SHOALHAVEN HOSPITAL REDEVELOPMENT

Health Infrastructure

Construction Environmental Management Plan

Document Reference **SHR-JHG-PRJ-PLA-PMG-99X011**

Revision: 4

Date: 17-December 2024

Rev	Date	Prepared By [Name & Signature]	Reviewed By [Name & Signature]	Approved By	Remarks
A	05/04/23	L.Nustas			DRAFT (FOR REVIEW)
00	15/05/23	Anthony Stead	Tim Williams	Rhys Collum	Issued For Construction
01	18/05/23	Charlie McLeod	Tim Williams	Rhys Collum	Issued For Construction
02	22/09/23	Charlie McLeod	R.Ingall	Rhys Collum	Inclusion of site accommodation layout
03	12/02/2024	Lefan Luu	R.Ingall	Rhys Collum	Amendments following NGH Audit
04	17/12/2024	R.Ingall	L.Lu	Rhys Collumn	ESCP revised to suit site conditions
05					

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1 Revisions and distribution

1.1 Revisions

Draft issues of this document shall be identified as Revision A, B, C, etc. Upon initial issue (Contract Award) this shall be changed to a sequential number commencing at Revision 0. Subsequent revision numbers shall be Rev. 1, 2, etc.

1.2 Distribution List

Principal's Representative	Via Aconex
Project Manager	Via Aconex
Project Site Manager	Via Aconex
HSEQ Manager	Via Aconex
Project Environment Representative	Via Aconex

The controlled master version of this document is available for distribution as appropriate and maintained on the document management system being used on the project. All circulated hard copies of this document are deemed to be uncontrolled.

1.3 Development Consent Conditions

Table 1 SSD 35999468 Compliance Table

Consent Condition Requirements	
	CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN
B16	Prior to the commencement of construction, the Applicant must submit a Construction Environmental Management Plan (CEMP) to the Certifier and must be published on the Applicant's website in accordance with condition A23. The CEMP must include, but not be limited to, the following:
a)	Details of: (i) hours of work; (ii) 24-hour contact details of site manager; (iii) Temporary site office arrangement; (iv) management of dust and odour to protect the amenity of the neighbourhood; (v) stormwater control and discharge; (vi) measures to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site; (vii) groundwater management plan including measures to prevent groundwater contamination; (viii) external lighting in compliance with AS 4282-2019 Control of the obtrusive effects of outdoor lighting
b)	an unexpected finds protocol for contamination and associated communications procedure to ensure that potentially contaminated material is appropriately managed;
c)	an unexpected finds protocol for Aboriginal and non-Aboriginal heritage and associated communications procedure;
d)	Construction Traffic and Pedestrian Management Sub-Plan (B17);
e)	Construction Noise and Vibration Management Sub-Plan (B18);
f)	Construction Waste Management Sub-Plan (B19);
	SOIL AND WATER
B22.	Prior to the commencement of construction, the Applicant must:
a)	install erosion and sediment controls on the site to manage wet weather events; and
b)	divert existing clean surface water around operational areas of the site.
B23.	Prior to the commencement of construction, erosion and sediment controls must be installed and maintained, as a minimum, in accordance with the publication Managing Urban Stormwater: Soils & Construction (4th edition, Landcom 2004) commonly referred to as the 'Blue Book'.
	VIBRATION CRITERIA
C16.	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
b)	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).
C17.	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 C16.
C18.	The limits in conditions C16 and C17 apply unless otherwise outlined in a Construction Noise and Vibration Management Plan, approved as part of the CEMP required by condition B17 of this consent.
	TREE PROTECTION
C19.	For the duration of the construction works:

a)	street trees must not be trimmed or removed unless it forms a part of this development consent or prior written approval from Council is obtained or is required in an emergency to avoid the loss of life or damage to property;
b)	all street trees immediately adjacent to the property boundaries must be protected at all times during construction in accordance with Council's tree protection requirements. Any street tree, which is damaged or removed during construction due to an emergency, must be replaced, to the satisfaction of Council;
c)	all trees on the site that are not approved for removal must be suitably protected during construction as per the recommendations of the Arboricultural Development Impact and Tree Protection Report prepared by Moore Trees Aboricultural Services dated 30 August 2022; and
d)	if access to the area within any protective barrier is required during the works, it must be carried out under the supervision of a qualified arborist. Alternative tree protection measures must be installed, as required. The removal of tree protection measures, following completion of the works, must be carried out under the supervision of a qualified arborist and must avoid both direct mechanical injury to the structure of the tree and soil compaction within the canopy or the limit of the former protective fencing, whichever is the greater.
	AIR QUALITY
C20.	The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.
C21.	During construction, the Applicant must ensure that:
a)	activities are carried out in a manner that minimises dust including emission of windblown or traffic generated dust;
b)	all trucks entering or leaving the site with loads have their loads covered;
c)	trucks associated with the development do not track dirt onto the public road network;
d)	public roads used by these trucks are kept clean; and
e)	land stabilisation works are carried out progressively on site to minimise exposed surfaces.
	SOIL & WATER
C22.	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'.
	IMPORTED FILL
C23.	The Applicant must:
a)	ensure that only VENM, ENM, or other material that meets the requirements of a relevant order and exemption issued by the EPA, is brought onto the site;
b)	keep accurate records of the volume and type of fill to be used; and
c)	make these records available to the Certifier upon request.
	DISPOSAL OF SEEPAGE AND STORMWATER
C24.	Adequate provisions must be made to collect and discharge stormwater drainage during construction to the satisfaction of Certifier. The prior written approval of Council must be obtained to connect or discharge site stormwater to Council's stormwater drainage system or street gutter

2 Definitions

AMS – Activity Method Statement

SDMH – Shoalhaven District Memorial Hospital

Principal – Health Infrastructure

DPIE – Department of Planning, Industry and Environment

CEMP – Construction Environmental Management Plan

ENM – Excavated Natural Material

EPA – Environmental Protection Authority

FM – Foreman / Supervisor

OEH – Office of Environment and Heritage

PER – Project Environmental Representative

PM – Project Manager

RAP – Remediation Action Plan

SEP – Site Environmental Plan

SM – Site Manager / Superintendent

TRA – Task Risk Assessment

VENM – Virgin Excavated Natural Material

WRA – Workplace Risk Assessment

3 Scope of the Construction Environmental Management Plan

EMS reference
Environment Management Manual JH-MAN-ENV-001

The SDMH site is located along the banks of the Shoalhaven River in Nowra. The project site comprises a total of 29,600m^2. The Project will have an indicative building footprint of approximately 8,860m^2, whilst the remaining 20,920m^2 will comprise of ground plane access, public domain, and landscaping works. The project includes.

- A new emergency department (ED) and emergency short-stay unit to improve patient flow and reduce wait times
- New state-of-the-art intensive care unit (ICU)
- Theatres and endoscopy procedure rooms, doubling capacity
- A dedicated cardiology inpatient unit (IPU), coronary care unit and catheterisation lab
- A new vascular surgery service and expanded orthopaedic, general surgery and urology services
- Overnight surgical IPUs and a dedicated day surgery unit
- New medical IPUs for specialties including gastroenterology, respiratory, oncology, endocrinology, and general medicine
- A new acute mental health IPU
- A psychiatric emergency care centre for emergency and crisis response adjacent to the ED
- An expanded acute stroke unit collocated with a dedicated rehabilitation service to ensure early access to rehabilitation and minimise functional loss
- A new nuclear medicine department to support expanded clinical services including cancer, cardiology, and respiratory care
- A new MRI service to provide improved diagnostic capacity
- Expanded medical imaging including CT, X-ray, ultrasound, and mammography to support clinical services
- Significant increase in aged care capacity in a dedicated ward
- A sub-acute geriatric evaluation and management service
- A dedicated palliative care facility
- A new paediatric assessment unit which will provide additional capacity for day presentations and short-stay admissions
- A specialist rehabilitation unit for a range of conditions including stroke, orthopaedics, brain, and spine injuries
- Expanded outpatient departments for follow up and management of admitted and non-admitted services
- Helipad on top of the new building with direct access to ICU and ED
- Link bridge to the existing Shoalhaven Memorial Hospital

Table 2 SDMH Staging:

Stage No.	Proposed works	Duration	Forecast Start Date	Forecast Finish Date
Stage 1	Demolition / Tree Clearing / Civil Works New Roadway BOC Delivery Area	4 months	May 2023	Aug 2023
Stage 2	Bulk Excavation, Piling	3 months	Aug 2023	Oct 2023
Stage 3	Footings, Inground Services & level 00	4 months	Oct 2023	Dec 2023
Stage 4	Superstructure (level L1-L4)	6 months	Dec 2023	June 2024
Stage 5	Superstructure (level L5-L7)	5 months	April 2024	Aug 2024
Stage 6	Façade and Fitout & Services	11 months	Mar 2024	Jan 2025
Stage 7	Landscaping and External Works	8 months	Feb 2025	Sep 2025

This Construction Environmental Management Sub-Plan specifies the requirements of the John Holland Environmental Management System (EMS) (which is certified to ISO AS/NZS14001) that the Shoalhaven District Memorial Hospital (the Project) will use to enhance its environmental performance. Consistent with John Holland Environment Policy, the intended outcomes of this CWMP include:

- Enhancement of environmental performance on the project.
- Fulfilment of the Project's compliance obligations; and
- Achievement of the Project's environmental objectives.

This Sub Plan (Construction Waste Management Plan) enables the management of environmental responsibilities in a systematic manner and contribute to the environmental pillar of sustainability. This Construction Waste Management Plan is applicable to the Project and applies to the environmental aspects of the Project's activities, products, and services that the Project determines it can either control or influence considering a life cycle perspective.

This Construction Waste Management Plan is applicable to all construction phase works associated with the SDMH project (John Holland and subcontractors).

3.1 Project Location

The site is located at 39 Shoalhaven Street Nowra, 160km South of Sydney. Within Nowra, the hospital is located north-west of the main business district and sits in an elevated position adjacent to and overlooking the Shoalhaven River. The precinct is bounded by Shoalhaven Street to the east, north street to the south and scenic drive to the west and is located within the Shoalhaven City Council area.

The site comprises is legally described as Lot 104 in Deposited Plan 1165533, Lot 7034 in Deposited Plan 1031852 and Lot 373 in Deposited Plan 755952.

The site is approximately 400m from the Shoalhaven Town Centre, 16km from Shoalhaven Heads and 12km to Nowra airport. The site is connected to Shoalhaven's public transport via an existing bus route which stops outside the existing hospital on both Shoalhaven Street and Scenic Drive.

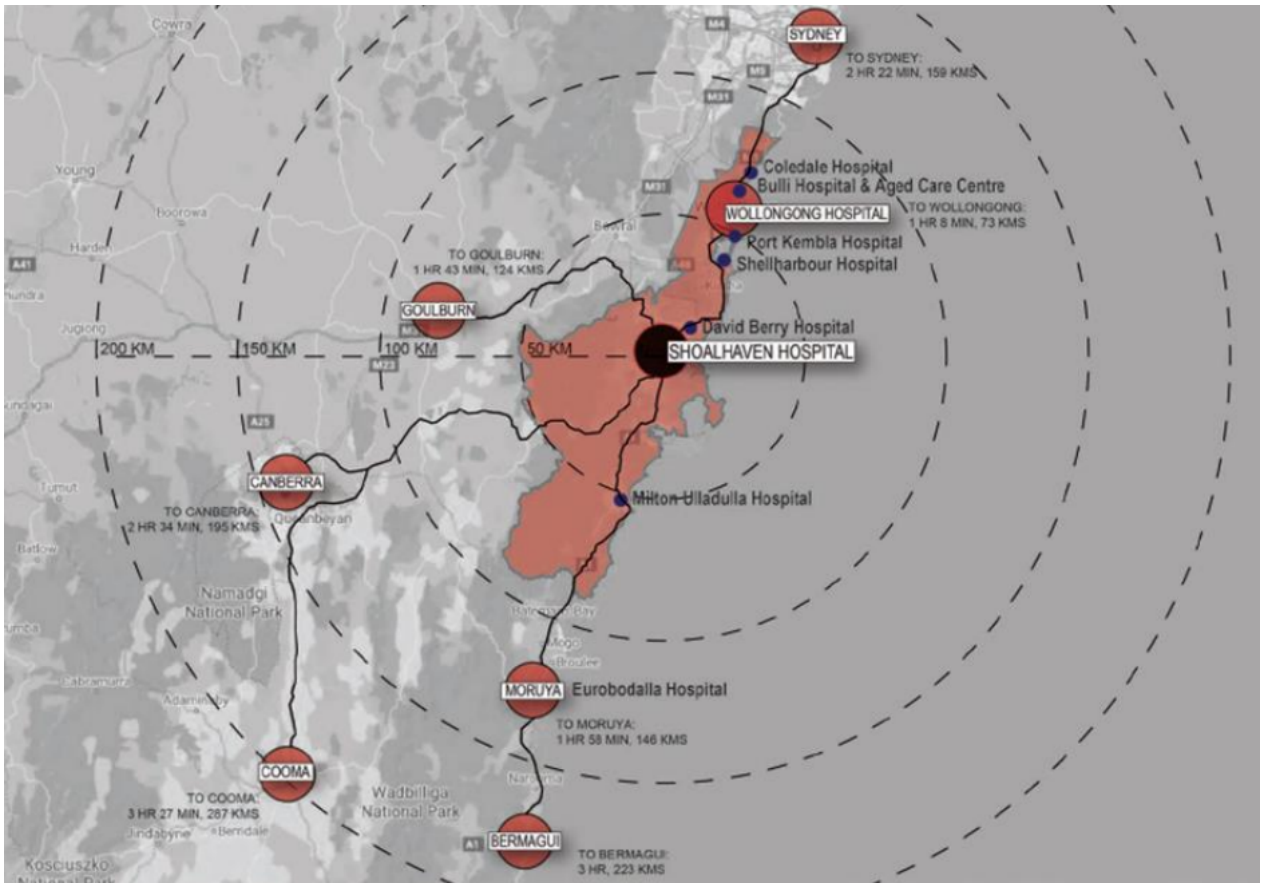


Figure 1 Regional Locality Plan

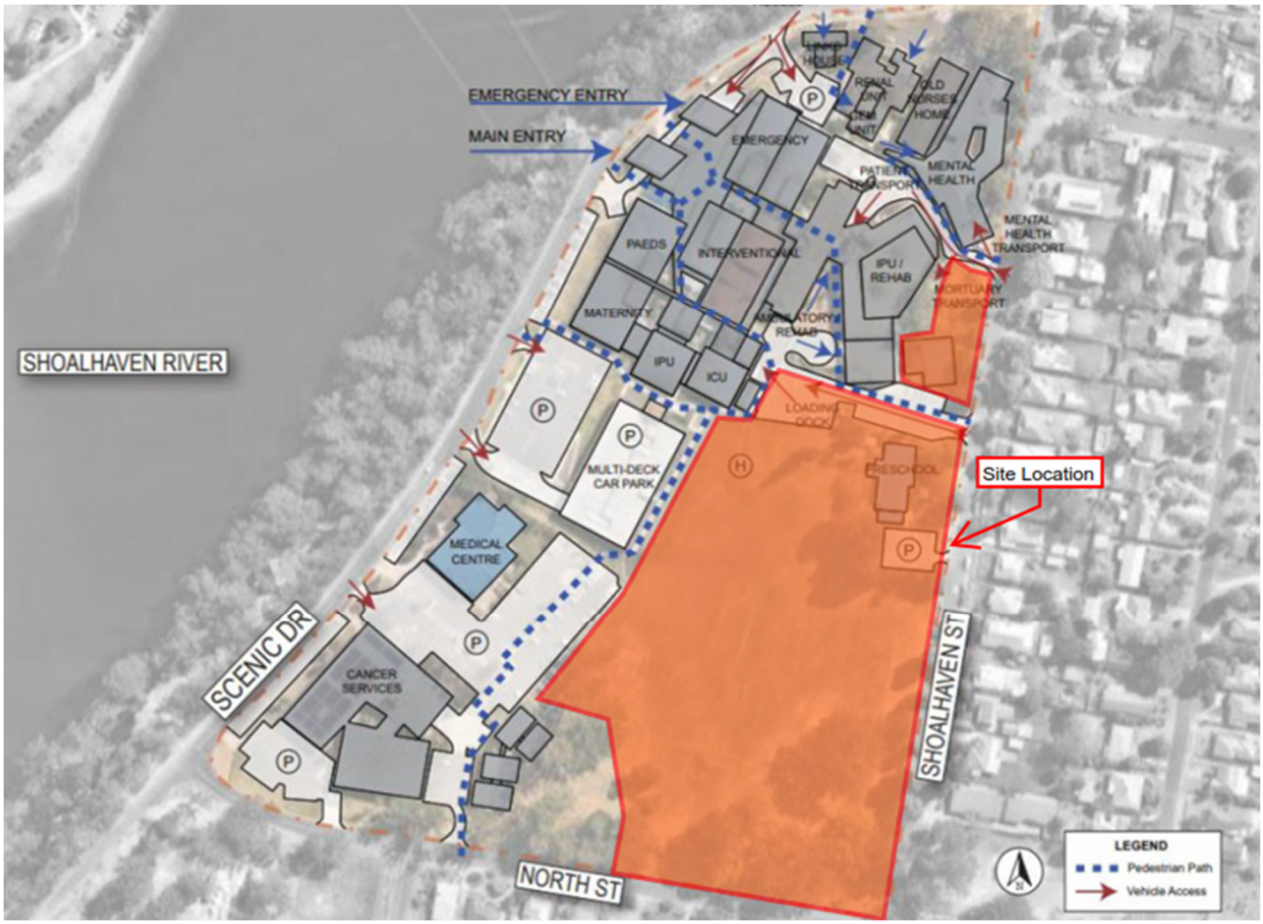
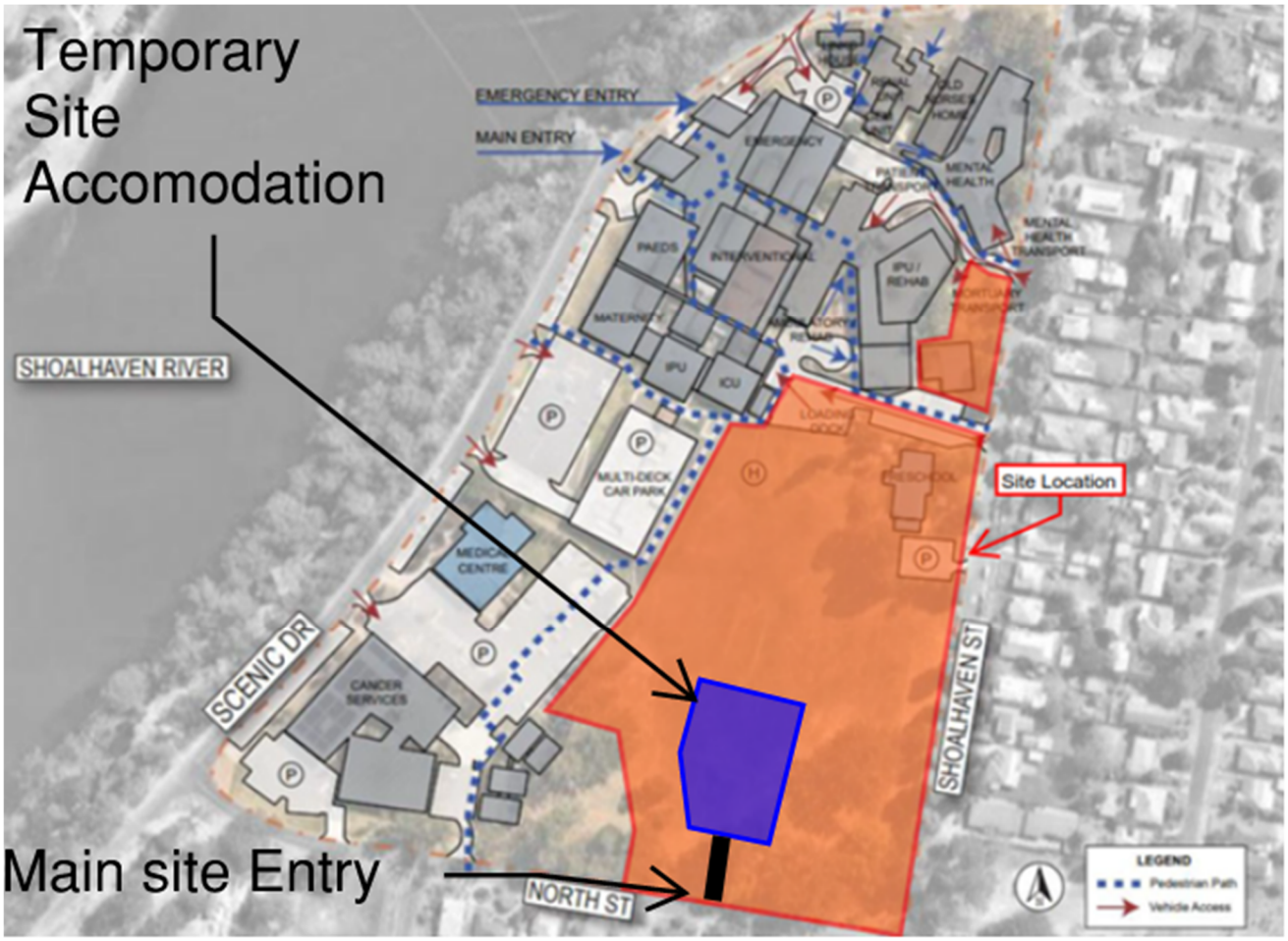


Figure 2 Locality Plan

3.2 Temporary Site Office Arrangements

Refer to the below for location of site accommodation



3.3 Site Working hours:

All site contact details, working hours will be displayed on the entry gates and around the perimeter of site.

4 Performance

4.1 Objectives

The Objectives of the waste management plan are to:

- Prevent environmental impacts from waste generated during all phases of the project
- Correctly manage and dispose of waste through identification of waste types and ensuring appropriate segregation, storage, and disposal.
- Create better waste outcomes through minimising waste and maximising re-use and recycling opportunities
- Ensure a clean and tidy workplace that minimised environmental, quality and safety risks
- No environmental incidents resulting from waste management.
- Recycling and re-use of waste wherever practicable.
- Segregation of waste streams for recycling (either on site or off site)
- Quantity of waste delivered to landfill minimised wherever practicable.
- Hazardous and non-hazardous chemicals and substances used during all phases of the Project will be selected and managed to minimise the potential adverse environmental impacts associated with their disposal.
- Waste generation is minimised through reduce, reuse, and recycle initiatives

- No litter to be observed across work sites.
- Waste transport vehicles use only the approved waste transport route.
- All waste generated on site is appropriately stored prior to disposal.
- No waste disposed at unapproved/non-licensed facilities.

4.2 Targets

- Number of waste related incidents: Nil

5 Environmental Management

5.1 Environmental Management Structure and Responsibility

EMS reference
Strategic & Business Planning JH-MPR-BUA-020

John Holland has an ongoing commitment to ensuring positive environmental outcomes by providing clear and strong leadership on environmental issues relevant to the project.

John Holland Project management demonstrate leadership and commitment with respect to the EMS by:

- Taking accountability for the effectiveness of the EMS on the Project
- Ensuring that the Environment Policy and environmental objectives are established and are compatible with the strategic direction and the context of the Project
- Ensuring the integration of EMS requirements into the Project's business processes
- Ensuring that the resources needed for the EMS are available on the Project
- Communicating the importance of effective environmental management and of conforming to the EMS requirements
- Ensuring that the EMS achieves its intended outcomes on the Project
- Directing and supporting Project personnel to contribute to the effectiveness of the EMS
- Promoting continual improvement
- Supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility.

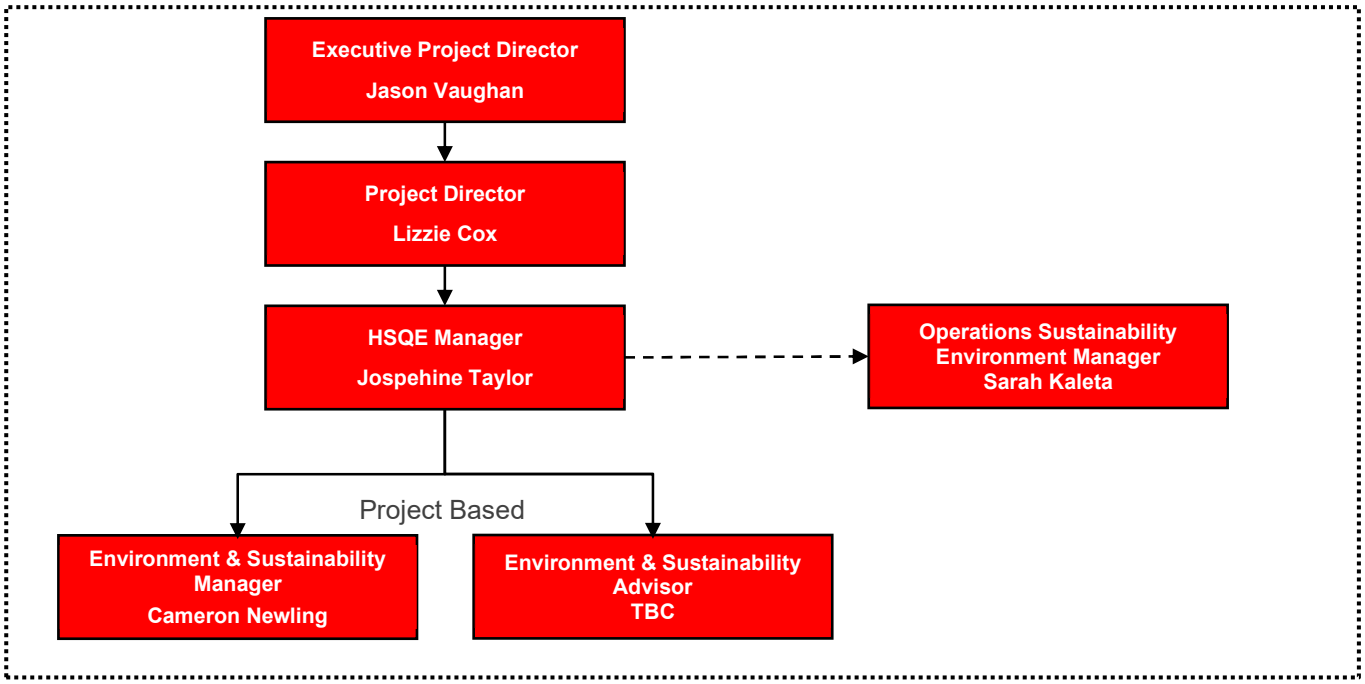


Figure 3: John Holland's Project environmental roles and responsibilities

John Holland is committed to ensuring that critical information is not lost between the development, design and subsequent delivery of environmental planning. Wherever possible John Holland staff responsible for developing this Plan will remain with the Project management team through to delivery.

The Project management team ensure that the responsibilities and authorities for relevant roles are assigned and communicated within the Project. On the Project the following roles are critical to the effective implementation of the EMS.

EMS reference
Resource Planning JH-MPR-PPL-003
Project Launch JH-MPR-PMA-001
Planning and Programming JH-MPR-PMA-002

Table 2 Overview of critical roles

Role	Responsibilities and authorities
Executive Project Director	Overall responsibility and authority for ensuring that the EMS (as applied on the Project) conforms to the requirements of the John Holland EMS and ISO14001 Overall responsibility and authority for reporting on the performance of the EMS (as applied on the Project) to top management
Project Director	Overseeing the Project Overarching operational responsibility for environmental impacts on site
HSEQ Manager	Responsible for overseeing HSEQ management and performance on site
Environment/Sustainability Manager / Project Environment Representative	Day to day responsibility and authority for ensuring that the EMS (as applied on the Project) conforms to the requirements of the John Holland EMS and ISO14001 Day to day responsibility and authority for reporting on the performance of the EMS (as applied on the Project) to top management Ensure correct and ongoing implementation of CEMP Liaise with project staff for ongoing monitoring and maintenance of environmental controls Determine and ensure reporting of incidents and practices that are non-conforming Conduct and report regular inspections, monitoring and reporting Ensure actions relating to environmental non-conformances, incidents and/or inspections are actioned and closed out in a timely manner Actively participate in and facilitate SQE Risk Management workshops Assist with updating of CEMP as required Prepare Project monthly environmental reports Liaise with Principal environmental representative Manage and track compliance with all environmental approvals, licences, and permits relating to the project Liaise with ESD consultants and collate information as directed Undertake necessary ESD audits, inspections as directed.
Environment/Sustainability Coordinator	To support Environment/Sustainability Manager on all the above activities
Operations Sustainability and Environment Manager	Audit and assessment of project environment & sustainability performance against John Holland EMS

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Organisation Chart(s)	HR Representative	Project Pack – Document Management System or Aconex
Position Descriptions	HR Representative	Performance Management and Development System

5.2 Approval and Licencing Requirements

EMS reference
Environment Management Manual JH-MAN-ENV-001
Environmental Planning JH-MPR-ENV-001
Managing SQE Risks JH-MPR-SQE-006

The Project team has considered the environmental aspects of its activities, products, and services that it can control and those that it can influence, and their associated environmental impacts, considering a life cycle perspective.

The Project team have determined those aspects that have or can have a significant environmental impact i.e. significant environmental aspects, by using established criteria. An overview of the Project's specific aspects is provided in Appendix 2. Comprehensive information on aspects and impacts is provided in the Workplace Risk Assessment.

Required Project documentation	Responsibility	JH tools to be used by Project to manage documentation
This Construction Environmental Management Plan; in particular, the Environmental Aspects Appendix 2	Project Environment Representative	Sharepoint or Aconex
Workplace Risk Assessment	Project Manager	Sharepoint or Project Pack Web

5.2.1 Legislative and Principal Requirements

The Shoalhaven District Memorial Hospital project operates under the SSD 35999468 Development Consent Conditions approved by the Minister for Planning April 2023

5.2.2 Needs and Expectations of Interested Parties

The Project has determined the interested parties that are relevant to the EMS, the relevant needs and expectations of these interested parties, and which of these needs and expectations become its compliance obligations. An overview is provided in the table below. Key compliance obligations are recorded in the Project's Obligation Register.

Table 3 Overview of the Project specific interested parties, needs and expectations and compliance obligations

Interested Parties	Needs and Expectations	Compliance Obligation
Governments/Regulators	Laws, regulations, authorisations, etc.	Yes- Regulatory
Principal Health Infrastructure	Contracts, agreements	Yes – Contractual
TfNSW	Laws, regulations, authorisations, etc.	Yes- Regulatory
John Holland	Policy, GMRs & System requirements	Yes – Internal standards
Value Chain	Contracts, agreements	Variable, often voluntarily
Industry Groups	Standards, principles, codes of practice, etc.	Variable, often voluntarily
Community	Agreements, commitments	Variable, often voluntarily
Employees	Contracts, agreements, commitments	Variable, often voluntarily

Required Project documentation	Responsibility	JH tools to be used by Project to manage documentation
Construction Environmental Management Plan; in particular the Interested Parties Table above	Project Environment Representative	SharePoint or Aconex
Obligations Register	Project Environment Representative	Soteria– Document Management System or Aconex

5.3 Compliance Obligations

EMS reference
Environment and Heritage Policy JHG-POL-GEN-002
Global Mandatory Requirements 9 (JH-STD-WHS-009)
Environment Management Manual JH-MAN-ENV-001
Environmental Planning JH-MPR-ENV-001
SSD 35999468 Conditions of Approval
HINSW head contract

The Project have determined the compliance obligations related to its environmental aspects, determined how these obligations apply, and taken these compliance obligations into account when establishing the EMS.

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Environmental Control Plans: Noise and Vibration Air Quality Waste Soil and Water / Erosion Heritage Unexpected Finds	Project Environment Representative	SharePoint or Aconex
Site Environment Plan (SEP)	Project Environment Representative	SharePoint or Aconex
Sustainability Management Plan	Operational Sustainability & Environment Manager	SharePoint or Aconex
Obligations Register	Project Environment Representative	Soteria
John Holland system requirements	Project Environment Representative	Integrated Management System

5.4 Environmental Training

EMS reference
Crisis Management - JH-MPR-RCC-006
Learning and Development JH-MPR-HRT-020
Employee Records JH-MPR-HRT-021
Verification of Competency JH-MPR-PAE-005
Counselling and Disciplinary JH-MPR-HRT-012
Internal Design Management JH-MPR-DES-001
Management of Design Consultants JH-MPR-DES-002
Letting of Consultant, Subcontract, Supply Packages JH-MPR-PMA-005
Administration of Consultant, Subcontract or Supply Packages JH-MPR-PMA-006
Performance Rating of Subcontractors JH-MPR-QUA-004
Site Induction JH-MPR-SQE-001
Health Safety Management & Consultation Arrangements JH-MPR-WHS-004

To ensure the highest levels of environmental competence, awareness and training the Project will:

- Determine the necessary competence of persons doing work under its control that affects its environmental performance and its ability to fulfil its compliance obligations
- Ensure that these persons are competent on the basis of appropriate education, training or experience
- Determine training needs associated with its environmental aspects and its environmental management system
- Where applicable, take actions to acquire the necessary competence, and evaluate the effectiveness of the actions taken.

The Project will ensure that persons doing work under the Project's control are aware of:

- The Environment Policy
- The environmental requirements described in Global Mandatory Requirements 9
- The significant environmental aspects and related actual or potential environmental impacts associated with their work
- Their contribution to the effectiveness of the environmental management system, including the benefits of enhanced environmental performance
- The implications of not conforming with the environmental management system requirements, including not fulfilling the organisation's compliance obligations.

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Training needs analysis	L&D Representative	Chris 21 – for JH personnel SharePoint – for external personnel
Education, training, experience, verification of competency records - for individuals	HR Representative	Chris 21 – for JH personnel SharePoint – for external personnel
Internal Training programmes	L&D Representative	SharePoint - L&D Course Catalogue e-learning Centre
Subconsultant/subcontractor/supplier experience, certifications and ratings – for organisations (including for subcontractors)	Commercial Representative	SharePoint – Subcontract Management Pack
Subcontractor HSEQ Deliverables	Commercial Representative	SharePoint – Subcontract Management Pack
Project Online Induction	L&D Representative	e-learning Centre
Induction attendance records	HR Representative	Chris 21 – for JH personnel SharePoint – for external personnel
Project Orientation	Project Environment Representative	SharePoint or Aconex
Site Orientation attendance records	HR Representative	Chris 21 – for JH personnel SharePoint – for external personnel
Pre-start Meetings and attendance records	Supervisor(s)	Damstra or SharePoint
Toolbox Meetings and attendance records	Supervisor(s)	Damstra or Sharepoint

HSEQ Alert briefing records	HSEQ Representative	Sharepoint

5.5 Emergency Contacts and Response

EMS reference
Emergency Evacuation and Response JH-MPR-PMA-008

The Project has established processes needed to prepare for and respond to potential emergency situations.

The Project will:

- Prepare to respond by planning actions to prevent or mitigate adverse environmental impacts from emergency situations.
- Respond to actual emergency situations.
- Take action to prevent or mitigate the consequences of emergency situations, appropriate to the magnitude of the emergency and the potential environmental impact.
- Periodically test the planned response actions, where practicable.
- Periodically review and revise the process and planned response actions, in particular after the Occurrence of emergency situations or tests.
- Provide relevant information and training related to emergency preparedness and response, as Appropriate, to relevant interested parties, including persons working under its control.
- The Project will maintain documented information to the extent necessary to have confidence that the process is carried out as planned.

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Emergency Response Plan	Project Manager	SharePoint or Aconex
Emergency Response Exercise Checklist/Records	HSEQ Representative	SharePoint or Aconex

5.5.1 Site Contact

The site manager, Chris Sykes, contact number is 0400 146 219.

Due to the project size, multiple site managers will be required at various stages of the project. Contact details will be updated accordingly.

6 Implementation

6.1 Support

6.1.1 Resources

EMS reference
Resource Planning JH-MPR-PPL-003
Project Launch JH-MPR-PMA-001
Planning and Programming JH-MPR-PMA-002

The Project has determined and made provision for the resources needed for the establishment, implementation, maintenance and continual improvement of the EMS on the Project.

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Work Breakdown Structure	Commercial Representative	Project Pack Web
Schedule	Planning Representative	Produced using P6 Primavera, recorded in SharePoint or Aconex
Budget	Commercial Representative	Project Cost Reporting
Organisation Chart	HR Representative	Sharepoint or Aconex
Position Descriptions	HR Representative	Performance Management and Development System
Sub consultant agreements	Commercial Representative	SharePoint
Subcontractor agreements	Commercial Representative	SharePoint – Subcontract Management Pack
Supplier agreements	Commercial Representative	SharePoint – Subcontract Management Pack

6.2 Documentation

EMS reference
Project Documentation Control Procedure JH-MPR-QUA-005

The John Holland EMS includes:

- Documented information required by the Standard;
- Documented information determined by John Holland as being necessary for the effectiveness of the EMS

When creating and updating documented information, the Project shall ensure appropriate:

a) identification and description (e.g. a title, date, author, or reference number);

b) format (e.g. language, software version, graphics) and media (e.g. paper, electronic);

c) review and approval for suitability and adequacy

This CEMP is a ‘live’ and ‘working’ document. The Project Environment Representative/HSEQ Manager will conduct regular reviews of the CEMP at intervals of not less than six months and ensure that the CEMP is formally reviewed and updated at least annually, or earlier as change requirements dictate.

Documented information required by the EMS and by the Standard shall be controlled to ensure:
a) it is available and suitable for use, where and when it is needed;
b) it is adequately protected (e.g. from loss of confidentiality, improper use, or loss of integrity)

For the control of documented information, the Project shall address the following activities as applicable:

- distribution, access, retrieval and use;
- storage and preservation, including preservation of legibility;
- control of changes (e.g. version control);
- retention and disposition

Documented information of external origin determined by the Project to be necessary for the planning and operation of the EMS shall be identified, as appropriate, and controlled.

Required Project documentation	Responsibility	JH tools to be used by Project to manage documentation
Policy, Standards, Manuals, Procedures, Workflows	Various Owners (see documentation for details)	Integrated Management System
All other documentation referred to in this CEMP	Project Manager	See relevant sections of this plan

6.3 Hold Point

Hold points related to the project are identified through the Workplace Risk Assessment process. Hold points relevant to the overall environmental management of the project are included below. Task specific hold points are identified in the respective Environmental Management Plans (refer to appendix 4)

Hold Point	Responsible person	Source
Prior to the commencement of construction, the Applicant must submit a Construction Environmental Management Plan (CEMP) to the Certifier and must be published on the Applicant's website in accordance with condition A23. The CEMP must include, but not be limited to, the following: **(a)** Details of: (i) hours of work; (ii) 24-hour contact details of site manager; (iii) Temporary site office arrangement (iv) management of dust and odour to protect the amenity of the neighbourhood; (v) stormwater control and discharge; (vi) measures to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site; (vii) groundwater management plan including measures to prevent groundwater contamination; (viii) external lighting in compliance with AS 4282-2019 Control of the obtrusive effects of outdoor lighting; (b) an unexpected finds protocol for contamination, asbestos or other unexpected finds and associated communications procedure;	Project Environmental Representative	SSDA 35999468 (B16)

(c) an unexpected finds protocol for Aboriginal and non-Aboriginal heritage and associated communications procedure; and		
Prior to the commencement of construction, the Applicant must install erosion and sediment controls on the site to manage wet weather events.	Project Environmental Representative	SSDA 35999468 (B22)
Prior to the commencement of construction, erosion and sediment controls must be installed and maintained, as a minimum, in accordance with the publication Managing Urban Stormwater: Soils & Construction (4th edition, Landcom 2004) commonly referred to as the 'Blue Book'.	Project Environmental Representative	SSDA 35999468 (B23)

6.4 Risk Assessment

6.4.1 Managing Safety Quality Environmental Risks Procedure

EMS reference
Managing SQE Risks Procedure JH-MPR-SQE-006

This procedure involves preparing a series of progressively more in-depth risk assessments and method statements. Further information on key documents required by the procedure is provided below:

- Workplace Risk Assessment (WRA): a strategic risk assessment conducted on workplace and broken down into work components for the purpose of identifying system, training, legislative, and the identification of further detailed planning and risk assessment activities
    - Also referred to as Construction Risk Analysis Workshop (CRAW), Risk Registers, and Principal Hazards Management Plan (PHMP)
    - Must be informed by pre-tender and contract award SQE reviews
    - Must engage relevant subject matter experts
- Activity Method Statement (AMS): operational planning risk assessments which aim to address the detailed hazard/risk control reduction strategies for workplace activities
    - AMS includes the methodology for the conducting activities, resources, plant, equipment and materials necessary to do the work safely.
    - Requirements for an AMS will be identified in the WRA
- Task Risk Assessment (TRA): team-based planning risk assessments which aim to address hazard/risk control reduction at the task level
    - Facilitated by the Supervisor, Leading Hand and/or Engineer and are primarily identified in the AMS
    - Must be completed prior to work commencing.

The WRA, AMSs and TRAs are pivotal to the management of all activities during delivery: they allow operational controls to be developed and implemented on a case by case basis for all the different workplaces, activities and tasks that are encountered in the contracting industry.

The WRAs, AMSs and TRAs are owned by Project Management, Project Engineers, Supervisory Staff and Workforce. Subject matter experts act as advisors during the preparation of these documents ensuring that information from the legislation, project brief, conditions of approval, head contract and internal procedures and policy is suitably incorporated and acted upon. Implementation of the Managing SQE Risk Procedure by the Project will allow the actions identified in relation to risks and opportunities and the achievement of environmental objectives to be incorporated and used to establish operating criteria and controls.

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Workplace Risk Assessment	Project Manager	Project Pack Web/Damstra

Activity Method Statements	Project Engineer(s)	Project Pack Web/Damstra
Task Risk Assessments	Supervisor(s)	Project Pack Web/Damstra

6.4.2 Global Mandatory Requirements

EMS reference
Global Mandatory Requirement 9 - Environment Management JHG-STD-WHS-009

When developing the operational controls to be included in the WRA, AMSs and TRAs the Global Mandatory Requirements (GMRs) must be incorporated as applicable on every project. The GMRs outline mandatory operational controls that must be deployed for managing key risks. The environmental GMR is outlined below:

GMR 9: ENVIRONMENT MANAGEMENT - I will protect the environment, prevent pollution, and minimise waste and resource use

6.4.3 Health Safety Environment Behavioural Framework

EMS reference
Managing Safety for Senior Leaders JH-MPR-WHS-020
Our HSE Behaviours Handout
JH HSE Behaviours Implementation Plan

John Holland's HSE Behaviours describe a set of everyday behaviours that are expected of all people working on behalf of The Project. The HSE Behavioural Framework encourages a culture that serves as an operational control.

The Project HSE behaviours will be implemented accordingly. The HSE Behaviours are outlined in a framework below (excerpt from the 'Our HSE Behaviours Handout').

Theme	Everyone	Supervisors	Managers
Standards	Follow rules	Ensure compliance	Set high standards
Communication	Speak up	Encourage the team	Communicate openly
Risk Management	Be mindful	Promote risk awareness	Confront risk
Involvement	Get involved	Involve the team	Involve others

Figure 4: Overview of HSE Behavioural Framework

This framework describes the behaviours that are expected of ‘everyone’, ‘supervisors’ and ‘managers’. Four themes that are critical to any strong HSE culture are also displayed: ‘standards’, ‘communication’, ‘risk management’ and ‘involvement’. These are key elements of the strong safety culture which supports our vision.

There are 12 sets of behaviours across each of these three employee groups and four themes, all of which are interdependent. Each of the twelve sets of behaviours is supported by a set of positive and negative statements that provide practical guidance on what is expected.

The HSE Behaviours that will be implemented are based on the risk profile of the project, size and scope, and in accordance with the Projects HSE Behaviours Implementation Plan.

The following figure is an example of the guidance that sits behind one of the behaviours.

Everyone's HSE Behaviours
(including Supervisors & Managers) To improve our HSE performance

	I will...		I will not...	
Follow rules	EP1.1	Learn the standards, rules and procedures that apply to me in my job	EN1.4	Ignore the rules and procedures
	EP1.2	Follow the rules and use the right procedures for the job	EN1.5	Disregard the consequences of not following a rule or procedure
	EP1.3	Identify impractical rules and procedures, and suggest improvements promptly	EN1.6	Rush or take short cuts to get the job done
			EN1.7	Fail to seek approval or advice if the plan changes or deviates

Figure 5: Example of specific HSE Behaviours

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Personal Action Plans	Senior Manager(s)	SharePoint
Induction Records	Project Management Team	Damstra
Toolbox Records	Supervisors	Damstra

6.4.4 Operational Planning and Control

Operational planning and controls processes are implemented by the Project in order to incorporate the actions identified in relation to risks and opportunities, and the achievement of environmental objectives, by establishing operating criteria and controls.

EMS reference
Managing SQE Risks JH-MPR-SQE-006
Global Mandatory Requirement 9 - Environment Management JHG-STD-WHS-009
HSE Behavioural Framework
Internal Design Management JH-MPR-DES-001
Management of Design Consultants JH-MPR-DES-002
Letting of Consultant, Subcontract, Supply Packages JH-MPR-PMA-005
Administration of Consultant, Subcontract or Supply Packages JH-MPR-PMA-006
Inspection of Subcontracted Works JH-MPR-QUA-003
Hazardous Chemicals Management JH-MPR-SQE-011
Asbestos Procedure JH-MPR-WHS-024 http://ims.jhg.com.au/viewdocument.aspx?doc=JH-MPR-WHS-024&newtab=true
Plant and Equipment JH-MPR-PAE-001

6.4.5 Outsourced Processes

EMS reference
Management of Design Consultants JH-MPR-DES-002
Purchasing JH-MPR-PMA-004
Inspection of Subcontracted Works JH-MPR-QUA-003
Letting of Consultant, Subcontract, Supply Packages JH-MPR-PMA-005
Administration of Consultant, Subcontract or Supply Packages JH-MPR-PMA-006

The Project ensure that outsourced processes are controlled or influenced. Consistent with a life cycle perspective, the Project have:

- Established controls, as appropriate, to ensure that its environmental requirement(s) is (are) addressed in the design and development process for the product or service, considering each life cycle stage.
- Determined its environmental requirement(s) for the procurement of products and services, as appropriate.
- Communicated its relevant environmental requirement(s) to external providers, including contractors.

- Considered the need to provide information about potential significant environmental impacts associated with the transportation or delivery, use, end-of-life treatment and final disposal of its products and services.

Required Project documentation	Responsibility	JH tools to be used by Project to manage documentation
Sub consultant, sub-contractor, supplier qualification records	Design/Commercial Representative	SharePoint or Aconex
Sub consultant, sub-contractor, supplier agreements	Design/Commercial Representative	SharePoint or Aconex
Sub consultant, sub-contractor, supplier HSEQ deliverables	Design/Commercial Representative	SharePoint or Aconex

6.4.6 Other Operational Controls

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Chemical Risk Assessment	Supervisor(s)	Chemwatch and/or Project Pack Web
Safety Data Sheets	HSEQ Representative	Chemwatch and/or Project Pack Web
Chemical Register	HSEQ Representative	Chemwatch and/or Project Pack Web
Unexpected finds protocol	Environment Manager	SharePoint or Aconex
Archaeology unexpected finds protocol		
Plant and Equipment Register	Project Engineer	Project Pack Web or Damstra

7 Environmental Management Activities & Control Plans

7.1 Sediment Controls

Our Erosion and Sediment Control Plan will further outline the layout of any planned or implemented controls diagrammatically, in accordance with Managing Urban Stormwater: Soil and Construction (Landcom, 2004) ('Blue Book'). Refer to the Sediment and Erosion Control Plan Drawing (ASB-DD-DRG-CV-005 Rev 3)

Controls will include but not be limited to: Refer to Sediment and Erosion Control Plan

- Existing services and controls are to be maintained
- Additional temporary stormwater protections are required to be completed during the initial site establishment stages
- Installed stormwater pits will be wrapped in geofabric
- No discharge of water outside of Water Quality Objectives is to occur. Any water that does not comply will be treated and retested or disposed of at a licenced facility.
- De-watering shall not take place unless a dewatering permit has been obtained and completed to the satisfaction of the Project Environmental Representative (PER) or pumped into onsite detention

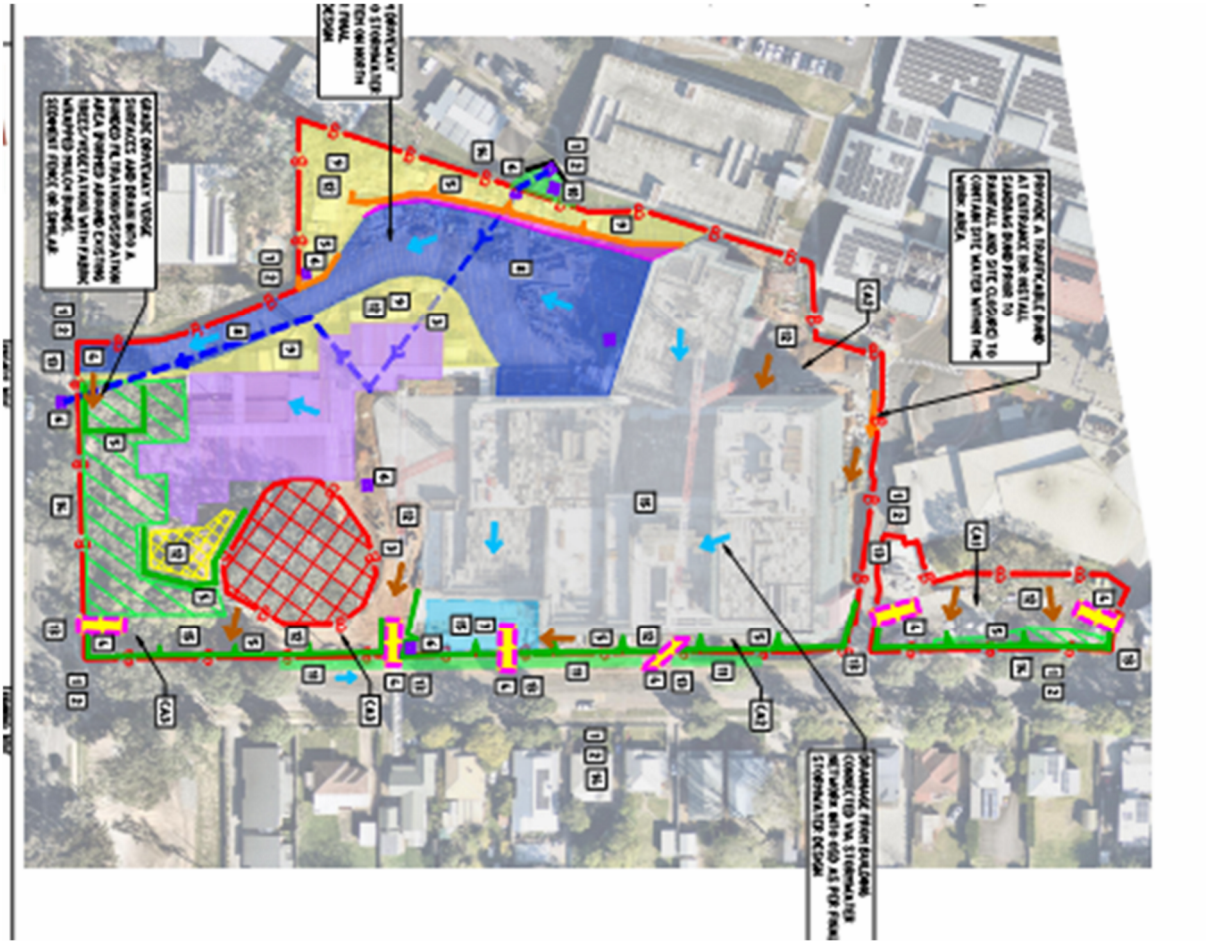


Figure Extract from Sediment and Erosion Control Plan Drawing - Page 2 (refer appendix 8)

During the initial phase of the project, John Holland will undertake the installation of stormwater systems within the early works zone. Before proceeding with the permanent stormwater installation on the main ASB site, John Holland will prepare the area in strict adherence to the sediment and erosion control plan, project documents and the 'blue book'. Throughout the construction process, on-site adjustments will be made as necessary, with careful consideration to the localised conditions, in order to effectively prevent any occurrence of excessive water runoff.

7.2 Air Quality and Dust Management

Works will be conducted so as to minimise dust generation and any other potential air quality impacts as a result of construction activities. The following controls will be implemented and monitored:

- Dust generated during construction activities is to be controlled to minimise impact of construction on surrounding properties through use of water suppression
- Exposed areas are to be progressively revegetated or covered as soon as practical to reduce risk of dust

7.3 Contamination

Numerous assessments have been completed at the site with the most recent Environmental Site Assessment (ESA) (Stantec, 2022a) prepared by Stantec identified total recoverable hydrocarbon (TRH), toxaphene and possible polycyclic aromatic hydrocarbon (PAH) contamination at borehole BH01 exceeding the adopted criteria within a carpark at Shoalhaven Hospital. The identified contamination meets the definition of a hotspot at >2.5x the adopted assessment criteria. Further delineation sampling undertaken as part of a Data Gap Investigation (DGI) (Stantec, 2022b) delineated the extent of impact to an area 2 m x 2 m with a depth of 0.5 m below ground level (m bgl) and an estimated volume of 2 m3. Based on the status as a hotspot, the DGI concluded that while the contamination was not considered to impact suitability of remainder of the site for the intended use, identified impacts will require management as part of the proposed development.

Under the current understanding of the site, the extent of material requiring management has been delineated to an approximately 2 m x 2 m area within the carpark area delineated by BH01E1, BH01S1, BH01W1 and BH01N1. Vertically contaminants of concern are below the laboratory limit of reporting by BH01_0.5 collected from 0.5 m bgl. Based on these measurements total volume requiring management is estimated, to be 2 m3 in-situ with for potential to bulk during removal up to approximately 4 m3.

The RAP concluded that subject to proper implementation of the plan and based on the findings of the DGI and ESA, with the exception of the area located between sampling locations BH01E1, BH01S1, BH01W1 and BH01N1, the site was considered suitable for the intended land use as a hospital. The unsuitable area can be made suitable following management of the identified contamination.

7.4 Spill Response Management

The inappropriate/inadequate storage and handling of any liquid chemical has the potential to lead to spills or leaks to the environment. In addition, inappropriate/inadequate storage and handling of volatile liquids can lead to air pollution. Site management should be undertaken in accordance with the following guiding principles:

- Establish designated locations for storing and handling chemicals
- Ensure that spill response materials and resources are available at site to respond quickly in the event of a spill
- Regularly inspect storage and handling areas

Diesel refuelling should be undertaken with drip trays/similar material in place to capture potential leaks. Ensure a spill kit is readily available to deploy in the event of a spill during the refuelling process.

7.4.1 Incident Response

In the event of a spill, follow the “three C’s”: control, contain and clean up with a spill kit. Notify the Site Supervisor immediately. Once the area has been made safe, notify the Project Environment Advisor.

7.5 Fire Precautions During Construction

All fire precaution measures implemented during construction to be in accordance with Clause E1.9 - Fire precautions during construction, of the National Construction Code 2019; (Excerpt below)

E1.9 Fire precautions during construction

In a building under construction:

a) not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required exit or temporary stairway or exit: and
b) After the building has reached an effective height of 12 m—
   i) the required fire hydrants and fire hose reels must be operational in at least every storey that is covered by the roof or the floor structure above, except the 2 uppermost storeys: and
   ii) any required booster connections must be installed.

7.6 Construction Lighting

All external construction lighting will be established and operated in compliance with AS 4282:2019 Control of the obtrusive effects of outdoor lighting. Lighting will be installed in coordination with the objective of minimising light spill by directing lighting away from residential receivers where possible. In order to ensure lighting does not impact on sensitive receivers, the following will be implemented:

- Lights will be located as far away as possible and directed away from neighbouring properties, with consideration given to current Crime Prevention Through Environmental Design principles. For safety and security purposes during nights and periods of low light temporary lighting will be required for work areas and traffic detours
- Lighting will be directed to illuminate the target areas. Baffles or shield will be utilised where practicable and feasible to reduce potential of light spill.

7.7 Construction Noise and Vibration

The current site is a vacant plot within the hospital grounds. The site's general context is that of a civic precinct bounded by low-rise residential land uses. The nearest/potentially most impacted sensitive receives surrounding the site representative of noise catchments have been identified in the Construction Noise Dust and Vibration Management Plan.

Permanent noise, vibration and dust monitors will be installed in certain locations (this is noted in the JH Site Environmental Plan).

The plan details mitigation measures to be applied to minimise impacts to surrounding receivers.

Site monitoring has been established around the perimeter of the building footprint. These monitors are setup to be on real time notification if any exceedances occur. The site team are notified and an inspection of the monitor and works occurring within that zone can be reviewed.

7.8 Communication

EMS reference
Community Relations JH-MPR-CCM-005
Media Relations JH-MPR-CCM-004

The Project has established the processes needed for internal and external communications relevant to the EMS, including:

- What it will communicate
- When to communicate
- With whom to communicate
- How to communicate.

When establishing its communication processes, the Project has:

- Considered its compliance obligations
- Ensured that environmental information communicated is consistent with information generated within the environmental management system and is reliable.

The Project will respond to relevant communications on its EMS. The Project will retain documented information as evidence of its communications, as appropriate.

7.8.1 Internal Communication

EMS reference
Community Relations JH-MPR-CCM-005
Performance Statistics – Safety, Quality & Environment JH-MPR-SQE-009

The Project will:

- Internally communicate information relevant to the EMS among the various levels and functions of the Project and John Holland, including suggested changes to the EMS, as appropriate
- Ensure its communication processes enable persons doing work under the Project's control to contribute to continual improvement.

Internal communication will include meetings which may include pre-start meetings, toolbox talks, project team meetings, HSEQ team meetings, Principal meetings, subcontractor meetings, and HSEQ system review meetings. Meetings will include appropriate environmental information and will be minute and recorded.

Environmental toolbox talks will be held as and when new activities are undertaken and risks arise, at a minimum of one toolbox talk a month.

Internal communication will also include written instructions which may include drawings, specifications, method statements, risk assessments, contracts and subcontracts.

Internal communication regarding the notification of events and associated SQE actions will be managed using Soteria.

Internal communication of The Project's performance will also be undertaken via monthly environmental reporting using a project pack and Soteria.

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Communication records - general	All personnel	SharePoint – Office Correspondence or Aconex
Meeting minutes	All personnel	SharePoint – Office Correspondence or Aconex
Reports	All personnel	SharePoint – Office Correspondence or Aconex

7.8.2 External Communication, Consultation and Complaints

The project will be managed in accordance with the Community Stakeholder & Interface Management Plan (CSIMP). All complaint and enquiries will be managed in accordance with this plan. All external communication will be issued through the principal's representative.

Community consultation will be undertaken by Health Infrastructure prior to the commencement of the SHR. Prior to starting construction activities, the following strategies will be put into place:

- Community information sessions held
- Formal and informal briefings and feedback sessions held
- Where required, face-to-face engagement with neighbouring residents and businesses
- Distribution of project community information resources
- Established communication channels for feedback including website, project community contact number and project email account.

The following highlights expected stakeholder and community consultation outcomes for managing high noise generating works:

- Stop works procedures and lines of communication where works may affect continuity of Hospital Campus operations
- Consultation with Hospital Campus on appropriate location for noise and vibration monitoring devices
- Complaints management processes for noise and vibration
- Identification of preferred communication channels with key stakeholders and neighbouring residents for works notification

Impacted Stakeholders will be kept informed of the project status and key activities throughout the project duration via:

- Construction briefings – regular briefings and presentations to affected stakeholders to provide advance notice of noise generating works, work hours and construction impacts management strategies
- Construction briefings are utilised to gain feedback and input into construction planning and minimise impacts to stakeholders
- Community notification – notifications circulated via letter box drop, email and project website to communicate upcoming construction activity to the local community and affected stakeholders
- Construction Interface Meetings – regular meetings with key project stakeholders to communicate upcoming works, impacts and mitigate strategies
- Site hoarding or notices on the hoarding will also identify Health Infrastructure and John Holland as the site operators

These channels will be used to inform residents and business owners, describing the construction hours, potential high noise works/hours, the noise management measures being implemented and providing contact details for further information or complaints.

The following table details the documentation required, project personnel responsible and methods by which the information will be managed.

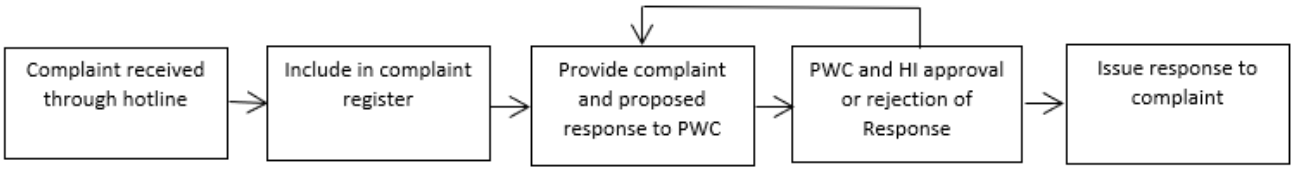
Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Communication records – Principal and regulators	Project Manager	SharePoint – Office Correspondence or Aconex
Communication records – subcontractors and suppliers	Commercial Representative	SharePoint – Office Correspondence or Aconex
Communication records - community	Project Manager	SharePoint – Office Correspondence or Aconex
Meeting minutes	Project Manager	SharePoint – Office Correspondence or Aconex
Reports	Project Manager	SharePoint – Office Correspondence or Aconex

Enquiries and complaints received in person or via the 1800 hotline managed by John Holland will be:

- Responded to within the timeframes outlined below
- Recorded in Stakeholder spreadsheet within 24 hours of receipt
- Reported monthly in the complaints register, with information about any resolution reached and published on the project website in accordance with the SSD 35999468.

Classification	Description	Action
High Issue cannot be resolved by the project team	- Involves media attention/ coverage - Involved political and/ or government agencies - Relates to safety or security incident	- Immediate report to the HI Communications Director - No comment to be provided by the Project team
Medium Issue cannot be immediately resolved	- Involves an individual or group expressing negative sentiments towards the project with risk of further action - The stakeholder raising the issue is not satisfied with the response provided	- Project Stakeholder manager engages the broader Project team to investigate further, determine a suitable outcome and respond appropriately - Issue is reported on following reporting protocols
Low Issue can be responded to immediately	- Involve an individual or group expressing negative sentiments towards the project - Involves an individual or group expressing concern for project impacts and outcomes - There is no threat of further action	- Project Stakeholder Manager provides the appropriate response and notified the broader project team as required - Records of low-level issues to be tracked and reported as per this plans and conditions of consent

Responses to complaints received will be provided to JSP for review prior to issuing to the community as outlined below:



Responses will be as per the following response time frames:

Activity	Response Timeframe
Email enquiry acknowledgement	1 business day
Email / onsite enquiry response	5 business days
Site phone line	30 minutes
Website contact form	3 business days

7.9 Environmental Control Plans or Maps

The primary environmental constraints for the Project are identified in the Construction Environmental Sub Plans and captured progressively using Site Environmental Plans and Erosion and Sediment Control Plans. These plans will contain information regarding, but not limited to:

- Project Boundaries
- Endangered Ecological communities, threatened flora and fauna, significant items
- Sensitive receivers (e.g., Watercourses)
- Noise or light spill sensitive receivers e.g., residential receivers, Places of education etc.
- Location of site offices
- Working hours
- Aboriginal and Non-Aboriginal heritage
- Contamination
- Tree protection measures

8 Monitoring, Reporting and Review

8.1 Monitoring

To ensure excellent environmental outcomes John Holland has robust processes in place to measure and evaluate its environmental performance against criteria set out in the CEMP.

EMS reference
Monitoring and Review JH-MPR-SQE-002
Inspection, Testing and Surveillance JH-MPR-SQE-004
Workplace Hazard Identification and Inspection JH-MPR-WHS-006
Performance Statistics – Safety, Quality and Environment JH-MPR-SQE-009
Inspection of Sub-contracted Works JH-MPR-QUA-003
Administration of Consultant, Subcontract, Supply Packages JH-MPR-PMA-006
Resource Use Reporting JH-MPR-ENV-002

Project Monthly Reporting and Reforecasting and Review JH-MPR-PMA-015
WHSR Planning JH-MPR-WHS-001

The Project will monitor, measure, analyse and evaluate its environmental performance.

The Project will determine:

- What needs to be monitored and measured.
- The methods for monitoring, measurement, analysis, and evaluation, as applicable, to ensure valid results.
- The criteria against which the organisation will evaluate its environmental performance, and appropriate indicators.
- When the monitoring and measuring will be performed.
- When the results from monitoring and measurement will be analysed and evaluated.

Projects will use the Project Monitoring Schedule to plan for monitoring activities in accordance with the risk profile on the project as per Workplace Hazard Identification and Inspection.

The Project will:

- Ensure that calibrated or verified monitoring and measurement equipment is used and maintained, as appropriate. The Project will evaluate its environmental performance and the effectiveness of the EMS.
- Communicate relevant environmental performance information both internally and externally, as identified in its communication processes and as required by its compliance obligations.
- The Project will retain appropriate documented information as evidence of the monitoring, measurement, analysis, and evaluation results.
- The Project will establish, implement, and maintain the processes needed to evaluate fulfilment of its compliance obligations.

The Project will:

- Determine the frequency that compliance will be evaluated.
- Evaluate compliance and take action if needed.
- Maintain knowledge and understanding of its compliance status.
- Retain documented information as evidence of the compliance evaluation results.

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Subcontractor HSEQ Deliverables (pre-mob and monthly thereafter)	Commercial Representative	SharePoint – Subcontract Management Pack
Resource usage (energy, water, etc) data (monthly)	Commercial Representative & PER	PCR & Project Pack Web
Concrete and steel consumption data (monthly)	Project Engineer	Aconex & Project Pack Web
Waste data (monthly)	PER & CA	Project Pack Web
Approvals and Licences Register Status (monthly)	Project Environment Representative	Soteria

Obligations Register Status (monthly)	Project Environment Representative	Soteria
Internal Project Report (Monthly)	Project Manager	Mars and SharePoint
Principal Report (Monthly)	Project Manager	SharePoint or Aconex
HSES Valuation (Monthly)	Project Manager	Soteria
Project Self-Assessment (Annual)	Project Environment Representative	Soteria
Actions arising	Project Environment Representative	Soteria

Required Project documentation	What to be inspected	Responsibility	John Holland tools to be used by Project to manage documentation
Site Diary (daily)	All required construction areas	Supervisor(s)	Project Pack Web
Weekly General Inspections	Site area	Workplace Manager	Soteria
High Risk Inspections	Areas of high risk works to be determined through risk assessments	Workplace Manager	Soteria
GMR Self-Assessments (monthly)	Areas of work applicable to GMRs	Workplace Manager	Soteria

8.2 Reporting

Reporting requirements for the project include:

- Incident reports
- Monthly monitoring reports
- Noncompliance reports
- Compliance reporting
- Inspection reports
- Internal and external audit reports
- Independent audit report responses

8.3 Environmental Auditing

8.3.1 Internal audit

EMS reference
Monitoring and Review JH-MPR-SQE-002

John Holland will conduct internal HSE audits of the Project at planned intervals to provide information on whether the EMS conforms to:

- The organisation's own requirements for its EMS
- The requirements of the International Standard
- Is effectively implemented and maintained.

John Holland will establish, implement and maintain (an) internal audit programme(s) for the Project, including the frequency, methods, responsibilities, planning requirements and reporting of its internal audits upon contract award.

John Holland will:

- Define the audit criteria and scope for each audit;
- Select auditors and conduct audits to ensure objectivity and the impartiality of the audit process;
- Ensure that the results of the audits are reported to relevant management

John Holland will retain documented information as evidence of the implementation of the audit program and the audit results.

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Audit Program	Operations Environment Manager	Soteria
Audit Reports	Operations Environment Manager	Soteria
Actions Arising	Operations Environment Manager	Soteria

8.4 Corrective Action

8.4.1 Incidents, Non-Conformity and Corrective Action

EMS reference
Non-conformance and Corrective Action JH-MPR- SQE-007
Incident Management JH-MPR-SQE-010

When a nonconformity (including an incident, or a verified complaint) occurs, the Project will:

- React to the nonconformity and, as applicable:
  - Take action to control and correct it
  - Deal with the consequences, including mitigating adverse environmental impacts
- Evaluate the need for action to eliminate the causes of the nonconformity, in order that it does not recur or occur elsewhere, by:
  - Reviewing the nonconformity
  - Determining the causes of the non-conformity
  - Determining if similar nonconformities exist, or could potentially occur
- Implement any action needed
- Review the effectiveness of any corrective action taken
- Make changes to the environmental management system, if necessary.

Corrective actions will be appropriate to the significance of the effects of the nonconformities encountered, including the environmental impact(s).

The Project will retain documented information as evidence of:

- The nature of the nonconformities and any subsequent actions taken
- The results of any corrective action.

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Event Records	Project Environment Representative	Soteria
Non-Conformance Records	Quality Representative	Soteria
Actions Arising	Project Environment Representative	Soteria

8.4.2 Accountable Culture Tool

EMS reference
Incident and Event Management JH-MPR-SQE-010
Counselling and Disciplinary Procedure JH-MPR-PPL-012

The Accountable Culture Tool (ACT) is designed for line managers to help them to understand, categorise and address appropriate actions of their staff, work force and subcontractors w in a fair and just way.

The ACT is a step-by step decision making tool that provides managers with a structured process to address an event and the people involved in a constructive way and not simply react on the outcome. It also encourages the recognition of positive performance.

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Event Records	Project Environment Representative	Soteria
Reward and recognition records	HR Representative	Chris 21 – for John Holland personnel W Drive – for external personnel
Counselling and disciplinary records	HR Representative	Chris 21 – for John Holland personnel W Drive – for external personnel

8.5 CEMP Review

EMS reference
Monitoring and Review JH-MPR-SQE-002
Independent Project Reviews JH-MPR-PMA-018
Project Monthly Reporting and Reforecasting and Review JH-MPR-PMA-015
WHSR Planning JH-MPR-WHS-001

John Holland management conduct yearly reviews of the John Holland EMS, to ensure its continuing suitability, adequacy and effectiveness. When the EMS review is complete an update of system improvements is communicated via the IMS to all employees.

The management review will include consideration of:

- The status of actions from previous management reviews

- Changes in:
  - External and internal issues that are relevant to the environmental management system
  - The needs and expectations of interested parties, including compliance obligations
  - Its significant environmental aspects
  - Risks and opportunities
- The extent to which environmental objectives have been achieved
- Information on the organisation's environmental performance, including trends in:
  - Non-conformities and corrective actions
  - Monitoring and measurement results
  - Fulfilment of its compliance obligations
  - Audit results
- Adequacy of resources
- Relevant communication(s) from interested parties, including complaints
- Opportunities for continual improvement.

The outputs of the management review will include:

- Conclusions on the continuing suitability, adequacy and effectiveness of the EMS
- Decisions related to continual improvement opportunities
- Decisions related to any need for changes to the environmental management system, including resources
- Actions, if needed, when environmental objectives have not been achieved
- Opportunities to improve integration of the EMS with other business processes, if needed
- Any implications for the strategic direction of the organisation.

Management reviews are conducted at project level through the internal project reports and/or Health Safety Environment Quality Valuations. The project will retain documented information as evidence of the results of management reviews.

The review of the CEMP will be in accordance with the conditions of consent. The CEMP will be reviewed and revised following:

- An incident (as defined in the conditions of Consent)
- Any non-compliance with the conditions of consent or other legal requirement
- Any non-conformance with any other environmental requirements
- Audit findings (internal, external and/ or independent)
- Project modifications approved by the consent or approval authority
- Changes to legislative requirements

Upon revision the CEMP will be resubmitted to the Department and any other party as required by the conditions of consent.

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Internal Project Report (Monthly)	Project Manager	SharePoint or MarS
Project Management Meeting minutes	Project Manager	SharePoint or Aconex
HSEQ Valuation (Monthly)	Project Manager	Soteria
Actions Arising	Environment Manager	Soteria

8.6 Continual Improvement

EMS reference
Monitoring and Review JH-MPR-SQE-002
Project Completion Procedure JH-MPR-PMA-016

The Project will continually improve the suitability, adequacy and effectiveness of the John Holland EMS to enhance environmental performance.

Required Project documentation	Responsibility	John Holland tools to be used by Project to manage documentation
Actions Arising	Project Environment Representative	Soteria
Lessons Learned	Project Environment Representative	Work Centre

9 Appendix 1: John Holland Environmental Policy

JOHN HOLLAND

ENVIRONMENT POLICY

UP FOR THE CHALLENGE OF IMPROVING LIVES

OUR COMMITMENT

To value the natural environment and communities in which we work.

Our goal across all business activities is to use resources efficiently, respond to climate change, prevent pollution, enhance and protect the environment and our heritage.

OUR APPROACH

John Holland's four values of caring, empowering, imaginative and future-focused are the platform for our everyday interactions. We use these values to guide our approach to the environment.

Caring

We care deeply about what we do and how it affects the environment now and for the future by:

- Driving a strong culture to respect the environment across the business in our offices, on our projects and with our joint venture partners.
- Prioritising the environment, the community, sustainable products and resource efficiency in our decision making.
- Providing best practice training and education to our people to build awareness and capability to protect the environment and respect the communities in which we work and live.

Empowering

We gain trust through action by:

- Empowering our people, partners and subcontractors to speak up about how we can better protect and enhance the environment.
- Encouraging participation and collaboration to achieve sound environmental performance and outcomes.
- Driving accountability by ensuring everyone is responsible for valuing and protecting the environment.

Imaginative

We push the boundaries by:

- Focusing on continual learning and improvement by reviewing performance, capturing and sharing lessons learnt and celebrating successes.
- Exploring and introducing new technologies and approaches that minimise impacts on the environment and provide cost effective solutions that are resource efficient.
- Having a transparent critical risk management process that helps us to continuously identify opportunities and improvements to our systems and processes.

Future-focused

We're in it for the long, long term by:

- Exceeding our legislative, customer and other mandatory requirements.
- Establishing and maintaining an effective management system.
- Ensuring our work leaves a positive legacy for the communities we serve and the environments we operate in.

Joe Barr
Chief Executive Officer
January 2020

10 Appendix 2: Aspects, Impacts, Mitigation & Legislation

The following table will be populated upon undertaking the project specific Workplace Risk Assessment

Aspect	Impact	Mitigation
Discharging water from site	Pollution entering waterway or ground	Appropriate erosion and sediment controls in place and regular site inspections by suitably qualified and experienced professional
Waste Disposal	Pollution entering landfill	Vetting of all waste disposal locations and tracking of loads off sites Spoil permit process
Noise	Noise disturbance to local sensitive receivers	Undertake noise modelling to predict impacts Noise monitoring to validate model and effectiveness of mitigation measures
Use of raw materials and natural resources	Destruction of natural habitat	Procure enviro certified products Comply with ESD measures
Energy use	Increase in GHG emissions	Use Bio mix diesel, purchase grid energy from green supplier
Vibration	Damage to sensitive receivers	Monitoring and implementation of safe working distances
Contamination	Cross contamination of clean areas	Works to be completed as per RAP and CSWMP
Contamination	Contamination of clean areas through spills etc	Works to be completed as per management plans Monitoring and implementing containment practices
Heritage	Damage to heritage items	Monitoring Unexpected Finds Protocol
Biodiversity	Damage to trees	Tree protection Vegetation removal permit
Dust	Dust impacting adjacent sensitive receivers	Monitoring Dust suppression as per CSWMP

11 Appendix 3: Integrated Management System Procedures

IMS procedure references
Environment Management Manual JH-MAN-ENV-001
Strategic and Business Planning JH-MPR-BUA-020
Environment and Heritage Policy JHG-POL-GEN-002
Resource Planning JH-MPR-PPL-003
Project Launch JH-MPR-PMA-001
Planning and Programming JH-MPR-PMA-002
Environmental Planning JH-MPR-ENV-001
Managing SQE Risks JH-MPR-SQE-006
Global Mandatory Requirements 9 (JHG-STD-WHS-009,)
Learning and Development JH-MPR-PPL-020
Employee Records JH-MPR-PPL-021
Verification of Competency JH-MPR-PAE-005
Counselling and Disciplinary JH-MPR-PPL-012
Internal Design Management JH-MPR-DES-001
Management of Design Consultants JH-MPR-DES-002
Letting of Consultant, Subcontract, Supply Packages JH-MPR-PMA-005
Administration of Consultant, Subcontract or Supply Packages JH-MPR-PMA-006
Performance Rating of Subcontractors JH-MPR-QUA-004
Site Induction JH-MPR-SQE-001
Health Safety Management & Consultation Arrangements JH-MPR-WHS-004
Community Relations JH-MPR-CCM-005
Corporate Communications JH-MPR-CCM-004
Performance Statistics – Safety, Quality & Environment JH-MPR-SQE-009
Project Documentation Control Procedure JH-MPR-QUA-005
Inspection of Subcontracted Works JH-MPR-QUA-003
Hazardous Chemicals Management JH-MPR-SQE-011
Asbestos Procedure JH-MPR-WHS-024
Plant and Equipment JH-MPR-PAE-001
Managing Safety for Senior Leaders JH-MPR-WHS-020
Purchasing JH-MPR-PMA-004
Emergency Evacuation and Response JH-MPR-PMA-008
Monitoring and Review JH-MPR-SQE-002
Inspection, Testing and Surveillance JH-MPR-SQE-004
Workplace Hazard Identification and Inspection JH-MPR-WHS-006

IMS procedure references
Resource Use Reporting JH-MPR-ENV-002
Project Monthly Reporting and Reforecasting and Review JH-MPR-PMA-015
WHSR Planning JH-MPR-WHS-001
Independent Project Reviews JH-MPR-PMA-018
Non-conformance and Corrective Action JH-MPR-SQE-007
Incident and Event Management JH-MPR-SQE-010
Project Completion Procedure JH-MPR-PMA-016

12 Appendix 4: Environmental Control Plans

The following reference file numbers are currently under development and provided as a guide only

Environmental Control Plans	John Holland Ref
Construction Noise, Dust and Vibration Management Plan (CNDVMP)	JHG-SHR-PM-PL-99-XX012
Construction Waste Management Sub-Plan (CWMP)	JHG-SHR-PM-PL-99-XX013
Construction Soil and Water Management Plan (CSWMP)	JHG-SHR-PM-PL-99-XX014
Aboriginal Cultural Heritage Management Sub-Plan	JHG-SHR-PM-PL-00-XX017
Construction Traffic and Pedestrian Management Plan (CTPMP)	JHG-SHR-PM-PL-99-XX021
Flood Emergency Response Plan (FERP)	JHG-SHR-ARP-TT-PL-94-XX01
Ground Water Management Plan	SDMH-JHG-PLA-PRM-XX014

13 Appendix 5: Unexpected Finds Protocol

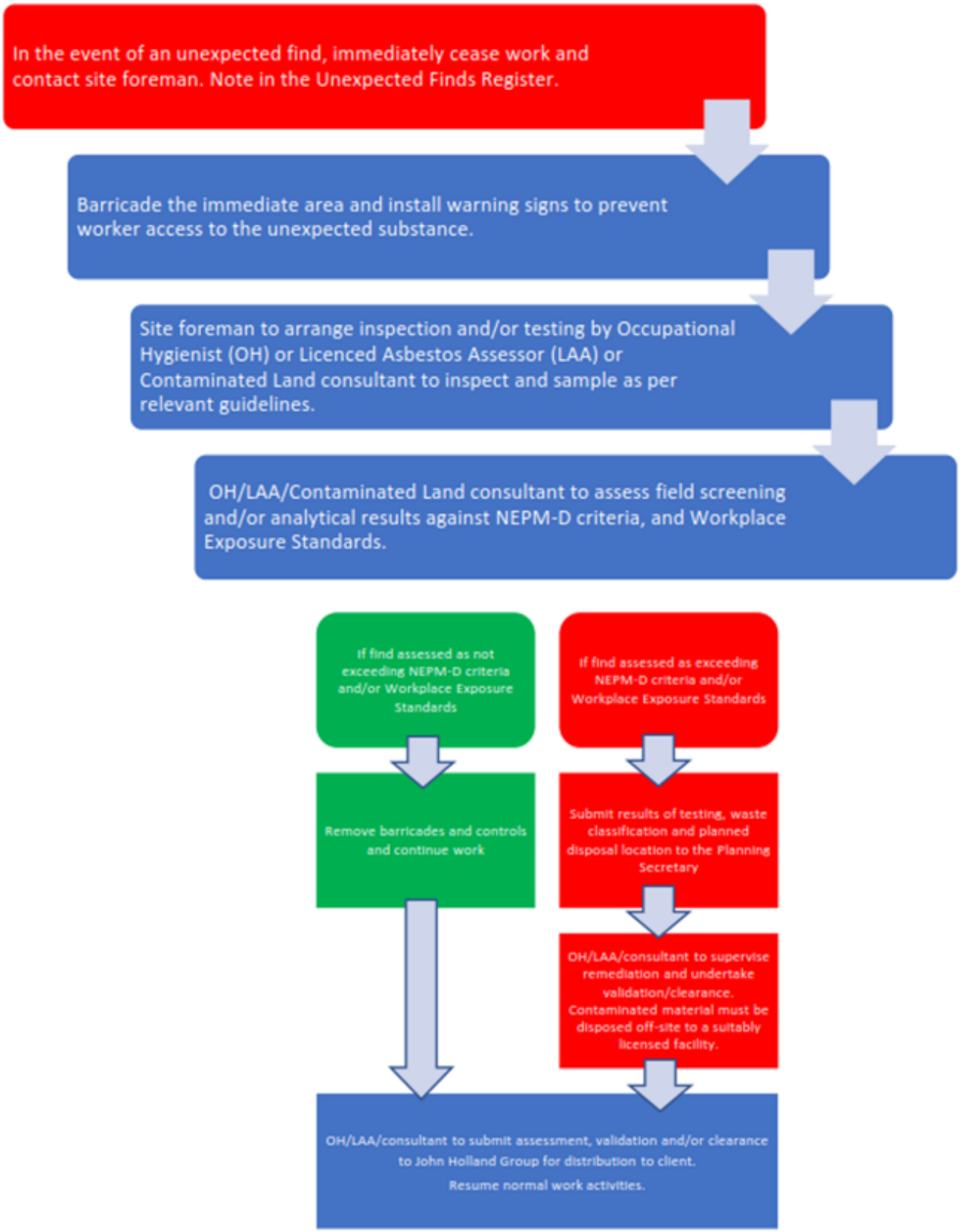
This Unexpected Contamination Finds Protocol (the Protocol) outlines the work requirements in the event of unexpected finds occurring during construction at the Shoalhaven District Memorial Hospital.

The aim of this Protocol is to manage the risk of potential exposure to asbestos/hazardous materials and limit disturbance from unexpected finds. All subcontractors are to adopt this protocol into their own site-specific SWMS based on individual tasks and associated risks where needed.

This Protocol has been prepared to satisfy Condition B16(b) in the Shoalhaven District Memorial Hospital development consent 35999468.

This unexpected finds protocol is also applicable to findings of potential heritage items. Based on findings of site history and site contamination investigation works undertaken at the site, unexpected finds which could reasonably occur within the site are summarised below.

Potential Unexpected Find	Observed Characteristic
Buried dry waste materials including asbestos	May include a variety of waste materials including wood, plastic, metal fragments, building rubble (e.g. concrete, brick, asphalt, forms of asbestos etc.).
Buried putrescible wastes	Putrescible waste materials typically comprise decomposed organic waste materials intermixed within the fill materials on site, with an associated characteristic rotten egg type odour. Such materials should not be confused with decomposed plant matter and/or marine sediments found within the natural sandy soils.
Previous site structures	- A buried tank or former process pipelines; - Deeper sand fill sometimes with visual/ olfactory indications of contamination - Presence of small concrete footings surrounded by odorous or visually impacted soils and/ or groundwater
Hydrocarbon Compounds	May be identified by a hydrocarbon odour which may vary in strength from weak (just detectable) to very strong (easily detectable at a distance from the source). The odour may or may not be accompanied by specific areas of dark staining (black-grey) or larger scale discolouration of strata from a previously identified 'natural colour' e.g. staining of orange and brown clay to dark grey and green. May also be visible as a distinct coloured sheen on water within an excavation.
Other unusual odours	Solvent/acetone odour Alcohol odour Caustic odour Acidic (Acetic/Formic/Citric) odour Ammonia odour Sulphur (rotten egg) odour


In the event of an unexpected find, immediately cease work and contact site foreman. Note in the Unexpected Finds Register.
Barricade the immediate area and install warning signs to prevent worker access to the unexpected substance.
Site foreman to arrange inspection and/or testing by Occupational Hygienist (OH) or Licenced Asbestos Assessor (LAA) or Contaminated Land consultant to inspect and sample as per relevant guidelines.
OH/LAA/Contaminated Land consultant to assess field screening and/or analytical results against NEPM-D criteria, and Workplace Exposure Standards.
If find assessed as not exceeding NEPM-D criteria and/or Workplace Exposure Standards
If find assessed as exceeding NEPM-D criteria and/or Workplace Exposure Standards
Remove barricades and controls and continue work
Submit results of testing, waste classification and planned disposal location to the Planning Secretary
OH/LAA/consultant to supervise remediation and undertake validation/clearance. Contaminated material must be disposed off-site to a suitably licensed facility.
OH/LAA/consultant to submit assessment, validation and/or clearance to John Holland Group for distribution to client.
Resume normal work activities.

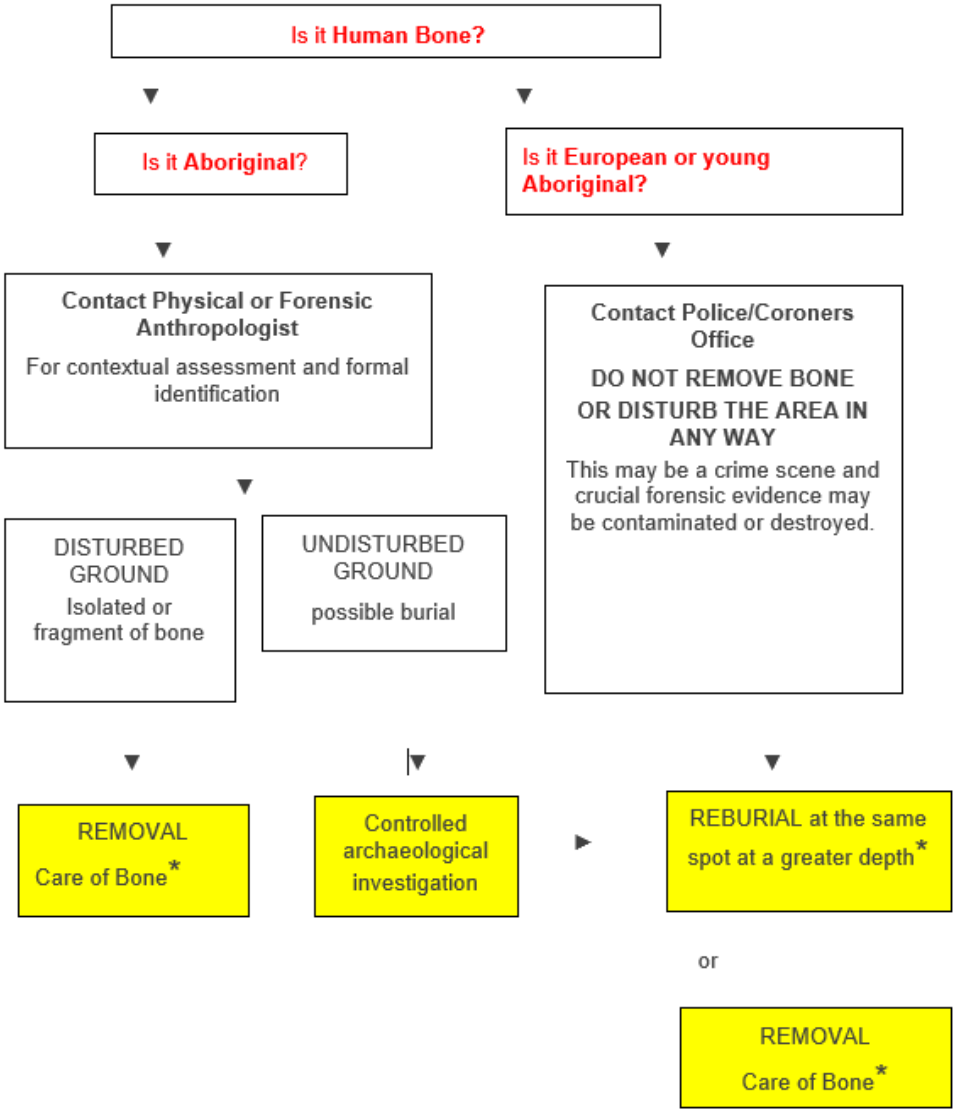
14 Appendix 6: Unexpected Finds Protocol – Heritage

UNEXPECTED FINDS PROTOCOL

Unexpected Find items can include a potential Aboriginal burial site [Grave Cut, isolated bone or accompanying burial paraphernalia] or item of heritage or archaeological significance including unidentified bone fragments, non-local or brought in stone material, stone artefacts or, geomorphological anomalies [not expected at this site]. Unexpected finds items can also include archaeological relics including pottery, fragments of structures, bottles etc.

1. Cease work in the area immediately if a potential item has been discovered.
2. Contact the Site Manager, Construction Manager or PER Immediately. JSP and HI to be notified by JHG team.
3. Erect barricades to isolate the immediate area and prevent entry. Establish a buffer of 10m between the item and the barrier (as a minimum where possible)
4. The appropriate regulatory authorities/specialist will be notified as soon as possible. A suitably qualified archaeologist and the registered Aboriginal representative must be contacted to determine significance of the objects. If suspected historic heritage an archaeological assessment and management strategy may be required before further works can continue as determined in consultation with Heritage NSW
5. No person is to enter the barricaded area unless expressly permitted by the specialist Heritage Advisor/NSW Heritage/ Archaeologist. A clearance certificate or approval should be given in writing prior to entry. Sampling / inspection of the find is to be carried out by the specialist/authority as advised by the John Holland Group Construction Manager.
6. The nominated specialist Heritage Advisor/NSW Heritage/ Archaeologist in liaison with John Holland Group Construction Manager and senior site personnel and/or relevant authorities will determine if further management actions are necessary based on an available information.
7. If determined to be of significance or identified as a New aboriginal Object the site is to be registered in the Aboriginal heritage Information Management System, including management outcomes.
8. Consultation must be carried out with the Aboriginal community representatives, the archaeologists, and Heritage NSW as relevant to develop and implement management strategies. All permits to carry out additional actions are to be obtained prior to the commencement of any new works and the nominated specialist/authority must provide written clearance approval. It should be noted such approval may require an Aboriginal Heritage Impact Permit [NSW Heritage AHIP]. Works may only recommence with the written approval of the Planning Secretary
9. The barricade may then be removed, and work activities may resume under the direction of the John Holland Construction Manager and the Specialist Heritage advisor and NSW Heritage.
10. Construction works may then re-commence.

Chart showing steps to follow when bone is uncovered:



* These procedures to be determined by LaPerouse LALC

15 Appendix 7: EMP Preparation Checklist

Requirement	Plan reference	Yes/No/Not applicable
Document preparation and endorsement		
Has the EMP been prepared in consultation with all relevant stakeholders as per the requirements of the conditions of consent? (Section 4.1)		N/A
Have the views of the relevant stakeholders been taken into consideration? Have appropriate amendments been made to the EMP and does the EMP clearly identify the location of any changes? (Section 4.1)		N/A
Has the EMP been internally approved by an authorised representative of the proponent or contractor? (Section 4.2)	Cover page	Yes
Version and content		
Does the EMP describe the proponent's Environmental Management System (EMS) (if any), and identify how the EMP relates to other documents required by the conditions of consent? (Section 3.5.1)	Appendix 3 Section 4.4	Yes
Does the EMP include the required general content and version control information? (Section 3.1)	Section 1 Cover page	Yes
Does the EMP have an introduction that describes the project, scope of works, site location and any staging or timing considerations? (Section 3.2)	Section 2.1 Section 2.4	Yes
Does the EMP reference the project description? (Section 3.3)	Section 2.4	Yes
Does the EMP reference a Community and Stakeholder Engagement Plan (or similar) or include community and stakeholder engagement actions (if required)? (Section 3.4)	Section 4.6	Yes
Have all other relevant approvals been identified? Has appropriate information been provided regarding how each approval is relevant? (Section 4)	Section 3.2	Yes
Has the environmental management structure and responsibilities been included? (Section 3.5.2)	Section 3.1	Yes
Does the EMP include processes for training of project personnel and identify how training and awareness needs will be identified? (Section 3.5.3)	Section 3.4	Yes
Does the EMP clearly identify the relevant legal and compliance requirements that relate to the EMP? (Section 3.5.3)	Section 3.2	Yes
Does the EMP include all the conditions of consent to be addressed by the EMP and identify where in the EMP each requirement has been addressed? (Section 3.5.13)	Table 1 Section 2.3	Yes
Have all relevant guidelines, policies and standards been identified, including details of how they are relevant? (Section 3.5)	Section 3.2	Yes
Is the process that will be adopted to identify and analyse the environmental risks included? (Section 3.5.5)	Section 4.4 and 5.6	Yes
Have all the environmental management measures in the EIA been directly reproduced into the EMP? (Section 3.5.7)	Table 3 Section 2.3.1	Yes
Have any additional environmental management measures been included in the EMP? (Section 3.5.7)	Appendix 3 and 4	Yes

Requirement	Plan reference	Yes/No/Not applicable
Have environmental management measures been written in committed language? (Section 3.5.7)	Section 4.5	Yes
Have project environmental management measures, including hold points, been identified and included? (Section 3.5.6)	Section 4.5 Appendix 4	Yes
Are relevant details of environmental monitoring that will be carried out included? (Section 3.5.8)	Section 5.5 Appendix 4	Yes
Have the components of any environmental monitoring programs been incorporated? (Section 3.5.8)	Section 5.1 Appendix 4	Yes
Are environmental inspections included? (Section 3.5.9)	Section 5.1	Yes
Does the EMP document all relevant compliance monitoring and reporting requirements for the project? (Section 3.5.12 and 3.5.13)	Section 5.1 and 5.2	Yes
Does the EMP describe the types of plans or maps (such as environmental control maps) that will be used to assist with the management of environmental matters on site? (Section 3.5.10)	Section 4.7 Appendix 4	Yes
Does the EMP list environmental management documents? (Section 3.5.11)	Appendix 3 Appendix 4	Yes
Is an auditing program referenced? (Section 3.5.13)	Section 5.3	Yes
Does the EMP include the incident notification and reporting protocols that comply with the relevant conditions of consent? (Section 3.5.15)	Section 5.4	Yes
Does the EMP identify the project role/position that is responsible for deciding whether an occurrence is an incident? (Section 3.5.15)	Section 5.4.1	Yes
Does the EMP describe a corrective and preventative action process that addresses the requirements? (Section 3.5.16)	Section 5.4	Yes
Does the EMP include details of a review and revision process that complies with the requirements? (Section 3.6)	Section 5.5 and 5.6	Yes

16 Appendix 8: Erosion Sediment Control Plan - (ESCP)

EROSION AND SEDIMENT CONTROL PLAN

BACKGROUND

This is an Erosion and Sediment Control Plan (ESCP) that describes the on-ground erosion and sediment controls required for John Holland's works at the Shoalhaven Hospital Redevelopment site, NSW. This ESCP has been prepared to accord with the guidelines and principles in the NSW Blue Book (Landcom, 2004).

This ESCP must be read in conjunction with the relevant specifications and design drawings.

Underlying residual soils at the site are mapped as being from the Nowra Soil Landscape. The Nowra Soil Landscape has dispersive subsoils.

This ESCP is to be updated as works progress to ensure that the installed controls are applicable to the inherent risk and the nature of the works underway.

EROSION HAZARD ASSESSMENT SITE ESTABISHMENT

The Site erosion hazard is determined by the Revised Universal Soil Loss Equation (RUSLE) as follows:

A = R x K x LS x P x C

A = Computed soil loss (t/ha/yr)
R = Rainfall erosivity factor (4250 adopted)
K = Soil erodibility factor (0.047 based on soil data presented in Hazelton (1992) and Landcom (2004))
LS = Slope length and gradient (1.47 (80m, 6%))
P = Soil conservation factor (1.3 adopted)
C = Ground cover factor (1 adopted)

Based on the above data, the potential soil loss for this site is approx. 382 t/ha/yr.

The project now has three (3) disturbed catchments of approx. 0.16 ha (CA1 – northern site area), 0.23 ha (CA2 – main building area draining into OSD) and 0.3 ha (CA3 – south eastern corner of site). Many of the surfaces across the site have now been sealed/stabilised.

Under Blue Book standards, a sediment basin is required if the soil loss in any catchment is >200 t/yr. Based on the above, the potential soil loss in each catchment is approx. 61.1 t/yr (CA1), 87.9 t/yr (CA2) and 114.6 t/yr (CA3). Therefore, sediment basins are not required for any of these catchments as the soil loss for each is <200 t/yr.

GENERAL INSTRUCTIONS

1. This plan is to be read in conjunction with other relevant environmental documentation for the project (e.g. CEMP, SWMP, EWMS etc.)
2. Weather forecasts are to be monitored daily and the site prepared to minimise erosion, control drainage, and maximize sediment capture during rain events. Erosion and sediment controls removed or damaged during construction are to be repaired or reinstated prior to forecast rain.
3. Erosion and sediment controls are to be implemented as part of initial site works, except as noted in this plan.
4. Minimise disturbance at any one time to only what is necessary for safe and efficient construction. Do not disturb new areas when rain is imminent unless appropriate controls can be implemented prior to rain occurring.
5. Establish stockpile areas in accordance with Blue Book Standard Drawing SD 4-1 on ESCP03. Exact locations TBC onsite.
6. Undertake dust suppression as required to minimise dust rise.
7. Regular site inspections are to be conducted by the site environment manager (or their representative) of temporary controls and general site conditions and records of all such inspections are to be retained onsite. Inspections are to be undertaken:
   - 7.1. At least weekly during normal construction hours; and
   - 7.2. Prior to forecast rainfall (>50% chance of 10mm or more in 24 hours); and
   - 7.3. Daily during rain events (if safe to do so); and
   - 7.4. Within 24 hours of the cessation of a rain event that causes runoff (if safe to do so).
8. Undertake progressive stabilisation of lands as final earthworks are completed in each area (rather than waiting until the completion of works).
   - 8.1. Final rehabilitation is to achieve the C-factors (ground cover) detailed below:
     - 8.1.1. C-factor of 0.1 (>= 60% ground cover) within 20 days; and
     - 8.1.2. C-factor of 0.05 (at least 70% ground cover) within 2 months/at completion of works.
   - 8.2. Areas to be revegetated are to be topsoiled first. Refer to Blue Book Standard Drawing SD 4-2 on ESCP05.
   - 8.3. Appropriate seedbed preparation should be carried out when revegetating lands (See Blue Book Standard Drawing SD 7-1 on ESCP06).
9. As areas are completed (i.e. at least 90% of any finished area has at least 70% final ground cover), temporary sediment and drainage controls can be decommissioned and removed.
10. This plan is to be updated as required to ensure it is relevant to the on-ground works being undertaken.

TOPSOIL STRIPPING AND SOIL MANAGEMENT

Soils are to be stripped and managed in accordance with the following:

- As much as possible soil is to be stripped when moist (not too wet or dry).

All stockpiles must be constructed and maintained in accordance with Blue Book Standard Drawing SD 4-1 (ESCP05) and the following:

- Mulched vegetation, topsoil and subsoil (if applicable) are to be stockpiled separately wherever possible.
- Inactive stockpiles are to be stabilised to achieve a C-factor of 0.1 (i.e – equivalent to 60% grass cover) within 10 days of formation using a biodegradable soil polymer (e.g. Vital Stonewall), geotextile, jute matting or equivalent.
- Topsoil stockpiles should be constructed to no more than 2 meters in height wherever possible.

Stockpiles should be battered down at a maximum slope of 2:1 wherever possible.

OSD / DIRTY WATER HOLDING STRUCTURE

The permanent OSD structure is to be utilised during the construction works as a dirty water holding basin and sediment settlement device. Undertake the following maintenance as required:

10.1. De-water and desilt the OSD if sediment is starting to accumulate. Dewatering is to be undertaken in accordance with the 'Dirty Water Treatment and Discharge Requirements' notes below.
10.2. Material removed from the OSD device must be taken to an active stockpile or spoil dump.

DIRTY WATER TREATMENT AND DISCHARGE REQUIREMENTS

- Any active discharge of water from the project (i.e. where water is moved offsite via direct action such as pumping rather than flowing off the project as a result of heavy rainfall) is to achieve:
  - 50 mg/L or less TSS (Total Suspended Solids) or 50 NTU; and
  - pH 6.5 to 8.5; and
  - no visible trace of oil or grease.
- Flocculation might be achieved by using gypsum at a rate of approximately 30kg/100m^3 of stormwater. Alternative flocculating agents can only be used if safe to do so and appropriate dosing procedures are in place. Refer to manufacturers guidelines for dosage details.
- Ensure that flocculant/coagulant is thoroughly mixed/diluted with water prior to spreading evenly over the entire pond surface for proper treatment of water. Dirty water from the basin can be used for mixing the flocculant/coagulant.

DOCUMENT CERTIFICATION

This plan has been developed based on agreed requirements as understood by SEEC at the time of engagement. It applies only to a specific task on the nominated lands. Other interpretations should not be made, including changes in scale or application to other projects. Changes to the project scope or extent might impact on the validity of this plan.

Any recommendations contained in this plan are based on an honest appraisal of the opportunities and constraints that existed at the site at the time of investigation, or as advised to us. Such recommendations are potentially subject to the limited scope and resources available.

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS
02	26/09/24	A.T.	A.T.	A.M.	FINALISED ESCP ISSUE
01	24/09/24	A.T.	A.T.		DRAFT – REVISED FOR CURRENT SITE CONDITIONS
00	04/07/23	C.B.	C.B.	A.M.	FINAL ISSUE
B	03/07/23	C.B.	C.B.	A.M.	FINAL DRAFT – AMENDED TO REFLECT CLIENT COMMENT
A	30/06/23	C.B.	C.B.	A.M.	DRAFT ISSUE – FOR REVIEW

DRAWING STATUS

DESIGN BY	A.T.
DRAWN BY	A.T.
FINAL APPROVAL	A.M.
SCALE: (on A3 Original)	N.T.S.

FINAL

North

CLIENT: JOHN HOLLAND

SEEC
Suites 7 & 8, 68-70 Station Street
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PROJECT TITLE: SHOALHAVEN HOSPITAL REDEVELOPMENT

DRAWING TITLE: EROSION AND SEDIMENT CONTROL BACKGROUND AND GENERAL INSTRUCTIONS – SHEET 1 OF 5

PROJECT NO.	SUB-PR NO.	DRAWING NO.	REV
23000207	P01	ESCP01	02

Plot Date: Thursday, September 26, 2024 2:38:08 PM CAD File Name: L:\23000207 Shoalhaven Hospital Redevelopment\Drawings\23000207_P01_ESCP_REV 02.dwg

LEGEND:

- SITE BOUNDARY
- SEDIMENT FENCE (BLUE BOOK SD 6-8 ON ESCP03) OR MULCH/EARTH BUND MIN. 600mm HIGH (DETAIL 1 AND IECA SD MB-01 ON ESCP05). RETURNS/CHECKS BUNDS PROVIDED AT MAX. 20m INTERVALS.
- COIR LOG BUND (IECA SD LOG-01 ON ESCP05) OR ALTERNATIVELY SEDIMENT FENCE, OR EARTH BUND CAN BE INSTALLED AS ABOVE. RETURNS/CHECKS BUNDS PROVIDED AT MAX. 20m INTERVALS.
- PIT PROTECTION (REFER TO IECA SD GB-01 OR SA-01 ON ESCP04 AND BLUE BOOK SD 6-12 ON ESCP05). NOT ALL LOCATIONS SHOWN - TO BE CONFIRMED ONSITE.
- DIRTY WATER FLOW DIRECTION
- CLEAN WATER FLOW DIRECTION
- STABILISED SITE ACCESS/EXIT (BLUE BOOK SD 6-14 ON ESCP04)
- TRAFFICABLE MOUND/BUND - FORMED AS CONCRETE, COLD/HOT MIX BUND (OR SIMILAR). OR PROVIDE A SANDBAG BUND PRIOR TO RAINFALL AND SITE CLOSURE
- STOCKPILE AREA (BLUE BOOK STANDARD DRAWING SD 4-1 ON ESCP03)
- STORMWATER PIPE TAKING CLEAN WATER - APPROX. LOCATION
- PERMANENT OSD STORAGE TANK - USED AS DIRTY WATER HOLDING BASIN DURING CONSTRUCTION
- SURFACES STABILISED WITH SOIL BINDER AND SEEDING, HYDROMULCH OR SIMILAR
- SEALED DRIVEWAY SURFACES - KEPT CLEAN AND STABLE
- BUILDING LOCATION - SEALED SURFACES
- SITE COMPOUND- ROOF/SEALED SURFACES
- LAYDOWN/STORAGE AREAS - SURFACES MAINTAINED STABLE WITH SOIL BINDER (HEAVY APPLICATION), AGGREGATE OR SIMILAR (RE-APPLY AS REQUIRED)
- STABILISED BATTERS - GEOFABRIC, JUTE MATTING, SOIL BINDER (HEAVY APPLICATION)
- NO GO ZONE. NO GROUND DISTURBANCE
- RETAIN VEGETATION/TREES AND MAINTAIN STABILISED SURFACES AS MUCH AS POSSIBLE

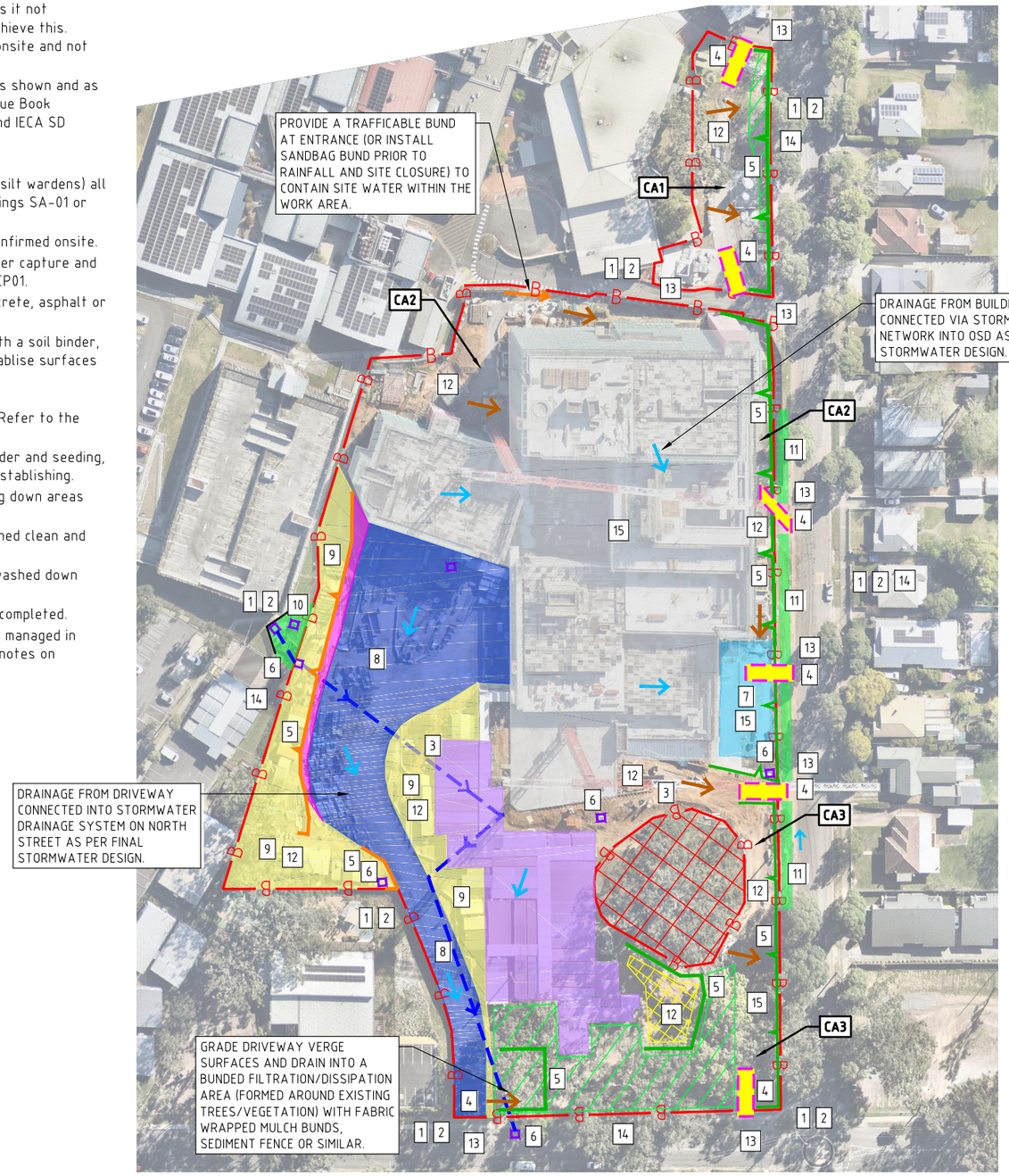
LOCATIONS OF ALL AREAS AND CONTROLS ARE APPROXIMATE ONLY AND ARE TO BE CONFIRMED ONSITE

MINIMISE DISTURBANCE TO ONLY WHAT IS REQUIRED FOR SAFE AND EFFICIENT CONSTRUCTION.

UNDERLYING AERIAL SOURCED FROM NEARMAP (SEPT, 2024).

EROSION AND SEDIMENT CONTROL INSTRUCTIONS

1. Install flagging or survey tape to delineate work limits.
2. Stage disturbance to minimise the amount of exposed area at any one time.
3. Maintain installed stormwater pipe to convey clean water from the upslope headwall and site compound down to North Street. This pipe must be connected to the road side gutter or an active stormwater pit.
4. Install stabilised site access/exit points in the locations shown and anywhere else construction vehicles travel from unsealed areas onto sealed public roads. Refer to Blue Book Standard Drawing 6-14 on ESCP04. Sediment tracking onto local roads it not permissible. Utilise wheel wash (hose down) during inclement weather to achieve this. Ensure runoff from the wheel wash drains into a sediment control device onsite and not into the public/street stormwater system.
5. Install sediment fence, coir log bunds or mulch/earth bunds in the locations shown and as indicated on this plan. Sediment fence to be installed in accordance with Blue Book Standard Drawing SD 6-8 on ESCP03. Mulch/earth bunds (as per Detail 1 and IECA SD MB-01 on ESCP05) or coir log bunds (as per IECA SD Log-01 on ESCP05).
   - 5.1. Ensure returns/checks are provided at max. 20m intervals.
6. Install pit protection around (sediment fence, coir logs or sandbags) or in (silt wardens) all online stormwater pits within the work area. Refer to IECA Standard Drawings SA-01 or GB-01 on ESCP07.
   - 6.1. Note that not all pit locations are shown on the plan and are to be confirmed onsite.
7. Maintain the permanent OSD device already installed and use for dirty water capture and treatment. Refer to the 'OSD/Dirty Water Holding Structure' notes on ESCP01.
8. Driveway surfaces are to be sealed as per the permanent design with concrete, asphalt or similar. Keep surfaces clean and stable at all times.
9. Laydown/storage area surfaces (including batters) are to be stabilised with a soil binder, aggregate or similar. Ensure surfaces are keep stable. Maintain and re-stablise surfaces as necessary.
10. Disturbed surfaces around the upslope stormwater outlet are to be stabilised/rehabilitated by replacing topsoil and hydromulching or similar. Refer to the 'General Instructions' on ESCP01.
11. Disturbed surfaces of the street verge are to be stabilised with a soil binder and seeding, hydromulch or similar. Keep area fenced off with flagging whilst grass is establishing.
12. Dust suppression is to be carried out as required via water carts or hosing down areas to control dust rise.
13. Undertake street sweeping as required to ensure public roads are maintained clean and free of sediments.
    - 13.1. Tracked mud and rocks are to be removed from roads, not swept or washed down stormwater drains/kerbs.
14. Progressively stabilise all batters and drains as each section of works is completed.
15. All dirty water accumulating onsite in low points or within the OSD is to be managed in accordance with the 'Dirty Water Treatment and Discharge Requirements' notes on ESCP01.



0 7.5 15 22.5 30 37.5m

Scale: 1:1500 (A3 SHEET)

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS
02	26/09/24	A.T.	A.T.	A.M.	FINALISED ESCP ISSUE
01	24/09/24	A.T.	A.T.		DRAFT – REVISED FOR CURRENT SITE CONDITIONS
00	04/07/23	C.B.	C.B.	A.M.	FINAL ISSUE
B	03/07/23	C.B.	C.B.	A.M.	FINAL DRAFT – AMENDED TO REFLECT CLIENT COMMENT
A	30/06/23	C.B.	C.B.	A.M.	DRAFT ISSUE – FOR REVIEW

DRAWING STATUS

DESIGN BY	A.T.
DRAWN BY	A.T.
FINAL APPROVAL	A.M.
SCALE: (on A3 Original)	1:1000

FINAL

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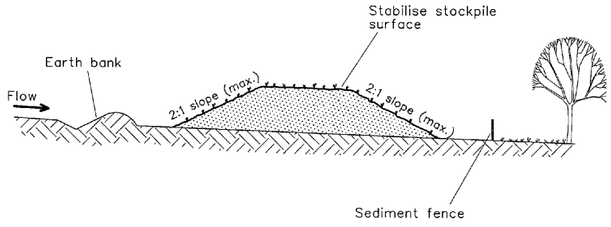
PROJECT TITLE: SHOALHAVEN HOSPITAL REDEVELOPMENT

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN SHEET 2 OF 5

PROJECT NO.	SUB-PR NO.	DRAWING NO.	REV
23000207	P01	ESCP02	02

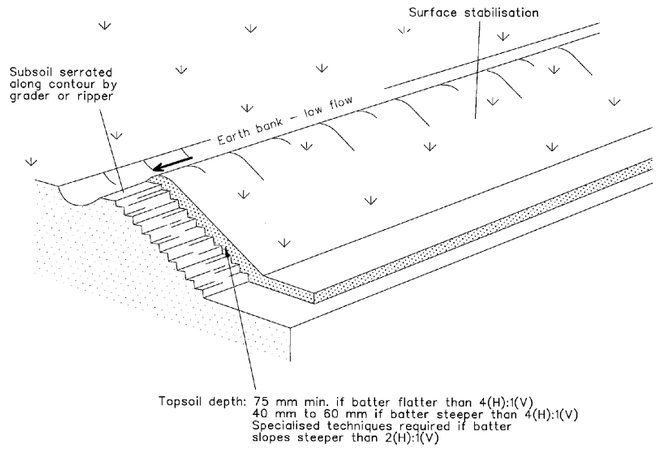
Plot Date: Thursday, September 26, 2024 2:38:12 PM CAD File Name: L:\23000207 Shoalhaven Hospital Redevelopment\Drawings\23000207_P01_ESCP_REV 02.dwg



Construction Notes

1. Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
2. Construct on the contour as low, flat, elongated mounds.
3. Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
4. Where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
5. Construct earth banks (Standard Drawing 5-5) on the upslope side to divert water around stockpiles and sediment fences (Standard Drawing 6-8) 1 to 2 metres downslope.

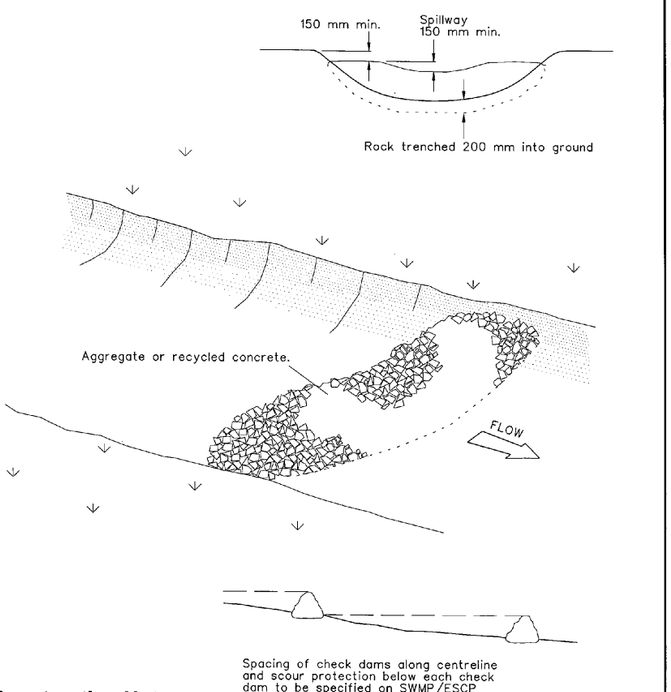
STOCKPILES — SD 4-1



Construction Notes

1. Scarify the ground surface along the line of the contour to a depth of 50 mm to 100 mm to break up any hardsetting surfaces and to provide a good bond between the respread material and subsoil.
2. Add soil ameliorants as required by the ESCP or SWMP.
3. Rip to a depth of 300 mm if compacted layers occur.
4. Where possible, replace topsoil to a depth of 40 to 60 mm on lands where the slope exceeds 4(H):1(V) and to at least 75 mm on lower gradients.

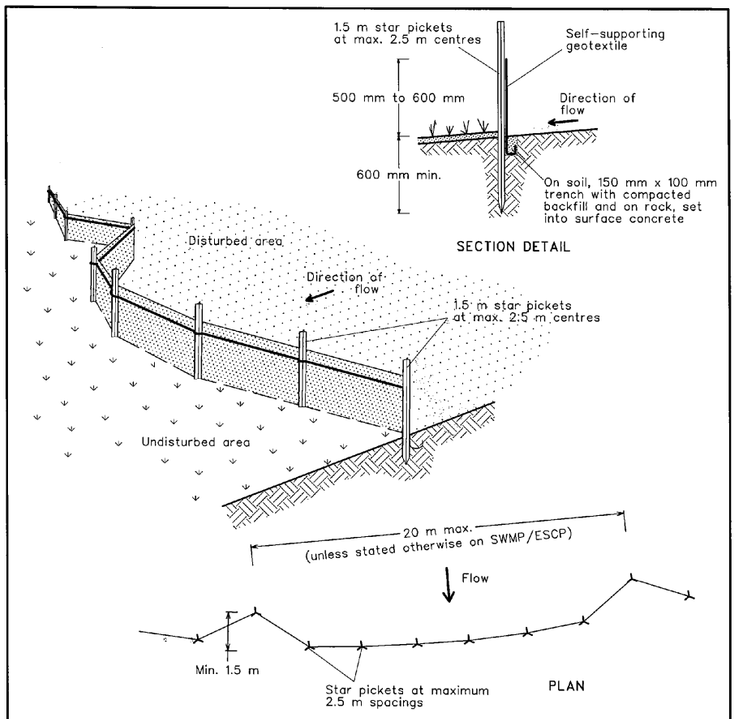
REPLACING TOPSOIL — SD 4-2



Construction Notes

1. Check dams can be built with various materials, including rocks, logs, sandbags and straw bales. The maintenance program should ensure their integrity is retained, especially where constructed with straw bales. In the case of bales, this might require their replacement each two to four months.
2. Trench the check dam 200 mm into the ground across its whole width. Where rock is used, fill the trenches to at least 100 mm above the ground surface to reduce the risk of undercutting.
3. Normally, their maximum height should not exceed 600 mm above the gully floor. The centre should act as a spillway, being at least 150 mm lower than the outer edges.
4. Space the dams so the toe of the upstream dam is level with the spillway of the next downstream dam.

ROCK CHECK DAM — SD 5-4



Construction Notes

1. Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
2. Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
3. Drive 1.5 metre long star pickets into ground at 2.5 metre intervals (max) at the downslope edge of the trench. Ensure any star pickets are fitted with safety caps.
4. Fix self-supporting geotextile to the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextile with wire ties or as recommended by the manufacturer. Only use geotextile specifically produced for sediment fencing. The use of shade cloth for this purpose is not satisfactory.
5. Join sections of fabric at a support post with a 150-mm overlap.
6. Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile.

SEDIMENT FENCE — SD 6-8

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A	30/06/23	C.B.	C.B.	A.M.	DRAFT ISSUE – FOR REVIEW

DRAWING STATUS: **FINAL**

DESIGN BY: A.T.
DRAWN BY: A.T.
FINAL APPROVAL: A.M.

SCALE: N.T.S.
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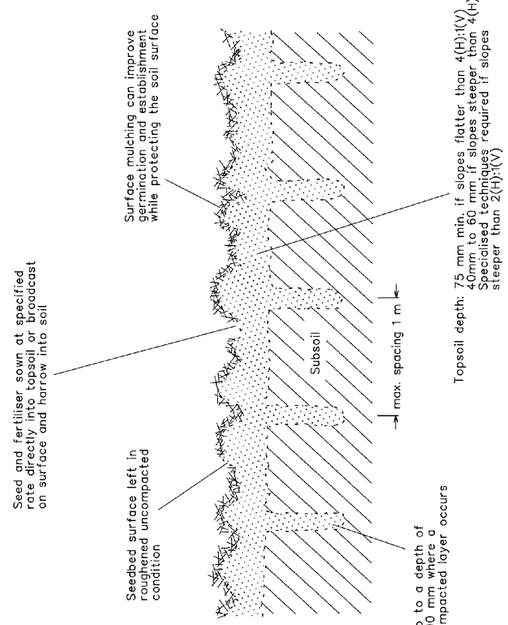
PROJECT TITLE: SHOALHAVEN HOSPITAL REDEVELOPMENT

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN – BLUE BOOK STANDARD DRAWINGS SHEET 3 OF 5

PROJECT NO.	SUB-PR NO.	DRAWING NO.	REV
23000207	P01	ESCP03	02

Plot Date: Thursday, September 26, 2024 2:38:15 PM CAD File Name: L:\23000207 Shoalhaven Hospital Redevelopment\Drawings\23000207_P01_ESCP_REV 02.dwg

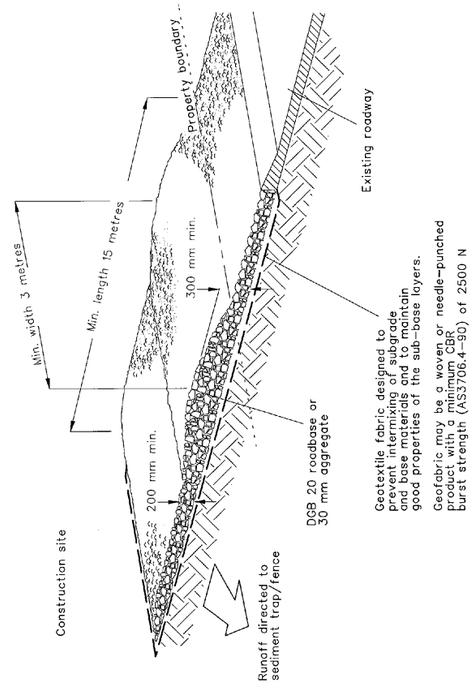


Construction Notes

1. Loosen compacted soil before sowing any seed. If necessary, rip the soil to a depth of 300 mm. Avoid rotary hoe cultivation.
2. Work the ground only as much as necessary to achieve the desired tilth and prepare a good seedbed.
3. Avoid cultivation in very wet or very dry conditions.
4. Cultivate on or close to the contour where possible, not up and down the slope.

SEEDBED PREPARATION

SD 7-1



Construction Notes

1. Strip the topsoil, level the site and compact the subgrade.
2. Cover the area with needle-punched geotextile.
3. Construct a 200-mm thick pad over the geotextile using road base or 30-mm aggregate.
4. Ensure the structure is at least 15 metres long or to building alignment and at least 3 metres wide.
5. Where a sediment fence joins onto the stabilised access, construct a hump in the stabilised access to divert water to the sediment fence

STABILISED SITE ACCESS

SD 6-14

INSTALLATION

THE FOLLOWING A GENERAL INSTALLATION REQUIREMENTS. OPERATORS SHOULD OBTAIN INSTALLATION INSTRUCTIONS FROM THE GULLY BAG MANUFACTURER OR DISTRIBUTER.

1. REFER TO APPROVED PLANS FOR LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.

2. ENSURE THAT THE INSTALLATION OF THE SEDIMENT TRAP WILL NOT CAUSE UNDESIRABLE SAFETY OR FLOODING ISSUES.

3. INSTALL SEDIMENT TRAP IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

4. ENSURE THAT NO SEDIMENT-LADEN INFLOW IS ALLOWED TO BYPASS THE GULLY BAG UNTIL THE BAG IS EITHER FULL OF SEDIMENT, OR THE INFLOW EXCEEDS THE HYDRAULIC CAPACITY OF THE BAG.

5. INSTALL APPROPRIATE SEDIMENT AND/OR FLOW CONTROLS ON THE SIDE-ENTRY SLOT (IF ANY).

6. TAKE ALL NECESSARY MEASURE TO MINIMISE THE SAFETY RISK CAUSED BY THE STRUCTURE.

MAINTENANCE

1. INSPECT ALL SEDIMENT TRAPS DAILY AND IMMEDIATELY AFTER RUNOFF-PRODUCING RAINFALL. MAKE REPAIRS AS NEEDED.

2. REMOVE AND REPLACE THE GULLY BAG WHEN IT IS EITHER FULL OF SEDIMENT, OR IS LIKELY TO BE FULL OF SEDIMENT BEFORE THE NEXT INSPECTION, OR THE HYDRAULIC CAPACITY OF THE FILTER BAG IS EXCESSIVELY REDUCED.

3. DISPOSE OF THE SEDIMENT AND FILTER BAG IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

4. ENSURE SEDIMENT DOES NOT ENTER THE STORMWATER DRAIN DURING DE-SILTING OPERATIONS AND MAINTENANCE OF THE TRAP.

5. SEDIMENT ON THE ROAD MUST BE REMOVED IMMEDIATELY IF IT REPRESENTS A SAFETY HAZARD.

REMOVAL

1. WHEN THE UP-SLOPE DRAINAGE AREA HAS BEEN STABILISED, REMOVE ALL MATERIALS INCLUDED DEPOSITED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

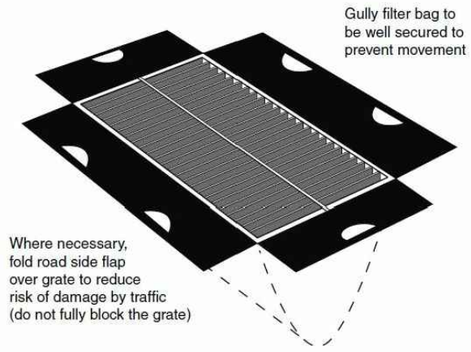


Figure 1 - Gully filter bag

Drawn:	Date:		
GMW	Dec-09	Gully Filter Bag	GB-01

INSTALLATION

1. REFER TO APPROVED PLANS FOR LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.

2. ENSURE THAT THE INSTALLATION OF THE SEDIMENT TRAP WILL NOT CAUSE UNDESIRABLE SAFETY OR FLOODING ISSUES.

3. INSTALL SEDIMENT TRAP IN ACCORDANCE WITH STANDARD DRAWING SUPPLIED WITH THE APPROVED PLAN, OR AS DIRECTED BY THE SITE SUPERVISOR.

4. ENSURE THE SEDIMENT TRAP FULLY ENCLOSES THE KERB INLET. USE APPROPRIATE SPACERS TO ENSURE THE SEDIMENT TRAP DOES NOT BLOCK THE SIDE-ENTRY INLET.

5. IF NECESSARY, INSTALL ADDITIONAL 'ON-GRADE KERB INLET SEDIMENT TRAPS' UP-SLOPE OF THE SAG INLET TO ADEQUATELY RETAIN THE EXPECTED QUANTITY OF SEDIMENT RUNOFF.

6. TAKE ALL NECESSARY MEASURE TO MINIMISE THE SAFETY RISK CAUSED BY THE STRUCTURE.

MAINTENANCE

1. INSPECT ALL SEDIMENT TRAPS DAILY AND IMMEDIATELY AFTER RUNOFF-PRODUCING RAINFALL. MAKE REPAIRS AS NEEDED.

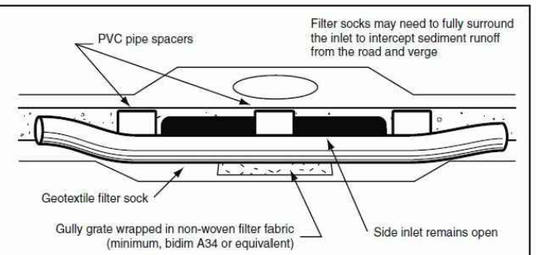
2. REMOVE COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

3. ENSURE SEDIMENT DOES NOT ENTER THE STORMWATER DRAIN DURING DE-SILTING OPERATIONS AND MAINTENANCE OF THE TRAP.

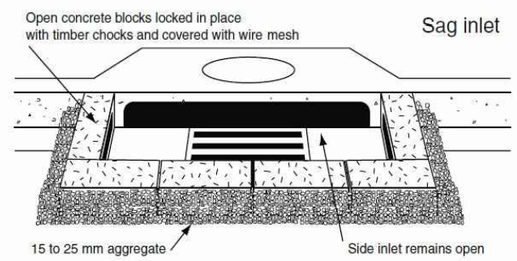
4. SEDIMENT ON THE ROAD SHALL BE REMOVED IMMEDIATELY IF IT REPRESENTS A SAFETY HAZARD.

REMOVAL

1. WHEN THE UP-SLOPE DRAINAGE AREA HAS BEEN STABILISED, REMOVE ALL MATERIALS INCLUDED DEPOSITED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.



(a) Filter sock sediment trap on a sag inlet



(b) Block and aggregate type sediment trap on a sag inlet

Drawn:	Date:		
GMW	Dec-09	Sag Kerb Inlet Sediment Trap	SA-01

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS
02	26/09/24	A.T.	A.T.	A.M.	FINALISED ESCP ISSUE
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DRAWING STATUS

DESIGN BY	A.T.
DRAWN BY	A.T.
FINAL APPROVAL	A.M.
SCALE: (on A3 Original)	N.T.S.

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PROJECT TITLE

SHOALHAVEN HOSPITAL REDEVELOPMENT

DRAWING TITLE

EROSION AND SEDIMENT CONTROL PLAN – STANDARD DRAWINGS SHEET 4 OF 5

PROJECT NO.	SUB-PR NO.	DRAWING NO.	REV
23000207	P01	ESCP04	02

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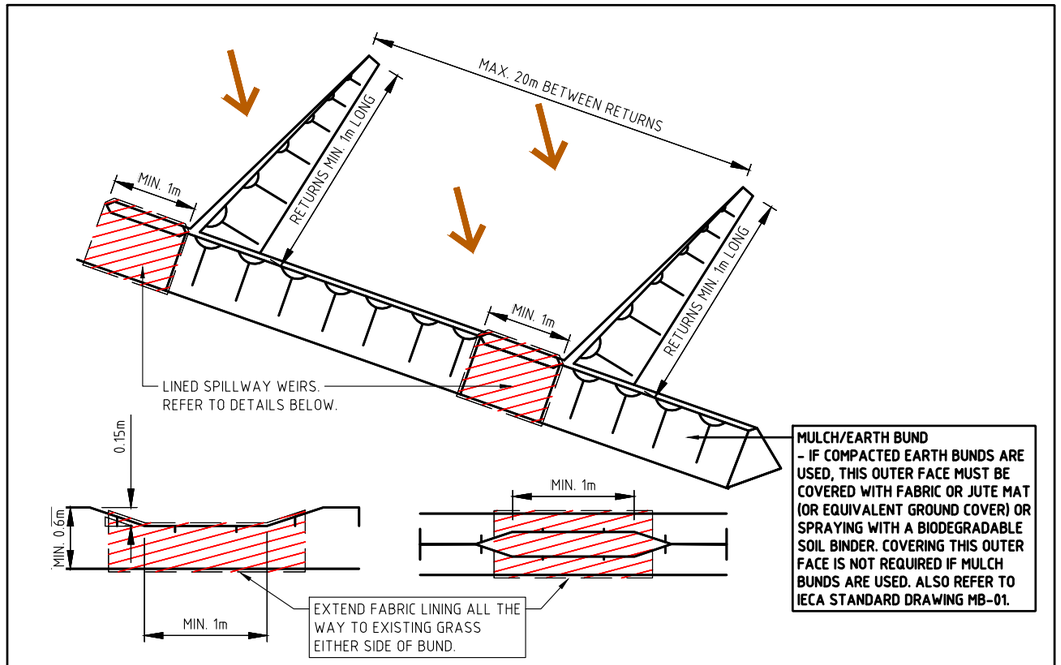
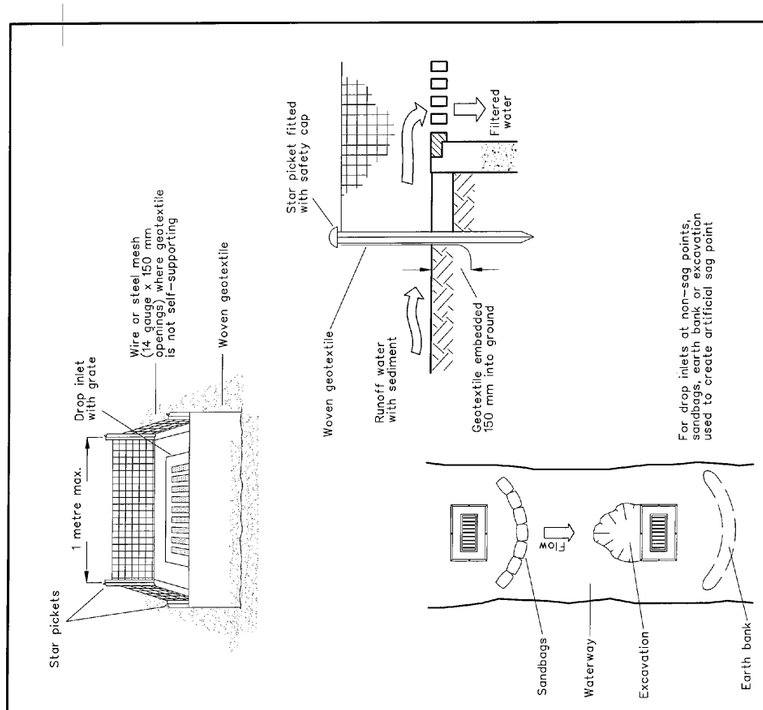


DETAIL 1 - TYPICAL MULCH/EARTH BUND



Construction Notes

1. Fabricate a sediment barrier made from geotextile or straw bales.
2. Follow Standard Drawing 6-7 and Standard Drawing 6-8 for installation procedures for the straw bales or geofabric. Reduce the picket spacing to 1 metre centres.
3. In waterways, artificial sag points can be created with sandbags or earth banks as shown in the drawing.
4. Do not cover the inlet with geotextile unless the design is adequate to allow for all waters to bypass it.

GEOTEXTILE INLET FILTER

SD 6-12

MATERIALS

(i) MULCH MUST COMPLY WITH THE REQUIREMENTS OF AS4454.

(ii) MAXIMUM SOLUBLE SALT CONCENTRATION OF 5dS/m.

(iii) MOISTURE CONTENT OF 30 TO 50% PRIOR TO APPLICATION.

INSTALLATION

1. REFER TO APPROVED PLANS FOR LOCATION AND EXTENT. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, MATERIAL TYPE, OR METHOD OF INSTALLATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.

2. WHEN SELECTING THE LOCATION OF A MULCH FILTER BERM, TO THE MAXIMUM DEGREE PRACTICAL, ENSURE THE BERM IS LOCATED:

(i) TOTALLY WITHIN THE PROPERTY BOUNDARIES;

(ii) ALONG A LINE OF CONSTANT ELEVATION (PREFERRED, BUT NOT ALWAYS PRACTICAL);

(iii) AT LEAST 1m, IDEALLY 3m, FROM THE TOE OF A FILL EMBANKMENT;

(iv) AWAY FROM AREAS OF CONCENTRATED FLOW.

3. ENSURE THE BERM IS INSTALLED IN A MANNER THAT AVOIDS THE CONCENTRATION OF FLOW ALONG THE BERM, OR THE UNDESIRABLE DISCHARGE OF WATER AROUND THE END OF THE BERM.

4. ENSURE THE BERM HAS BEEN PLACED SUCH THAT PONDING UP-SLOPE OF THE BERM IS MAXIMISED.

5. ENSURE BOTH ENDS OF THE BERM ARE ADEQUATELY TURNED UP THE SLOPE TO PREVENT FLOW BYPASSING PRIOR TO WATER PASSING OVER THE BERM.

6. ENSURE 100% CONTACT WITH THE SOIL SURFACE.

7. WHERE SPECIFIED, TAKE APPROPRIATE STEPS TO VEGETATE THE BERM.

MAINTENANCE

1. DURING THE CONSTRUCTION PERIOD, INSPECT ALL BERMS AT LEAST WEEKLY AND AFTER ANY SIGNIFICANT RAIN. MAKE NECESSARY REPAIRS IMMEDIATELY.

2. REPAIR OR REPLACE ANY DAMAGED SECTIONS.

3. WHEN MAKING REPAIRS, ALWAYS RESTORE THE SYSTEM TO ITS ORIGINAL CONFIGURATION UNLESS AN AMENDED LAYOUT IS REQUIRED OR SPECIFIED.

4. REMOVE ACCUMULATED SEDIMENT IF THE SEDIMENT DEPOSIT EXCEEDS A DEPTH OF 100mm OR 1/3 THE HEIGHT OF THE BERM.

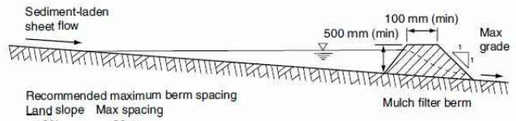
5. DISPOSE OF SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

REMOVAL (IF REQUIRED)

1. WHEN DISTURBED AREAS UP-SLOPE OF THE BERM ARE SUFFICIENTLY STABILISED TO RESTRAIN EROSION, THE BERM MAYBE REMOVED.

2. REMOVE ANY COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

3. REHABILITATE/REVEGETATE THE DISTURBED GROUND AS NECESSARY TO MINIMISE THE EROSION HAZARD.



Recommended maximum berm spacing

Land slope	Max spacing
< 2%	30 m
5%	25 m
10%	15 m
20%	8 m

Figure 1 - Typical placement of mulch filter berm

Drawn:	Date:		
GMW	Apr-10	Mulch Filter Berms	MB-01

MATERIALS

GEO LOGS: MANUFACTURED FROM 100% JUTE, COIR (COCONUT FIBRE) OR A COMBINATION OF BOTH.

STAKES: MINIMUM 50 X 50mm X 0.9m HARDWOOD. STAKE LENGTH AND WIDTH MAY NEED TO VARY SLIGHTLY DEPENDING ON THE GROUND CONDITIONS.

INSTALLATION

1. REFER TO APPROVED PLANS FOR LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS OR METHOD OF INSTALLATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.

2. PRIOR TO INSTALLATION ON CHANNEL/RIVER BANKS, PLACE A SUITABLE EROSION CONTROL MAT OVER ANY AREA WHERE THE LOGS ARE TO BE PLACED ABOVE AN EXPOSED SOIL.

3. WHEN PLACED ACROSS THE INVERT OF DRAINAGE CHANNELS, ENSURE THE LOGS ARE PLACED SUCH THAT:
(i) THE CREST OF THE DOWNSTREAM LOG IS LEVEL WITH THE CHANNEL INVERT AT THE IMMEDIATE UPSTREAM SOCK (IF ANY).
(ii) EACH LOG CHECK DAM EXTENDS UP THE CHANNEL BANKS SUCH THAT THE CREST OF THE CHECK DAM AT ITS LOWEST POINT IS LOWER THAN GROUND LEVEL AT EITHER END OF THE CHECK DAM.

4. WHEN PLACED ALONG A CHANNEL/RIVER BANK, DO NOT RECESS THE LOG MORE THAN 1/3 THE LOG DIAMETER INTO THE BANK.

5. ENSURE THE LOGS ARE PLACED TIGHTLY, END TO END.

6. WHERE PRACTICAL, THE EXTREME ENDS OF A ROW OF LOGS SHOULD BE ROTATED UP THE BANK AND SECURED WELL WITH STAKES.

7. SECURE THE LOGS BY DRIVING THE STAKES BETWEEN THE OUTER NETTING AND THE CORE MATERIAL EACH SIDE OF THE LOGS AND SECURED INTO THE GROUND, NOT THROUGH THE CENTRE OF THE LOG.

8. ENSURE THE SPACING OF STAKES (ONE ON EITHER SIDE) DOES NOT EXCEED AN INTERVAL OF 1m.

9. ONCE DRIVEN INTO THE GROUND, THE STAKES SHOULD IDEALLY SIT AT LEAST TWO-THIRDS BELOW THE GROUND AND ONE-THIRD ABOVE, AND IDEALLY SIT FLUSH WITH THE TOP OF THE LOG.

10. WHERE DIRECTED, INTERLACE COIR ROPE, GALVANISED WIRE, OR PLASTIC TREE TIES BETWEEN THE STAKES TO PROVIDE ADDITIONAL ANCHORAGE.

11. FILL AND SHAPE BEHIND THE LOGS IF REQUIRED.

12. IF STREAM FLOWS ARE LIKELY TO OVERTOP THE LOGS, THEN TAKE APPROPRIATE STEPS TO PREVENT HIGH VELOCITY FLOW ALONG THE LANDWARD SIDE OF THE LOGS. THIS CAN BE ACHIEVED WITH THE PLACEMENT OF ROCK CHECKS AT A SPACING NOT EXCEEDING 3m, OR THE PLACEMENT OF LOGS LATERALLY UP THE CHANNEL BANK.

MAINTENANCE

1. WHILE ON-SITE WORKS CONTINUE, INSPECT ALL GEO LOGS PRIOR TO FORECAST RAIN, DAILY DURING EXTENDED PERIODS OF RAINFALL, AFTER SIGNIFICANT RUNOFF PRODUCING STORMS OR OTHERWISE AT WEEKLY INTERVALS.

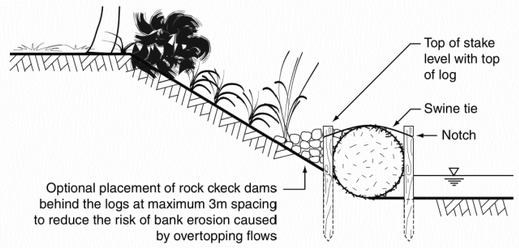
2. REPAIR OR REPLACE DISPLACED LOGS THAT ARE LIKELY TO CAUSE EROSION PROBLEMS.

POST INSTALLATION MONITORING

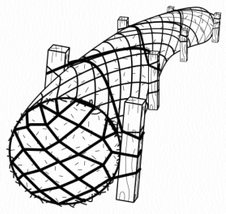
1. MONITORING OF WORKS CAN INVOLVE SEVERAL DIFFERENT TECHNIQUES, SUCH AS PHOTO POINT MONITORING, AERIAL PHOTOGRAPHIC MONITORING, MEASURING PLANT SURVIVAL AND GROWTH, AND FLORA AND FAUNA SURVEYING.

2. INSPECT AND MAINTAIN GEO LOGS AFTER EACH HIGH FLOW EVENT FOR THE FIRST YEAR. MAINTENANCE MAY INVOLVE RESECURING LOGS, REPLACING LOGS, AND REPAIRING BREAKS IN THE NETTING.

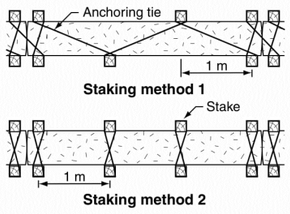
3. ANY NON-BIODEGRADABLE OR POTENTIALLY HAZARDOUS MATERIALS (INCLUDING HARDWOOD STAKES AND SYNTHETIC TWINE OR NETTING) SHOULD BE REMOVED ONCE WORKS HAVE REACHED THE END OF THEIR LIFE.



(a) Typical placement of geo log at toe of stream bank



(b) Typical anchorage of geo log



(c) Methods of stake placement

Drawn:	Date:		
GMW	May-10	Geo Logs (coir logs)	Log-01

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS
02	26/09/24	A.T.	A.T.	A.M.	FINALISED ESCP ISSUE
01	24/09/24	A.T.	A.T.		DRAFT - REVISED FOR CURRENT SITE CONDITIONS
00	04/07/23	C.B.	C.B.	A.M.	FINAL ISSUE
B	03/07/23	C.B.	C.B.	A.M.	FINAL DRAFT - AMENDED TO REFLECT CLIENT COMMENT
A	30/06/23	C.B.	C.B.	A.M.	DRAFT ISSUE - FOR REVIEW

DRAWING STATUS

DESIGN BY	A.T.
DRAWN BY	A.T.
FINAL APPROVAL	A.M.
SCALE: (on A3 Original)	N.T.S.

FINAL

North

CLIENT: JOHN HOLLAND

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PROJECT TITLE: SHOALHAVEN HOSPITAL REDEVELOPMENT

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN - STANDARD DRAWINGS AND DETAIL - SHEET 5 OF 5

PROJECT NO.	SUB-PR NO.	DRAWING NO.	REV
23000207	P01	ESCP05	02

Plot Date: Thursday, September 26, 2024 2:38:20 PM CAD File Name: L:\23000207 Shoalhaven Hospital Redevelopment\Drawings\23000207_P01_ESCP_REV 02.dwg

17 Environmental Management Guidelines

Appendix B – Environmental Management Guidelines

Environmental management plan review checklist

This checklist has been designed to assist government agencies and others in reviewing service providers' Environmental Management Plans. It may also assist service providers in developing their Environmental Management Plans and reviewing their service providers' Environmental Management Plans.

✓ = Yes X = No 0 = Not applicable

Minimum requirements for all contracts

Does the Environmental Management Plan include:

- ☐ a statement of objectives?
- ☐ a listing of the environmental aspects, (with risks and opportunities) and significant related impacts associated with the work?

Do the environmental aspects and impacts listed include:

- ☐ specific undertakings arising from any formal environmental impact assessment?
- ☐ relevant development consent conditions?
- ☐ pollution control approvals/licences/permits and any conditions attached to these?
- ☐ other statutory and contract obligations?
- ☐ environmental risks and opportunities with significant impacts with the activities involved?
- ☐ environmental objectives, targets and measures (where practical) for the significant impacts, risks and opportunities?

Does the Environmental Management Plan include:

- ☐ documented procedures to be followed to manage the identified aspects and significant impacts, risks and opportunities identified? (These measures are subject to compliance with the contract involved)
- ☐ a clear indication of the respective environmental management roles and responsibilities of the service provider and its service providers?
- ☐ emergency response procedures, covering the details required?

Is it demonstrated that all personnel:

- ☐ are or will be familiar with the Environmental Management Plan?
- ☐ understand the Plan, including with the following:
  - ☐ application of the Plan to them?
  - ☐ assessment of training needs?
  - ☐ communication, training and induction procedures?
  - ☐ training programs?

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Appendix B – Environmental Management Guidelines

Environmental management plan review checklist

Enhancements for major contracts

Does the Environmental Management Plan include the following, as they apply to the nature and scope of the contract:

Identification of organisational and individual roles, responsibilities and authorities for establishing, implementing and maintaining procedures, and monitoring activities and performance, to ensure conformity with each environmental management requirement (documenting all such responsibilities)?

With:

- ☐ supervisory/management protocols for personnel and service providers?
- ☐ appointment of an environmental manager?

☐ Documented procedures, with roles, responsibilities and authorities, for controlling all activities/processes and performance to ensure conformity with each environmental management requirement (listing all such requirements)? Including for:

- ☐ management of service providers?
- ☐ training of personnel?
- ☐ communicating requirements, including legislation/regulations, and approval/permit/licence and contract conditions?
- ☐ keeping records?
- ☐ providing regular reports on the implementation of the Environmental Management Plan?
- ☐ activities with compliance bonds/undertakings and penalties for nonconformity?
- ☐ Other activities? (give details) .....

☐ Cross-references to, or inclusion of, other environmental and other management related documents such as:

- ☐ work method statements? (give details) .....
- ☐ design plan?
- ☐ landscape plan?
- ☐ soil and water management plan/erosion control plan?
- ☐ statement of heritage significance?
- ☐ incident management plan?
- ☐ traffic management plan?
- ☐ communications plan?
- ☐ industrial relations/training plan?
- ☐ OHS management plan?
- ☐ quality management plan?
- ☐ Others? (give details) .....

Appendix B – Environmental Management Guidelines

Environmental management plan review checklist

- ☐ Monitoring, measurement, evaluation and review (including audit) procedures, including provisions for:

  - ☐ review criteria/measures/scope/personnel/program?
  - ☐ addressing the consequences of nonconformities?
  - ☐ investigation, analysis, evaluation and follow-up verification?
  - ☐ corrective and preventive action?
  - ☐ Others? (give details) .....