

Waterloo Over Station Development (OSD) – Basement

CONSTRUCTION WASTE MANAGEMENT PLAN

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Glossary

Term	Explanation
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
CSSI	Critical State Significance Infrastructure
DPE	Department of Planning & Environment (previously Department of Planning, Industry & Environment)
ECM	Environmental Control Map
ENM	Excavated Natural Material
ERSED	Erosion and Sediment
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
ER	Environmental Representative
GSW	General Solid Waste
ISD	Integrated Station Development
Minister, the	NSW Minister for Planning
OEH	Office of Environment and Heritage
OSD	Over Station Development
RAP	Remediation Action Plan
REMMs	Revised Environmental Mitigation Measures
RSW	Restricted Solid Waste
SERR	Sustainability and Environment Reporting Register
SMCSW	Sydney Metro City and Southwest
SWTC	Scope of Work and Technical Criteria
TSE	Sydney Metro Tunnel and Station Excavation Contractor
VENM	Virgin Excavated Natural Material

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1 Introduction

1.1 Purpose

John Holland has prepared this Construction Waste Management Sub Plan to describe how spoil and waste will be managed during the construction of the Waterloo Over Station Development (OSD) – Basement.

This Plan forms part of the Construction Environmental Management Plan (CEMP) for Waterloo OSD – Basement and has been prepared to address the relevant requirements of the Development Consent (DC) (SSD 10438), applicable legislation, and the John Holland EMS (including the Global Mandatory Requirements).

1.2 Development Consent Conditions

The Table below outlines the conditions under SSD-10438 condition C26 for the construction waste management sub-plan for the Basement works for the Waterloo Metro Quarter Development

Table 1- Consent Conditions

Condition under C26(b)	Report Section
i. require that all waste generated during the project is assessed, classified and managed in accordance with the EPA’s “Waste Classification Guidelines Part 1: Classifying Waste”;	Section 5.4
ii. demonstrate that an appropriate area will be provided for the storage of bins and recycling containers and all waste and recyclable material generated by the works;	Section 5.5.1 Section 5.5.2 Appendix B – Site Plans
iii. procedures for minimising the movement of waste material around the site and double handling;	Section 5.5.1 Section 5.5.2 Section 5.8 Section 5.9
iv. waste (including litter, debris or other matter) is not caused or permitted to enter the waters of Sydney Harbour;	Section 5.4.2
v. any vehicle used to transport waste or excavation spoil from the site is covered before leaving the premises;	Section 5.9
vi. the wheels of any vehicle, trailer or mobilised plant leaving the site and cleaned of debris prior to leaving the premises;	Section 5.9
vii. details in relation to the transport of waste material around the site (on-site) and from the site, including (at a minimum): <ul style="list-style-type: none"> ▪ a traffic plan showing transport routes within the site; ▪ a commitment to retain waste transport details for the life of the project to demonstrate 	Appendix B – Site Plans Section 5.4.1 Section 5.7
viii. compliance with the Protection of the Environment Operations Act 1997; and the name and address of each licensed facility that will receive waste from the site (if appropriate).	Section 5.8 Section 5.9 Section 6.1 Section 6.3 Section 7.1

1.3 Background

The Waterloo OSD Basement is located within South Sydney local area in the suburb of Waterloo. The site is situated approximately 3 kilometres from the CBD on one city block bounded by Botany Road to the west, Raglan Street to the north, Cope Street to the east, and Wellington Street to the south.

This Plan builds on the assessment undertaken in the Environmental Impact Statement (EIS)- Waterloo Metro Quarter, Over Station Development, Basement Carpark (herein referred to as 'the EIS'). The scope of works for the Basement includes excavation and construction of a two-level basement including:

- A maximum of 155 car parking spaces to support the operation of the commercial building 1, residential building 2, social housing building 4, car share provisions for the wider Waterloo Metro Quarter site, and spaces to service the Waterloo Congregational Church and Sydney metro users;
- Ground level slab structure
- 13 motorcycle parking spaces for commercial and residential users;
- Commercial and retail end of trip facilities and bicycle storage facilities;
- Residential storage facilities and bicycle parking;
- Shared plant and services provisions; and
- In ground OSD tank south of building 2

This will require the demolition/removal of concrete slab, remediation of potential contaminated materials, archaeological investigation, perimeter secant wall piling, bulk and detail excavation, shotcrete works, shoring, foundation piling and then FRP works to ground and suspended slabs.

The EIS envisaged the total volume of spoil generation would be approximately 34,676 cubic metres which would be generated predominantly from bulk excavation of the basement carpark. The majority of spoil would be surficial fill materials beneath the current concrete slab expected to be General Solid Waste (GSW) with isolated areas of potentially hazardous material identified in fill materials. Further sampling and waste classification in accordance with the NSW EPA Waste Classification Guidelines (2014) for the materials to facilitate offsite disposal is required. Virgin Excavated Natural Material (VENM) is expected below fill materials from the bulk excavation of the basement. The spoil generated during construction is expected to be manageable through the application of standard management strategies and project-specific sustainability initiatives.

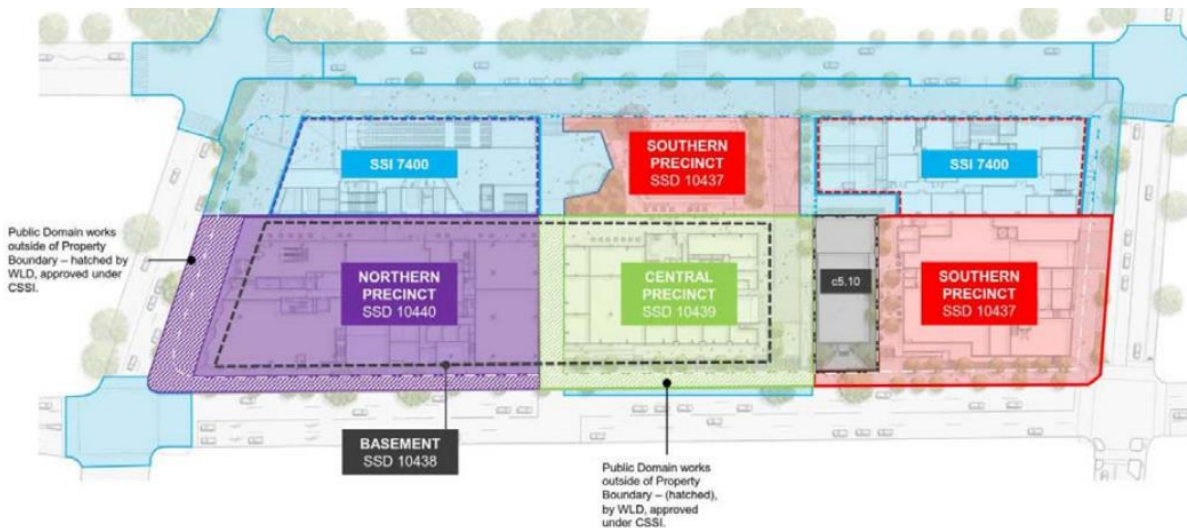
1.4 Overview of the Waterloo OSD Project

The Waterloo Metro Quarter Over Station Development (OSD) comprises four separate buildings, a basement carpark and public domain works adjacent to the Waterloo Metro station. Separate SSD DAs have been submitted concurrently for the design, construction and operation of each building in the precinct;

- Southern precinct SSD-10437,
- Basement Car Park SSD-10438,
- Central precinct SSD-10439, and
- Northern precinct-SSD-10440.

For reference for the Waterloo OSD project, precinct locations are provided in Figure 1.

Figure 1: Waterloo OSD Project Site



The Basement Extent is more clearly defined in Figure 2 within the OSD project.

Figure 22: Waterloo OSD Project Site



Figure 3 Basement Delineation inside Waterloo Quarter Site

1.4.1 Permanent works

The Waterloo OSD works under the Development Consent include the design and construction of the Basement Carpark and associated infrastructure within the site. Section 6 of the CEMP provides a detailed description of the works to be completed. These include:

Construction of 2-storey shared basement car park and associated excavation comprising:

- Ground level structure
- Car parking for the Commercial Building 1, Residential Building 2, social housing Building 4, Waterloo congregational church and Sydney Metro
- Service vehicle bays
- Commercial end of trip and bicycle storage facilities
- Retail end of trip and bicycle storage facilities
- Residential storage facilities
- Shared plant and services
- In ground OSD tank

1.4.2 Temporary works

The proposed temporary works include:

- Site compound, amenities and services establishment, use and demobilisation
- Re-establishment of required temporary construction plant such as water treatment plant, sediment controls and any required construction temporary services.
- Establishment of any required security measures to meet Sydney Metro Security guidelines. This may include bollards, fencing, jersey kerbs, security guards etc.
- Hoarding, security fencing, handrails and gantry
- Vehicular accesses and diversions
- Piling and crane platforms
- Sheet piling and fibrecrete retaining walls
- Construction signage
- Traffic and pedestrian management devices
- Lighting
- Existing services protection
- Lay-down and storage areas
- Stockpile areas
- Scaffolding and access platforms
- Formwork and falsework systems and
- All other temporary works and measures required for the construction of the Works.

1.5 Objectives and Targets

The objectives of the Sub Plan have been developed in accordance with the Project Approval Conditions refer to Table 2 for details

Table 2: Spoil & Waste objectives and targets

Objective	Target
Minimise spoil & waste generation where possible	Minimum of waste to be 60% recycled or reused should be standard practice. minimum 93% of construction & demolition waste diverted from landfill
Spoil & waste will be managed with consideration to minimising adverse traffic and transport related issues.	No complaints with respect to spoil haulage
Spoil & waste will be managed to avoid contamination of land or water.	No contamination of land and water from spoil
Spoil & waste will be managed with consideration of the impacts on residents and other sensitive receivers.	No dust complaints from Spoil Haulage
Site contamination will be effectively managed to limit the potential risk to human health and the environment	Unexpected finds procedure implemented if contamination is found

The basement works will contribute to necessary Green Star Credits for the later Building 1 and 2 works. Relevant Green Star Design & As-Built v1.3 credits, with contributing ratings targets to achieve 6 Star BSMT-CUN-ES-SPC-001 are outlined below;

- Responsible Construction (Credit 2)
- Operational Waste (Credit 4)
- Upfront Carbon Emissions (Credit 21)
- Life Cycle Impacts (Credit 26)
- Inclusive Construction Practices (Credit 31)
- Indigenous Inclusions (Credit 32)
- Procurement and Workforce Inclusion (Credit 33)

As such, construction activities where possible will endeavour to meet criteria required to achieve these criteria.

2 Legal and Other Requirements

The legislation and planning instruments considered during development of this Sub Plan are outlined in Table 3.

Table 3: Legislation and Planning Instruments

Legislation	Description	Relevance to this Plan
Environmental Planning and Assessment Act 1979	This Act establishes a system of environmental planning and assessment of development proposals for the State.	The approval conditions and obligations are incorporated into this Plan
Protection of the Environment Operations Act 1997 (POEO Act)	The object of the Act is to achieve the protection, restoration and enhancement of the quality of the NSW environment	All works must be in accordance with relevant sections of the act
Protection of the Environment Operations (Waste) Regulations 2005 (NSW)		All works must be in accordance with relevant sections of the act
Waste Avoidance and Resource Recovery Act 2001	This Act promotes waste avoidance and resource recovery to achieve a continual reduction in waste generation. The Act provides for the development of a state-wide Waste Strategy and introduces a scheme to promote extended producer responsibility for the life-cycle of a product	Spoil reuse will be managed in accordance with relevant sections of the act
Roads Act 1993	Regulates the carrying out of various activities on public roads.	Transport of spoil must be managed in accordance with the act
Contaminated Land Management Act 1997	This Act enables the EPA to respond to contamination that it has reason to believe is significant enough to warrant regulation	Contamination must be managed in accordance with the act

The Plan addresses applicable requirements within the following documents:

- Environmental Impact Statement, Waterloo Metro Quarter, Over Station Development, Basement Carpark, dated 26th October 2020;

2.1 Guidelines

Guidelines and standards relating to the management of spoil & waste include:

- Waste Classification Guidelines, Part 1: Classifying Waste (EPA, November 2014)
- Waste Classification Guidelines, Part 4: Acid Sulfate Soils (EPA, November 2014)
- NSW Waste Avoidance and Resource Recovery Strategy 2014-2021 (EPA 2014)
- NSW Government's Waste Reduction and Purchasing Policy
- Draft Protocol for managing asbestos during resource recovery of construction and demolition waste (NSW EPA 2014)
- Guidelines on Resource Recovery Exemptions (Land Application of Waste Materials as Fill) (DECCW, 2011)
- Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes (DEC, 2004)
- Local government guidelines for waste/recycling as appropriate
- Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme (3rd edition) (EPA 2017)
- Consultants Reporting on Contaminated Land: Contaminated Land Guidelines (EPA 2020)
- Contaminated Land Guidelines: Sampling Design part 1 – application (EPA 2022)
- Acid Sulfate Soil Manual (NSW Acid Sulfate Soil Management Advisory Committee 1998).
- Guidelines for Waste Management in New Developments – (City of Sydney, 2020)
- Waterloo Metro Quarter Design and Amenity Guidelines – (March 2020)

3 Roles and Responsibilities

Roles and responsibilities related to waste management during construction is outlined in Table 4.

Table 4: Roles and Responsibilities for spoil management

Role	Responsibility
Project Manager	Managing the delivery of the Works including overseeing implementation of the plan Act as Contractor's Representative
Client/ Development Manager	Review and assess regular construction reporting to monitor delivery teams tracking of high level targets. Collaborate where required with delivery team around non-compliances and significant notifiable incidents requiring interactions with council, client, Department of Planning or other governing authorities.
Environment and Sustainability Co-ordinator/ Manager	Oversee the implementation of all waste, resource recycling and spoil reduction initiatives. Responsible for managing ongoing compliance with the CoA and environmental document requirements Co-ordinate the on-ground application of spoil & waste management measures during construction Monitor and report spoil & waste volumes during construction as applicable to environment and sustainability targets
Commercial Manager	Ensure that relevant spoil & waste management requirements are considered in procuring services
Construction Manager	Oversee spoil & waste movements (including truck numbers and haulage routes) in consultation with the Environment and Sustainability Manager Review spoil & waste management contracts and provide resources to ensure compliance with this plan
Sustainability Manager	Track and report spoil & waste management elements against sustainability targets as applicable
Construction Supervisors & Subcontractors	Manage the delivery of the construction process, in relation to spoil & waste management across the site in conjunction with the Environment & Sustainability Manager Report to the Environment and Sustainability Manager any pollution incidents relating to spoil & waste management
Engineers	Implement spoil & waste management requirements during construction works
Specialist Consultant	Specialist consultants may be engaged to undertake investigations and respond to unexpected finds or to classify waste and spoil under the relevant waste classification guidelines
NSW EPA Site Auditor	EPA accredited Site Auditor may be engaged to independently undertake review and endorsement of site investigation, remediation and validation works where required. Additionally, to provide a Site Audit Report and Site Audit Statement demonstrating the site is suitable for the approved land use.
Safety Manager	Collaborative incident management and reporting in the event of safety incidents with a potential to cause environmental impact.
Stakeholder and Community Relations Manager	Assist the Environment and Sustainability Manager in consulting regulatory agencies

Role	Responsibility
	Work collaboratively with the Environment and Sustainability Manager to resolve environmental complaints.
All personnel	Undertake site induction training, attend & sign onto relevant environment toolbox talks Report all environmental incidents to the environmental team and site supervisor Conduct all works in accordance with this sub plan.

4 Aspects and Impacts

The key aspects and potential impacts in relation to the management of spoil & waste during the works are described in Table 5. Management measures to address these impacts are contained in Section 5. Implementation of mitigation measures will be included on the Environmental Control Map (ECM).

Table 5: Aspects and impact associated with spoil management

Aspects	Potential Impacts
Air Quality	Dust from temporary spoil stockpiles and loading trucks may reduce air quality
Community	Reduction of air quality as a result of dust generation from spoil handling
Contamination	Cross contamination of spoil from the inappropriate segregation, storage, transport and disposal of spoil
Design specification	Limitations on opportunities to minimise spoil generation further given the current estimated quantities of spoil to be generated during construction
Land use	Licensing and approval requirements may impact (either positively or negatively) on the availability of potential beneficial reuse at off-site locations.
Noise	Disturbance of sensitive receivers as a result of noise associated with spoil & waste management
Resources	Excessive volumes of waste directed to landfill from inadequate collection, segregation, classification and disposal of spoil
Sedimentation	Potential for sediment-laden site runoff from spoil stockpiles
Soil and Water	Pollution from the incorrect storage, handling and disposal of waste.
Sustainability	Availability of suitable reuse sites decreases volume for beneficial reuse Distance to beneficial reuse or disposal sites increases the carbon footprint

5 Spoil & Waste Management

5.1 Spoil & Waste Management Hierarchy

In alignment with the John Holland commitment to resource use efficiency, the Spoil & Waste Management Hierarchy outlined in Figure 4 will be adopted:

Figure 4: Spoil & Waste Management Hierarchy



5.2 Spoil & Waste Minimisation Initiatives

Spoil & waste minimisation, reuse and recycling practices will be implemented in accordance with the spoil & waste management hierarchy in Figure 4.

Where demolition works are required (e.g. road surfaces), the Project will reuse and recycle materials to the greatest extent practicable.

Further details are included in the Ecologically Sustainable Development Report and Sustainability Strategy (WMQ-BMNT-CUN-ES-RPT-001)

5.3 Spoil & Waste Generation

The Waterloo OSD Basement Carpark is expected to generate approximately 37,000 m³ of spoil during construction. This will generally be generated during bulk excavation of the basement.

Spoil, other than Virgin Excavated Natural Material (VENM), generated will be assessed, classified and managed in accordance with the EPA's Waste Classification Guidelines prior to offsite disposal. Different types of spoil will be segregated and stored separately to prevent mixing and cross contamination. The EPA's Resource Recovery Orders and Exemptions will be considered when classifying spoil for disposal or reuse.

5.4 Classification

Spoil generated, to be loaded out at any stage of the project will require classification as per EPA “Waste classification guidelines Part 1: Classifying waste” guidelines, prior to loadout. Based on borehole investigations executed to date, the following waste classifications are expected during the works. Once classified, a JHG spoil loadout permit with details of tip and copy of classification is to be submitted prior to any load out activities occurring. Waste classifications are required to be prepared by a suitably qualified and experienced consultant.

Typically, general construction waste is expected as a by-product of any site works. This will be managed separately to spoil through use of on site bins by subcontractors and JHG workforce.

5.4.1 Spoil Classification

VENM

Virgin excavated natural material means natural material (such as clay, gravel, sand, soil or rock fines) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities. That does not contain sulfidic ores or soils, or any other waste, and includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved from time to time by a public notice published in the NSW Government Gazette.

John Holland as the generator of the VENM, or its Environmental Consultant will consider the following four questions when classifying material as VENM:

1. Are manufactured chemicals or process residues present?
2. Are sulfidic ores or soil present?
3. Are naturally occurring asbestos soils present?
4. Is there any other waste present?

If material meets the definition of VENM it can be reused on or offsite without prior testing. However, if there is any doubt as to whether the material is VENM, John Holland will sample and test the material as per the excavated natural material resource recovery exemption to confirm that the material is free of contaminants.

ENM

If spoil is unable to be classified as VENM it will be sampled, and tested to determine whether it meets the excavated natural material (ENM) classification criteria in accordance with the Protection of the Environment Operations (Waste) Regulation 2014 (the Regulation) current general resource recovery exemption, the excavated natural material exemption 2014:

Excavated natural material means naturally occurring rock or soil (including but not limited to materials such as sandstone, shale, clay and soil) that has:

- (a) Been excavated from the ground, and
- (b) Contains at least 98% by weight natural material, and
- (c) Does not meet the definition of Virgin Excavated Natural Material in the Act

ENM does not include material that has been processed or contains acid sulphate soils or potentially acid sulphate soils.

General Soil Waste

Spoil not classified as either VENM or ENM due to contamination from either construction material or other sources shall be characterised in accordance with the Waste Classification Guidelines: Part 1 Classifying Waste (EPA 2014). General Solid Waste (GSW) (Non putrescible) is any waste that is not classified as special waste, liquid waste, hazardous waste, restricted solid waste or general solid waste (putrescible).

Special Waste

Special waste is a class of waste that has unique regulatory requirements. The potential environmental impacts of special waste need to be managed to minimise the risk or harm to the environment or human health.

Special waste means any of the following:

- Clinical and related waste
- Asbestos waste
- Waste tyres
- Anything classified as special waste under an EPA gazettal notice.

Of the above special waste types, asbestos has the potential to be present (e.g. utility trenches) Disposal of asbestos offsite will be conducted by an appropriately licensed waste contractor who holds a current license to transport such waste. The waste contractor will provide:

- A copy of their current license (record to be retained).
- Waste classification reports (as per EPA Waste Classification Guidelines)
- Clearance certificates
- Asbestos waste disposal quantities via weighbridge dockets
- Confirmation that the asbestos waste was disposed at a suitably licensed facility with an Environmental Protection License.
- Records for all Listed/Controlled/Regulated waste (in the form of a Waste Transport Certificate, EPA's online WasteLocate or equivalent)

Further details have been included in the Health and Safety Management Plan.

All monitoring and reporting of waste will be conducted as outlined in Section 6 of this plan.

Restricted Solid Waste (RSW)

If either the Specific Contamination Concentration (SCC) or Toxicity Characteristics Leaching Procedure (TCLP) values for spoil exceed threshold guidelines for GSW, the waste must be classified as Restricted Solid Waste. Based on previous testing of soils there is the potential that a portion of spoil excavated at Waterloo OSD- Basement will be classified as restricted solid waste.

Hazardous Waste

The following waste types (other than special waste or liquid waste) have been pre-classified by the EPA as 'hazardous waste':

- containers, having previously contained a substance of Class 1, 3, 4, 5 or 8 within the meaning of the Transport of Dangerous Goods Code, or a substance to which Division 6.1 of the

Transport of Dangerous Goods Code applies, from which residues have not been removed by washing or vacuuming

- coal tar or coal tar pitch waste (being the tarry residue from the heating, processing or burning of coal or coke) comprising of more than 1% (by weight) of coal tar or coal tar pitch waste
- lead-acid or nickel-cadmium batteries (being waste generated or separately collected by activities carried out for business, commercial or community services purposes)
- lead paint waste arising otherwise than from residential premises or educational or child care institutions
- any mixture of the wastes referred to above.

If either the Specific Contamination Concentration (SCC) or Toxicity Characteristics Leaching Procedure (TCLP) values for spoil exceed threshold guidelines for RSW, the waste must be classified as Hazardous Solid Waste. Based on previous testing of soils there is the potential that isolated areas of fill material excavated at Waterloo OSD- Basement will be classified as hazardous solid waste.

5.4.2 General Construction Waste

As a by-product of any construction works, general construction waste is expected to be generated. This may include concrete, asphalt and masonry, metals etc.

Concrete

Concrete pours will generate minimal excess of concrete (through overorder and washout). Subcontractors are to manage concrete waste at specific dedicated project washout areas (locations to be determined). Larger quantities of waste concrete will be managed offsite for reuse by concrete supplier or recycling by waste subcontractor. Intended destination to be provided by successful concrete contractor.

General Construction Waste (Metal, Timber, Masonry, Paper and Cardboard etc)

For this portion of works, fitout activities are minimal so the expected amounts of timber, miscellaneous steel waste; stud, structural steel, roofing and miscellaneous metalworks, masonry, paper and cardboard etc. Are expected to be fairly minimal. This waste material will be managed through use of general construction waste bins. These waste bins will be taken off site and materials recycled by licenced waste contractor (to be determined following competitive tender process) where possible.

Wastewater

Wastewater is expected to be generated through activities such as masonry cutting, paint washout etc. These activities will be managed by dedicated masonry and wash out bins to catch slurry and materials. No untreated wastewater is to be discharged to any stormwater systems.

Stormwater and Discharge to Stormwater Systems

As per Condition D24-26 any proposed discharge of groundwater or collected rainwater is required to have separate approval by City of Sydney Council prior to discharge into any stormwater systems.

Effluent

Ablution, toilet blocks and portaloos may generate effluent waste. Where possible, toilet blocks will be direct sewer connects to feed into established sewer systems. Where this is not possible, pump out and off-site disposal by licenced waste contractor (to be determined) will occur.

Contaminated/ Hazardous Substances Waste (other than soil)

General chemical use including curing and jointing compounds, paint, adhesives and solvents; or waste arising from hydraulic spills/leaks may be expected. John Holland and subcontractors are required to manage waste on-site using existing bins. Waste is to be segregated into dedicated contaminated/ hazardous substances waste bin.

Off-site recycling by waste subcontractor

Licensed Waste Contractor are to be determined following competitive tender process. Waste subcontractor will engage an EPA licensed transporter to dispose at a landfill licensed to receive it.

All listed/controlled/regulated/hazardous wastes must be stored appropriately such that stormwater runoff does not come into contact with the wastes. Sedimentation controls including coil logs, sand bags and ensuring haulage cleanliness are outlined in the Environmental management plan. This will ensure no waste or spoil to enter the local stormwater system and mitigate any potential for contamination into Sydney Harbour or locality.

5.4.3 Resource Recovery Exemptions

The Protection of the Environment Operations (Waste) Regulation 2014 enables the EPA to issue 'resource recovery exemptions' which allow for the beneficial reuse of wastes via land application or for use as a fuel. These exemptions enable a project to comply with the principle of 'wastes to resources for beneficial reuse' (where the wastes are fit for beneficial reuse). During the project, materials may be encountered that do not meet the VENM or ENM classification but are also not contaminated material. In these circumstances the Project will check for existing resource recovery exemptions such as:

- The excavated public road material exemption 2014 (EPA);
- The reclaimed asphalt pavement exemption 2014 (EPA);
- The recovered aggregate exemption 2014 (EPA).

5.5 Spoil & Waste Quantities

During construction of Waterloo OSD Basement the volume of spoil generated will be primarily generated from the excavation of the Basement Carpark. Spoil & waste generating activities for the project include concrete slab removal, demolition of capping beam, excavation for lift shafts piling, utility and landscaping works, construction, and office waste.

All spoil movements will be managed through a John Holland Spoil Permit Form. This form will cover:

- Importing spoil to site (such as VENM, ENM, Roadbase etc)
- Exporting material off the project site (to landfill, other developments etc)

This process will ensure the following documentation is obtained:

- Waste Classification, VENM reports etc
- EPL of the licencing facilities
- EPA exemptions of receiving developments and appropriate development consents
- Section 143 certificates
- EPA exemption compliance assessment

All waste would be assessed, classified, managed and disposed of in accordance with the NSW Waste Classification Guidelines. 100 per cent of spoil that can be reused would be beneficially reused in accordance with the project spoil reuse hierarchy. The following general management requirements will be implemented for the Waterloo OSD site:

- Handling spoil to minimise potential for air or water pollution
- Minimise traffic impacts associated with spoil removal
- Ensure that temporary spoil stockpiles are not within or in close proximity to sensitive areas identified in ECM's, or within flood prone areas
- Manage temporary spoil stockpiles in accordance with the Soil & Water Procedure and Air Quality Procedure
- Undertake haulage of spoil off-site in accordance with the Construction Traffic Management Plan which includes haulage roads, hours of work, and queuing
- Implement measures in the Air Quality Procedure and Soil and Water Procedure to prevent the tracking of spoil mud onto roads and the generation of both wheel and load generated dust, for trucks transporting spoil off-site
- Ensure all trucks transporting spoil off-site are appropriately licenced to carry the materials to appropriately licenced waste facilities
- Maintain all waste sampling and classification results and waste transfer dockets/ receipts for the life of the project in the waste register
- Any stockpiles containing weeds that will be reused on site will be appropriately treated to prevent weeds being spread

5.5.1 Onsite Spoil Management

Following excavation of spoil, it will be stockpiled and classified for reuse (either on or offsite) or offsite disposal. Different types of spoil will be segregated to prevent mixing and cross-contamination.. All contaminated spoil identified to not be suitable to remain on-site should be treated and managed in accordance with the Site approved Remediation Action Plan (RAP). Potentially contaminated soils should be stockpiled on plastic sheeting or hardstand pending offsite disposal or be loaded directly into trucks for disposal where feasible to prevent cross contamination of underlying soils

All stockpiles will be managed in accordance with the requirements of the 'Blue Book' to prevent erosion and minimise the potential for pollution. Water based organic polymers will be used for

short term control of risks associated with erosion and pollution. Stockpiles would be located away from sensitive receivers, where feasible and reasonable, and protected from the elements through barriers, covering or establishing a cover crop.

Spoil that is to be stockpiled for an extended period (greater than 10 days) will be managed to prevent erosion and minimise the potential for pollution. Typically, water based polymers or vegetative stabilisation will be used. Stockpiles must not be placed in drainage lines, channels or paths.

Locations of stockpiles will change dynamically with job staging. However, the recurring concept will be similar regardless of staging. Small to medium size spoil stockpiles will be located close to area of works which generated the spoil, for load out. Larger spoil stockpiles may be generated for reuse of spoil on site for construction of spoil ramps or fill for build up of areas required.

Another advantage of this is the need for less “double handling” which can introduce cross contamination of spoil and potential contamination of clean area through mishandling of spoil. Stockpiling locations will be shown on Site Environmental Control Maps (ECM) and the Erosion and Sediment Control Plans (ESCP).

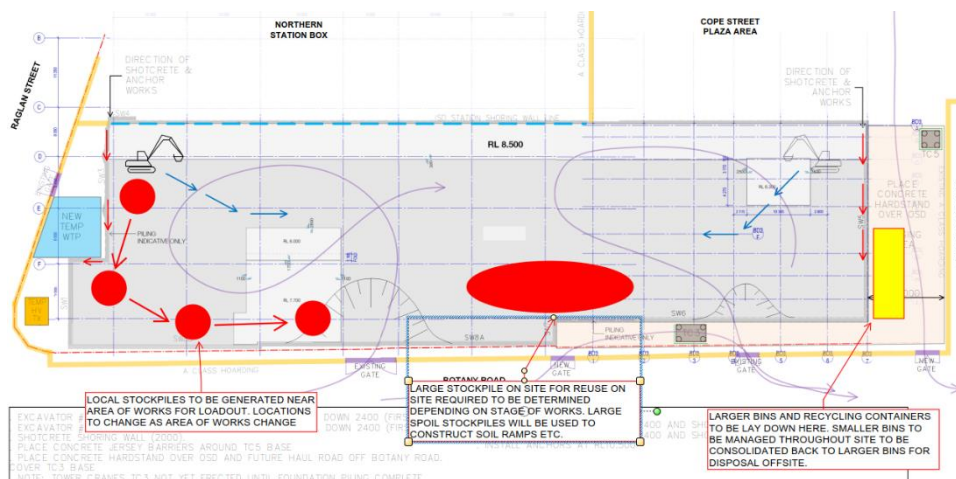


Figure 5 - Example of Site Stockpile Arrangement during CC1 works

5.5.2 Onsite Waste Management

The locations of recycling and waste will change with job staging. A dedicated area will be determined (currently on the hard stand area north of the church) for positioning of large bins. These bins will be segregated for general construction waste, metal recycling, concrete waste etc. Smaller dedicated bins will be dispersed to work area as required and telehandlers to consolidate the smaller bins into the larger bins for future disposal and recycling. Larger bins will be typically located at street level for easy load and unload by bin trucks through the licenced waste contractor.

Waste skips/bins will meet the following provisions:

- Adequate number for waste segregation (recycling, re-use and disposal) and sufficient volume;
- Labelled to clearly identify the contents;
- Appropriate for the waste being contained – be compatible, leak-proof and fit for purpose;

- Be accessible and appropriately located;
- Be covered (where necessary) to prevent ingress of rain and prevent animals from entering.

No waste is to be burned or buried on Site.

Dedicated waste receptacles suitable for storage and segregation of listed/controlled/regulated/hazardous wastes will be provided as necessary. Containers and storage areas will comply with storage requirements as per SDS and relevant Australian Standards.

Listed/controlled/regulated/hazardous waste which will require segregation typically include, but are not limited to: Waste oil, Oil filters, Grease, Coolant, Solvents, Oily-water mixtures, Empty hydrocarbon drums, Absorbent materials contaminated with hydrocarbons, Contaminated soil, Tyres, Sanitary and clinical wastes, Sewage, Special waste (asbestos).

All listed/controlled/regulated/hazardous waste removed from the site, both solid and liquid wastes, must be removed by a licenced waste contractor who holds a current licence to transport such waste under the respective provisions of the POEO Act and Regulations and disposed of at facility licensed to receive that waste.

EPL's for both the receiving facility and the transport company must be obtained prior to any hazardous waste being removed from site.

These licenses must be held on site. Records for all listed/controlled/regulated/hazardous waste must be maintained by John Holland, the Transporter and Receiver of wastes. Waste transport and disposal documentation to be provided by the licensed waste contractor for each load (within 14 days) If waste transport involves movement across state jurisdiction, consignment authorisation must be obtained from an agency (or designated facility) to move controlled waste into the jurisdiction.

5.5.3 Offsite Reuse or Disposal

All material will be classified in accordance with the classifications in Section 5.4. Material that can be reused off site include:

- VENM
- ENM
- EPA Resource Recovery Exemption/Order disposal locations

Off Site disposal would occur for the below:

- GSW
- RSW
- Special or Hazardous Waste

Potential spoil offsite reuse locations will be identified by the Construction Manager and Environment and Sustainability Manager. The following will be completed:

- Check that appropriate approvals are in place for the receiving site,

- Check that a s143 Notice has been completed by the reuse location owner and / or site operator
- Agree to commercial terms with the site operator and / or owner, and
- Ensure that relevant CoA, environmental, community and traffic impacts are managed under the approved CEMP and sub plans, Community Communication Strategy and the Construction Traffic Management Plan (CTMP) including approved haulage routes.

A Waste Receiving Site Register will be maintained by the Environment and Sustainability Coordinator and will include details of the recycling, transfer and disposal sites assessed and approved by the Project to receive the Waterloo OSD Basement spoil and waste material. Beneficial reuse of spoil either onsite or offsite will be conducted in accordance with relevant legislation and resource recovery exemptions

Further details on this process are included in the John Holland Waste, Recycling and Spoil Procedure.

5.5.4 Spoil Import

There may be instances where spoil is required to be imported externally to site. This may be to build up area or improve various ground conditions as required by varying engineering advice. Spoil import permits will be completed to ensure only VENM, ENM, resource recovery exempt materials or other material approved in writing by the EPA are imported to site. All imported material must meet the criteria outlined in the Remediation Action Plan.

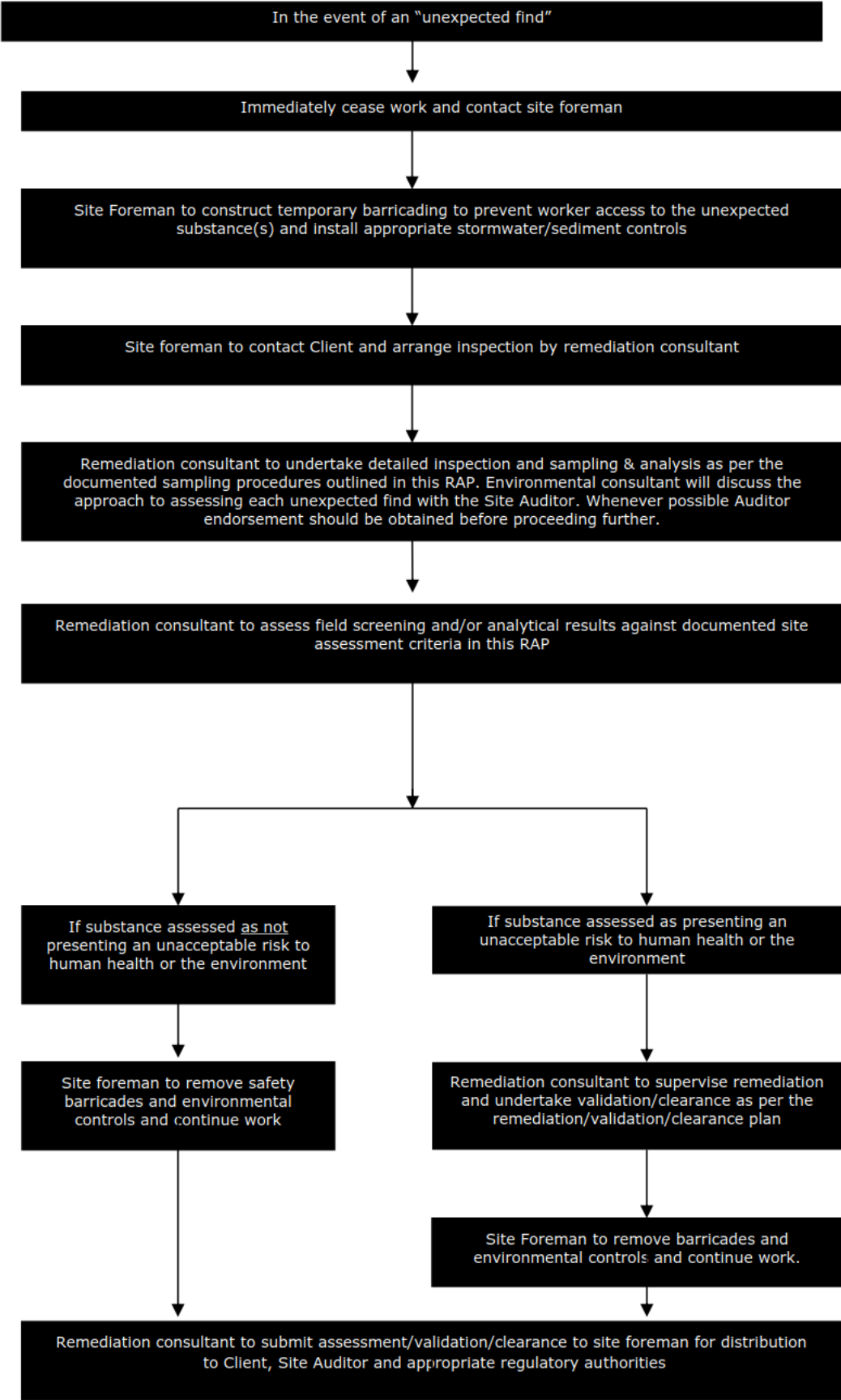
The site auditor will also approve all material being imported. As part of the final validation report material brought to site must be verified prior to acceptance with dockets supplied during material movement. All truck movements will be recorded on tracking sheets.

5.6 Unexpected Finds Protocol (UFP)

In accordance with condition C36 of the Development Consent, an Unexpected Finds Protocol (UFP) is to be developed and submitted to the satisfaction of the Certifier. The UFP is required to be reviewed and endorsed by an EPA accredited Site auditor. The protocol must outline contingency measures and the procedures to be followed in the event unexpected finds of contaminated material are encountered during works.

JBS&G have developed a Remediation Action Plan (RAP) and UFP that includes the Basement (JBS&G, 2022). The RAP including the UFP was reviewed and endorsed by the appointed NSW EPA Site Auditor (Tom Onus) on 9th Jan 2023. Refer to Section 7.6 of the RAP (JBS&G, 2023) for further details on the UFP.

For reference, the UFP is attached here:



5.7 Tracking

Spoil Waste Tracking

Spoil removed from site will be tracked using a docket system which will be recorded in the Sustainability and Environment Reporting Register (SERR). The register will be completed as required and capture the following information:

- Date transported
- Material Type
- Waste Classification (and associated report number where relevant)
- Quantity
- Waste receipt details, including the site or project name, location, capacity, site owner, and the tier the site is classified as under the spoil reuse hierarchy;
- Truck registration (non-skip waste)
- Docket numbers (haulage and receipt site).
- Copies of waste dockets will be retained electronically on-site.

Construction Waste Tracking

Waste will be removed by an appropriately licensed waste subcontractor and taken to an appropriately licensed recovery, recycling or disposal facility. The subcontractor is to provide monthly reports detailing:

- Date of Waste Collection
- Description of Waste
- Cross reference to relevant waste transport documentation
- Quantity of waste collected
- Origin of Waste
- Destination of waste

Upon Project completion all temporary materials and wastes will be removed from site unless otherwise instructed.

5.8 Transportation and Handling

Where spoil produced, cannot be reused on site, it will be transported from site using an appropriately licensed waste management contractor. Contractors will be required to provide tracking receipts to confirm appropriate disposal of spoil from the works and will be required to report spoil quantities monthly.

Specialist licenced waste contractors must be used when removing 'special waste' or 'hazardous waste' in accordance with the Protection of the Environment Operations (Waste) Regulation 2005.

5.9 Spoil Haulage

Haulage routes associated with the movement of spoil are described in the Construction Traffic Management Plan. Spoil movements would be undertaken via trucks. Typical controls would be as follows:

- The public would be notified of proposed traffic changes as outlined in the Waterloo Metro Quarter Development - Community Communication Strategy.
- Access to existing properties and buildings will be maintained
- Planning to allow sufficient space for truck layover. Truck queuing can be wholly accommodated on site with minimal risk of truck parking/queuing on surrounding roads.

Condition D3 allows the haulage and delivery of spoil and materials:

- a. between 7am and 6pm, Mondays to Fridays inclusive; and;
- b. between 7:30am and 3:30pm, Saturdays.

Additionally, in accordance with condition D4, no works may be carried out on Sunday or public holidays. Noise impacts will be managed in accordance with the Construction Noise and Vibration Management Plan.

The key principle for spoil haulage by road is to select the most appropriate route which will minimise impact and facilitate efficient access to arterial roads. The following conditions apply to haulage:

- The body of any vehicle or trailer, used to transport waste or excavation spoil from the premises, is covered before leaving the premises to minimise any spill or escape of any dust, waste, or spoil from the vehicle or trailer;
- Mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer or motorised plant leaving the premises, is removed to the greatest extent practicable before the vehicle, trailer or motorised plant leaves the premises. This may be through the use of high pressure washer and wash down bay located at the entry and exit points of the site, if deemed to be required; and
- Road surfaces subject to the tracking of material by vehicles leaving the premises are effectively cleaned at appropriate times where required and subject to traffic volumes.

Traffic Controllers positioned at each entry/ exit will have responsibilities to ensure that spoil haulage vehicles have:

- covered loads
- Wheels and body are free of mud, dirt and other excavation materials which could contaminate areas external to site

5.10 Site Controls for Spoil Haulage

Tracking of Sediment and other materials onto roadways is a foreseeable risk for the project. As a result, prior to the commencement of works the following controls are to be implemented:

- Washdown zone with cattle grid/ rumble pad installed for at least one exit gate, to allow thorough washdown if required. High Pressure Washers to be established at these locations.
- Additional Cattle Grids/ Rumble Pads at exit gates if deemed required as works progress.
- Street Sweepers on call to clean streets as required.
- Sediment controls at stormwater drains.
- Traffic controllers check for: covered loads, wheels and body of vehicles clear of materials.

6 Training, Compliance and Reporting

6.1 Compliance and Monitoring

Spoil management will be inspected as part of a weekly environment and sustainability site inspection as outlined in Section 11 of the CEMP. The inspections would typically include the following:

- Stockpile locations, volume, effectiveness of ERSED controls and classification
- Compliance with haul routes and gates
- Checking that loads are covered
- Exit controls and mud tracking on roads

Results of the weekly inspection will be recorded in Soteria with findings and any associated corrective actions to be communicated to staff during pre-starts, toolbox and team meetings as appropriate.

Compliance records will be retained and will include:

- Material movement approval forms
- Records of inspections in relation to spoil management
- Records detailing the beneficial re-use of spoil.
- Waste dockets for any spoil disposed of to landfill sites.
- Sustainability & Environmental Reporting Register (SERR)
- Results and outcomes of inspections, monitoring and auditing will be reported internally on a monthly basis. This will be reported in project monthly report.

Auditing of the implementation of this Plan will be undertaken in accordance with the CEMP Section 11.

6.2 Training

Personnel will receive training appropriate to their role in spoil & waste management on the project. Ongoing toolbox talks covering the requirements for management of spoil & waste will be used to raise awareness to the wider project team.

The site induction will be utilised to train all staff in the general requirements waste management.

Specific training relating to aspects associated with the management of spoil & waste will be provided to John Holland project staff as identified in the CEMP and training matrix, or as otherwise deemed necessary to address an event or to manage risk.

6.3 Reporting

John Holland will track all spoil & waste generated by the project. All spoil & waste data will be reported monthly and recorded in the projects SERR. Progress against spoil targets outlined in Section 1.5 will be reported on in accordance with section 11 of the CEMP. All compliance records,

spoil classification reports and waste disposal records will be retained by John Holland as required for the life of the development.

All material/waste tracking will also be required as part of the site audit process for the purposes of determining site suitability. Ensure appropriate tracking of internal fill/soil movements, removal off-site and importation to site is undertaken as required by the Remediation Action Plan for future reporting as part of the site validation

6.4 Corrective Action Plan

In the event where there may be problems or non-compliance to this plan, the following actions are foreseeable.

Problem	Suggested Corrective Action
No/inadequate collection	Arrange for collection by approved/licensed waste contractor Segregate and reuse or recycle wastes wherever practicable
Reuse or recycling opportunity not recognised	Train/re-train personnel Arrange for recycling collection by approved/licensed waste contractor
Unlicensed operator	Confirm operator license/s are appropriate for the required service.
Incorrect disposal	Confirm suitability of waste removal contractor. Confirm/inspect disposal facilities for suitability. Notify/train personnel. Notify site auditor and EPA as applicable
Contamination of the Site	Notify client, assess degree and real extent of contamination. Notify site auditor Manage in accordance with the RAP Prevent access to the area. Cover contamination to prevent exposure to rain. Remove contaminated material and remediate in accordance with Regulator/Client requirements.
Inaccurate records Management	Update records Improve reporting system Train personnel

7 Review & Improvement

This Plan will be reviewed by John Holland annually and updated as applicable to ensure it remains consistent with Project priorities, risk management, development condition requirements taking into account:

- The status and progress of Waterloo OSD activities
- Changes in the design, delivery and operations processes and conditions
- Lessons learnt during delivery and operations
- Changes in other related Project Plans
- Requirements and matters not covered by the existing Project Plans
- Where deemed appropriate in relation to items raised within inspections or audits.

Where a review of Spoil & Waste Management performance, based on inspection and audit results, indicates that current mitigation measures are not effective, the Environment and Sustainability Manager will consult with the Construction team in regards to additional mitigation measures. These additional mitigation measures may include additional controls or changed work practices.

7.1 Records

Records associated with this management plan and monitoring programme will be and include the following:

- Subcontractors to provide records of waste quantities for all materials both recycled and disposed to landfill
- Records will be maintained to ensure applicable recycling targets can be achieved over the duration of the project
- Site inspections, audits, monitoring, reviews, or remedial actions.
- Documentation as required by performance conditions, approvals, licences and legislation.
- Modifications to site environmental documentation; and
- Other records as required by the CEMP and sub plans.

Environmental documents and records generated during the delivery of the works will be stored and managed using SharePoint including all environmental monitoring data which will be saved in the Environmental Monitoring Tracker.

- Environmental Inspection reports and actions will be managed and stored using the iAuditor tool; and
- Incident reports and corrective actions will be stored and managed using the Soteria Reporting System.

7.2 Enquiries, Complaints and Incident Management

The procedure for the management of environmental and social impacts associated with spoil transfer and reuse will be undertaken in accordance Communication Community Consultation Strategy - Condition C14.

All environmental incidents and complaints are to be investigated, reported, documented, actioned and closed out as per the details provided in the Community Consultation Strategy and the CEMP.

Environmental incidents will be classified by the Environment and Sustainability Manager/ Co-ordinator in consultation with the Project Director. All incidents will be reported using the John Holland incident management system "Soteria" or Aconex.

Following an incident, corrective and preventative actions will be identified, assigned to the appropriate person/s and closed out in accordance with the appropriate time frames set in response to the circumstances. Examples of corrective and preventative actions that may be raised in response to an environmental incident may include:

- Site clean-up and reinstatement/implementation of controls
- Amending environmental or other procedures and forms/permits
- Conducting toolbox talks and/or other training
- Preparing and distributing Environmental Alerts
- Increased site monitoring. Corrective and preventative actions will be developed on a case by case basis and shall be appropriate to the significance of the effects of the nonconformities encountered, including the environmental impact(s).

Complaints / incidents regarding waste will be reported immediately to the PER and/or Safety Advisor/Manager and Community and Stakeholder Manager.

The Project Director shall be notified immediately of all incidents and valid complaints. Relevant John Holland procedures for incidents and complaints handling reporting shall be followed

John Holland Operational HSE Team is to be immediately informed of any incident that has caused or is likely to cause material harm to the environment and will advise on the notification of relevant regulators and stakeholders (As required by the Protection of the Environment Operations Act 1997).

Any incident requiring regulator notification will also be done so in accordance with John Holland Incident Notification and Reporting Matrix (refer to Incident Management Procedure).

8 Appendix A – Compliance Matrix

Clause	Detail	Reference
Project Conditions of Approval		
C19	<p>"Prior to the commencement of any earthwork or construction, the Applicant shall:</p> <p>(a) amend, or prepare an addendum to, the Construction Environmental Management Plan (CEMP) applicable to the CSSI approval (CSSI 7400) to apply to the development. The amended CEMP must be submitted for approval to the Planning Secretary and a copy provided to the Certifying Authority, or</p> <p>(b) prepare a Construction Framework Environmental Management Plan (CFEMP) for the development, independent of the CEMP approved with the CSSI station works. The CFEMP must be submitted for approval to the Planning Secretary and a copy provided to the Certifying Authority. The CFEMP must:</p> <p>(i) describe the relevant stages and phases of construction including work program outlining relevant timeframes for each stage/phase;</p> <p>(ii) describe all activities to be undertaken on the site during site establishment and construction of the development;</p> <p>(iii) clearly outline the stages/phases of construction that require ongoing environmental management monitoring and reporting;</p> <p>(iv) detail statutory and other obligations that the Applicant is required to fulfil during site establishment and construction, including approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;</p> <p>(v) include specific consideration of measures to address any requirements of the EPA during site establishment and construction;</p> <p>(vi) describe the roles and responsibilities for all relevant employees involved in the site establishment and construction of the works;</p> <p>(vii) detail how the environmental performance of the site preparation and construction works will be monitored, and what actions will be taken to address identified potential environmental impacts;</p>	<p>Waterloo MQD Construction Environmental Management Plan and this Plan</p>

Clause	Detail	Reference
	<p>(viii) document and incorporate all sub environmental management plans (Sub-Plans), studies and monitoring programs required under this consent; and</p> <p>(ix) include arrangements for community consultation and complaints handling procedures during construction."</p>	
C21	<p>"The CFEMP and any associated Sub-Plans should be revised:</p> <p>(a) at each key stage of the works;</p> <p>(b) in response to future development consents;</p> <p>(c) in response to major changes in site conditions or work methods; and</p> <p>(d) in support of licence variations as necessary."</p>	<p>Waterloo MQD Construction Environmental Management Plan and this Plan</p>
C26	<p>Prior to the commencement of any earthwork or construction, the Applicant shall:</p> <p>(a) Amend, or prepare an addendum to, the Construction Waste Management Sub-Plan (CWMP) applicable to the CSSI station works (CSSI 7400) to apply to the development. The amended CWMP must be submitted to the Planning Secretary for approval and a copy provided to the Certifying Authority, or</p> <p>(b) Prepare a Construction Waste Management Sub-Plan (CWMP) for the development, independent of the CWMP approved with the CSSI station works. The CWMP must be submitted to the Planning Secretary for approval and a copy provided to the Certifying Authority. The Sub-Plan must include, as a minimum, the following elements:</p> <ol style="list-style-type: none"> I. require that all waste generated during the project is assessed, classified and managed in accordance with the EPA's "Waste Classification Guidelines Part 1: Classifying Waste"; II. demonstrate that an appropriate area will be provided for the storage of bins and recycling containers and all waste and recyclable material generated by the works; III. procedures for minimising the movement of waste material around the site and double handling IV. waste (including litter, debris or other matter) is not caused or permitted to enter the waters of Sydney Harbour V. any vehicle used to transport waste or excavation spoil from the site is covered before leaving the premises 	

Clause	Detail	Reference
	VI. the wheels of any vehicle, trailer or mobilised plant leaving the site and cleaned of debris prior to leaving the premises VII. details in relation to the transport of waste material around the site (on-site) and from the site, including (at a minimum): <ul style="list-style-type: none"> • a traffic plan showing transport routes within the site; • commitment to retain waste transport details for the life of the project to demonstrate compliance with the Protection of the Environment Operations Act 1997; and • the name and address of each licensed facility that will receive waste from the site (if appropriate). 	
D14	The Applicant must ensure the requirements of the Construction Environmental Management Plan, Construction Pedestrian Traffic Management Plan, Construction Noise and Vibration Management Sub-Plan, Air Quality Management Plan and Construction Waste Management Plan required by Part B of this consent are implemented during construction.	Waterloo MQD Construction Environmental Management Plan and this Plan
John Holland Global Mandatory Requirements		
9.5	Minimise energy, water and waste and prioritise the selection of resource efficient materials	This Plan
9.6	Assess and, if required, classify spoil and waste prior to being lawfully removed and disposed	Section 5.4

9 Appendix B – Site Plans

