guide to Noise Control on Construction, Maintenance and Demolition Sites;

AS 2601 - 2001: Demolition of Structures;

AS 2436- 1981: Guide to Noise Control on Construction, Maintenance and Demolition Sites;

AS 2986.1-2003 Workplace air quality - Sampling and analysis of volatile organic compounds by solvent desorption;

AS 2986.2-2003 Workplace air quality – Part 2: Diffusive sampling method;

AS NZS ISO 19011-2003 Guidelines for quality and or environmental management systems auditing;

- AS/NZS 3012-2003: Electrical Installations- Construction and Demolition sites;
- BS6472 -1992: Evaluation and Human Exposure to Vibration in Buildings (1 to 80Hz);
- BS7385 Part 2-1993: Evaluation and measurement of Vibration in Buildings Part 2;
- DEC (now EPA), NSW (2005): Approved Methods for the Modelling and Assessment of Air Pollutants in NSW;
- DEC (now EPA), NSW (2007): Approved methods for the Sampling and Analysis of Air Pollutants in NSW;
- Department of Conservation and Land Management, CALM (1992): Urban Erosion Control and Sediment Control;
- National Environmental Protection Measure (NEPM) on Ambient Air Quality;
- National Environment Protection Council (1998): National Environment Protection NSW DEC (2007): Noise Guide for Local Government;
- NEPM (1999) *Assessment of Site Contamination*, as amended 2013;
- National Occupational Health and Safety Commission, 2nd Edition [NOHSC:2002 (2005)]: Code of Practice for the Safe Removal of Asbestos;
- NSW Department of Housing (1998): Managing Urban Stormwater- Soils and Construction;
- Safework, NSW (1993). Code of Practice: Safe Work on Roofs, Part 1, Commercial and Industrial Buildings;
- Safework, NSW (1997). Code of Practice: Amenities for Construction Work;
- Safework, NSW (1997). Code of Practice: Cutting and Drilling of Concrete and Other Masonry Products;
- Safework, NSW (1992). Code of Practice: Electrical Practices for Construction Work;
- Safework NSW (July 2014): Code of Practice: Excavation Work;
- WorkCover NSW (March 2014): Managing asbestos in or on soil; and
- Other NSW EPA endorsed relevant guidelines.

In addition to any regulatory compliance required by the above mentioned Acts and Guidelines, the contractor will be responsible to carry out the site works with all due care to ensure that the following conditions are complied with:

- Practical minimization of all wind-borne dust leaving the confines of the site;
- No water containing any suspended matter or contaminants is to be allowed to leave the confines of the site in such a manner that it could pollute any nearby waterway;
- Material originating from onsite is not to be tracked outside the site boundary and any material present on road surfaces must be removed immediately;
- Noise levels at the site boundary are to comply with the legislative requirements;
- Odour levels at the site boundary are to comply with the requirements as per this CEMP.

The CEMP will be explained to all contractors and a copy will be maintained on site during the course of excavation and future construction works.

Occupational Health and Safety

The following Health and Safety plan contains procedures and requirements that are to be implemented as a minimum during the site works.

The objectives of the health and safety plan are:

- To apply standard procedures that reduces risks resulting from the above works;
- To ensure all employees are provided with appropriate training, equipment and support to consistently perform their duties in a safe manner; and
- To have procedures to protect other site workers and the general public. These objectives will be achieved by:

- Assignment of responsibilities;
- An evaluation of hazards;
- Establishment of personal protection standards and mandatory safety practices and procedures; and
- Provision for contingencies that may arise while operations are being conducted at the site.

This health and safety plan does not provide safety information specific to construction and other demolition or excavation activities carried out by contractors, such as the safe operation, maintenance and inspection of plant, etc. Contractors will be required to prepare their own Safe Work Method Statements for their work activities. All parties working on the site shall comply with all applicable Work Health and Safety legislation, regulations, codes and guidelines.

Responsibilities

Principal Contractor

RCC is responsible for ensuring that the work is carried out in accordance with the health and safety plan. This will include:

- Ensuring a copy of the health and safety plan and CEMP is available at the site during the excavation/construction activities;
- Confirming individuals are competent in performing assigned tasks;
- Liaison with the contractor representatives, as appropriate, regarding safety matters; and
- Investigation and reporting of incidents and accidents.

Every individual worker is responsible for conducting their allocated tasks in a safe manner and in accordance with their training and experience. They must give due consideration to the safety of all others in their proximity and cooperate in matters of health and safety. All workers must leave their work areas in such a condition that the location will not be hazardous to others at any time.

Hazards

The known or potential hazards associated with the work activities described are listed below:

- Potential chemical hazards;
- Physical hazards, including;

- Work in or near excavations;
- Operating machinery;
- Heat stress and UV exposure;
- Underground or overhead services;
- Manual handling; and
- Noise.

In the event of the discovery of any condition that would suggest the existence of a situation more hazardous than anticipated, or of any new hazard that could potentially cause serious harm to personnel or the environment, work will be suspended until the Project Manager has been notified and appropriate instructions have been provided to field personnel.

Potential Chemical Hazards

The main potential chemical hazards associated with the excavation/construction works is petroleum hydrocarbons, PAHs, heavy metals, asbestos and soil gasses.

When working with identified contaminated materials in general, care needs to be taken to ensure that the contamination is not introduced to the worker via ingestion, inhalation or dermal contact. The personal protective equipment (PPE) and decontamination requirements outlined in Section 3.4 shall be followed to control the risks posed by chemical hazards at the site.

Potential hazards associated with working with asbestos or asbestos containing material (ACM) are addressed in detail in the Asbestos Management Plan (AMP) and should be read in conjunction to this document (refer to **Appendix B**).

Physical Hazards

Operating Machinery

Heavy plant and equipment operating in the vicinity of field personnel presents a risk of physical injury. Personnel should be cognisant of their position in relation to operating machinery at all times.

Never walk behind or to the side of any operating equipment without the operator's knowledge. Do not assume that the operator knows your position. Personnel should stay at least 2 m from the operational area of heavy equipment and should not stand directly below any load or piece of equipment (eg. excavators).

Working in or Near Excavations

All excavations shall be shored, sloped or otherwise constructed so as to comply with SafeWork Authority safety regulation to minimise the potential for collapse.

Geotechnical advice given to the slopes and treatment of batters should be adhered to at all times. All batters to be 1H:2V for temporary and permanent.

Cuts and Abrasions

The manual work associated with the site works gives rise to the risk of cuts and abrasions to personnel working in the area. As well as the direct consequences of any cut or abrasion, such injuries can lead to the possibility of exposure to contaminants through the wound as well as diseases such as

tetanus. To minimise the risk of direct or indirect injury, personnel will wear the personal protective equipment described.

Heat Stress and UV Exposure

Site personnel may experience heat stress due to a combination of elevated ambient temperatures and the concurrent use of personal protection equipment; this depends in part on the type of work and the time of year.

There are four main types of heat stress related problems:

- Heat Rash - caused by continuous exposure to heat and humid air and aggravated by chafing clothes. Decreased ability to tolerate heat, as well as being a nuisance.
- Heat Cramps - caused by profuse perspiration with inadequate fluid intake and chemical replacement. Signs: muscle spasms and pain in the extremities and abdomen.
- Heat Exhaustion - is caused by increased stress on various organs as they meet the increasing demand to cool the body. Signs: shallow breathing; pale, cool, moist skin; profuse sweating; dizziness, and lassitude
- Heat Stroke - result of overworked cooling system. Heat Stroke is the most severe form of heat stress. Body must be cooled immediately to prevent severe injury and/or death. Signs: red, hot, dry skin; no perspiration, nausea; dizziness and confusion; strong, rapid pulse and coma. Medical help must be obtained immediately.

In addition to the above, overexposure to UV radiation in sunlight can result in sunburn to exposed skin. The use of a high protection sunscreen (SPF15 or greater) on all exposed skin is recommended. Hats (including hard hats in specified areas) will also provide additional sun protection during the peak (i.e. 10:00 am to 3:00 PM) sun period. Sunglasses should be worn (where appropriate) to protect eyes from effects of UV exposure.

Underground Services

There is the potential for underground services (electricity, natural gas lines, water, telephone, sewer, and stormwater) to be present beneath the work area. The remediation contractor shall ensure that appropriate procedures will be taken to minimise the risk associated with excavation near services. This should include but not be limited to dial before you dig plan review, service provider notification and work clearance, service location by an approved contractor, manual test pitting, adherence to safe excavation distances (for overhead and below ground services), spotting during excavation, assessment of structural considerations etc.

Aboveground Electrical Hazards

All electrical plant and equipment must comply with the requirements of Australian Standard AS 3000. Hand held portable tools shall comply with AS/NZS 3160 "hand-held portable electric tools" and shall be double insulated. A Residual Current Device (RCD) shall protect plug-in portable equipment, which is connected to a supply above Extra Low Voltage - 12-24 Volts (including equipment supplied from a generator or welding set). RCD protection shall be provided during maintenance of portable electrical equipment at all times while the equipment is connected to a power supply above Extra Low Voltage, irrespective of whether power is switched ON or

OFF. RCD's shall comply with AS 3190 and shall be type II units, rated to trip at or below 30 milliamps within 40 milliseconds.

No excavator may work within 2 m of overhead distribution power lines.

Manual Handling

When lifting or handling heavy objects, use correct lifting techniques, bending the knees not the back. If the item to be lifted is too heavy or awkward for one person to lift, seek assistance from other employees or use mechanical help.

Noise

Long-term exposure to high levels of noise is unlikely. However, operating machinery may cause significant noise exposures for short periods. Earplugs or earmuffs should be worn in any situation where noise levels make normal conversation difficult.

Environmental Management

The remaining sections of this document set out the environmental management activities and management measures, which will be implemented during the Excavation works at 3 Wentworth Point Rd, Wentworth Point NSW. The Principal Contractor will ensure that personnel responsible for undertaking the works are aware of their roles and responsibilities detailed in this CEMP.

Potential Environmental Issues

The potential environmental issues associated with the proposed construction works include:

- Air emissions from contaminated soils and groundwater;
- Impact of noise and air emissions from plant, equipment and vehicles used in the project and associated transport of infrastructure;
- Disturbance of acid sulfate soil, or potential acid sulfate soil during construction, including dewatering activity's;
- Potential impacts to terrestrial and aquatic ecology within close proximity to the work area and the surrounding areas;
- Disturbance to, and release of potentially contaminated soil and groundwater to the local environment; and
- Disruption to amenity of any residents and other land users in the vicinity of the site.

General Structure of Environmental Management

Individual management measures have been prepared to address the issues listed in Environmental Elements 1 to 9. The numbering order should not be considered as a ranking of priority of each element as each element will have some overlaps in procedures and monitoring requirements. Each plan is comprised of a number of elements, each with an overall associated management policy, mechanisms of policy implementation, proposed monitoring programs and potential corrective actions as described in Table 3.

Table 3: Structure of CEMPs

EMP Element	Description of Content
Element	The environmental aspect of construction or operation requiring management consideration.
Potential Impacts	The potential impacts in relation to the environment.
Management Actions	The procedures to be undertaken to avoid or minimise potential impacts
Performance Objectives	The target or strategy to be achieved through the specific management actions.
Performance Indicator	The criteria against which the implementation of the actions and the level of achievement of the performance objectives will be measured, as well as the success of the implementation of the policy.
Monitoring	The intended monitoring program and the process of measuring actual performance.
Responsibility	The entity assigned responsibility for carrying out each action.
Reporting	The process of documenting actual performance, or how well the policy has been achieved, including the format, timing and responsibility for reporting and auditing of the monitoring results.
Corrective Action	The action to be implemented and by whom in the case where a performance requirement is not met.

Monitoring Requirements

Auditing and Records

The Project Manager will conduct regular audits of the Principal Contractors implementation of the CEMP (including the AMP). Audits will involve a review of all environmental documents, records and reports to ensure compliance with the requirements of the CEMP. If non-compliance is detected, the Principal Contractor will initiate to the satisfaction of the Project Manager the appropriate corrective action.

Key environmental and procedural issues to be covered by the audit will include, but may not be limited to:

- Environmental management measures presented in Environmental Elements 1 to 9;
- Environmental management measures presented in the AMP;
- Adherence to reporting procedures;
- Complaint and incident management; and
- Legislative requirements.

Records of auditing and reporting will be maintained to demonstrate compliance with environmental requirements.

Environmental and construction records will include, but may not be limited to:

- Complaint records;
- Incident, non-conformance and corrective action reporting;
- Communications with stakeholders;
- Monthly waste management reporting;
- HGG monitoring if required;
- Daily asbestos monitoring if required; and
- CEMP audit documentation.

Auditing will also be carried out in line with the SSD requirements for the project, as outlined in the SSD 8373 Development Consent.

Emergency Preparedness and Response

Specific and immediate responses to emergencies and environmental incidents will be determined by the Principal Contractor.

Table 13: Emergency Contacts

Organisation	Contact Number
Police, Fire, Ambulance	000
Emergency call service - International standard¹	112
Text Emergency Call	106
Royal Prince Alfred Hospital	50 Missenden Rd, Camperdown NSW 2050 (02) 9515 6111 Mon-Sun = 24/7
Waterloo Medical Centre	4/45 Wyndham St, Alexandria NSW 2015 (02) 9699 1261 Mon-Fri = 5.30am-6pm Sat = 7.30am-11pm

City of Sydney Council	Town Hall House Level 2, 456 Kent Street Sydney NSW 2000 02 9265 9333 Mon-Fri = 8:30am-5:00pm
State Emergency Service (SES)	24Hrs 132-500
NSW EPA Pollution Hotline	(24 hours) Phone: 131 555
Ausgrid (Electricity Supply)	13 13 88
Ausgrid (Gas Supply)	13 19 09
Sydney Water (faults, leaks and water quality enquiries)	13 20 90
WIRES (Wildlife Information and Rescue Service)	24Hrs (02) 4323-2326

Security and Public Safety

Restriction to Access

Perimeter fencing and/ barricades that restrict access to the proposed work zone and stockpile area should be installed. Only authorised persons wearing the appropriated PPE will be able to enter the excavation/construction and stockpile/staging areas during works.

Whilst excavations remain open, the site is unattended and works are not active, high visibility fencing will be placed around the boundary of the excavation to alert any people on site to the presence of the excavation.

Pedestrian and Traffic Control

Relevant signage will be in place during the excavation works to warn and protect pedestrians and other traffic of the potential exposures in the vicinity of the work area.

Signage shall also be erected to inform the public whom to contact in case of any complains

Reporting

Environmental Elements 1 to 8 of the Project include Performance Objectives to be applied to specific aspects of the works and Corrective Actions that may be adopted should non- conformances or environmental incidents occur.

Non-compliance

A non-conformance is defined as a failure to fulfill a requirement of this CEMP or other associated environmental document. All non-compliances must immediately be reported to the Contract Administrator, and the appropriate details of the non-compliance should be submitted (in writing via email) within 24 hours of the occurrence of the non-compliance.

The Project Manager or Subcontractors may identify and report a non-conformance.

Environmental Incident

An environmental incident is defined as an unplanned event that occurs that impacts, or has the potential to impact, on the environment (including natural or built). In the event of an environmental incident, the Contract Administrator should be notified immediately. The details of the environmental incident will be supplied to the Project Manager on reporting of any incident.

Reporting and Corrective Actions

When reporting a non-compliance or environmental incident, all immediate corrective actions which have been taken to rectify the situation will be documented. Further corrective action should be recommended if required at the time of reporting. Relevant agencies which require notification should also be identified.

The Principal Contractor will maintain a register of all non-compliances and environmental incidents, along with the corrective and preventative actions

which have been implemented to mitigate and/or prevent further recurrences. The Principal Contractor must ensure and verify that corrective actions to control environmental impacts, and avoid future non-compliances have been undertaken by the appropriate personnel.

Table 14 details the general procedures to be undertaken when non-compliances and environmental incidents occur.

Corrective and Preventative Action Procedures

Element	Management
Objective	To implement a system to identify, document, analyse and implement corrective and preventative actions for environmental non-conformance issues
Management Actions	<p>When a non-conformance or environmental incident occurs the Principal Contractor is to ensure corrective and preventive actions are implemented by:</p> <ul style="list-style-type: none"> ▪ Assigning personnel to undertake investigation as per 'Environmental Incident Investigation Report' Form or 'Non- Compliance Report' Form and designate lead investigator. ▪ Maintain documentation of Investigation Report Forms and their corrective/preventive actions on site; ▪ Report environmental non-conformances identified that cause or have the potential to cause a significant environmental impact immediately to the Contract Administrator.
Responsibility	<p>All Staff and Subcontractors are:</p> <ul style="list-style-type: none"> ▪ Responsible for informing their immediate manager of environmental non-conformances. ▪ Responsible for undertaking corrective/preventative actions and effectiveness determinations as assigned. Provide a summary of environmental non-conformances with outstanding corrective actions to the Contract Administrator as requested. ▪ Utilise corrective/preventative actions to revise and update CEMP and/or CEMP objectives, operational controls, and other aspects as required. ▪ Review outstanding corrective action status.
Reporting	Maintenance of records of ' <i>Environmental Incident Investigation Report</i> ' Forms and ' <i>Non-Compliance Report</i> ' Forms completed for the duration of the project.

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