



environmental management
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CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

2-6 HASSALL STREET, PARRAMATTA

RICHARD CROOKES

CONSTRUCTIONS

SUBMITTED TO

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35 WAVERLY CRST, BONDI JUNCTION NSW 2022

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DOCUMENT CONTROL

Report name **2- 6 HASSALL STREET**
CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

Revision number Version 2

REVISION HISTORY

This CEMP issue no.	Date Issued	Amended Page(s)	Action / Amendment Description	Approved By
Draft	16/03/2020			
Version 1	17/03/2020			Craig Richmond
Version 2	10/08/2020		Where revisions are required, the revised document must be submitted to the Certifying Authority for approval within six weeks of the review	Caoimhe Crosbie
Version 2	10/08/2020	4,29	Operating hours	Caoimhe Crosbie
Version 2	10/08/2020	33,34	Refuelling Environmental Control Procedure	Caoimhe Crosbie
Version 2	10/08/2020	35,36,37,38	Dewatering procedure	Caoimhe Crosbie
Version 2	10/08/2020	47,48	Appendix D Dewatering Checklist	

DISTRIBUTION OF CONTROLLED COPIES

Copy no	Issued to	Version
Version 2	Grant D'Arcy Greg Tischmann Kevin Morgan Peter Woodfield Gabriel Burnett Caoimhe Crosbie	Version 2

REVIEW AND ACCEPTANCE OF THE CEMP

Role	Name	Signature
Construction Manager	Grant D'Arcy	
Senior Project Manager	Greg Tischmann	
Site Manager (Delivery)	Kevin Morgan	
General Foreman	TBC	
Contracts Manager	Gabriel Burnett	
Environmental Manager	Caoimhe Crosbie	

1 Introduction

1.1 Scope and Purpose of the CEMP

The purpose of the Construction Environmental Management Plan (CEMP) is to provide a structured approach to the management of environmental issues during the construction of the new 19-storey building at 2-6 Hassall Street, Parramatta (The Project) under Richard Crookes Construction (RCC).

This CEMP will outline how RCC will manage environmental aspects and potential impacts associated with the works and address how RCC will meet relevant contract, planning approvals and other statutory requirements.

In summary, the main purpose of the CEMP is to:

- Describe the Project and relevant activities and how they will impact on the environment;
- Identify the aspects of the works that may potentially impact on the environment and how these will be managed;
- Allocate roles and responsibilities for employees and sub-contractors who will be working on the Project;
- Ensures that the Project meets planning approval, legal, environmental, stakeholder and other related requirements;
- Minimises negative environmental impacts of the works; and
- Provide all personnel and sub-contractors with information, systems, procedures and documentation necessary to undertake the Project in accordance with environmental requirements.

This CEMP and sub plans have been prepared to comply with:

- The Project Approval Authority SSDA 9670; and
- AS/NZS ISO 14005:2019 Environmental Management System.

The plan has been prepared in accordance with the Department of Planning Industry and Environment guideline (October 2004) and in accordance with the procedures, safeguards and mitigation measures identified in the SSDA and the Development Application issued by the Parramatta City Council.

1.2 Project Description

The Project consists of the design and construction of a commercial and educational development including

- A. Construction and use of a 19-storey building comprising:
 - i. Basement / Lower Ground level including car and bicycle parking, a loading dock, back-of-house storage and plant, and tertiary institution floor space.
 - ii. Ground level including retail tenancies, tertiary institution lobby floor space, a commercial office lobby, plant equipment, end of trip facilities and driveway ramp.
 - iii. Above ground levels comprising tertiary institution and commercial floor space.
 - iv. Podium terraces and rooftop plant equipment.
- B. Landscaping and public domain works including the provision of a ground level through-site link.
- C. Extension and augmentation of services and infrastructure as required.
- D. Integrated fitout and services for the WSU tenancy areas including signage.

The project is located at 2-6 Hassall Street Parramatta, is bounded by commercial properties (east and west), Hassall St (south) and NSW Police Force Headquarters (north) shown in red in Figure 1.



Figure 1 Site Location & Aerial Photograph (Source Google Maps)

1.3 Conditions of approval

Table 1 – Conditions of Approval

	CONDITIONS	Responsibility
Monitoring and Environmental Audits		
A20	<p>"Monitoring and Environmental Audits</p> <p>Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, Site audit report and independent auditing.</p> <p>Note: For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development."</p>	Richard Crookes
B9	<p>"Site Contamination</p> <p>The Applicant must submit a Site Audit Report and Section A Site Audit Statement for the relevant part of the site prepared by a EPA accredited Site Auditor. The Site Audit Report and Section A Site Audit Statement must verify the relevant part of the site is suitable for the proposed education, commercial and retail land uses and be provided to the satisfaction of the Certifying Authority."</p>	Enviroscene
Environmental Management		
B13	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	
B13	detailed baseline data;	Environmental Impact Statement (Ethos Urban)
B13	<p>details of:</p> <p>(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);</p> <p>(ii) any relevant limits or performance measures and criteria; and</p> <p>(iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;</p>	CEMP

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	CONDITIONS	Responsibility
B13	(a) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	CEMP Sub Plans
B13	(b) a program to monitor and report on the: (i) impacts and environmental performance of the development; (ii) effectiveness of the management measures set out pursuant to paragraph (c) above;	CEMP
B13	a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	RCC Emergency Response Management Plan
B13	a program to investigate and implement ways to improve the environmental performance of the development over time;	CEMP
B13	(c) a protocol for managing and reporting any: (i) incident and any non-compliance (specifically including any reference of the impact assessment criteria and performance criteria); (ii) complaint; and (iii) failure to comply with statutory requirements.	RCC Emergency Response Management Plan
B13	(d) a protocol for periodic review / update of the plan and any updates in response to incidents or matters of non-compliance.	CEMP
Construction Environmental Management Plan		
B14	Prior to the commencement of construction, the Applicant must submit a Construction Environmental Management Plan (CEMP) to the Certifying Authority and provide a copy to the Planning Secretary. The CEMP must include, but not be limited to, the following:	CEMP
B14	Details (i) hours of work	Monday to Sunday 7am to 6pm inclusive. Public holidays 7am to 6pm inclusive.
B14	Details (ii) 24-hour contact details of site manager;	Kevin Morgan Senior Site manager 0404812193
B14	Details (iii) management of dust and odour to protect the amenity of the neighbourhood;	CEMP
B14	Details (iv) stormwater control and discharge;	Environmental Impact Statement (Ethos Urban, Appendix K Stormwater Management Plan)

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	CONDITIONS	Responsibility
B14	Details (viii) community consultation and complaints handling;	Environmental Impact Statement (Ethos Urban Community Consultation)
B15	<p>The Construction Noise and Vibration Management Sub-Plan must address, but not be limited to, the following:</p> <ul style="list-style-type: none"> (a) be prepared by a suitably qualified and experienced noise expert; (b) describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009); (c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers; (d) include strategies that have been developed with the community for managing high noise generating works; (e) describe the community consultation undertaken to develop the strategies in condition B15(d); (f) include a complaints management system that would be implemented for the duration of the construction; and (g) adherence to the recommendations of the report titled Noise Impact Assessment Issue B 	Dated 11 April 2019 and prepared by Floth,
B16	Construction Waste Management Sub-Plan (see condition B16);	EcCell Environmental Construction Waste Management Plan
B17	Construction Soil and Water Management Sub-Plan (see condition B17);	Robert Bird Group Erosion and Sediment Control Plan
B18	an unexpected finds protocol for contamination and associated communications procedure;	Environmental Impact Statement (Ethos Urban, Aboriginal Cultural Heritage Assessment Appendix J)
B19	an unexpected finds protocol for Aboriginal and non-Aboriginal heritage and associated communications procedure;	Environmental Impact Statement (Ethos Urban, Aboriginal Cultural Heritage

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	CONDITIONS	Responsibility
		Assessment Appendix J)
B20	waste classification (for materials to be removed) and validation (for materials to remain) be undertaken to confirm the contamination status in these areas of the site;	Environmental Impact Statement (Ethos Urban, Appendix N Contamination and Hazardous Material)
B21 B22	Details (v) measures to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site;	Robert Bird Group Erosion and Sediment Control Plan
B21 B22	Details (vi) groundwater management plan including measures to prevent groundwater contamination;	Environmental Impact Statement (Ethos Urban, Appendix K Stormwater Management Plan)
B26	Construction and Demolition Waste Management Prior to the commencement of the removal of any waste material from the site, the Applicant must notify the TfNSW (RMS) Traffic Management Centre of the truck route(s) to be followed by trucks transporting waste material from the site	EcCell Environmental Construction Waste Management Plan
C12	Construction Noise Limits The development must be constructed to achieve the construction noise management levels detailed in the Interim Construction Noise Guideline (DECC, 2009). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures identified in the approved Construction Noise and Vibration Management Plan.	White Noise Acoustics
Vibration Criteria		
C 15	Vibration caused by construction at any residence or structure outside the site must be limited to: (a) for structural damage, the latest version of DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures (German Institute for Standardisation, 1999); and for human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: a technical guideline (DEC, 2006) (as may be updated or replaced from time to time)."	Environmental Impact Statement (Ethos Urban, Appendix T Noise and Vibration Assessment)
C19	During construction, the Applicant must ensure that:	CEMP

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	CONDITIONS	Responsibility
	<p>(a) exposed surfaces and stockpiles are suppressed by regular watering;</p> <p>(b) all trucks entering or leaving the site with loads have their loads covered;</p> <p>(c) trucks associated with the development do not track dirt onto the public road network;</p> <p>(d) public roads used by these trucks are kept clean; and</p> <p>(e) land stabilisation works are carried out progressively on site to minimise exposed surfaces."</p>	
C20	<p>Erosion and Sediment Control</p> <p>All erosion and sediment control measures must be effectively implemented and maintained at or above design capacity for the duration of the construction works and until such time as all ground disturbed by the works have been stabilised and rehabilitated so that it no longer acts as a source of sediment. Erosion and sediment control techniques, as a minimum, are to be in accordance with the publication Managing Urban Stormwater: Soils & Construction (4th edition, Landcom, 2004) commonly referred to as the 'Blue Book'.</p>	<p>Robert Bird</p> <p>Erosion and Sediment Control Plan</p> <p>CEMP</p>
C22	<p>Disposal of Seepage and Stormwater</p> <p>Adequate provisions must be made to collect and discharge stormwater drainage during construction of the building to the satisfaction of the principal certifying authority. The prior written approval of Council must be obtained to connect or discharge site stormwater to Council's stormwater drainage system or street gutter</p>	<p>CEMP</p> <p>Dewatering Management Plan</p> <p>Douglas Partners May 2020</p>
C23	<p>Unexpected Finds Protocol – Aboriginal Heritage</p> <p>In the event that surface disturbance identifies a new Aboriginal object, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeologist and the registered Aboriginal representatives must be contacted to determine the significance of the objects. The site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) which is managed by EES Group and the management outcome for the site included in the information provided to AHIMS. The Applicant must consult with the Aboriginal community representatives, the archaeologists and EES Group to develop and implement management strategies for all objects/sites. Works shall only recommence with the written approval of EES Group.</p>	<p>Environmental Impact Statement (Ethos Urban, Aboriginal Cultural Heritage Assessment Appendix J)</p>
C24	<p>Unexpected Finds Protocol – Historic Heritage</p> <p>If any unexpected archaeological relics are uncovered during the work, then all works must cease immediately in that area and the NSW Heritage Division contacted. Depending on the possible significance of the relics, an archaeological assessment and management strategy may be required before further works can</p>	<p>Environmental Impact Statement (Ethos Urban, Aboriginal Cultural Heritage Assessment Appendix J)</p>

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	CONDITIONS	Responsibility
	continue in that area. Works may only recommence with the written approval of the NSW Heritage Division.	
C25	Waste Storage and Processing Waste must be secured and maintained within designated waste storage areas at all times and must not leave the site onto neighbouring public or private properties.	Construction Waste Management Plan
C26	All waste generated during construction must be assess, classified and managed in accordance with the Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014).	Construction Waste Management Plan
Independent Environmental Audit		
C32	Independent Audits of the development must be carried out in accordance with: (a) the Independent Audit Program submitted to the Planning Secretary and the Certifying Authority under condition C33 of this consent; and (b) the requirements for an Independent Audit Methodology and Independent Audit Report in the Independent Audit Post Approval Requirements (Department 2018).	ZOIC Environmental Pty Ltd
C33	In accordance with the specific requirements in the Independent Audit Post Approval Requirements (Department 2018), the Applicant must: (a) review and respond to each Independent Audit Report prepared under condition C33 of this consent; (b) submit the response to the Planning Secretary and the Certifying Authority; and (c) make each Independent Audit Report and response to it publicly available within 60 days after submission to the Planning Secretary and notify the Planning Secretary and the Certifying Authority in writing at least seven days before this is done.	ZOIC Environmental Pty Ltd
C34	Notwithstanding the requirements of the Independent Audit Post Approval Requirements (Department 2018), the Planning Secretary may approve a request for ongoing annual operational audits to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that an audit has demonstrated operational compliance.	ZOIC Environmental Pty Ltd
C 35	Community Engagement The Applicant must consult with the community regularly throughout construction, including consultation with the nearby sensitive residential receivers located in Hassall Street and the commercial receivers at Curtis Cheng Centre (NSW Police Headquarters), Lancer Military Barracks, Commercial Hotel, 7 Hassall Street and Eclipse Tower, relevant regulatory authorities and other interested stakeholders.	RCC

1.4 Community Consultation

In accordance with the requirements of the Project Approval, an Environmental Impact Assessment was undertaken by Ethos Urban dated 12th April 2019 consulting the designated stakeholders and agencies related to 2-6 Hassall St during the development of the CEMP and Environmental Sub Plans. The agencies and stakeholders consulted include:

- City of Parramatta Council
- NSW Office of Environment and Heritage
- GANSW
- Heritage Division of the OEH
- TfNSW and RMS
- Department of Education
- Surrounding Landowners
- Commercial Hotel
- Lancer Barracks
- Curtis Cheng Police Head Quarter
- Staff and Students
- Local Community

1.5 Distribution

The CEMP is available to all personal and sub-contractors. The document is uncontrolled when printed. One controlled hard copy of the CEMP and supporting documentation will be maintained by the OHS&E. Registered copies will be distributed to the following personnel:

- Project manager
- Quality Manager
- Environmental manager
- Site manager

1.6 CEMP Objectives and Targets

RCC project site-specific objectives and targets (O&T) are presented in Table 2 below. These provide details of the SDC corporate environmental targets and objectives that will apply to the Project.

Table 2 –RCC project site-specific objectives and targets (O&T)

Objective	Targets
To comply with applicable legal and other requirements (environmental laws, regulations, statutory requirements and instruments of approval)	Nil instances of non-compliance with environmental statutory requirements (e.g. infringement notices, clean-up notices, etc.)
To implement a rigorous and comprehensive CEMP	Monthly Environmental Inspections completed; and All Non-Conformances closed out.
To minimise waste to land fill, minimise the recycling of waste and ensure traceability	Over 85% of waste produced from the Project to be recycled; and All waste generated and transported off site to be sent to EPA licensed landfills or recycling facilities and disposal dockets to be retained on file.

Objective	Targets
Encourage all workers to report all environmental incidents and complete incident reports	All identified incidents are reported and documented
To provide training and information on environmental aspects/impacts and controls for the Project to workers	All workers are inducted into CEMP prior to commencement of works on site

1.7 Environmental Policy

RCC will implement its corporate Environmental Policy on the Project as follows:

ENVIRONMENTAL POLICY

Richard Crookes Constructions Pty Limited promotes and encourages a sustainable environment throughout our business activities and sources our supplies and services in ways that prevent pollution and promote compliance with legal and other requirements.

The company implements Environmental Management System to aid us in meeting our corporate responsibilities. The System is certified by Global-Mark as meeting the requirements of AS/NZS ISO 14001:2016 Environmental Management Systems.

These form part of the company's Project Management Plans and are supported by company procedures and guidelines.

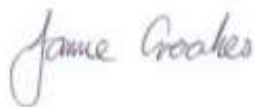
Management intends that all employees of our company, relevant subcontractors and suppliers, are made aware of their environmental responsibilities and the environmental impacts associated with their activities, products and services.

Our company objectives for continual improvement in environmental management include:

- Reducing the number of environmental notices issued on the projects by implementing a program of inductions, training and monitoring.
- Minimising the impacts to the community through the development of project specific Environmental, Traffic management plans, stakeholder consultation plans and by timely and appropriate response to complaints.
- Minimising impacts on the environment using dust, soil and water, waste and chemical management practices that are regularly inspected and maintained.
- Achieve a waste minimisation figure of 85% through monthly reporting

The Continual improvement of the project environmental management plans and progress with achieving the company's objectives will be reviewed during management meetings, project reviews and following the results of internal and external audits.

The Policy will be made available to the public and interested parties on request. This Policy will be reviewed every two years.



Jamie Crookes
Managing Director
 26th February 2020

2 Environmental Management Planning

2.1 Project Environmental Obligations

All construction personnel working at RCC will comply to the following environmental obligations:

- Minimise pollution of land, air and water
- Use pollution control equipment if required and keep in proper working order
- Minimise the occurrence of offensive noise
- Recycle waste material where possible
- Reduce litter from the site

2.2 Legal and Other Requirements

This CEMP incorporates applicable Environmental Legislation, Codes of Practice, Australian Standards and other Guidelines for the Project. RCC workers (including subcontractors) must comply with relevant Environmental, WHS legislation, Codes of Practice, Industry Standards and Regulatory Approvals as applicable to their work activities.

A legal register will be maintained by RCC and a copy can be made available on request. The relevant key legislation is listed in Table 3 and Licensing and Approvals is listed in Table 4.

Table 3 – Key NSW Legislation

Legislation Title	Application/Relevance to the Project	Administering Authority
Environmentally Hazardous Chemicals Act 1985 as amended and Regulation 2008	Use of environmentally hazardous chemicals on site (if required)	NSW Environment Protection Authority (EPA)
Dangerous Goods (Road and Rail Transport) Act 2008 and Regulation 2009	Transport of dangerous goods / and transport of contaminated materials	EPA WorkCover
Protection of the Environment Operations Act 1997 (POEO)	Environmental protection and prevention of pollution.	NSW Environment Protection Authority (EPA)
POEO (Noise Control) Regulation 2008	Noise control	NSW Environment Protection Authority
Dangerous Goods (Road and Rail Transport) ACT 2006	A licence may be required for the storage of prescribed quantities of dangerous goods	Work Cover NSW
POEO (Penalty Notices) Regulation 2004	Penalty Notices	EPA
POEO (Clean Air) Regulation 2010	Atmospheric pollutants including dust and odour	EPA
POEO (Waste) Regulation 2005 and Waste Management amendment 2008	Waste management and recycling	EPA
Waste Avoidance and Resource Recovery Act 2001	Waste management and recycling	EPA

Legislation Title	Application/Relevance to the Project	Administering Authority
Protection of the Environment Administration Act 1991 and Regulation 2012	Environment Protection	EPA
Environmental Planning and Assessment Act 1979	Planning and Assessment	Department of Planning and Environment (DP&E)
Heritage Act 1977	Management of Heritage listed structures on site	NSW Office of Environment and Heritage (OEH)
Local Government Act 1993	Planning and Assessment	City of Sydney Council
Work Health and Safety Act 2011	Workplace safety	SafeWork NSW (WorkCover)
Work Health and Safety Regulations 2017	Workplace safety and asbestos handling	SafeWork NSW (WorkCover)
NSW Contaminated Land Management Act 1997 and Regulation 2013	Land Contamination	EPA
Roads Act 1993 Roads and Maritime Service	Act to regulate the carrying out of various activities on public roads.	NSW Roads and Maritime Services (RMS)
Water Management Act 2000	Water Management	EPA
Rivers and Foreshores Improvement Act, 1948	Water Management	EPA
Catchment Management Act, 1989	Water Management	EPA
Fisheries Management Act, 1994	Water Management	EPA
The Water Administration Act, 1986	Water Management	EPA
The Sydney Water Act, 1994	Water Management	EPA
Environmental Legislation: Urban Areas in NSW - Managing Urban Stormwater: Soils and Construction Sediment and Waste Control Guidelines 4th edition (2004)	Water Management	EPA

Table 4 – Licensing and Approvals

Regulatory Authority / Other	License/Permit/Approval	Purpose	Approval Holder
Environment Planning and Assessment Regulation 2000	Planning Approval	Planning Approval	Charter Hall
SafeWork NSW (WorkCover)	Demolition Permit	Demolition to be undertaken by	Charter Hall

Regulatory Authority / Other	License/Permit/Approval	Purpose	Approval Holder
		SafeWork Licensed Contractor	
Sydney Water Corporation	Trade Waste Permit (where required)	Permit to pump to sewer	RCC
City of Parramatta Traffic Control Committee (STC) RMS	Traffic Control Plan Approval & Temporary Road Closure Permit (where required)	To manage traffic and pedestrians requiring access to site or other road operations	RCC/Sub Contractor
RMS	Wide Load Permit (where required)	Transport of wide/long loads such as Float Vehicle for plant	RCC/ Sub contractor
EPA	Licensed to transport hazardous waste (where required)	Transport hazardous liquid waste within NSW to recycling facility or landfill	Hazardous Waste Removal Sub-Contractor
Parramatta Council	Dewatering during construction permit	Dewater the site during construction	RCC/ Sub contractor

2.3 Standards and Guidelines

The relevant Standards and guidelines are listed in Table 5.

Table 5 – Codes of Practices, Standards and Guidelines

Policy / Standards / Guidelines	Application
AS 1940 The storage and handling of flammable and combustible liquids	Dangerous Goods and Hazardous Chemicals
Storing and handling liquids – Environmental Protection Participants Manual (DEEC 2007)	Dangerous Goods and Hazardous Chemicals
Environmental Compliance Report Liquid Chemical Storage, Handling and Spill Management, Part B – Review of best practice and regulations (DECC 2005)	Dangerous Goods and Hazardous Chemicals
Code of Practice – Managing noise and preventing hearing loss at work, SafeWork NSW	Noise/Vibration
AS 2670.2 Annex A Evaluation of human exposure to whole body vibration	Noise/Vibration
EPA Guidance Statement #8 – Environmental Noise (Draft)	Noise/Vibration
EPA Interim Construction Noise Guideline	Noise/Vibration
Code of Practice: Construction Hours/Noise within the Central Business District 1992 (City of Sydney)	Noise/Vibration
AS 2436-Guide to noise control on construction, maintenance and demolition sites	Noise/Vibration

Policy / Standards / Guidelines	Application
AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting	Outdoor Lighting
EPA Guidance Statement #18 – Prevention of air quality impacts from development sites	Dust, Odour & Fumes
National Environmental Protection Measure – (NEPM) Ambient Air Quality	Dust, Odour & Fumes
Urban erosion and sediment control field guide – BLUE BOOK (Department of Land and Water Conservation)	Erosion and Sediment Control
NSW Guidelines for construction sites 1998	Erosion and Sediment Control
Code of Practice – Excavation Work (WorkCover NSW)	Erosion and Sediment Control
Manual Managing Urban Stormwater – Soils and Construction 2008 (Department of Housing)	Stormwater Management
Planning Guidelines SEPP 55 – remediation of land	Land Contamination
NSW Government Resource Efficiency Policy 2014	Energy/Water /Waste Management
NSW Waste Classification Guidelines, 2014 (EPA)	Waste Management
Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-Liquid Wastes 1999 DEC	Liquid waste

2.4 Environmental Risk Assessment

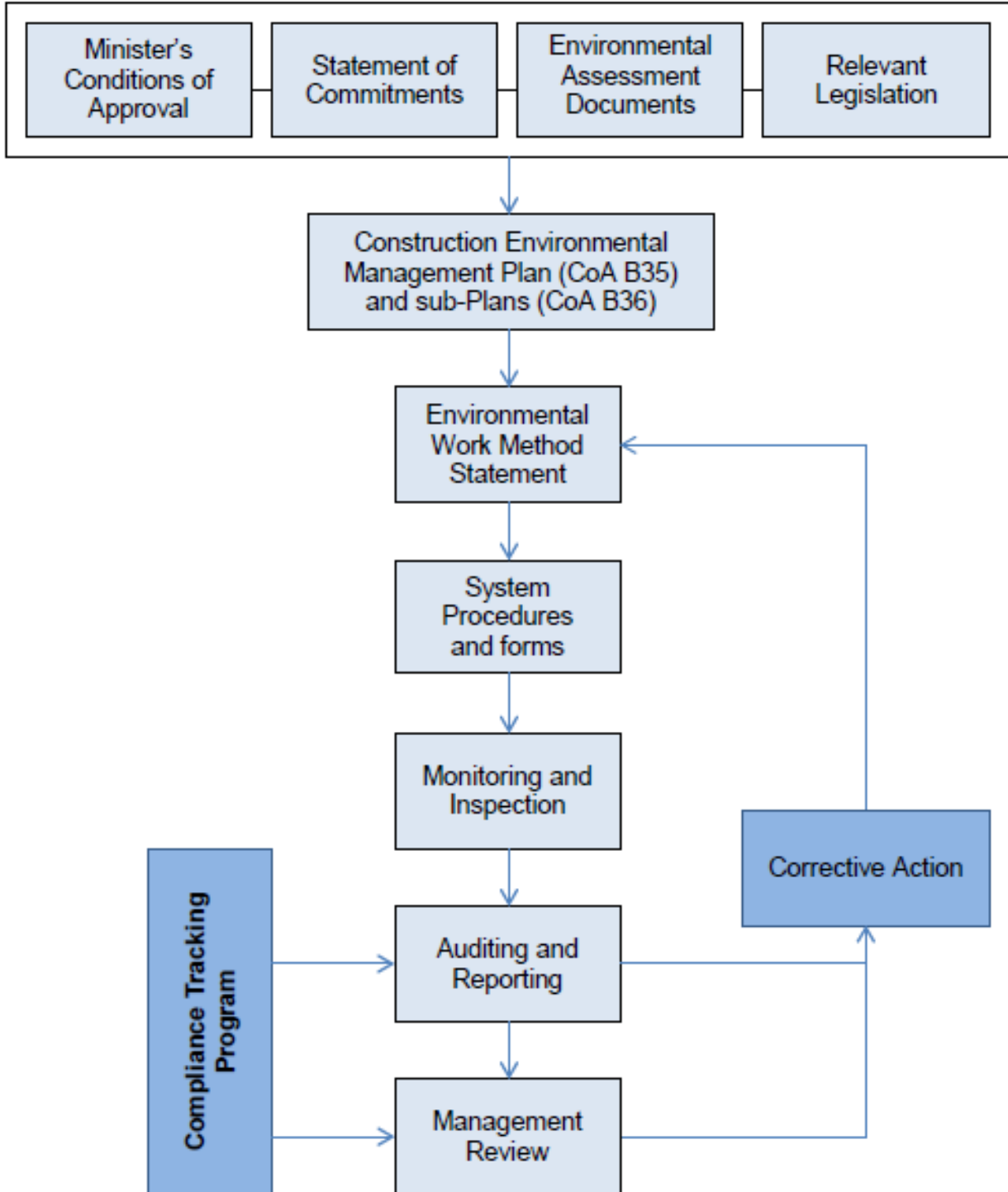
An Environmental Risk Assessment (ERA) has been completed for the Project and documented. A copy of the ERA is provided in Appendix (A). The ERA describes control procedures to manage environmental aspects, impacts and procedures to manage risks.

The ERA for the Project is based on AS/NZS ISO 31000:2009 the Australian Standard for Risk Assessments. A risk management approach is used to determine the severity and likelihood of each activity's impact on the environment and to prioritise its significance. This process considers potential regulatory and legal risks as well as taking into consideration the concerns of community and other key stakeholders.

3 Implementation and Operation

3.1 Environmental management documentation

This CEMP is the overarching management plan for the site environmental management documents.



3.2 Environmental Management Sub-plans

Several environmental management sub-plans support the CEMP. These documents are prepared to identify requirements and processes applicable to specific impacts or aspects of the activities for the Project

- Erosion Sediment Control Plan Management Plan- Robert Bird
- Lighting Impact Assessment- Floth
- Contamination and Hazardous Material - Douglas Partners
- Heritage Impact Assessment - Weir Phillips
- Archaeological Impact Assessment - Casey and Lowe
- Aboriginal Cultural Heritage Assessment - Comber Consultancy
- Construction Waste Management Plan - EcCell Environmental Management
- Noise and Vibration Management - White Noise Acoustics
- Emergency Incident Response Plan - Richard Crookes
- Dewatering Management Plan – Douglas Partners R.005.Rev0 11th May 2020
- Incident Notification Plan -Richard Crookes

They address requirements of the Conditions of Approval and other measures identified in the process of submitting the Development Application.

RCC will ensure meaningful and effective consultation and communication processes are established and maintained throughout the life of the project in accordance with the Project environmental requirements. The following planned methods will be considered as part of the site consultation arrangements on environmental matters:

- Site inductions, training, information and promotional sessions;
- Environmental Alerts (QSE);
- Circulation/display of environmental information and other relevant documents;
- Environmental meetings – held as needed to discuss specific environmental issues and implications;

4 Resources, Roles, Responsibilities and authority

The key project roles personnel and responsibilities of RCCCC are presented in Tables 6 and 7.

Table 6 – Project Roles and Personnel

Role	Name
Construction Manager	Grant D’Arcy
Senior Project Manager	Greg Tischmann
Site Manager (Delivery)	Kevin Morgan
Senior Design Manager	Peter Woodfield
General Foreman	TBC
Contracts Manager	Gabriel Burnett
Site Foreman	Gabriel Burnett
Environmental Manager	Caoimhe Crosbie

Table 7 – Project Roles and Responsibilities

Roles / Position	Responsibilities
Project Manager	<ul style="list-style-type: none"> • Implement the CEMP • Have overall responsibility for environmental matters on site • Ensure that works are undertaken in accordance with RCCs Environmental Policy and Objectives and other requirements of this CEMP • Ensure workers are aware of RCCs environmental requirements and undertake appropriate training as required • Liaise with and other stakeholders as required • Arrange and provide resources for the Project • Ensure CEMP objectives and targets are being met • Ensure the CEMP is maintained for the duration of the Project • Ensure the Parramatta Council has approved dewatering permit
Site Supervisor	<ul style="list-style-type: none"> • Implement the CEMP on site • Ensure effective environmental controls are implemented for the life of the Project • Identify, recommend and implement solutions to environmental issues where required • Ensure that all workers are properly inducted as per the requirements of this CEMP • Provide sufficient resources for the successful management of environmental matters • Communicate site environmental issues, incidents and environmental performance to management • Ensure relevant environmental records are maintained
Worker	<ul style="list-style-type: none"> • Carry out their work in accordance with RCCs Environmental Policy, Objectives and the requirements of this CEMP • Take immediate steps to control identified environmental hazards in the workplace where appropriate • Work in a manner without risk to themselves, others or the environment • Participate in pre-start and toolbox meetings, inspections and audits as required by RCC • Report all incidents to the Site Supervisor • Follow instructions as required by the Site Supervisor
Sub-Contractor / Consultants / Specialists	<ul style="list-style-type: none"> • Conduct their work activities in an environmentally sensitive manner in accordance with this CEMP relevant environmental legislation and other requirements • Ensure all plant and equipment is fit for use and appropriately tested and maintained • Adequately instruct their workers in correct methods and environmentally safe working practices • Report all incidents to the Site Supervisor • Follow instructions as required by the Site Supervisor • Maintain water testing documentation when water is discharged to stormwater

4.1 Community Complaints Register

RCC will maintain a Complaints Register in Appendix C that records the following:

- Number of complaints received;
- Number of people affected in relation to a complaint; and
- Nature of the complaint and means by which the complaint was addressed and whether resolution was reached, with or without mediation.

The Complaints Register will be made available to the Department of Planning on request.

4.2 Sub-contractor Management

RCC will ensure that appropriate resources are scheduled to the Project including budget allocation to ensure adequate supply of environmental control equipment including Geotech socks and spill kits.

The timely supply of requested items (e.g. spill kits, Geotech socks, Geotech material, pads and other equipment) is to be coordinated by the site supervisor to ensure that objectives are achieved. There is to be no delay in project performance and the environment is not to be compromised due to insufficient supplies or unavailability of requested resources.

All Sub-contractors will be advised of the relevant DA/Planning Approval conditions and will be required to operate within the requirements of this CEMP and associated documents.

General

All Sub-contractors engaged by RCC for works shall undertake works in accordance with:

- Relevant Environmental Legislation, Codes of Practice and Australian Standards, and
- RCCs policies and procedures and CEMP requirements.

Monitoring

Sub-contractors are expected to provide a high level of supervision of their workers on site and implement appropriate monitoring practices such as: work area inspections, task observations and environmental review.

RCC will monitor Sub-contractor's environmental compliance through mechanisms such work area inspections, observations, audits and reviews.

4.3 Competency, Training and Awareness

All workers and Sub-contractors attending site will receive a site-specific induction that includes details of environmental and compliance obligations. This training also includes environmental management and mitigation requirements for noise, air pollution, water pollution, waste management, contamination, hours of work, incident and complaint response, sensitive receivers and location of critical services. Any worker not inducted will be unable to commence works on site.

Evidence of training and competency is to be provided prior to commencement of works. Some key competency environmental standards for this Project may include:

The Project Manager is responsible for identifying and assessing the training needs for the Project. The Site Supervisor is responsible for monitoring the skills required by workers to effectively implement the CEMP, Sub Plans and associated procedures on site. Records of induction and other training will be maintained by RCC.

Pre starts and toolbox talks will be held on a regular basis in order to provide the Project decision makers with an update, including any key or recurring environmental issues.

Workers will be made aware of this CEMP and Sub Plans including RCCs Management System policies, procedures, site rules and other requirements through the site-specific induction, consultation and communication processes. Further awareness may be achieved by:

- Pre-start, toolbox talks and meetings; and
- Environmental Risk Assessments
- Spill kit training

5 Stake Holder and Community Involvement

RCC will consult with the community regularly throughout construction, including consultation with the nearby sensitive residential receivers located in Hassall Street and the commercial receivers at Curtis Cheng Centre (NSW Police Headquarters), Lancer Military Barracks, Commercial Hotel, 7 Hassall Street and Eclipse Tower, relevant regulatory authorities and other interested stakeholders.

RCC will notify stakeholders of any significant events or changes that affect or may affect individual properties, residences and businesses. This will include but is not limited to noisy works and interruptions to utility services outside of normal hours

6 Emergency and Incident Response

The RCC Emergency and Incident Response Plan, as per the Work Health and Safety Plan, includes:

- Categories for environmental emergencies and incidents;
- Notification protocols for each category of environmental emergency or incident, including notification of notification to owners / occupiers in the vicinity of the incident. This is to include relevant contact details;
- Identification of personnel who have the authority to take immediate action to shut down any activity, or to affect any environmental control measure (including as directed by an authorised officer of the EPA);
- A process for undertaking appropriate levels of investigation for all incidents and the identification, implementation and assessment of corrective and preventative actions;
- Notification requirements depending on the nature of the incident (i.e. the EPA, Department of Planning and Environment or OEHL) will be notified by the RCC Project Manager.

6.1 Emergency Contact Numbers

FIRE BRIGADE	000
NSW FIRE and RESCUE	131555
ENERGY AUSTRALIA	133466
ENRETECH CLEAN UP CREW	(02) 4869 3261 OR 0425 232 740 (mobile)
AGL	131245
SYDNEY WATER	1300143734
ENVIRONMENTAL PROTECTION AUTHORITY	02 99955000
POISONS INFORMATION CENTRE	13 11 26
DIAL-BEFORE-YOU-DIG	1100
PITT BULL BOOMS AND CLEAN UP WORKCOVER	02) 4959 1039 OR 0423 859 912 (mobile) 13 10 50 OR (02) 9214 9220 (after hours)
RICHARD CROOKS MAIN OFFICE	0299024700
KEVIN MORGAN SENIOR SITE MANAGER	0404812193

7 Environmental Inspections and Monitoring

7.1 Environmental Inspections, Monitoring and Auditing

7.1.1 Inspections

All RCC workers and Sub-contractors working on behalf of RCC are required to monitor work activities in accordance with their site-specific environmental documentation, the requirements of this CEMP and Sub Plans. Activities that will be undertaken on site are listed in Table 8.

Table 8 – Environmental Inspections, Auditing and Monitoring

Site/Activity Inspections	Frequency	By Whom
<i>Management Visit Report</i>	One per month	Senior Management
<i>Weekly Environmental Site Inspection</i>	Once per week	Site Team
<i>Inspection Test Plans (ITPs)</i>	As Required	Site Team
<i>Plant Inspection</i>	Daily	Operators
<i>Emergency Preparedness Inspections</i>	At Project Start	RCC Site Team
<i>Community Complaints Register</i>	On going	RCC Site Team
<i>Waste Tracking</i>	On going	ER
<i>Noise / Vibration</i>	On going	RCC Site Manager
<i>Environmental Audits</i>	Monthly	Environmental Representative
<i>Independent Environmental Audits</i>	As per the condition of consent	Lead Environmental Auditor

Sub-contractors are responsible for inspection of their own areas of control and equipment used. This will be monitored and checked by RCC Site Supervisors.

7.1.2 Audits

An internal environmental auditing programme will be established by RCC for the Project and consist of systems audits focusing on:

- Compliance with Approval, Permit and Licence sections that are relevant to current operations;
- Compliance with the CEMP;
- Community consultation and complaint response; and
- Environmental Training Records.

7.2 External Audits, Lead Independent Environmental Audit

The Audit Criteria are identified by the conditions for SSD 9275 and the expectations of the NSW Government (June 2018). These include:

- An Assessment of compliance with the SSD Conditions of Consent
- An assessment of environmental performance during the construction phase of the development including;
- Assessment of actual impacts compared to predicted impacts documented in the Ethos Urban (2018) State Significant Development Application Environmental Impact Statement 6 Hassall St Parramatta (EIS) and Submission Reports.
- Assessment of incidents, non-compliance and complaints that have occurred on the project.

- Assessment of feedback received by Department of Planning, Industry & Environment, other agencies and stake holders where relevant.
- Assessment of performance during the construction phase of the development, having regard to agency policy and any environmental issues identified through consultation carried out in developing the Audit scope.
 - A high-level assessment of the adequacy of the RCC Hassall St Construction Environmental Management Plan (CEMP) and sub plans.
 - Any other matters considered relevant or as identified in completing the independent audit.

7.3 Environmental Non-Compliances

7.3.1 Incident Reporting

The following summary of RCC's Incident Management and Reporting process covers all potential incidents (safety, compliance and environmental). Potential Environmental incidents include:

- Emissions to Air;
- Discharge to Land or Water;
- Damage to adjoining property due to environmental impacts;
- Complaints from public;
- Hazardous Building Materials;
- Wastes untracked;
- Chemical incidents; and
- Other environmental hazards that cannot be address immediately.

7.3.2 Incident Investigation

A formal documented investigation will be required for:

- Any notifiable incident resulting in a significant release to land, air, and water or that had the potential to incur a penalty from the relevant authority;
- Environmental incidents that have the potential to incur a penalty from the relevant authority; and
- Where requested by the Project Manager.

The Project Manager will review all incidents to verify that corrective and preventive actions resulting from incident investigations (documented process within the related forms include actions, responsibilities, and timeframes), are appropriate, track closure and are signed-off.

Information about on-site incidents, lessons learnt and similar operations to prevent reoccurrence is to be provided to the workers during pre-start/toolbox meetings

7.3.3 Corrective Action

The need for corrective and preventive action may be initiated following:

- Audit(s);
- A site inspection, e.g. plant, worksite;
- An Incident Report or an Investigation Report;
- An Inspection, testing, repair and maintenance reports;
- Issues raised at Pre-start/Toolbox meetings, project meetings or by the ER;
- Complaints;

- Changes to procedures, processes, systems or documentation;
- Legislative change;
- Adverse trends;
- Regulator enforcement activities such as Improvement Notice, Prohibition Notice or Infringement Notice; or
- Management reviews.

7.3.4 Environmental Monitoring and Inspection Records

RCC will establish a uniform system of document management and record keeping that maintains currency of information and is able to demonstrate compliance to the CEMP and regulatory requirements. This will include:

- Site inspections, audits, monitoring, reviews or remedial actions.
- Documentation as required by performance Conditions, Approvals, Licenses and Legislation.
- Modifications to site environmental documentation (e.g. CEMP, ERA).
- Other records as required including:
 - Qualifications of personnel;
 - Monitoring and inspection reports;
 - Induction and training records;
 - Reports of environmental issues, incidents and complaints and action taken to rectify these;
 - Internal and external audit reports;
 - Evidence of action taken as a result of a recommendation from such meetings;
 - Records of Sub-contractors monitoring their own activities;
 - Records of the Contractor monitoring the Sub-contracted activities;
 - Non-conformance and corrective action records; and
 - Risk management records

Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits will be produced by the RCCCC, Environmental Manager or delegate and records will be retained onsite for the duration of the Project.

8 Review and Improvement

8.1 Continual Improvement

RCC will continually improve its suitability, adequacy and effectiveness of the CEMP and Sub Plans. This review will include:

- Ensuring corrective actions implemented are effective;
- Corrective actions can be extended to other operational activities (where relative);
- Lessons learnt from root causes are extended to other operational activities (where relative);
- Implement additional corrective and preventative actions as required for improvement.

Corrective actions will be undertaken in the event of a complaint or incident and based on the results of monitoring and auditing.

8.2 Management Review

Periodic assessments and reviews of this CEMP will be conducted by the project management personnel where identified or biannually (6 monthly). Reviews may be conducted due to:

- Changes in internal/external issues (e.g. Legislation, risks, aspects etc.);
- Results of Internal/external/compliance audit results;
- Interested party feedback;
- Status of corrective and preventative actions;
- Results of site inspection,
- Outcomes of incident and near miss investigations;
- Any concerns which have been expressed by relevant parties

8.3 Documentation Control

Revision Control

The Project Manager is responsible for ensuring the initial developed CEMP (draft) is reviewed and given a starting version number (i.e. 1) at CEMP approval. Any amendments or revisions to the CEMP to be given with the next version number series (e.g.2, 3 etc.) for the life of the Project.

Distribution Control

Where controlled copies are used, controlled copies will be distributed to key workers prior to commencement of works, so that they are aware of the CEMP contents and for retention purposes. Amendments to this CEMP will be communicated to persons issued with controlled copies. Awareness of the contents of the CEMP will be communicated during site inductions. The Project Manager or delegate is responsible for the distribution of revised versions or sections thereof to project site management.

Uncontrolled Copies

In most occasions uncontrolled copies (latest version) will be distributed to key workers (or internal or external stakeholders) prior to commencement of works, so that they are aware of the CEMP contents. Such copies will not be numbered nor kept up to date. Awareness of the contents of the CEMP and amendments will be communicated during site inductions, Daily Pre-start/Toolbox Meetings. Uncontrolled copies will only be distributed on the authority of the Project Manager.

Construction Environmental Management Plan CEMP, Approval

The CEMP to be reviewed by each person nominated on the covering page of this CEMP and necessary amendments / revisions made prior to approval by the Project Manager. This CEMP to be written and developed prior to work commencing on site.

8.4 Records Management

All relevant environmental records shall be maintained in a secure and orderly manner such that they remain legible, identifiable and traceable to the activity, product or services for which they were generated until the period for retention expires (as required by specific Australian Standards, WHS & Environmental legislation).

During the Project, environmental records including all subsequent versions of the CEMP and Sub Plans are to be kept on site with the latest version. A copy is to be made available to workers carrying out work in connection with the CEMP and Sub Plans, maintained and located in the Site Office until completion of the Project.

Example of environmental records include (where generated):

- CEMP and all revisions
- ERA
- Records of management reviews
- Induction and training records
- Environmental Checklist
- Records of work environmental controls
- Minutes of tender/contract reviews
- Register of Calibration and certificates
- Work Method Statements
- Waste disposal docketts
- Risk assessments
- Permits
- Monitoring of subcontractor records
- Audit Reports
- Schedule of Inspection/Test Plans (where used)
- Records of any testing/analysis
- EPA Disposal receipts for Hazardous Materials
- Site Inspection Records
- Non-conformance and Corrective Action
- Complaint and Incident Reports
- Dewatering records
- Waste disposal docketts

8.5 Communication, Consultation, Cooperation and Reporting

RCC will ensure meaningful and effective consultation and communication processes are established and maintained throughout the life of the project in accordance with the Project environmental requirements. The following planned methods will be considered as part of the site consultation arrangements on environmental matters:

- Site inductions, training, information and promotional sessions;
- Environmental Alerts (QSE);
- Circulation/display of environmental information and other relevant documents;
- Environmental meetings – held as needed to discuss specific environmental issues and implications;
- Site Environmental Inspection; Appendix C
- Daily Pre-Start & Toolbox meetings addressing relevant environmental risks;
- Inductions and Toolbox meetings if incident occurs; and
- Notices and signage;

The RCC workplace monitoring program represented in Table 9.

Table 9– Reporting and Communication

Reporting & Communication	Frequency	Responsibility	Report To
<i>Daily Prestart Meeting</i>	Daily	Site Manager	Project Manager
<i>Toolbox Meeting</i>	Weekly	Site Manager	Project Manager
<i>HSE Meeting</i>	Quarterly (minimum), where established or required	Project Manager	QSE Manager & Place on Noticeboard or sign-in area
<i>Notifiable Incidents</i>	As occurs	Project / Environmental Manager	Relevant authority

9 Environmental Control Procedures

9.1 Water Quality Management

9.1.1 Objectives

Control, minimise or avoid release of contaminants to waterways / drainage systems

9.1.2 Responsibilities

Subcontractor / Site Team

9.1.3 Management Strategy

- Provide and maintain erosion and sediment controls around the perimeter of the site.
- Direct 'clean (offsite)' stormwater using GeoTech Sox around land disturbance activities.
- Construct bunded area for concrete pumping.
- Place an impervious plastic lining below the pump's hopper to contain any possible spillage or droppings;
- Paint, form oil, solvents and fuels will be stored correctly and bunded.
- Install a triple rinse wash out system for trade washout.
- Painting subcontractor required to wash out into purpose-built tanks that will be disposed of by the painting contractor through a licensed transfer station.
- All construction personnel undertaking discharge of water to on-site or off-site areas will undergo a toolbox talk to ensure the correct controls are in place to minimise the degradation of waters associated with the site.
- Adequate provisions must be made to collect and discharge stormwater drainage during construction of the building to the satisfaction of the principal certifying authority. The prior written approval of Council must be obtained to connect or discharge site stormwater to Council's stormwater drainage system or street gutter"
- Plumbing subcontractor to prepare de-watering management plan and implement the following controls:
 1. Obtaining permission of authorities before pumping water out
 2. Set up tank/pond to allow settlement of turbid water
 3. Test water before pumping out
 4. Monitor water for turbidity and PH before pumping out
 5. Visually check pump out area for turbidity
- ensure that concrete waste and rinse water is not disposed of on the site and are prevented from entering any natural or artificial water course.

9.1.4 Performance Indicators

No contamination of waterways

9.1.5 Reporting

Site Environmental Inspection Checklist Form.

9.2 Erosion and Sediment Control

9.2.1 Objectives

All erosion and sediment control measures must be effectively implemented and maintained at or above design capacity for the duration of the construction works and until such time as all ground disturbed by the works have been stabilised and rehabilitated so that it no longer acts as a source of sediment. Erosion and sediment control techniques, as a minimum, are to be in accordance with the publication Managing Urban Stormwater: Soils & Construction (4th edition, Landcom, 2004) commonly referred to as the 'Blue Book'."

9.2.2 Responsibilities

Subcontractor / Site Team

9.2.3 Management Strategy

- Implement the Erosion and Sediment Control Management Plan reference Robert Bird
- Install sediment fences in accordance with Erosion and Sediment Controls Plan
- Hardstand material, rumble grids or other appropriate measures will be installed at entry and exit points to minimise the tracking of dirt on the roadways
- All construction vehicles shall follow the traffic management plan and enter and exit the site via the temporary construction entry/exist points
- All vehicles involved in excavation, soil transport or movements on unsealed roads shall have their wheels cleaned in a designated area before leaving the site
- Street sweeping (never hosing down) will be conducted to reduce sediment on roads
- Install sediment control barriers/filtration on local drains and maintain
- When filling sedimentation socks for use in and around drains, only fill to 50% of capacity
- Maintain erosion sediment control settings

9.2.4 Performance Indicators

No transfer of sediment off site.

9.2.5 Reporting

Site Environmental Inspection Checklist

9.3 Dust and Air Quality Management

9.3.1 Objectives

Control, minimise or avoid emissions to the atmosphere caused by rising dust, vehicle / plant emissions, noxious fumes / odours, or paint spraying activities.

9.3.2 Responsibilities

Subcontractor / Site Team

9.3.3 Management Strategy

- All construction staff shall be inducted on dust control measures and instructed on management actions required under the CEMP (i.e. speed limits, access tracks).
- Where a complaint is received regarding dust, visual dust monitoring will be undertaken and activities reviewed to minimise dust emissions.
- All construction plant and equipment with access to the site will be properly maintained prior to, and serviced, in accordance with the manufacturer's requirements during the works.
- Operating machinery and vehicles will be visually checked to ensure exhaust fumes are acceptable.
- Machinery and vehicles found emitting visible smoke for longer than 10 seconds while operational on site will be taken out of service and serviced to ensure smoke is no longer visible.
- Trucks transporting materials, such as sand, soil, landscape materials and gravel will have covered loads and tailgates secured.
- Paint-spraying activities will not be undertaken in adverse weather conditions.
- Measures (including watering or covering exposed areas) will be used to dampen exposed areas and access tracks to reduce dust generation.
- A shade cloth around site perimeter fencing and gates will be installed
- Haul roads shall be installed with gravel / road base where required to minimise dust production.
- Hardstand material, rumble grids or other appropriate measures will be installed at entry and exit points to minimise the tracking of dirt on the roadways
- Where applicable, sealed roads will be swept to remove deposited material that could generate dust
- Exposed surfaces and stockpiles will require dust suppression by regular watering;
- Public roads used by these trucks are kept clean

9.3.4 Performance Indicators

No sustained visual dust observed beyond the immediate boundaries of construction site during construction.

No deposition of dust or other contaminant particulate, resulting from construction activities.

9.3.5 Reporting

Site Environmental Inspection Checklist

9.4 Construction Noise and Vibration Management

9.4.1 Objectives

Construction Noise Limits

The development must be constructed to achieve the construction noise management levels detailed in the Interim Construction Noise Guideline (DECC, 2009). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures identified in the approved Construction Noise and Vibration Management Plan."

9.4.2 Responsibilities

Subcontractor / Site Team

9.4.3 Construction Hours

Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:

- between 7:00am and 6:00pm, Mondays to Sundays inclusive, and on public holidays.

9.4.4 Management Strategy

- All construction work will take place as determined by local council conditions.
- Noise monitoring will be undertaken if required by council conditions or if complaints are received due to unreasonable levels of noise in a noise sensitive area.
- Plant and equipment which are identified with excessive noise will be reviewed and strategies implemented to minimise noise levels
- During operation, if equipment is likely to cause excess vibration, it will be monitored for vibration levels if required.
- Rock breaking / blasting times will be limited to comply with council conditions.
- Where work outside normal operating hours or vibration is a likely for extended periods, a communication plan/strategy for nearby residents will be prepared.
- Communication and notification of nearby residents and owners that may be affected by noise and vibration will be undertaken
- A dilapidation report to adjoining property will be completed
- Strict enforcement of the hours of work to ensure compliance with Local Government conditions of consent particularly for deliveries and commencement of daily work routines will be undertaken
- The hours of work will be included in the workplace specific induction and displayed on the workplace notice board;
- Ensure construction vehicles (including concrete agitator trucks) do not arrive at the site or surrounding residential precincts outside of the construction hours of work outlined under condition.
- Where practicable and without compromising the safety of construction staff or members of the public, the use of 'quackers' to ensure noise impacts on surrounding noise sensitive receivers are minimised.
- Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in condition C15.



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9.4.5 Performance Indicators

No complaints regarding noise.

9.4.6 Reporting

Site Environmental Inspection Checklist

9.5 Hazardous Chemicals Management

9.5.1 Objectives

Avoid or minimise contamination of land caused by use of imported materials, or by spillage of fuels, paint, form oil, chemicals and other hazardous chemicals and dangerous goods. Hazardous Chemicals and Dangerous Goods have been identified as a Significant Aspect and will require specific management for any Hazardous or Dangerous Goods.

9.5.2 Responsibilities

Subcontractor/Site team

9.5.3 Management Strategy

- Material Safety Data Sheets for each chemical stored or used on the project shall be maintained on site in an accessible location.
- All chemicals and dangerous goods used on site will require a material safety data sheet and appropriately labelled.
- Bunds capable of storing 110% of the container volume will be installed around areas where chemicals are stored or where the quantity is a potential threat.
- Bund walls and floors will be constructed with impervious materials and in accordance with legislation.
- Spill kits shall be established and readily available.
- Toolbox talks in the use of spill kits will be undertaken
- Any chemical or fuel spills will be cleaned as quickly as possible and placed in suitable receptacles for reclamation or disposal, in a manner that does not cause pollution.
- Fuelling of vehicles or construction plant will be carried out in areas from which fuel or oil will not be discharged to waters/street gutters or stormwater drainage systems.
- Under no circumstances shall trucks that leak any sort of mechanical fluid be permitted on or adjacent to the site.
- Oil contaminated stormwater will be disposed of to a licensed disposal site.
- In the event of a spill, the procedures contained in the Emergency Management Plan will be implemented
- Minimal volumes of fuels and chemicals will be kept on site
- Bunds will be covered to reduce water build up
- Containers of solvent based paints will be returned to solvent recycling depot

9.5.4 Performance Indicators

No incidents or spillages.

9.5.5 Reporting

Site Environmental Inspection Checklist

9.6 Spoil and Construction Waste Management

9.6.1 Objectives

All waste and recycling material removed from Richard Crookes construction sites including excavation construction and demolition waste will need to be classified. The Waste Classification Guidelines EPA (2014) is a step-by-step process for classifying waste.

9.6.2 Responsibilities

Subcontractor / Site Team

9.6.3 Management Strategy

All excavation waste removed from site will be classified by a suitably qualified environmental consultant including

- Virgin excavated natural material
- ENM in accordance with Excavated Natural Material Order 2014.
- The waste classification certificates will be provided to the receiving facility.
- Disposal docket (for non VENM/ENM) from landfill will be provided and kept in a Data file onsite
- Material tracking/dockets will be provided for VENM/ENM.
- Disposal facility will have appropriate licence to receive the waste in accordance with the waste classification.

A Waste Data File will be maintained on-site and all entries will include: Excavation and Construction Waste this will include

- The classification of the waste
- The time and date of material removed
- A description of and the volume of waste collected
- The location and name of the waste facility that the waste is transferred to
- The vehicle registration and the name of the waste contractor's company
- Disposal docket

The Waste Data File will be made available for inspection to any authorized officer at any time during the life of the site works. At the conclusion of site works, the designated person will retain all waste documentation and make this validating documentation available for inspection.

9.6.4 Performance Indicators

To correctly implement all measures to ensure environmental impacts are minimised during excavation and construction.

9.6.5 Monitoring and Reporting

Daily when waste is removed from site

9.7 Refuelling Environmental Control Procedure

9.7.1 Objective

The purpose of this procedure is to minimise the risk of hydrocarbon leakages and chemical spills which may occur during refuelling and/or operation of the generator used on site.

9.7.2 Responsibilities

All staff, crane crew and refuelling operator.

9.7.3 Management Strategy

All staff shall be made aware of the stormwater drains, chemical bunding systems and spill kits to prevent environmental damage if a hydrocarbon spill occurs. This should include familiarisation with the location of the equipment and location of the stormwater drains and the contents of this. When undertaking refuelling onsite the following shall be ensured:

STORMWATER DRAINS

- Stormwater drains shall be covered with geo-textile fabric for protection and these shall be checked daily and maintained throughout the entire project.
- Bunds to be established around stormwater drains on Charles Street and be impervious to hydrocarbons and chemicals .

DIESEL DRUMS / REFUELLING PUMP

- Diesel Generator to be stored in an impervious bund.
- Diesel drums are stored in an impervious bund
- A tarpaulin will be placed over diesel drum when not in use so that rainwater does not enter the bund and reduce volume
- Check for any leaks and diesel spills on the ground around the diesel drum and generator
Visually inspect the generator
- Check that seals and fittings appear in good condition and there is no evidence of poor maintenance practices or damage.
- Visually inspect all hoses before use to ensure they are fit for service and will not create spills during transfer.
- Check the certification plate to ensure the hose has been continuity tested in the past 6 months.
- Do not use hoses that appear damaged or are out of test date – hose testing tags are to be checked for validation before use.
- Fuel delivery nozzle to be fitted with automatic cut-off to prevent overfilling the fuel tank
- Fuel Supplier to carry appropriate type and capacity spill kit. Position rags and spill equipment in a readily accessible location.
- Check the pump outlet valve is closed before opening pumps inlet valve and the tanker's internal valve. With fuel gravity feeding to the pump, check all connections for leaks. Correct any leaks before commencing. Open the pump outlet valve and check for leaks particularly from hose fittings. Correct any leaks before continuing.
- Monitor the hoses and pressure for any signs of leakage. Pumping is to cease immediately if leaks or the transfer is not going as intended.
- Refuelling operators are to remain in attendance for the duration of refuelling the tank

SPILL MANAGEMENT

- Ensure any spills within the bunded area are cleaned up, monitored and reported.
- Keep hydrocarbon-spill kits in emergency response locations
- Restock and ensure adequate spill kits are available
- Onsite checklists to be completed and documented as required
- Store SDS for fuels and chemicals

NOISE MANAGEMENT

- Ensure machinery and plants are properly maintained in such a manner as to avoid excessive noise generation
- Ensure work is conducted within permitted hours

FIRE MANAGEMENT

- Chemical mixing, angle grinder or ignition sources of fuels, gases and other flammable substance to be avoided where possible.
- Fire Extinguishers to be made available on site.
- The location of any fire Hydrants or hose reels to be identified by site workers.

9.7.4 Performance Indicators

No hydrocarbon spills on site .

9.7.5 Monitoring and Reporting

Check the above procedure before refuelling

9.8 Dewatering Management Procedure

Dewatering, for the purposes of this procedure is any activity that involves the removal of ponded stormwater or infiltrated groundwater from any location on site and the subsequent reuse or discharge of that water.

There is no water table at the project site. Therefore, this procedure applies to stormwater dewatering only. The procedure includes the collection, storage, testing and discharge of stormwater

Captured rainwater from the construction will collect in the basement area onsite and will then be drained to the 50,000-litre installed rainwater tank. This water will then be held and when discharged will be tested for PH and Turbidity. The water will be pumped to the existing street Hassall Street where it will then be discharged to Charles Street Stormwater Drain.

It is the objective of this procedure to ensure that all site dewatering activities are completed in a manner that does not cause harm to the environment. No construction site dewatering activity will be carried out unless it is in accordance with this procedure.

9.8.1 Current Legislation

To ensure compliance the following legislation has been considered

- Water Management Act 2000
- Rivers and Foreshores Improvement Act, 1948
- Catchment Management Act, 1989
- Fisheries Management Act, 1994
- The Water Administration Act, 1986
- The Sydney Water Act, 1994
- Environmental Legislation: Urban Areas in NSW - Managing Urban Stormwater: Soils and Construction Sediment and Waste Control Guidelines 4th edition (2004)

Water testing is to be in accordance with the ANZECC guidelines (ANZECC 2000, 'Australian Water Quality Guidelines for Fresh and Marine Waters', Australian and New Zealand Environment and Conservation Council, Kingston) Table 3.4.1, trigger levels of toxicants for marine water at a 95% level of protection, for assessment of groundwater disposal to the stormwater system or as otherwise nominated by Parramatta City Council. Fresh water levels should be adopted where marine water trigger levels are absent.

9.8.2 Objective

The Dewatering Management Procedure has been developed in response to the Parramatta City Council requirements for dewatering water to the stormwater system from water generated during construction. A Dewatering Management Plan (DMP) has been completed by Douglas Partners (R.005.Rev0). This Dewatering Management Procedure is based on previous geotechnical investigations on the site and inspections of the site during bulk earthworks. The only water expected to enter the site is via precipitation/rainfall that has fallen within the construction site catchment. The objective of the DMP is to prevent pollution or degradation of the receiving waters North and North / East in the Parramatta River.

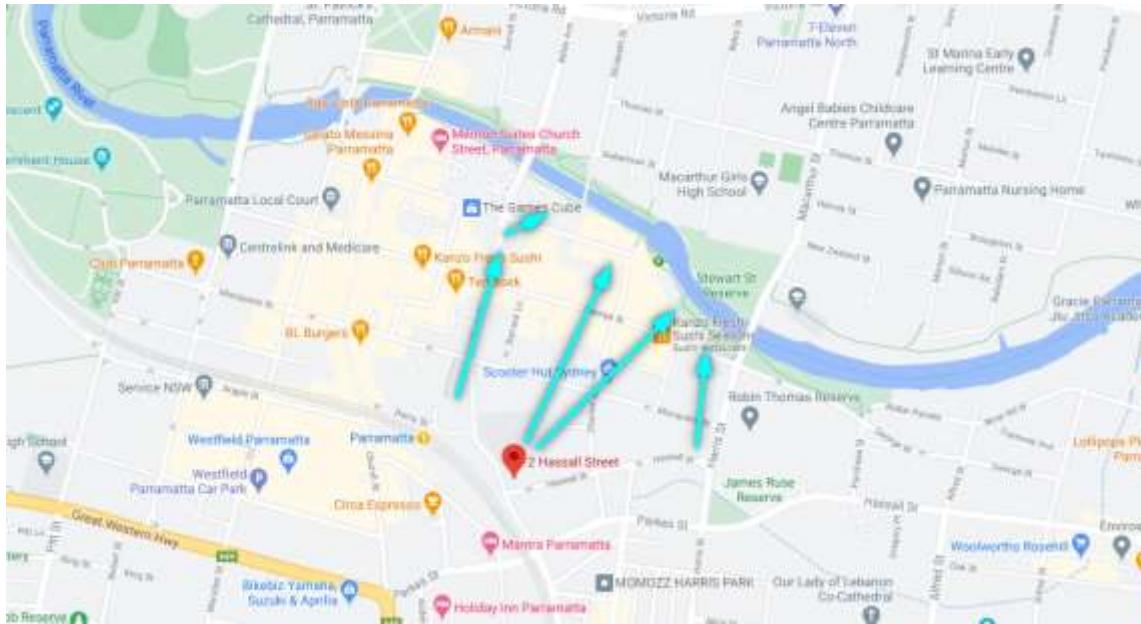


Figure 2 Site Location & Indicative Groundwater Flow Direction

9.8.3 Site Dewatering Responsibilities

All personnel involved in dewatering will be made aware of the dewatering requirements at the site inductions and via regular toolbox talks. All personnel involved in dewatering activities will be follow the roles and responsibilities as outlined in Table 10. **Table 10 – Site Dewatering Responsibilities**

Roles / Position	Responsibilities
Project Manager	<ul style="list-style-type: none"> Ensure the Parramatta Council has approved dewatering permit Instruct plumbing contractor to dewater as per the Dewatering Management Procedure
Site Sub-contractor	<ul style="list-style-type: none"> Ensure Dewatering permit has been obtained from the council before dewatering site water Ensure dewatering checklist is complete before discharging water (Appendix D) Check water for PH level using electronic waterproof pH meter and or Ph strips Check water for turbidity using a turbidity tube Check discharge point Check Vertical Pump is not submerged further than under the water surface

9.8.4 Management Strategy

DEWATERING METHODS:

1. Water will be collected in the basement area and will be diverted into a permanent water holding tank that can hold tank 50,000 litres. All water will be held in the purpose-built holding tank
2. Do not discharge without Dewatering Permit from the Parramatta City Council
3. Turn on pump and take sample of the outfall daily and record testing levels.
4. Do not discharge if pH and Turbidity levels are not within the following criteria
5. Before discharge water to be tested for pH and turbidity If the turbidity is above 20NTU and pH is above 7.5, then the water can be treated with aluminium sulphate.
 - If turbidity: <20 NTU it can be discharged
 - suspended solids: <50 mg/L it can be discharged
 - pH: 6.5 – 8.5 it can be discharged
 - No Evidence of Oil and Grease (visual only) then water can be discharged
6. Position pump and place intake below water level
7. Regularly check on pump and the point of discharge when dewatering
8. Turn off pump when water level is near empty or below the Sediment Settling Zone.

WATER QUALITY CRITERIA FOR DISCHARGE AND/OR REUSE:

Water quality sampling and testing may be required to ensure that the water quality objectives are met prior to either reuse or discharge of the water.

Approved testing methods for various analytes can be referenced from “Approved Methods for the Sampling and Analysis of Water Pollutant in New South Wales” (DEC 2004).

Best management practice applies when discharging water including representative water quality criteria for the receiving environment and ensuring all discharges comply with these requirements.

Standard project water quality objectives criteria are as follows:

- | | |
|--------------------------|------------------|
| ○ Total suspended solids | 50mg/L |
| ○ pH | 6.5 – 8.5 |
| ○ oil and grease | no visible trace |

WATER TREATMENT - PH LEVELS

If the pH of sediment pond water is outside the range of 6.5-8.5, it will need to be treated to bring it within the acceptable range. If the water pH is above 8.5, the following might be applicable:

- hydrochloric acid is used to lower the pH:
- a 500ml dose of acid lowers 7000l of water by a ph of approximately 1.5.
- to treat water with acid, safety requirements must be followed as outlined in relevant SDS

If the water pH is below 6.5, a base such as agricultural lime, with a pH of about 8.2, will be used to raise the pH.

SUSPENDED SOLIDS

If the TSS of water is greater than 50 mg/l a flocculent should be used as follows:

Treating water with flocculent (e.g. gypsum, liquid alum or flocculent blocks) will make the sediments drop to the bottom. Water retention tanks also have internal baffles installed to further assist with reducing the sediment load. Dosing rates of 30kg per 100m³ will be used and application methods will be applied as per methods recommended in the Landcom publication Managing Urban Stormwater, Soils & Construction (4th edition). Note that an even application over the captured water is essential for effective flocculation. Apply evenly in water and wait for the sediment to settle out.

Only environmentally safe flocculants are to be used based on the review of SDS information.

DISCHARGING WATER

Approval to discharge treated water will be required from the Parramatta City Council. and once water has been tested and meets all the criteria approval to discharge will be granted. No water discharge will occur without this hold point being released and the appropriate approval obtained.

Dust suppression of unsealed surfaces will be required at regular intervals. Onsite reuse of stormwater and groundwater for dust suppression and construction needs will be considered prior to offsite discharge.

The site manager for the Plumbing Sub Contractor will visually monitor water quality at a downstream inspection point once each discharge event commences, to ensure no plume is evident. If the water quality declines during release offsite (e.g. water treatment may have resulted in layers of varying water quality), the system will be shut down and additional treatment will be required. The water will not be permitted to be discharged off site until the approval of the water release hold point.

WATER SAMPLING AND TESTING REQUIREMENTS:

Water sampling will be undertaken before commencement of any water discharge. Water will only be discharged after a rainfall event and when the 50,000-litre holding tank is full. Water will be tested for PH and Turbidity and also a visual check of any oil or grease on the surface.

Water within the holding tank will be monitored prior to each discharge by field measurements as follows:

- An electronic waterproof pH meter and or pH strips; and
- A turbidity tube.

During initial monitoring, a correlation will be established between total suspended solids (TSS) and turbidity, so that turbidity can be used as a field indicator of TSS prior to discharge.

Oil and grease will only be tested for if an oily sheen is visible on the surface of the water.

Samples will be taken from 300mm below the surface of the water at the final baffle and collected in bottles appropriate for the analytes to be tested. Samples will be

Assessed to confirm compliance with discharge protocol prior to the discharge event.

9.8.1 Reporting

If removal of water from the site is required, monitoring and associated reporting is proposed in the Table 11 below:

Table 11 – Monitoring and Reporting requirements

Item	Monitoring	Monitoring Frequency
Water Quality Sampling and Testing	Sampling and testing of water from the point of discharge. Properties tested include pH & suspended solids, including turbidity .	pH and turbidity to be measured before each pump out. Water will be visually checked for oil or grease on the surface
Groundwater inflow rates	N/A	
Quantity of water disposed offsite (rainwater)	Vertical pump at 5 litres per second	Each pump out
Reporting	Dewatering checklist to be completed when water is pumped out	Each pump out

RECORD KEEPING

Relevant data will be recorded on the water treatment details and record of water discharge into council stormwater will be submitted to the project environmental representative for review and approval prior to water discharge. All records will be stored electronically on site.

10 Terms and Definitions

Table 12 – Terms and Definitions

Conditions of approval	Obligations imposed on an activity assessed under Part 5 of Environmental Planning & Assessment Act 1979
Conditions of consent	Obligations imposed on a development assessed under Part 4 of Environmental Planning and Assessment Act 1979
Construction environmental management plan (CEMP)	A site or project specific plan developed to ensure that appropriate environmental management practices are followed during the construction phase of a project
Construction method statement (CMS)	A component of Framework EMP that addresses environmental management issues relevant to specific site and/or activity
Environmental aspect	Element of an organisation activities, products or services that can interact with the environment
Environmental impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisations activities, products or services
Environmental management plan (EMP)	A site or project specific plan developed to ensure that appropriate environmental management practices are followed during the construction and/or operation of a project
Environmental management representatives (EMR)	A person generally appointed for large projects to independently review, audit and endorse a project’s environmental activities.
Environmental management system (EMS)	The part of an organisations overall management system that includes organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy
Environmental policy	Statement by an organisation of its intentions and principles for environmental performances.
Framework EMP	An overarching EMP providing environmental management information relevant to an entire project
Government agency	NSW Government department, authority or state-owned corporation
Minister	Minister administering the Environmental Planning and Assessment Act 1979

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Appendix A – Environmental Risk Assessment

RICHARD CROOKES
CONSTRUCTIONS
Project: Innovation Hub Parramatta

Appendix 1 Environmental Risk Matrix Construction

SOC Objectives and Targets / KPIs:
 -3 Environmental Notices issued by EPA or Local Council annually
 Action community complaints within 24 hours, no repeat complaints for same issue
 Investigate non effective operational controls / environmental incidents and report

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CONSTRUCTIONS

Developed by: Joseph Elias	Assessment of Significant Environmental Impact (no controls)	Environmental Aspect - also consider if any legislation applies to activity or environmental aspect. See Intranet Legal and Other Requirements Table																					Impact - No Controls. Refer to EMPs or Operational Controls Table Appendix 4 of PMP
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Dewatering	likelihood	1			5	4	4		4														1. pollution of aquatic ecosystems 2. use of scarce/non renewable resources 3. pollution of aquatic ecosystems 4. pollution of aquatic ecosystems 5. pollution of aquatic ecosystems 6. pollution of aquatic ecosystems
	consequence	2			4	4	4		4														7. use of scarce/non renewable resources 8. use of scarce/non renewable resources 9. pollution of aquatic ecosystems 10. pollution of aquatic ecosystems 11. community disturbance 12. human discomfort, damage to buildings
	risk	2			1	2	2		2														13. stakeholder interactions 14. visual amenity, pollution 15. visual amenity, pollution 16. non efficient use of materials, chemical pollution 17. reduction in landfill space, loss of recyclables 18. visual amenity, pollution 19. visual amenity, pollution
	Signif y/yes, n/no	Y			Y	Y	Y		Y														
Detailed excavation / In ground Services	likelihood	1			4	4						1					4	3					1. pollution of aquatic ecosystems 2. use of scarce/non renewable resources 3. pollution of aquatic ecosystems 4. pollution of aquatic ecosystems 5. pollution of aquatic ecosystems 6. pollution of aquatic ecosystems 7. use of scarce/non renewable resources 8. use of scarce/non renewable resources 9. pollution of aquatic ecosystems 10. pollution of aquatic ecosystems 11. community disturbance 12. human discomfort, damage to buildings
	consequence	2			3	4						2					4	3					13. stakeholder interactions 14. visual amenity, pollution 15. visual amenity, pollution 16. non efficient use of materials, chemical pollution 17. reduction in landfill space, loss of recyclables 18. visual amenity, pollution 19. visual amenity, pollution
	risk	2			2	2						2					2	2					20. visual amenity, pollution 21. visual amenity, pollution
	Signif y/yes, n/no	Y			Y	Y						Y					Y	Y					
Foundations - piling	likelihood	1			4	4						1											1. pollution of aquatic ecosystems 2. use of scarce/non renewable resources 3. pollution of aquatic ecosystems 4. pollution of aquatic ecosystems 5. pollution of aquatic ecosystems 6. pollution of aquatic ecosystems 7. use of scarce/non renewable resources 8. use of scarce/non renewable resources 9. pollution of aquatic ecosystems 10. pollution of aquatic ecosystems 11. community disturbance 12. human discomfort, damage to buildings
	consequence	2			2	2						2	3	2									13. stakeholder interactions 14. visual amenity, pollution 15. visual amenity, pollution 16. non efficient use of materials, chemical pollution 17. reduction in landfill space, loss of recyclables 18. visual amenity, pollution 19. visual amenity, pollution
	risk	2			3	2						3	2	2									20. visual amenity, pollution 21. visual amenity, pollution
	Signif y/yes, n/no	Y			N	Y						Y	Y	Y			N	Y					
Foundations - piling	likelihood	1			4	4						1	2	1			4	3					1. pollution of aquatic ecosystems 2. use of scarce/non renewable resources 3. pollution of aquatic ecosystems 4. pollution of aquatic ecosystems 5. pollution of aquatic ecosystems 6. pollution of aquatic ecosystems 7. use of scarce/non renewable resources 8. use of scarce/non renewable resources 9. pollution of aquatic ecosystems 10. pollution of aquatic ecosystems 11. community disturbance 12. human discomfort, damage to buildings
	consequence	2			2	3						2	3	2			2	3					13. stakeholder interactions 14. visual amenity, pollution 15. visual amenity, pollution 16. non efficient use of materials, chemical pollution 17. reduction in landfill space, loss of recyclables 18. visual amenity, pollution 19. visual amenity, pollution
	risk	2			3	2						2	2	2			3	2					20. visual amenity, pollution 21. visual amenity, pollution
	Signif y/yes, n/no	Y			N	Y						Y	Y	Y			N	Y					
Structure - formwork, reinforcement, concrete & curing, post tensioning	likelihood																						1. pollution of aquatic ecosystems 2. use of scarce/non renewable resources 3. pollution of aquatic ecosystems 4. pollution of aquatic ecosystems 5. pollution of aquatic ecosystems 6. pollution of aquatic ecosystems 7. use of scarce/non renewable resources 8. use of scarce/non renewable resources 9. pollution of aquatic ecosystems 10. pollution of aquatic ecosystems 11. community disturbance 12. human discomfort, damage to buildings
	consequence																						13. stakeholder interactions 14. visual amenity, pollution 15. visual amenity, pollution 16. non efficient use of materials, chemical pollution 17. reduction in landfill space, loss of recyclables 18. visual amenity, pollution 19. visual amenity, pollution
	risk																						20. visual amenity, pollution 21. visual amenity, pollution
	Signif y/yes, n/no																						
Wet trades: Blockwork, brickwork, render, waterproof membranes	likelihood				1												1					4	1. pollution of aquatic ecosystems 2. use of scarce/non renewable resources 3. pollution of aquatic ecosystems 4. pollution of aquatic ecosystems 5. pollution of aquatic ecosystems 6. pollution of aquatic ecosystems 7. use of scarce/non renewable resources 8. use of scarce/non renewable resources 9. pollution of aquatic ecosystems 10. pollution of aquatic ecosystems 11. community disturbance 12. human discomfort, damage to buildings
	consequence				4												4					2	13. stakeholder interactions 14. visual amenity, pollution 15. visual amenity, pollution 16. non efficient use of materials, chemical pollution 17. reduction in landfill space, loss of recyclables 18. visual amenity, pollution 19. visual amenity, pollution
	risk				1												1					3	20. visual amenity, pollution 21. visual amenity, pollution
	Signif y/yes, n/no				Y												Y					N	
Services - hydraulic, electrical, mechanical, incl. cable chasing, concrete curing	likelihood	5			1							4										1	1. pollution of aquatic ecosystems 2. use of scarce/non renewable resources 3. pollution of aquatic ecosystems 4. pollution of aquatic ecosystems 5. pollution of aquatic ecosystems 6. pollution of aquatic ecosystems 7. use of scarce/non renewable resources 8. use of scarce/non renewable resources 9. pollution of aquatic ecosystems 10. pollution of aquatic ecosystems 11. community disturbance 12. human discomfort, damage to buildings
	consequence	2			3							2					3					2	13. stakeholder interactions 14. visual amenity, pollution 15. visual amenity, pollution 16. non efficient use of materials, chemical pollution 17. reduction in landfill space, loss of recyclables 18. visual amenity, pollution 19. visual amenity, pollution
	risk	2			2							3					2					3	20. visual amenity, pollution 21. visual amenity, pollution
	Signif y/yes, n/no	Y			Y							N					Y				Y	N	
Roofing	likelihood																1					4	1. pollution of aquatic ecosystems 2. use of scarce/non renewable resources 3. pollution of aquatic ecosystems 4. pollution of aquatic ecosystems 5. pollution of aquatic ecosystems 6. pollution of aquatic ecosystems 7. use of scarce/non renewable resources 8. use of scarce/non renewable resources 9. pollution of aquatic ecosystems 10. pollution of aquatic ecosystems 11. community disturbance 12. human discomfort, damage to buildings
	consequence																2					2	13. stakeholder interactions 14. visual amenity, pollution 15. visual amenity, pollution 16. non efficient use of materials, chemical pollution 17. reduction in landfill space, loss of recyclables 18. visual amenity, pollution 19. visual amenity, pollution
	risk																2					2	20. visual amenity, pollution 21. visual amenity, pollution
	Signif y/yes, n/no																Y					Y	
Finishes - Internal: partitions, ceilings, joinery, door hanging	likelihood																1					1	1. pollution of aquatic ecosystems 2. use of scarce/non renewable resources 3. pollution of aquatic ecosystems 4. pollution of aquatic ecosystems 5. pollution of aquatic ecosystems 6. pollution of aquatic ecosystems 7. use of scarce/non renewable resources 8. use of scarce/non renewable resources 9. pollution of aquatic ecosystems 10. pollution of aquatic ecosystems 11. community disturbance 12. human discomfort, damage to buildings
	consequence																3					2	13. stakeholder interactions 14. visual amenity, pollution 15. visual amenity, pollution 16. non efficient use of materials, chemical pollution 17. reduction in landfill space, loss of recyclables 18. visual amenity, pollution 19. visual amenity, pollution
	risk																2					2	20. visual amenity, pollution 21. visual amenity, pollution
	Signif y/yes, n/no																Y					Y	

App 1 Environmental Risk Matrix
Revision Date May 2016
PMP Review Date <Date>



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RICHARD CROOKES Appendix 1 Environmental Risk Matrix
CONSTRUCTIONS

RCC Objectives and Targets / KPIs:
 <3 Environmental Notices issued by EPA or Local Council annually
 Action community complaints within 24 hours, no repeat complaints for same issue
 Investigate non effective operational controls / environmental incidents and report

RICHARD CROOKES
CONSTRUCTIONS

Project: Innovation Hub Parramatta		Environmental Aspect - also consider if any legislation applies to activity or environmental aspect. See Intranet Legal and Other Requirements Table																				Impact - No Controls. Refer to EMPs or Operational Controls Table Appendix 4 of OMP		
Developed by: Joseph Elias	Assessment of Significant Environmental Impact (no controls)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		21	
Activity, Product or Service	Assessment of Significant Environmental Impact (no controls)	dust	odour	greenhouse	stockpiles	Adjoining waterways	sewer	land	resources/water	resources/materials	resources/energy	noise	vibration	community concerns	flora	fauna	waste / chemicals	landfills/leachate	litter	traffic	aboriginal heritage	European heritage		
cranes: Gyprocking, painting, tiling,	Signif y/yysa, n/mco									Y		N	N					N		Y				11. community disturbance 14. loss of habitat 19. community disturbance, mud tracking on public roads
External works - pavements, landscaping, lighting	likelihood	u			1	u			u			1	u				u	u		1		u		
	consequence	2			2	2			2			2	3				2	2		3		2		
	risk	3			2	3			3			2	3				3	3		2		3		
	Signif y/yysa, n/mco	N			Y	N			N			Y	N				Y	N		Y		N		

Appendix B – Sample Site Environmental Checklist

Richard Crookes Construction Conduct a Weekly Site Environmental Checklist on site. The sample Site Environmental Checklist includes the following information in the online checklist.

Supervisor:

Project Title:

Date:

Air Quality	Comments
Check good housekeeping procedures are in place – including wet sweeping of dusty work areas	
Check plant and equipment to be fitted with standard pollution control devices. Copies of compliance certificates to be supplied plant and equipment before commencing on site	
Minimise stockpiling of materials on site	
Any stockpiles on site are to be kept damp by use of water sprays	
Check concrete cutting water is vacuumed up and not left to dry out, leaving a source of very fine silica dust.	
Wet down demolition wastes that is generating dust during loading onto trucks prior to lifting	
Sediment Controls	
Check sediment Controls established around works area	
Establish Geotech sock and fabric before works commence on site	
Cease works if Sediment Controls are not effective	
Check Hydrovac is working before concrete cutting	
Remove sediment laden water with Hydrovac	
Inspected vehicles wheels before leaving the site for sediment on tyres.	
Water Quality	

Check no chemicals, fuel or wastes to be kept on site	
Check sediment control measures are preventing sediment from entering waterways	
Ensure all sealants & liquid chemicals including, diesel, paints, are banded and remain in work vehicle after use and not left on site	
Check all vehicles for any leakage of oil or diesel	
Report any leakage of oil and diesel spills	
Check if dewatering has occurred and if all records are available as per the Dewatering Procedure	
Waste Management	
The site is in an orderly state free of litter	
Waste dockets are received from the Waste Contractor	
Noise Management	
Check all plant and equipment complies with Guidelines	
Remove tonal indicators from mobile equipment & fit with residential type	
Ensure plant and equipment maintained	
Chemical and Waste Storage Checklist	
Check refuelling is by Mini Tankers	
Check work areas for any sign of fuel or oil leaks	
Check all storage containers for leaks, ensure all lids are on properly, that containers are stable	
Check all secondary containment (permanent/mobile) for leaks, spills or rainwater	

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Check all road work areas for spills or staining	
Check all spill kits are in good condition and have sufficient material for spill response	
Check labels on all chemical storage containers, update and replace if necessary	
Check all signage on site is intact	
Maintain chemical SDSs on site	
Review chemical storage register and update if necessary	
Other Comments:	



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Appendix C – Communications and Complaints Register

Date	Time	Name / Contact	Communication / Complaint	Outcome



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Appendix D – Dewatering Checklist

Water Treatment Details Innovation Hub 6 Hassal St Parramatta											
Date	Test By	Reading prior to treatment			Treatment		Reading after treatment			pH and Turbidity meet council requirement level? IF NOT DO NOT DISCHARGE	Sign off
		Time	Ph	Turbidity Field	Water Volume (m3)	Type/Name of Flocculent	Time	pH 6.5 to 8.5	Turbidity Field Generally less than 75NTU		

Record of Water Discharge into Council Stormwater Innovation Hub – 6 Hassall St, Parramatta							
Date	Start Time	Stop Time	Total Hours (hr)	Rate of Dewatering (m3/hr)	Total Volume	Name	Sign off



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Record of Training and Induction into Dewatering Procedure Innovation Hub – 6 Hassall St, Parramatta			
Date	Name	Employed by	Signature