LIVERPOOL HOSPITAL REDEVELOPMENT PROJECT ENVIRONMENT HEALTH & SAFETY PLAN

Bovis Lend Lease Pty Limited

ABN 97 000 098 162

PLAN REVISION STATUS
(Table need only be completed if document is to be Printed)

DATE	REVISION	PURPOSE	REVIEWED BY
2/4/2008	A	*Draft*	Peter Rose
15/5/2008	B	Initial Site Review	Nick Gaudry Darren Power Peter Rose
02/06/08	C	June 2008 Review	Darren Power
07/07/08	D	Delivery map adjusted	Darren Power
01/08/09	E	August review made as per Capital Insight's review.	Darren Power
17/09/08	F	Monthly review of Means and Methods update	Darren Power
28/10/08	G	Monthly review and further changes as per Capital Insight's comments.	Darren Power
17/12/08	H	Uploaded traffic management plans and delivery maps added	Darren Power
05/02/09	I	Vehicle Movement Plan adjusted	Jason Flynn
10/03/09	J	Changes made for monthly review	Darren Power
24/3/09	K	Changes made following GMR walk; NGERS reporting requirements added; Rehab requirements added	Nick Gaudry
01/04/09	L	Changes made to Section 11.3 and monthly review new TMP and delivery maps added.	Darren Power
07/08/09	M	New Traffic Management Plan added	Darren Power
07/09/09	N	New Traffic Management Plan added and changes made from Bluebook EHS Template.	Darren Power
14/12/09	O	New Traffic Plan added.	Darren Power
22.04.10	P	Paint Wash Out System added.	Jason Flynn
03/05/10	Q	New Traffic Management Plan	Jason Flynn
20.05.10	R	Monthly Review	Nick Gaudry
10.08.2010	S	Monthly Review	Jason Flynn
09.09.2010	T	Monthly Review	Jason Flynn

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KEY ELEMENTS					
Item No	Issue and Form	Requirement	Responsibility	Relevant Sec of Plan& form name	Notes
1.	ROAD	Discussed and reviewed at the design meeting.	CM	7.1 *ROAD Manual*	ROAD form updated on a minimum monthly basis
2.	EHS Impacts & Hazards Risk Assessment	Prior to Project commencing then monthly and as required. Subcontractors to undertake prior to commencing	CM/SM/FM	7.2 and 8.2 for subcontractors. *EHS Impacts & Hazards Risk Assessment Guide*	Undertaken when required and reviewed minimum monthly (GMR). To identify changes to the EHS Plan, SWMS, Inductions and training.
3.	EH&S Plan	Minimum monthly or sooner if required	CM/SM	7.2 *Project EH&S Plan*	Undertaken after review of the Project Risk Assessment to ensure the plan meets the changing requirement of the Project. Filed H 01
4.	Heights Mitigation Presentation	At Pre-construction and reviewed on a minimum monthly basis	CM	7.*2 Pre-Construction Agenda*	A Presentation developed to address construction activities at heights identified in the ROAD and risk assessment such as formwork, scaffolding, steel erection, etc Filed in H 01
5.	Subcontractor EH&S Plan (including reporting)	Submitted prior to start	SE/PE/FM	8.2 *e.g. Subby*	To be submitted with works to proceed checklist. NO PLAN – NO WORK Subbies plans to be Filed in H 17
6.	Safe Work Method Statements (SWMS)	Prior to specific task commencing.	FM/SE/PE	7.2 & 8.2 refer to Subby pack and SWMS Checklist	Hold Point: Must be reviewed by relevant Foreman / Engineer / EHS Manager prior to work commencing. Using the Subcontractor SWMS Checklist Form SWMs Checklist before work commences.
7.	Subcontractor Pre-Commencement Meeting	Prior to start on site.	EHS Coordinator / CM/SM/GF/PE/ SE	Subcontractor Pre-commencement meeting	No Meeting No Start
8.	Subcontractor Works to Proceed Checklist	Prior to start on site.	Engineers responsible for trade package/SM/CM	8.2 *Subcontractor Works To Proceed*	NO CHECKLIST NO WORK To be filed at the front of the Subcontractors EH&S Plan in H 17
9.	Visitor Register	Daily	All team	5 *Visitors Register*	All visitors to have suitable footwear and hardhat hi-viz clothing, safety eyewear & gloves. Register kept in the Site Office reception
10.	Complaints Register	Daily as required	All team/SM	16 *Complaints Routine Form*	Report logged and SM notified to co-ordinate action plan. Register kept in the Site Office reception
11.	Emergency Contact List	At commencement of the Project and as required	CM/SM	13 *Emergency Contact List*	Local emergency information included and posted at the first aid location and Site Office reception
12.	Site Inductions	Daily	SM/EH&S Manager	8.3 & 10.2 *Induction form and Guideline*	7.30am in the Induction room and documentation file in H 16
13.	MSDS (Material Safety Data Sheets) and Hazardous	Prior to start on site.	As required	11.2 & 18.1 *Hazardous Substance Dangerous*	Copy to be given to first aid.

	Substance Dangerous goods register			*Goods Register*	
	Mobile Equipment Tag (MET)	To be attached to mobile plant, step ladders or mobile scaffolding prior to commencing on site.	CM/GF	9 Inspection Test Process	Equipment to be inspected by BLL person responsible for the area monthly or once while onsite if less.
14.	Plant and Equipment Register	Initial inspection when plant arrives on site then due first week of every month.	SC/FM	9 *Plant and Equipment Register via Inspection Measure Test Equipment*	No plant and equipment register, NO WORK. To be filed in relevant Subcontractors EH&S Plan
15.	Permits for certain Works vehicle	Prior to starting the following works: ▪ Excavation ▪ Cut & Core ▪ Confined Spaces ▪ Working in Public Areas / Disruption Notices ▪ Erect / Jump / Dismantle Crane ▪ Harnesses ▪ Hot works	SM/FM/SC	7.2 & to be developed	NO PERMIT NO WORK STARTS Permits to be file in H 09
16.	Subcontractor EH&S Inspections, Reporting plant and equipment	Weekly.	First Aid	9.2 & 11 *Subcontractor Guide to EH&S Compliance*	To be undertaken by Subcontractor supervisor & forms submitted to Red documentation tray in Site office. First aider to follow up
17.	Subcontractor Matrix	Monthly	CM	8.3 Management Subcontract / Construction	To be used measure the subcontractors EHS performance.
18.	EH&S Committee & Minutes	Weekly safety walk.	SM/ Chairman of safety committee	12 *EH&S Committee Guideline*	Meeting to be held as soon as walk finished.
19.	EHS Weekly Site Inspection Sheet	Weekly safety walk	GF / Chairman of Safety Comm	9.2 EHS Weekly Site Inspection Sheet	Weekly EHS Committee Inspection walk
20	EHS&Q Subcontractor Audit	1st 6 Weeks, then each subsequent 6 Months	PE/SE/SM	14.2 *Subcontractors Audit Checklist*	Audit Notice, checklist and report
21	System Defects/Defect & Incident	Daily (report on when incident identified)	All team	11 & 14 System Defect & Incident Tool or Projectweb	Copies to be Filed in H 04
22	Incident Investigation Report Form	To be completed and submitted to the Regional Head of EHS with 1 week of the reportable incident.	CM/SM and Project EHS Manager	11 & 13 Reporting and Reporting & Incident Emergency Procedures	To be completed inconsultation with the Project EHS Manager
23	Site Diaries	Daily	FM	11 Job Diaries or Projectweb	Mandatory (OHS&E section to be completed with notable issues)
24	Toolbox Meetings / Record of Consultation	Minimum WEEKLY	CM/SM	10 Skilling and Training and 12 Committee/Consultation BLL*Record of Training and Consultation / Toolbox Meeting* template	To be used for training and consultation. Filed in H 03
25	Rehabilitation	Weekly	SM/First Aid/SC	15 *Return to work monitoring form*	Monitor workers rehabilitation through the Safety Committee Filed in H 05
26	GMR/EHS Site Walk	Monthly	CM/EHS Manager	11 CM.EHSM Monthly Review Template	The Project Risk Assessment should be reviewed on a minimum of a monthly basis following EHS Inspections. Reports GMR Project compliance for monthly stats on Webcare MAP.
27	EH&S Self Checklist	Monthly	PE/SE/FM	11 *EH&S Self Assessment Check*	The Project Risk Assessment should be reviewed on a minimum of a monthly basis following EH&S inspections.
28	CM/EHS Managers Monthly Review	Monthly	CM /EHS	11 *Project GMR Self Assessment*	Reports GMR Project compliance for monthly

					stats
29	Waste Management	Monthly statistic and monitoring	SM	7.2 & 18.3 *Generic EMP*	Needs to be analysed against performance measures and reported on monthly stats. Filed in H 0 Webcare EMA 7
30	EH&S Branch Reporting	Monthly. By the 5th working day.	CM/SM	11 *EH&S Report & Monthly Summary*	Webcare / Blue Glue
31	EHS&Q BLL Internal Audit	Once every 3 months	EH&S Manager	14 *EH&S Audit Checklist*	Undertaken by designated regional personnel Filed in H 02

Please refer to Glossy of Terms for full definition of acronyms

1. INTRODUCTION

Liverpool is approximately 35 minutes south west of the Sydney Central Business District and has a large culturally diverse community.

Liverpool Hospital is a 650 bed tertiary referral and teaching facility providing leadership in clinical care, teaching and research, and is a teaching hospital for the University of NSW.

The hospital has a proud history, a cosmopolitan look and an internationally recognised Trauma Centre.

The NSW Department of Health & South Sydney West Area Health Service are redeveloping Liverpool Hospital to provide the platform for the provision of the safest and highest quality health care services in the south west to meet population growth and community expectations and subsequently Liverpool Hospital is currently undergoing multi-million dollar expansions.

The new works include:

- New Clinical Services Block
- Extension and refurbishment of the existing Clinical Services
- New build component of Cancer and Pathology
- Refurbishment of Existing Cancer building
- Roads, Engineering of Central Energy

The works are due to start in May 2008 with completion programmed for October 2011

The design and delivery phase of this project, presents many opportunities to contribute to Bovis Lend Lease and construction industry benchmarks for Environmental, Health and Safety (EH&S) management through developing and implementing Occupational Health and Safety, and ecologically sustainable practices.

EH&S management during construction is the responsibility of each and every member of the project construction team. Identification of potential EH&S aspects and impacts is an ongoing activity. Potential impacts will be identified at both the design and construction phase via the project risk assessment and safe work practices procedures.

This Project EH&S Plan is to be maintained to the requirements of the BLL Bluebook and the forms, guides, policy's, etc are to be obtained from the related information in Bluebook. Where the BLL forms are required to be amended, altered or developed these shall be undertaken in consultation with appropriate Senior Management (ie EH&S Manager, Operations Manager, Executive Project Manager or Management System Manager).

2. ENVIRONMENTAL & INCIDENT AND INJURY FREE VISION

2.1 Environmental Vision

Bovis Lend Lease recognizes how closely linked our business activities are to environmental issues, on a global, regional and local level and is committed to minimising our environmental impacts and to meeting the environmental challenges facing our industry.

Bovis Lend Lease is eager to achieve this by investing in environmental technology in responsive building techniques and in environmentally sound business practices.

Bovis Lend Lease aims to minimise any environmental effect by adherence with all applicable environmental legislation and requirements and by developing a comprehensive reporting and data collection ability, so that it can be analysis in an effort to provide continuous improvement of our performance.

Bovis Lend Lease Australia 's Environment Vision presents a basic approach of active environmental managed activities with the aim to enhance and protect the environment in which we interact.

2.2 Incident and Injury Free

Bovis Lend Lease will operate Incident & Injury Free (IIF) and we are committed to realising this wherever we have a presence.

We will:

- Invest in what it takes to achieve this vision
- As employees be empowered to lead in making this vision real
- Proactively work with all stakeholders, including clients, designers, contractors and the workforce to make this vision a reality and be prepared to walk away rather than compromise our commitment to safety
- Own and act on our vision.
- This requires a mind set intolerant of any injury regardless of frequency or severity.

We believe:

- That working Incident & Injury Free is a choice and a basic human right.
- The leaders in our industry will be those who succeed in the transformation to making an Incident & Injury Free industry a given

We recognise:

- That this vision is achievable if we are committed.
- This commitment to Incident & Injury Free requires taking a personal stand, great courage and trust.

An Incident and Injury Free element is included in the site specific induction to assist in establishing a safety culture onsite and a general awareness as a whole. An Incident and Injury Free Promotion Program is to be implemented on the project and reported on over the duration of the project.

Project Team will develop and implement an IIF strategy to plan safety improvement and reward positive safety related behaviours. This needs to be reviewed monthly generally through your project team meeting.

3 OBJECTIVES

The Project Team has the following objectives with respect to EH&S:

- Identify and eliminate potential High and Medium incidents and occurrences;
- Maintain statutory compliance with respect to EH&S;
- Conform to company EH&S Management System, Standards, Instructions and EH&S Business Plans,
- Provide, training, skilling, awareness and Best Practice to meet Legislative and BLL requirement;
- Maintain accurate reporting and record keeping.
- Report, support and enhance Senior Management
- Undertake Positive Performance activities with the Project Team, Subcontractors, Client, Site personnel and other interested parties ie audits, tool box and neighbourhood consultation, PCG, etc
- Achieve the incident and injury free objectives for the project
- Ensure the effective management of environmental issue to reduce our impact on the natural environment.

This Environmental, Health and Safety Plan (EH&S) has been prepared to demonstrate Bovis Lend Lease's understanding of EH&S management and controls required for construction activities.

This EH&S Plan is intended to ensure that any EH&S commitments made and other requirements of the proposed development are identified and their incorporation in the works proposed is planned and implemented.

The EH&S Plan is a working document to be updated as necessary and forms part of the contract documentation for the project.

It is a commitment of Bovis Lend Lease that Best Practice EH&S Management be adopted and implemented at the all projects.

4. ENVIRONMENT HEALTH & SAFETY AND REHABILITATION POLICIES

The Lend Lease Corporation Environment, Health and Safety Policy, and Rehabilitation Policy forms the foundation for the EH&S and Rehabilitation performance of each group company. The Policies represent the commitment of Bovis Lend Lease to meeting EH&S and Rehabilitation objectives on a project specific basis to all project personnel.

The *Bovis Lend Lease Policies* are to be clearly displayed within the Site Office and accessible by the project team, eg. Project Noticeboard. They can be found in electronic format in Section 2 of the Project Management Plan.

5. EH&S STANDARDS

Objective

The Project team are to set Project specific EH&S Standards/Rules to meet the Region's legislative and regulatory requirements, Bovis Lend Lease *Company EH&S Standards, Global Minimum Requirements (GMR)* and industry best practice to provide an incident and injury free environment.

Key Management Issue

- Tenderers are expected to meet the project EH&S Rules and BLL's Means and Methods.
- Site inductions will be conducted in accordance with EHS Rule sand BLL Means and Methods
- All personnel and visitors to the project will undertake their activities in accordance with the project EHS Rules and BLL Means and Methods.

Actions

- The project PM/CM/SM is responsible for developing project rules in accordance with BLL Means and Methods.
- The project CM will ensure tenderers are aware of Project EHS Rules and BLL Means and Methods.
- The project SM will ensure site inductions are in accordance with BLL Means and Methods and BLL Induction Guide;
- The project SM will ensure personnel and visitors to the project will conduct their activities in accordance with BLL Means and Methods and Project Rules.
- All visitors must report to the site office and enter their details in the visitor's register and advise the name of the person / organisation they wish to meet. All visitors must be accompanies at all times by site inducted persons who are also responsible for ensuring visitors comply with the project rules and are signed out when leaving. Refer to the Visitors Register.
- Visitor House Rules:
    1. Visitor MUST sign in to the Visitors Register
    2. Visitors must be accompanied by an individual who has been Site Inducted
    3. Visitors must wear a Safety Helmet, Safety Glasses, High Visibility Vest, Gloves and Safety boots or shoes. ***Note*** Runners, Joggers, High Heels or leather shoes are not acceptable
    4. Helmets, Vests, Eyewear, Gloves and Safety Boots are to be returned to the site office at the completion of the visit.
    5. When on site, stay together as a group
    6. If the Emergency Evacuation Siren is activated whilst on site, go with the inducted person to the Evacuation Assembly Point and swipe your visitors card at muster swipe in point
    7. If a visitor injures themselves during the course of their site visit, they are to report to the First Aid Shed where they will be attended to by the First Aider and record the injury in the Register of Injuries
    8. Visitors must be aware of any Mobile Plant and Electrical Equipment.
    9. Visitors must obey any directions given by BLL, signage displayed and they are not to enter any closed off areas.
    10. Visitors are not to undertake any works.

6. ROLES AND RESPONSIBILITIES

Bovis Lend Lease is the Principal Contractor and as such is responsible for the overall management of the Project's Environment Health and Safety. All Bovis Lend Lease Subcontractors, Consultants and Visitors are responsible to comply to their EH&S Management system, BLL requirements (GMR, KPI and Regional requirements) and Legislative requirements

The designated Bovis Lend Lease EH&S person responsible for Site implementation, compliance and the weekly documented inspection of EH&S and GMR/KPI will be the Senior Site Manager or the Site Manager.

Bovis Lend Lease Project staff are required to:

- lead by example every time;
- challenge unsafe work practices and behaviour;
- utilise the Project EH&S Plan and treat it as a living document;
- encourage and support workers to work safely and with care for the environment;
- set priorities that reinforce safe and environmentally aware activities; and
- display ownership of areas under their control and assist project team members in overall EH&S management

Project Roles and Responsibilities for EH&S are also detailed in the elements of this EH&S Plan and are an appendum.

Key staff and service provider responsibilities for the delivery of the Environment, Health and Safety Policy are detailed in the in Section 3.3 of the Project Management Plan, ProjectWeb. The Construction Manager will designate a Project Team Member responsible for EH&S.

7. RISK MANAGEMENT

Objective

To identify and reduce Environment, Health and Safety risks related to BLL activities and to implement the following guiding principles as a minimum:

- Systematic identification of potential impacts and hazards in the work place
- Conduct a risk assessment
- Develop strategies to control it
- Mitigation of risk using managerial resources

To ensure BLL and its subcontractors use a EH&S risk assessment approach for the identification of environment, health and safety Impacts & Hazard and to employ a Consequence, Likelihood / probability process using an established qualitative approach, which is appropriate for typical development activities. The principles of AS 4360:2004 should be adopted in this process.

Key Management Issues

An obligation to control an identified risk to the environment or safety is also an obligation to take the following measures (in the order specified) to minimise the risk to the lowest level reasonably practicable by:

1. Elimination of the risk or impact if it is reasonably practicable
2. Substituting the hazard or impact giving rise to the risk with a hazard that gives rise to a lesser risk.
3. Isolating the hazard or impact from the person or environment put at risk.
4. Minimising the risk or impact by engineering
5. Minimising the risk by administrative means (for example, by adopting safe working practices or providing appropriate training, instruction or information)
6. Using Safe work procedures with personal protective safety equipment.

A combination of the above measures may be required to minimise the risk to the lowest level reasonably practicable if no single measure is sufficient for that purpose. It should be noted that the best solution possible should be implemented, as the further you move down the options the opportunity for human error, mistakes and violations tends to increase.

At Design

BLL recognises that on the LHR and certain projects where there are management of design responsibilities, we must ensure control of the design in regard to legislative requirements. In general, Occupational Health & Safety Acts, Regulations and other legislation in most states/territories require certain duties and/ or obligations ie

A person (the "designer") who designs a building or other structure, or a part of a building or other structure, as a workplace has an obligation to ensure that, relevant persons for the building or other structure or part will not be exposed to risk to their health or safety arising out of the design of the building or other structure or part.

At Construction

A comprehensive EH&S risk assessment at the construction phase of a project to identifying environmental impacts and safety hazards is an integral part of an Environment, Health and Safety Management System to maintain BLL due diligence process. The risk assessment approach extends beyond prescriptive legislative compliance issues to provide a disciplined process to;

- Define the Impacts and Hazards to be assessed;
- Identify activities, which have an interaction with the environment and could be a hazard to the workforce of public.
- Analysis and evaluate the potential impact and/or hazard by a Consequence, Likelihood / probability process;
- Identify management practices, procedures and actions.

BLL are responsible to ensure persons undertaking work on the Project at the construction phase is suitable skilled and trained to be able perform there work in an environmentally responsible and safe manner to the BLL Incident and Injury Free vision. As the work precedes persons skill and training level needs to be enhance to keep progress with the dynamic nature of the construction work. The training needs to also incorporate the BLL Incident and Injury Free vision.

Refer to the EH&S Impacts and Hazards Risk Assessment Guideline located in iKnow.(Blue Book)

7.1 Actions at Design

Risk management is a continuous process and begins with hazard identification. Hazard identification (environment, health and safety) means identifying sources that have the potential to impact the local environment and the health and safety of individuals during the construction, operation or maintenance of our projects.

- The project PM will have complete a Risk and Opportunity at Design (ROAD) using the ROAD Guideline located in iKnow.(Blue Book).This process will identify Impacts and hazards of the proposed design.
- The project PM will transferred the ROAD information to the Construction Manager. Risks and opportunities identified from the *ROAD* are to be transferred to the Construction Manager for use in the overall Project Impacts & Hazard Risk Assessment. As each package of work is developed the ROAD is updated by the Construction Manager as risk and opportunities identified are either eliminated or highlighted as needing controls. Construction issues arising from the workshops are to be included in appropriate trade packages.
- The status and content of the ROAD will be reviewed at design meetings. This review of the ROAD document must be conducted on a minimum monthly basis to meet Global Minimum Requirement. The ROAD is a 'living' checklist.
- The Construction Manager is responsible to ensure that all consultants and trade packages are adequately briefed on the ROAD issues.
- The Region and Project EH&S Managers must monitor the status of the ROAD at the monthly reporting meetings.

7.2 Actions at Construction

Occupational Health and Safety Legislation requires anyone in control of the workplace to identify work activity OHS hazards and the potential hazards of the proposed work, assess the risks involved and develop controls to eliminate, or minimise, the risk.

Also Environmental Protection Acts in most states require a General Environmental Duty. I.e.
A person must not carry out an activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm ("the general environmental duty")"

- The project will undertake a EH&S Impacts and Hazards Risk Assessment using the EH&S Impacts and Hazards Risk Assessment Guideline located in iKnow.(Blue Book).The Project EH&S Impacts and Hazards Risk Assessment will be initially undertaken prior to the construction phase of a project to identify the significant Impacts and Hazards of a project. The Construction Manager in consultation with the Project Team personnel will review the construction activities prior to work commencing on site to identify all potential Impacts and Hazards. Hazard & Impact Risk Assessments may also require to be undertaken on individual work activities as well as the Project EH&S Impacts and Hazards Risk Assessment.

  The assessment and identification of Impacts and Hazards should not only cover Project specific risks, but also Bovis Lend Lease Means and Methods to ensure they are addressed in the, Subcontractor Risk Assessment, Suppliers Information, EHS Plans and SWMS/Job Safety Analysis (SWMS and JSA). The Assessment should include but not be limited to the Means and Methods and other areas to be addressed are:

  - Waste Management
  - Public Safety
  - Manual Handling
  - The procurement and supply of plant and materials to meet the requirements of the relevant authorities and standards.
  - Environmental risks i.e Hazardous Substances / Dangerous Goods (storage, handling and transport), waste.

  The project will be broken down into activities that following the sequence of construction programme. For each potential workplace Impacts and Hazards an identified Risk Class will be determined by referring to the categories and examples in the Impacts and Hazards Evaluation Tables. The EHS Impacts and Hazards Risk Assessment Form will be used to manage the control of the risks identified.

  The Impacts and Hazards Risk Assessment form can also be used where BLL undertake work themselves.

  Where identified, all Class 1 and 2 risks will be recorded with controls to eliminate them or reduce severity. Where this cannot be appropriately undertaken using the hierarchy of control a detailed Safe Work Method Statement (SWMS also known as a Job Safety Analysis or JSA) will be developed to mitigate the risks.

  Class 3 risks will be minimised as far as possible. The higher the Risk Class the more extensive the controls to be provided.

  Where identified, all class 1 and 2 risks will be recorded with controls to eliminate them or reduce severity. Where this cannot be appropriately undertaken using hierarchy of control a detailed SWMS (SWMS also known as a Job Safety Analysis or JSA) will be developed to mitigate the risks refer to the BLL SWMS Guide and BLL SWMS Checklist. The review of the SWMS will be taken using the SWMS Checklist depending on duration and risk of work undertaken. Class 3 risks will be minimised as far as possible. The higher the Risk Class the more extensive the controls to be provided.

  - The EHS Impacts and Hazards Risk Assessment shall also be utilised to identify the implementation of BLL Permits and Tags for use in or of:
    - Excavation
    - Public Area / Disruption Notice
    - Drill and Cutting
    - Erect/Alter/Dismantle Tower Crane
    - Demolition
    - Harnesses
    - Hot Works

- Confined Spaces
- Mobile Equipment (ladders and mobile plant and scaffolding)
- Vehicle Entry

- The project team will review the EHS Impacts and Hazards Risk Assessment. The Project EHS Impacts and Hazards Risk Assessment require review through the lift of the project, as construction projects are of a dynamic nature. This review should identify any changes to EHS Plans, SWMS/JSA, Inductions and Training and are to be conducted and updated on a minimum monthly basis to meet Global Minimum Requirements.
- The project will issue the BLL EHS Impacts and Hazards Risk Assessment and any such review (where necessary) to all engaged subcontractors. The Project Impacts and Hazards Risk Assessment is to be used to provide the subcontractors required information regarding Project/work activity Impacts and Hazards prior to them formulating EHS Plans, SWMS/JSA, Inductions and Training.
- The project team will review this EHS Plan and any associated Project Delivery Plans against any new risks identified and ensure appropriate controls are implemented. These associated plans (height mitigation, traffic etc) need to be also reviewed on a minimum monthly basis.

1. Fall Prevention:

- GMR 1.1 The Falls Mandate
- GMR 1.2 Perimeter Protection
- GMR 1.3 Frame Erection
- GMR 1.4 Scaffolds, Temporary Works and Working Platforms
- GMR 1.5 Penetrations, Risers and Shafts
- GMR 1.6 Ladders
- GMR 1.7 General Precautions

2. Logistics:

- GMR 2.1 Site Access Control
- GMR 2.2 Fencing
- GMR 2.3 Public Protection
- GMR 2.4 Pedestrian & Vehicle Safety
- GMR 2.5 Operator Competence
- GMR 2.6 Powered Mobile Equipment
- GMR 2.7 Housekeeping

3.Ground Works:

- GMR 3.1 Pre-planning
- GMR 3.2 Stability
- GMR 3.3 Safe Works

4.Safe Lifting, Rigging and Slinging

- GMR 4.1 Cranes and Lifting Equipment
- GMR 4.2 Competent Persons

5.Electrical Safety

- GMR 5.1 Temporary Supply
- GMR 5.2 Work in Live Systems
- GMR 5.3 People and Tools
- GMR 5.4 Lighting

6.Occupational Health, Personal Protective Equipment & Welfare
- GMR 6.1 Occupational Health
- GMR 6.2 Personal Protective Equipment
- GMR 6.3 Welfare

7. Emergency Preparedness and Response
- GMR 7.1 Fire Prevention Measures
- GMR 7.2 Fire Detection and Alarm Systems
- GMR 7.3 Means of Escape
- GMR 7.4 Fire Fighting Equipment
- GMR 7.5 Evacuation Procedures

The project will be broken down into activities that follow the sequence of construction program. For each potential workplace Impacts and Hazards an identified Risk Class will be determined by referring to the categories and examples in the Impacts and Hazards Evaluation Tables. The attached EH&S Impacts and Hazards Risk Assessment From will be used to manage the control of the risks identified.

The Impacts and Hazards Risk Assessment form can also be used were BLL undertake work themselves.

- Where identified, all class 1 and 2 risks will be recorded with controls to eliminate them or reduce severity. Where this can be appropriately undertaken using the hierarchy of control a detailed Safe Work Method Statement (SWMS) will be developed to mitigate the risks.
- Class 3 risks will be minimised as far as possible. The higher the Risk Class the more extensive the controls to be provided.

- The project will issue the BLL EH&S Impacts and Hazards Risk Assessment to all engaged subcontractors. The Project Impacts and Hazards Risk Assessment is to be used to provide the subcontractors required information regarding Project/work activity Impacts and Hazards prior to them formulating EH&S Plans and SWMS.

- The project will review the EH&S Impacts and Hazards Risk Assessment. The Project EH&S Impacts and Hazards Risk Assessment requires review through the life of the project, as construction projects are of a dynamic nature. This review should be conducted and updated on a minimum monthly basis to meet Global Minimum Requirement.

- The Project Team personnel responsible for the review of the Subcontractors EH&S documentation should be inducted into these requirements and kept abreast of all reviews of the Project EH&S Impacts and Hazards Risk Assessment. BLL must ensure that its subcontractors use a EH&S risk assessment approach for the identification of environment, health and safety Impacts & Hazard and to employ a Consequence, Likelihood / probability process using an established qualitative approach, which is appropriate for typical development activities. The principles of AS 4360:2004 should be adopted in this process.

- The project team will ensure that the subcontractors conduct a EH&S risk assessment. The subcontractors EH&S risk assessment of their proposed activities is to evaluate identification of environment, health and safety Impacts & Hazard and to employ a Consequence, Likelihood / probability process using an established qualitative approach, which is appropriate for typical development activities. The principles of AS 4360:2004 should be adopted in this process.

7.3 Impacts and Hazards Risk Evaluation Tables

Qualitative Measures of Consequence or Impact

Level	Description of Consequence or Impact
H (High level of harm)	Potential Death, Permanent Disability or Major Structural Damage.Off-site release not contained, major remediation required with outside assistance, significant detrimental environmental impacts.
M (Medium level of harm)	Potential Temporary Disability or Minor Structural Damage. On site release contained, minor remediation required with outside assistance, short-term detrimental environmental impacts. Any potential for exceeding a Statutory Licence Permit condition.
L (Low level of harm)	Potential incident that has the potential to cause persons to require first aid. On-site release immediately contained, minor level clean up with no short-term environmental impacts.

Qualitative Measures of Likelihood / Probability

Level	Likelihood / probability
Likely	Could happen frequently
Moderate	Could happen occasionally
Unlikely	May occur only in exceptional circumstances.

Qualitative Risk Analysis Matrix – Level of Risk

Consequence	Likelihood / Probability		
	Likely	Moderate	Unlikely
H (High)	P1	P1	P2
M (Medium)	P1	P2	P3
L (Low)	P2	P3	P3

Key

P1	1st rank actions
P2	2nd rank actions
P3	3rd rank actions

Ranking a method of deciding priorities can be made.

Items from the first rank would be prioritised 1st followed by those from the 2nd rank and then those from the 3rd rank.
If you have now concluded that there are unacceptable hazards for your trade activity, group or area, then you now need to consider what are the existing controls for those hazards.

8. EH&S MANAGEMENT OF SUBCONTRACTORS/SUPPLIERS

Successful EH&S Management relies largely on the control of Subcontractors on the site and also recognises that Subcontractor Management is clearly the responsibility of the Site Project Team and in particular the Project Engineer and Foreman responsible for each trade package. EH&S Management of Subcontractors can be broken up into the following stages:

- Tender Stage
- Subcontract Preparation Stage
- Construction Stage

8.1 Tender Stage

The Subcontractor guide to EHS Compliance, Site/Project/Client Rules and BLL Means and Method are to be included in the tender documents. (The means and methods can be filtered for each package if required).

Tenderers will be vetted for their ability to comply with BLL and Project specific EH&S requirements. EH&S will be a criteria against which tenders are assessed. The *Management System Tender Questionnaire* and *Subcontractor Interview Checklist* will be used to document the tender evaluation (refer to the "*Project Procurement*" processes for details).

To assist subcontractors the latest copy of the Principal Contractors Safety Alliance 'Subbies Pack' is located in the guide of related info of Bluebook Section 6.

Subcontractors shall attend a Pre-commencement meeting attended by the EHS Coordinator and other BLL Management. The meeting shall follow the "Subcontractor Pre-Commencement Meeting" agenda.

Prior to the Project procuring materials for the project, the materials need to be added to the Impacts and Hazards Risk Assessments to ensure all impacts and hazards are identified. The information will be used in the preparation of the procurement documentation.

8.2 Subcontract Preparation Stage

Prior to commencement on site, all subcontractors will have a reviewed EHS plan in place.

The Subcontractor EHS Plan must be reviewed by the appropriate Site Engineer/Foreman in consultation with the subcontractor responsible for the works. The review of the Subcontractors EHS Plan will be verified using the "Works to Proceed Checklist' that is to be completed in full and attached to the front sheet of subcontractors EHS Plan. The BLL Site Manager and Construction Manager will undertake a final review and sign off the 'Works to Proceed Checklist' prior to the subcontractor commencing on site.

Refer to the 'Works to Proceed Checklist' for specific requirements to be met in the Subcontractors EHS Plan, which include, but are not limited to:

- The sequence of EH&S Management activities to be carried out
- The way(s) in which the identified risks will be reduced to an acceptable level (Class 3 outcome)
- The management system used to monitor compliance with the agreed safe system of work
- The way in which the progress of the work will be reviewed for the purposes of EH&S l protection in order that any necessary modifications and improvements to the system of work can be identified and introduced
- Inspection and Test Plans which relate to the work & the Safe Work Method Statements and the plant & equipment to be used
- The specific management sections relating to;
  - Handling, Storage & use of dangerous goods/hazardous substances
  - Manual handling
  - Plant and equipment.
  - Environment Management ie Waste, complaint, 2 ways of reducing waste, etc

The Subcontractor Safe Work Method Statements/JSA must be reviewed by the appropriate Foreman in consultation with the subcontractor responsible for the works. The review of the Subcontractor's Safe Work Method Statements/Job Safety Analysis will be verified suing the "SWMS Checklist".

Refer the 'SWMS Checklist' for specific requirements to be met in the Subcontractors SWMS/JSA, which include, but are not limited to:

- A task related identification & assessment of the risk activities in relation to the site and any person likely to be affected by them
- Sequence and description of the work, including EH&S measures to be undertaken to control the hazards. This should include a description of the plant and equipment used and relevant Codes of Practice and/or Australian Standards.
- Qualifications, skills and training of persons undertaking and supervising the work.
- Management sign off of the SWMS

The BLL Site Manager or their delegate will then also undertaken a a final review of the subcontractor's SWMS to check all issues have been considered and signed off the "SWMS Checklsit". The SWMS Register must be filled in with the detailed of the new SWMS. The final review shall also ensure the required permits and tags are distributed, implemented and fully understood by the Subcontractor responsible.

The "SWMS Checklist' and 'BLL SWMS Form' must also be used where BLL plans to undertake work themselves.

When materials are supplied to the project the Project Team member responsible for the procurement will ensure all EH&S information has been include and is distributed to the persons identified as needing to understand the requirements.

8.3 Construction Stage

After a Subcontractor has commenced on site the Foreman responsible for the works administers the following disciplines:

- As the type of works change, different risks will be encountered. ANY NEW WORKS OR CHANGES TO EXISTING METHODS ARE TO BE ADDRESSED BY A NEW RISK ASSESSMENT AND SWMS and a documented review of the subcontractors current SWMS and Risk Assessments are to be carried out no longer than at monthly intervals by the subcontractors person responsible for EH&S. All new revisions of SWMS will be reviewed by BLL using the SWMS Checklist.
- Undertaking worker toolbox meetings to address further training and/or on site issues or changes refer to *BLL Record of Training & Record of Consultation / Toolbox Meeting template*
- Submissions of Subcontractor EH&S Monthly Report (with Progress Claims) including those of their subcontractors (see example of weekly statistic form attached to the Subcontractors Guide to EH&S):
- Refer Blue Glue and subcontractor monthly report;
- Review plant and equipment registers and log books – refer to *Plant Inspection* or equivalent;
- Refer to the *Risk Assessment Guide;*
- Refer to the "*Systems Defects*" or Defect and Incident module ProjectWeb;
- Periodic Subcontractors Audits. Audit to be scheduled prior to a subcontractor starting on site. Refer to Section 13.2 Compliance Verification and *Management System Assessment.*
- *Monthly Assessment using the Safety Matrix by the CM/SM.*

A site specific Disruption Plan (DP) been developed. A disruption plan is required for the management of any work to be completed outside BLL site perimeters and or occupied premises / public spaces and will pay particular attention to any disruptions to the operations within the hospital and provide a format for coordinated actions for unavoidable disruptions.

Disruption plans will be submitted to the Construction Interface Group (CIG) for endorsement.

Disruption plans are identified on the two weekly programmes by BLL foremen in advance of the works required. DP's are then submitted to the CIG.

9. INSPECTION AND TESTING PROCESS

9.1 Bovis Lend Lease

The Project team member/members designated responsible for the Management of EH&S must conduct inspections of works and work methods, and conduct and document weekly EH&S inspections refer to *EH&S Weekly Site Inspection Sheet*. Inspections must include:

- BLL EH&S Means and Methods;
- the work site ;

- work methods
- access and egress;
- protective measures;
- adherence to safe working rules;
- electrical plant;
- plant and equipment;
- environment management.

In addition to the weekly inspections the CM and EHS Manager for the Project will undertaken a monthly inspections using the CM/EHS Review Template, any issues identified will be addressed using the projects defects and incident module. The CM will use the results of the GMR portion of the template to undertake the Webcare MAP (unless a Flash Report, Hip or LTI has occurred over the month).

The Project Impacts and Hazards risk assessment should be reviewed and signed off against the Weekly Inspections and Monthly Review for any new risks. Any changes incorporated into the Project Impacts and Hazards Risk Assessment shall be related to the Project Team members and subcontractors involved in the work.

Bovis Lend Lease Project staff are required to maintain a Plant and Equipment Register for Bovis Lend Lease procured plant and equipment ie scaffolding, loading platforms, waste bins, etc. Where plant is used commonly by contractors, BLL shall implement site rules to manage the process to ensure the plant safe and maintained to BLL requirements and persons are adequately skilled or certified to operate or use the plant and equipment.

The Register should include:

- dates of inspecting and testing
- plant identification numbers
- Type of plant
- Statutory Authority registration details

Certification and maintenance of all Project plant and equipment will be undertaken by a qualified person (ie Plant Mechanic, Plant Engineer, etc) and in some instances plant and equipment may require further certification where the configuration of can be altered (ie cranes. hoists, etc). Competent Persons will undertake and document inspections of plant and equipment prior to use and/or on a daily basis. Refer to *Plant and Equipment Inspection.*

All persons operating plant and equipment shall be appropriately trained, experienced and where required certified by the local authorities.

Mobile Equipment Tags will be used for all Mobile Equipment (ie EWP, Telehandlers etc on site longer than 1 day) mobile scaffolding and ladders refer to BLL Means and Methods 4.1.

9.2 Subcontractor's

The Subcontractor Supervisor's are required to undertake and document a daily inspection of their works and ensure compliance with the SWMS and BLL Means and Methods. The inspections will be submitted the project team on a weekly basis for review.

Subcontractors are required to maintain Inspection and Test records and Plant registers for all plant and equipment procured by them, to BLL and legislative or standard requirement, and provide third party certification by a qualified person prior to operation of the plant on site. A competent person will then maintain documented daily inspections (or as per manufacturers requirements) of the plant.

The Site Manager/Area Foreman will verify these records (against a visual inspection the plant and equipment) prior to the equipment being used on site and then on a monthly or as required by legislative or standard basis. Refer to S*ubcontractors Guide to EH&S, Plant & Equipment and Contract Labour Statistics form.*

10 SKILLING AND TRAINING

Objective

BLL are responsible to ensure persons undertaking work on the Project are suitably skilled and trained to be able perform their work in a environmentally responsible and safe manner to meet the BLL Incident and Injury Free vision. As the work proceeds persons, skill and training levels need to be enhanced to keep progress with the dynamic nature of the construction work. The training needs to also incorporate the BLL Incident and Injury Free vision.

Management Issues

- Skilling and training should be consistent to the skilling and training requirements outlined in Section 3 and 6 of the Bluebook.
- Ensure all persons are appropriately skilled or trained to undertake the work on site prior to commencing using the BLL Project Training Register to map, record and schedule training requirements.
- Training or skilling incorporates BLL and the Projects IIF vision.
- Identification of training and skilling should be based on a risk assessment basis of the projects specific requirements prior to commencing, and should be reviewed as part of the project EH&S documentation. This should not limit a person's skill enhancement opportunities.
- Ensure subcontractors undergo the mandatory BLL and legislative training, skilling and induction.
- Ensure appropriate records are maintained to BLL and legislative requirement
- Undertake toolbox talk on a weekly basis with project personnel. Tool Box Talks will be used to help Supervisors manage safety, to provide a forum for workers to have their say about safety issues and to help ensure safety awareness is maintained throughout the project. Where required specific safety issues will be raised, incidents reviewed, SWMS's or work activity developed and presented for evaluation and familiarisation or safety alerts discussed *BLL Record of Training and Consultation/Toolbox Meeting template*
- Subcontractors are to be encouraged to carry out further skilling and awareness training relevant to their work activities on site as identified in the submitted EH&S Plans. Subcontractors may have the opportunity for further skilling by BLL as appropriate (e.g. safety passport, EHS competency modules).

Site Actions

- Undertake and document an assessment of the project skills and training needs using the BLL Project Training Register.
- Ensure new BLL employees have undertaken the BLL and LL company and IIF inductions, and are aware, trained and skilled in the EH&S management systems ie Bluebook, ProjectWeb and Webcare where required.
- Ensure all persons associated with the Project have undertaken the required legislative training and inductions ie General Industry Construction Induction, etc. The project Team should utilise the BLL EH&S skilling modules.
- Ensure the identified BLL project staff is inducted into the incident emergency as soon as practicable after the site has been established and then when changes occur to the procedures (refer to Section 13).
- All persons carrying out construction work on the Project will undertake a Site Induction. The induction could include site representatives for consultation purposes.
- Subcontractor Construction workers are to be inducted into their work activity and/or SWMS and documentation will be submitted to the Project Team prior to commencing on site.
- Undertake and document an assessment of the project skills and training needs.
- Verify that all persons have undertaken a toolbox meeting on a minimum weekly basis refer to the *BLL Record of Training and Consultation / Toolbox Meeting template.*
- Ensure subcontractors maintain skilling and training records of their employees or persons undertaking work for them on the project.
- Maintain a EH&S Skill and Training Register of BLL team members in the BLL EH&S files

11. REPORTING AND RECORDING

Objectives

The Project Team is required to undertake reporting and recording duties of EHS matters to the Regional Business Unit. All reports and records are then collected and collated to provide EHS statistics which will be used to assist the business to best track and trend all EHS defects and incidents and to maintain a systematic approach to these required actions.

Management Issues

- Maintenance of Project EHS documentation

- Daily Monitoring of EHS matters ie Project compliance to BLL requirements, SWMS, plant and equipment monitoring,
- Monthly Submission of EHS statistics and GMR Compliance via the electronic EHS Reporting System Webcare
- Monthly EHS review of the Project/Program by the CM and EHSM
- Collecting and reporting Subcontractor EHS Statistic's and defect and incident close out action
- Correct Reporting of defects and incidents (P1, P2, A1 and A2's), LTI's, High Potential Incidents and Flash Reports using the ProjectWeb and Webcare
- Taking corrective action to eliminate the cause of A1, A2, P1 and P2 in order to prevent recurrence. The action shall be appropriate to the effects of the non-compliances encountered.
- Where a corrective action for a Defect and Incident (P1, P2, A1 and A2) has been submitted the person responsible for the close out action is required to ensure the actions are developed for implementation using the hierarchy of control (ie best practicable control, from elimination of the hazard down to the provision of PPE)
- The Project team are to ensure they review the corrective action and close out and if acceptable, ensure the Recipient, Supplier or Subcontractor has implemented the actions required, and in accordance with their approved reporting document, recorded their actions and notified the CM and GF.
- Maintaining Material Safety Data Sheets and its register
- Nominate site team member/s to manage the collection of this data and entry into *NGERs reporting forms* (eg: Commercial Manager)
- Bring to the attention of the Operations Manager any sub contractor refusing to provide NGERs reports
- Recording the reporting of EHS information to the Senior Management and Project personnel (eg project personnel, team members, subcontractors, consultants and key stakeholders)

Site Actions

- All EHS Documentation and records shall be maintained in the project filing, refer to Project Master Filing Index and "Archiving" Process Guidelines and/or via ProjectWeb.
- The EHS Plan, Impacts and Hazards and ROAD minimum monthly review is to be reported through ProjectWeb PMP unless otherwise agreed with the Operations and EHS Manager.
- The project team are required to submit monthly EHS statistics via the electronic EHS Reporting System Webcare MAP, EMA and SMA by the 5th working day of the month.
- CM and EHS Manager for the Project will undertake a monthly inspection using the CM/EHSM Review Template and maintain in the Project files. All issues identified will be addressed using the projects defects and incident module.
- The CM will use the results of the GMR portion of the template to undertake the Webcare MAP (unless a Flash Report, Hipo or LTI has occurred over the month).
- Subcontractors are to supply the following EHS statistics monthly (see example of weekly statistic form attached to the *Subcontractors Guide to EHS*):
    - Total number of workers and hours worked onsite
    - Number of Lost Time Injuries
    - Number of Lost time Day's
    - Number of First Aid Injuries
    - Waste produce and recycled

  (This should be attached to the subcontractor's monthly progress claim)
- The project Site Manager / Foreman responsible for trades with identified EHS risks will include comments in the site records and diary relating to the EHS management issues on the site. Information to be recorded should include:
    - local weather conditions
    - EHS inspections and general compliance of persons to there SWMS
    - EHS issues of good or poor performance.
    - general condition of the site in relation to tidiness, generated rubbish, sediment control,

- any other comments or observations relating to successful management of the EHS on the site; and
- any photographs of incidents and remedial work as appropriate.

- The following incidents/occurrences/reports are to be completed by the following people:

• Potential Class 1/2 incidents (System defects/Defects & Incidents)	All through the defects and incident module ProjectWeb
• Actual Class 1 or 2 incidents	All through the defects and incident module and WebCare if incident meets the criteria of HiPo or Flash report (see category type below).
• First Aid Occurrences Report	All through the First Aid and be entered into WebCare within 7 days
• Medical Treatment Injury (an injury where a medical practitioner is consulted and returns to work without losing a shift of work).	All through the First Aid and be entered into WebCare within 7 days
• Lost Time Injury (an injury where a person loses a whole day due to a work related injury or illness)	All through first aid and then into WebCare within 24 hrs(or suspected LTI).
• Rehabilitation	General Foreman
• WebCare Incident Reports For examples refer to *Incident Management System Definitions* found on Bluebook.	General Foreman/Construction Manager
• *Incident Investigation Report Form (refer to Sec 13)*	To be carried out in consultation with the Project EHS Manager and submitted to the Regional Head of EHS Manager within 1 week of the incident.
• Notices and Infringements served from an Gov't Authority	CM or SM to provide copy's to the Regional EHS Manager and Australian Head of EHS

- In the event of a fatality, multiply injuries or serious environment incident the CM or GF shall contact the Projects EHS Manager prior to entering details in Webcare.
- BLL will maintain *Dangerous Goods / Hazardous Substances Register* with the MSDS for all of Dangerous Goods / Hazardous Substances used on the project.
- CM is responsible for reporting of Project EHS information to Senior Management via the *Project Review*
- As part of the ongoing risk management of the EHS on this project, a process of site meetings and reviews will be established. Weekly meetings (eg subcontractors, EHS Committee, team, etc) are to be held to discuss issues relating to the EHS management on site, minutes from these meetings will be maintained on with the site files.
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- Category Explanations ENVIRONMENT, HEALTH & SAFETY & QUALITY

ProjectWeb	WebCare
P1 • Potential Death, Permanent Disability. • Potential off-site release not contained, major remediation required with outside assistance, significant detrimental environmental impacts. • Potential to cause Major Structural Damage.	Potential Class 1 and 2 incidents are automatically transferred to Webcare as a "near miss".
P2 • Potential Temporary Disability (personal injury). • Potential on site release contained, minor remediation required with outside assistance, short-term detrimental environmental impacts. Any potential for exceeding a Statutory Licence Permit condition. • Potential to cause Minor Structural Damage	
A1 • Actual Death or Permanent Disability. • Actual off-site release not contained, major remediation required with outside assistance, significant detrimental environmental impacts. • Actual Major Structural Damage.	Actual Class 1 and 2 do not transfer to Webcare as the system does not allow a HiPo or Flash report to be produced. Therefore, the CM and/or General Foreman are responsible to review the defects and incidents, and to ensure appropriate close out and any defect and incident that meet the criteria for *Hipo or *Flash Reports are entered as their appropriate incident type into the Webcare Incident Management System. Webcare incident types; • Near Miss • Injury Incident • Work Related Ill Health • Property Damage • Environment Damage • Public Health Incident refer to *Incident Management System Definitions* found on Bluebook.
A2 • Actual Incident Temporary Disability (personal injury). • Actual on site release contained, minor remediation required with outside assistance, short-term detrimental environmental impacts. Exceeding a Statutory Licence Permit condition. • Actual Minor Structural Damage.	
Q1 • A System Non- compliance (EHS) - identified as a result of a repetitive incident, or otherwise during an external audit. Note that a Q1 is also used for Quality Management System non-compliance.	

*eg

- Any fatality, loss of limb, fracture, collapse of permanent structure, or ground, fire or explosion, electrical incident any incident which will become a HiPo (or may become)
- Person falling more than 2m resulting in cuts / bruises (minor injury - HiPo fall),
- Any injury incident to a child (bear in mind this could be a serious incident as well),
- Objects falling more than 3m (eg from a scaffold) landing close to people working below as no exclusion zone was established (fall of materials – HiPo near hit),
- plywood sheet or roofing material blows off roof and lands in a public area without injuring anyone (near miss – HiPo fall of materials),
- a concrete wall panel falls due to failure of the slings whilst being lifted into the building – hits the ground two feet from a worker - no injuries sustained (lifting incident/fall of material – HiPo near hit),
- Vehicle and / or pedestrian impact – resulting in cuts and bruises (First Aid - HiPo vehicle),
- Exposure (above legal control limits) to asbestos fibres, isocyanates or other harmful substances above local control limits (Health - HiPo),
- Damage to adjacent property likely to result in loss of more then $10k (Property Damage- HiPo), and
- any significant contamination incident involving fuel, chemicals, Ozone depleting refrigerant loss, waste products, etc (Environment Damage - HiPo).

11.1 Notification to a Statutory Authority

The Construction Manager will ensure that any notifiable incidents as per legislative requirements are reported to the relevant Statutory Authority in a prompt and timely manner. Any notice issued by a Statutory Authority is actioned and closed out in the

required time frame. Any WorkCover prohibition notices or improvement notices issued to BLL or it's contractors will be forwarded to Capital Insight.

Construction Managers shall ensure that Capital Insight are notified of any notice issued by a Statutory Authority.

12. EH&S CONSULTATION

Objectives

The Project Team is required to consult, share and supply project information with all relevant stakeholders including site employees or their representatives to ensure EH&S management issues are appropriately agreed by all persons at the workplace. e.g. EH&S Committee Members, EHS representative or agreed arrangements between the employer and employees, and their roles and responsibilities.

Key Management Issue

Information shall include, but not limited to:

- risk management and hazard identification
- changes to the work environment
- processes or practices
- corrective actions and
- management of subcontractors and suppliers.
- any feedback from site personnel on potential hazards or project conditions
- consultation with workers is essential in identifying potential hazards that can be eliminated, or minimised, before injuries occur.

Project Action

- The CM/SM will ensure the EH&S processes relevant to the project are described and made available at the time of the induction.
- Persons representing site personnel will be available to consult and inform any project personnel regarding EH&S issues on the project.
- An EH&S Committee will be established to represent site employees, the committee should be established as per the legislative requirements or in absence by democratic means, the Committee shall establish a constitution for its operation. Refer to *EH&S Committee Guideline* for an example of a constitution that will be made project and committee specific. This is to be maintained with the minutes of the EHS Committee Meeting.
- Where required the members will undergo Committee Training (as per the legislative requirement) as soon as practicable once elected to the committee.
- The EH&S Committee shall undertake weekly inspections of the project and followed by a meeting to discuss the findings and other EH&S project issues. Any issues identified for correction shall have a close out date and responsibility assigned, issues shall be monitored to ensure they are appropriately closed out
- Where required the committee shall be inducted into relevant sections of the EH&S Plan ie risk management, inspection and test process, skilling and training, reporting and recording, etc
- All committee members will be available to consult and inform any project personnel regarding EH&S issues on the project.
- Minutes of the Committee meeting and inspections will be distributed to subcontractors project web and the Subcontractors pigeon hole in the site office reception.

13. INCIDENT / EMERGENCY PROCEDURES

In the event of an emergency, that requires evacuation, all work shall cease immediately and after leaving equipment in a safe condition, personnel shall proceed and assemble in Bigge Park as shown in the site induction and directed by the BLL and Subcontractor Supervisors. The Subcontractor shall be responsible for accounting for his/her employees and those of his/her Secondary Subcontractors at the assembly area.

The project specific emergency contact list and *Major Incident Flash Reporting Emergency Contact List* will be prominently displayed on site. In case of emergency, it is the Subcontractors Supervisors responsibility to ensure that relevant personnel are informed.

In addition to the emergency contact list being display all material safety data sheets should be filed behind "Emergency Procedures and a copy kept in the project First Aid facility.

The main objective of the Emergency Response procedure is to establish a system for the identification and elimination of all potential and actual Class 1 and 2 incidents.

The project team will;

- be inducted into the incident emergency procedures as soon as practicable after the site has been established and then when changes occur to the procedures (refer to Sec 10).
- undertake an evacuation drill on a 6 monthly basis, where the type of project makes this difficult to undertake the project team will consult with their EHS Manager to implement a mock drill to test the processes.
- a BLL representative (/first aider) must be issue a Medical Referral Letter for any injury requiring treatment by a medical practitioner. The injured person's supervisor should accompany the injured person to the medical practitioner's facility.
- in consultation with the Project EHS Manager investigate all Flash Reports, Hipo's, Lost Time Injuries and any incidents reportable to or notice issued by the local authority using the Incident Investigation Report Form. Incident Investigation Report Form will be submitted to the Australian Regional EHS Manager within 1 week of the incident.
- where a Subcontractor is involved in an incident (ie Flash Reports, Hipo's, Lost Time Injuries and incident reportable to the local authority) ensure they investigate the incident using their Incident Investigation Process that will be reviewed and included in the BLL investigation.
- where required contact the Projects EHS Manager to arrange any counselling following any critical incident.

What is a Major Incident?

Example:

- Major Structural Collapse - Serious Injury
- Serious incident that may not have caused injury, environmental incident (pollution plume, contamination) or rescue/assistance from Emergency Services required.
- Unplanned services disruption/failure affecting hospital.
- Explosion
- Earthquake

What you do immediately

- Provide basic medical assistance.
- Call for Emergency Services.
- Secure the Safety of people.
- Secure the Safety of the Site.
- Assist with isolating the situation only if it is within your capabilities and is safe to do so.
- Notify Senior Management
- Notify the client through Capital Insight

What don't you do.

- Write anything down that isn't absolutely necessary.
- Don't assume the cause of the accident.
- Don't disturb the site beyond rescue needs.
- Refer to following Procedure.

There is a Potential Occurrence

What do we want to have done?

- Endeavour to ensure that it won't happen again on your project.
- Spread the word - so that the company can learn from mistakes.
- Fill out a "System Defect Notice/Defect and Incident (ProjectWeb)"

What does the system ask you to do?

- Use the System Defect/Defect & Incident process for consistent reporting.
- Advise EH&S Manager.
- Identify the cause essential factors.
- Carry out necessary corrective action and investigation.
- Ensure all actions are developed using the hierarchy of control (ie best to worst, from elimination down to PPE)
- Close out the Non Conformance.

There is an Actual EH&S Occurrence

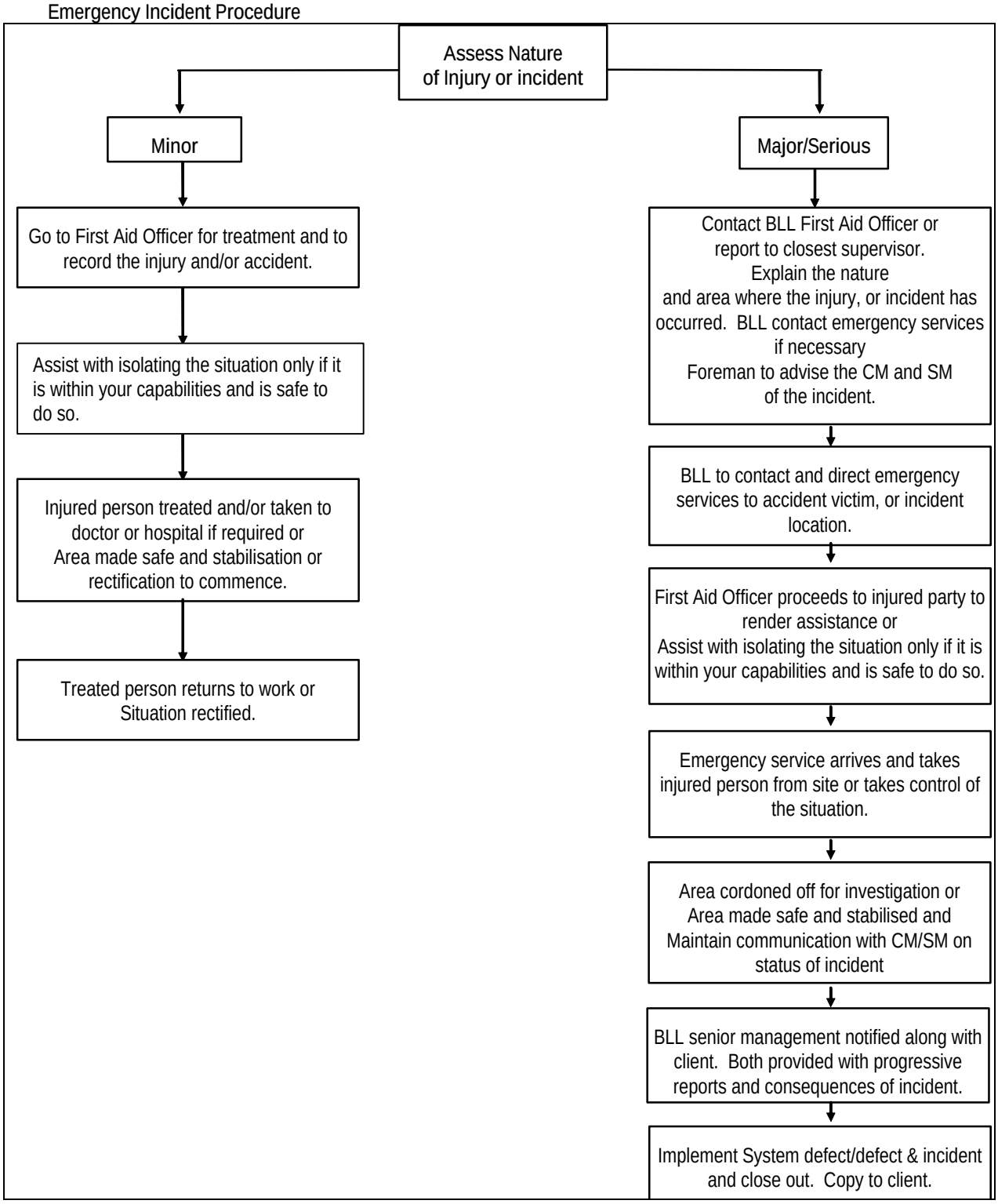
What do we want to have done?

- Ensure that the situation is contained.
- Ensure that people affected are given proper treatment.
- Assist with isolating the situation only if it is within your capabilities and is safe to do so.
- Protect our Company's position.
- Endeavour to ensure that it won't happen again on our projects.
- Spread the word, so the Company will learn from mistakes.

What has the "System" asked you to do?

- Use a consistent reporting format (First Aid, System Defect/Defect and Incident (ProjectWeb).
- Advise relevant statutory authorities.
- Identify the essential factors.
- Ensure all actions are developed using the hierarchy of control (ie best to worst, from elimination down to PPE.
- Input data into ProejctWeb and WebCare.
- Finish the action.
- Get the person back to work.

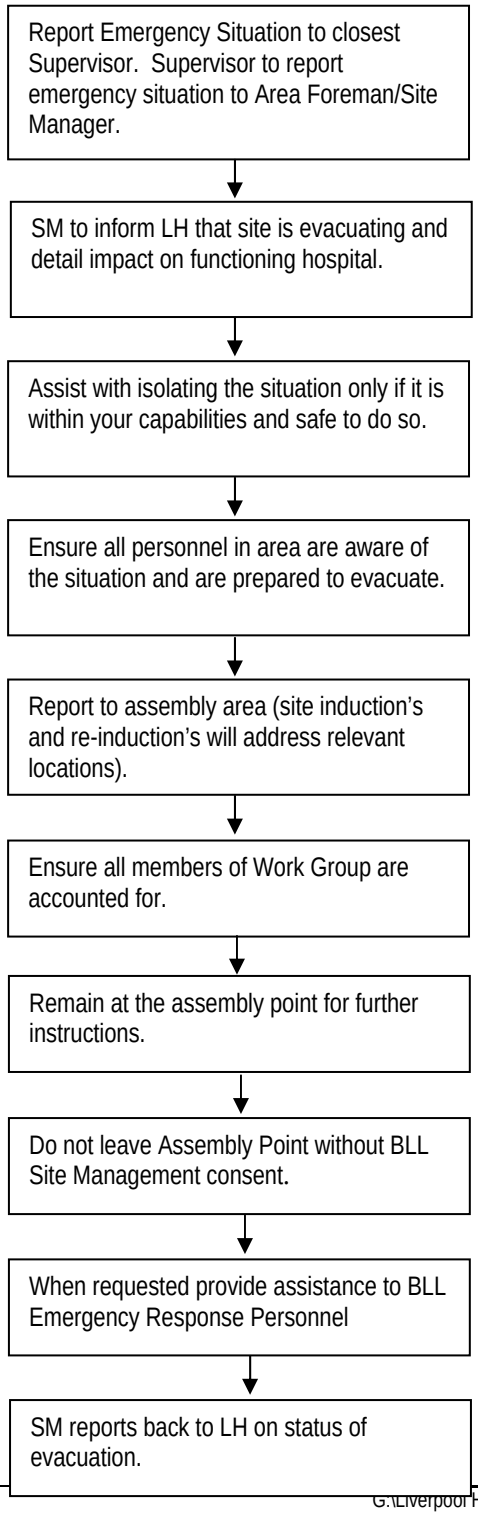
Emergency Incident Procedure



Emergency Evacuation Procedure

The following procedures are to be followed if an Evacuation situation arises ie:

- Major Structural Collapse
- Flood
- Fire
- Explosion
- Earthquakes
- Unplanned services disruption / failure

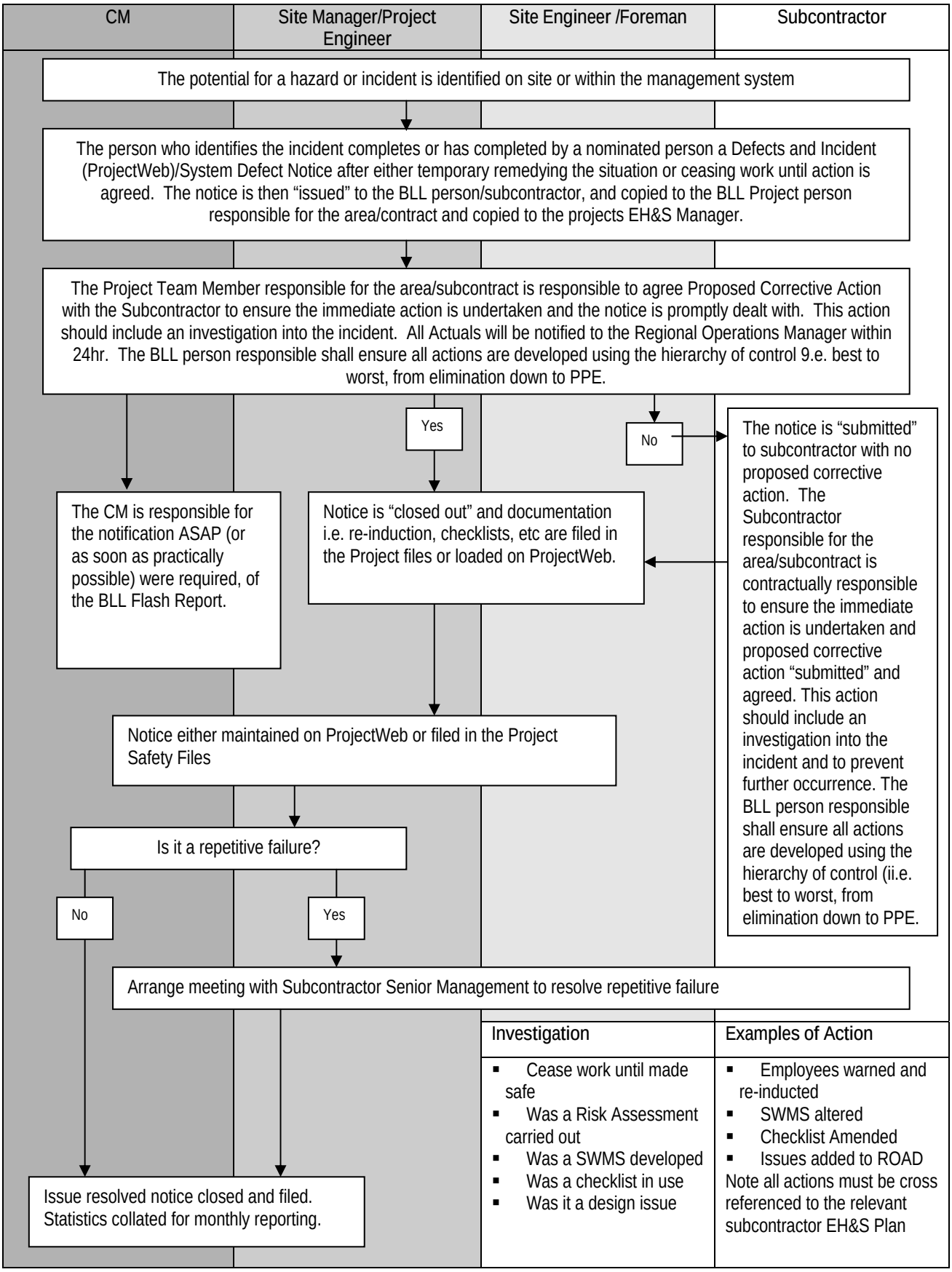


PROJECT MANAGEMENT RESPONSE TO MAJOR INCIDENT

❑	Action	Responsibility	Notes
❑	Area Foreman and SM to follow Emergency Incident/Evacuation Procedures	❑ SM/AF	❑ Advise CM
❑	As soon as practical advise ROM, EHSM, HOL and complete "Webcare report"	❑ CM	❑ If required ROM or EHSM proceed to site after advising Regional GM, Aust EHSM and/or SLT
❑	Notify relevant Authorities (ie EPA, WorkCover, etc) and client.	❑ CM	❑ After consultation with EHSM
❑	Proceed to the area and assess the incident immediately, ensuring appropriate emergency service have been advised and direct any alteration that may be required.	❑ CM	❑
❑	Notify Chairman of Safety Committee, Health & Safety Rep or Employee Rep.	❑ CM	❑
❑	Contact ROM and confirm any additional instructions.	❑ CM	❑
❑	Notify relevant receptionist as to appropriate response to enquires.	❑ CM	❑
❑	Contact the employee's management representative (if applicable), affected families (if relevant), or co-workers wherever possible.	❑ CM	❑
❑	Identify witnesses (if possible keep on site) and persons requiring counselling/debriefing	❑ CM	❑
❑	Advise EHSM of counselling/debriefing requirements.	❑ CM	❑
❑	Arrange counselling/incident debriefing	❑ CM	❑ In consultation with Safety Committee.
❑	Carry out site safety and security check.	❑ CM	❑
❑	Assist in the investigation of the incident with relevant authorities	❑ CM	❑ Providing sufficient use of facilities ie photo copying, fax etc if required.
❑	Complete injury and incident report and submit to HOL. Follow up relevant Workers Compensation reports.	❑ CM	❑
❑	Brief employees, subcontractors and employee representatives as to the current status.	❑ CM	❑
❑	Continue to liaise with investigating and regulatory authorities until the incident is finally closed.	❑ CM	❑ Provide sufficient resources for this to be carried out efficiently and in timely manner
❑	Ensure Authorities and notices or recommendation/corrective action are Implement and monitor	❑ CM	❑ CM to declare area suitable as regards to EHS
❑	Close out Defect and Incident report and ensure area/conditions are suitable to re-commence work.	❑ CM	❑

Key: AF-Area Foreman, GF-General Foreman, CM-Construction Manager, ROM-Regional Operations Manager, SLT-Senior Leaderships Team (Aust EHS and Risk Manager, CFO, CEO, etc), EHSM-Environmental Health &Safety Manager, HOL-Head of Legal, ERG-Emergency Response Group.

ACTUAL AND POTENTIAL CLASS 1 INCIDENT REPORTING PROCEDURE (DEFECTS AND INCIDENTS)



Note: Regional Manager must have report within 24 hours of Actual Class 1 incident being identified

14 COMPLIANCE VERIFICATION

The Site Team recognises Compliance Verification as covering two main areas:

- Bovis Lend Lease Compliance (with Site EH&S Plan)
- Subcontractor Compliance (with Subcontractor EH&S Plan)

14.1 Bovis Lend Lease Compliance

Bovis Lend Lease will ensure compliance with this management system (Project EH&S Plan) through the following measures.

- Monthly Review of the *ROAD, Project Risk Assessment* and site *EH&S Plan (*refer to ProjectWeb-Project Management Plan).
- Three Monthly *Project EH&S Audits.*
- Constant surveillance of Site Personnel (Project Diary).
- Submission of Monthly Safety Statistics to Branch Webcare Report and Project Monthly Stats.
- CM Monthly Assessment of the project via Webcare.
- Completion of System Defects/Defects and Incidents
- Senior Management EHS Review i.e Project Reviews
- Monthly review of the Subcontractors performance using the Subcontractor Safety Matrix's.
- Where the Project team elects to include a fortnightly EHS Compliance Programme that includes identifying Positive Incident and Injury Free EHS Performance Indicators on the Project. The EHS Meter is a tool that can be used for this purpose.

14.2 Subcontractor Compliance

Bovis Lend Lease will ensure Subcontractor compliance with this management system (Subcontractor EH&S Plans) through the following measures:

- Conducting a periodic EH&S Plan Audits, Audits shall take place once in the first six weeks from commencing on site and then once every six months or at more frequent times as defined by the Project Team.
- Monitoring subcontractor EH&S performance by the above tools.
- Subcontractor Management undertaking documented EH&S inspection.

Refer to "Assessments" process *Subcontractor Audit Checklist.* Also refer to for EH&S Meter form

Non –conformance

If the Subcontractor fails:

- to comply with the obligations listed within this EH&S Plan;
- to comply with any requirements of the Specification involving EH&S control or site rehabilitation;
- to observe the required EH&S impacts as measured by the Subcontractor, by Bovis Lend Lease Site Manager or by a Statutory Authority having jurisdiction over the Works.

The Site Manager may then direct the Subcontractor to modify or cease any and all of the Work under the Contract until the Subcontractor can satisfy the Site Manager that the failure has been corrected and will not recur.

If the Subcontractor fails to comply with the direction from the Site Manager then the Subcontractor will be in breach of the Contract and the Site Manager shall be entitled to exercise its rights under the General Conditions of the Contract.

If no non-conformances are identified in the inspection, the completed checklist should be signed by the Subcontractor and filed with the EH&S Records. Reporting of a potential occurrence is a means of demonstrating due diligence where someone is aware that something may have the potential to result in harm to either person or environment.

The Subcontractor will report any potential occurrences / non-conformance's identified to the projects Site Manager immediately. The Subcontractor will carry out re-inspections until compliance is achieved.

Refer to "*System Defects*" process for Occurrence Recording Defect Incident module on ProjectWeb.

15. REHABILITATION / RETURN TO WORK

Aim

To ensure Rehabilitation Procedures are established at our workplaces for all employees, subcontractors and their employees who sustain an injury or illness.

Objective

- To facilitate a safe and effective return to meaningful work consistent with medical opinion.
- To be able to read, interpret and implement the rehabilitation procedures established for the workplace
- To comply with requirements of Workers Compensation Legislation.

Actions

The following procedures will apply for lost time injuries/illness:

1. Post Rehabilitation Flow-Chart on to notice board where required.
2. The site first aid officer is responsible for confirming a lost time injury has occurred. She/he is to notify the BLL Site Manager;
3. The BLL SM/Subcontractors Supervisor is to arrange for the injured person to be escorted to a medical practitioner if appropriate; A *Medical Referral Letter* must be issued by a BLL representative for any injury requiring treatment by a medical practitioner.
4. Suitable persons are to be nominated by the BLL Site Manager to maintain contact with both the doctor and injured person as appropriate and to ensure workers compensation claim forms and notifications are sent to the relevant authorities. Site Manager to instigate Rehabilitation Documentation and return to Rehabilitation Coordinator;
5. The First Aid Officer and/or the BLL Site Manager shall maintain records of contact until a return of work is completed. The *Return to work monitoring form* will be filed with the workers compensation and rehabilitation documentation, this document should reference/include any incident investigation.
6. The Subcontractor and/ or BLL will compile a factual report in regard to the lost time incident and a record of time lost maintained.
7. If appropriate, the BLL Site Manager is responsible for ensuring alternative work is considered for suitable parties, including the medical practitioner, subcontractor and employee.
8. On return to work, the Subcontractor and/ or BLL is to monitor progress to full recovery.

Refer to *Rehabilitation Documentation (Return to work monitoring form).*

16. COMPLAINT MANAGEMENT

A Complaints Register is to be established for all Bovis Lend Lease projects for the purpose of documenting and actioning complaints from the community and stakeholders. The establishment of a complaints register and a complaints management process will form part of the mandatory activities on the stakeholder engagement action plan included in section 18.11.

During the construction of a project, routine complaints are commonly received, whether they be from local people living in the neighbourhood or passers by. A presentation/introduction should be undertaken to local business and private residents prior to commencement by the nominated project person to explain the project and introduce him/herself as the person responsible for any complaints.

Complaints can be of many different characteristics such as noise, dust or hours of work.

When a complaint is received it should be filled out on a complaint form and issued to the General Foreman to address the situation.

Where possible, the complaint must be addressed so that the integrity of the job is protected and the complainant does not take their complaint further, eg, the media.

Once a resolution to the complaint has been actioned, a follow up phone call to the complainant is made to advise them of action to be undertaken.

Should the resolution or issues be deemed to be significant for the project, the Construction Manager should advise the Regional Operations Manager.

17. ENVIRONMENTAL AND OTHER OCCUPATIONAL HEALTH & SAFETY SPECIFIC MANAGEMENT PLANS

17.1 BACKGROUND

This section has been developed to outline the environmental and other specific occupational health and safety management procedures for the project during the construction phases.

The EMPs are an integral part of the EH&S Plan that should be periodically reviewed as part of during the construction and demolition program and form part of the project contract documentation. The EMPs shall be supplementary to the minimum requirements on all Bovis Lend Lease projects as outlined by the BLL EMS.

Subcontractors may be required to submit Associated Environmental Plans detailing specific controls and treatments to prevent damage to the existing environment or surrounding facilities during the demolition and/or construction works.

Subcontractor Plans are to be in accordance with the principles of the BLL EH&S Plan.

17.2 KEY ENVIRONMENTAL AND OCCUPATIONAL HEALTH & SAFETY LEGISLATION, REGULATORY AND STATUTORY REQUIREMENTS

The construction works are to be conducted in accordance with all relevant state legislation including, but not limited to, the legislation listed below:

NEW SOUTH WALES

Australian Heritage Commission Act 1975
Catchment Management Act 1989
Contaminated Land Management Act 1997
Environmentally Hazardous Chemical Act 1985
Environmental Planning and Assessment Act 1979
Environmental Planning and Assessment Regulation 2000
Environmental Protection Act 1990
Heritage Act 1977
National Parks and Wildlife Act 1974
Native vegetation Conservation Act, 1997
Noxious weeds Act 1993
Noise Control Act 1975
NSW Health Policy documents
Local Government Act 1993Pesticides Act 1999
Occupational Health & Safety Act 2000
Occupational Health & Safety Regulation Act 2001
Ozone Protection Act 1989 & Regulations
Protection of the Environment Operations Act 1997
Protection of the Environment Operations (Waste) Regulation 1996Soil Conservation Act 1938
Roads Act 1993
Threatened Species Conservation Act 1995
Transportation Administration Act 1988
Traffic Control Act 1909
Waste Avoidance and Resource Recovery Act 2001

17.3 KEY NATIONAL ENVIRONMENTAL SUPPORTING DOCUMENTS

Hazardous Substances/ Dangerous Goods
Australian Dangerous Goods Code
Australian Standard AS 1940 2004 including amendments 1 & 2 The Storage and Handling of Flammable and Combustible Liquids
Australian Standard AS 44521997: The Storage and Handling of Toxic Substances
Australian Safety & Compensation Council NOHSC 1015 (2001) National Standard: Storage & Handling of Workplace Dangerous Goods
Australian Safety & Compensation Council NOHSC: 2018 (2005) Code of Practice for the Management and Control of Asbestos in Workplaces
Australian Safety & Compensation Council NOHSC: 2002(2005) Code of Practice for the Safe Removal of Asbestos

Asbestos & Hazardous Building Materials
Australian Standard AS 4452B1997: The Storage and Handling of Toxic Substances
Australian Safety & Compensation Council NOHSC 1015 (2001) National Standard: Storage & Handling of Workplace Dangerous Goods
Australian Safety & Compensation Council NOHSC: 2002(2005) Code of Practice for the Management and Control of Asbestos in Workplaces
Australian Safety & Compensation Council NOHSC: 2002(2005) Code of Practice for the Safe Removal of Asbestos

Waste Management
National Waste Minimisation and Recycling Strategy

Contaminated Soil & Water Management
Australian Standard AS4482:1997 Guide to the Sampling and Investigation of Potentially Contaminated Soil – Non-volatile and Semi-volatile Compounds.
NEPC (1999) National Environmental Protection (Assessment of Site Contamination) Measures
ANZECC (2000) Australian & New Land Water Quality Guidelines for Fresh & Marine Water Quality

Concrete & Paint Waste Management
National Waste Minimisation and Recycling Strategy

Stormwater & Erosion
Managing Urban Stormwater - Soil and Construction 4th edition produced by Landcom
ANZECC (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality

Noise & Vibration
ANZECC guidelines `Technical Basis for Guidelines to minimise Annoyance to Blasting Over pressure and Ground Vibration'
Australian Standard AS2436 (1981) Guide to Noise Control on Construction, Maintenance and Demolition Sites.
Australian Standard AS2601 (1991) Demolition of Structures.

Community & Neighbourhood Management
NEPC (1999) National Environmental (Assessment of Site Contamination) Measure – Guideline on Community Consultation and Risk Communication.
Standards Australia (AS/NZ4360:2004)) Risk Management.

Heritage & Archaeological Management
(Refer to PMP)

18. ENVIRONMENTAL AND OTHER SPECIFIC OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT PLANS

18.1. HAZARDOUS SUBSTANCES/DANGEROUS GOODS MANAGEMENT PLAN

Objectives

To receive, store, utilize, handle and dispose of chemical and hazardous materials in an environmentally appropriate manner To prevent any contamination of site work areas and adjoining property including aquatic ecosystems by chemicals and fuel used on the construction site.

Key Management Issues

Hazardous material on the project site will exist in solid, gaseous and liquid forms. These materials may include bulk fuels, chemicals used or stored during the construction and demolition works or hazardous materials such as PCBs, asbestos and lead-based paints encountered in existing building materials.

Sensitive receivers surround the site ; hence any escape of these substances is likely to have potential significant environmental and human health consequences. Appropriate management measures must be instituted to prevent environmental incidents such as:

- Major leak/spill from site storage containers of dangerous goods such as fuels that breaches the site boundary (Environmental Class P1 Risk) or remain within the site (Environmental Class P2 Risk)
- Exposure of site workers or personnel to dangerous goods or hazardous substances (Environmental Class P1 Risk)
- Inappropriate disposal of dangerous goods such as asbestos in building products (Environmental Class P2 Risk)
-

Refer to the *Asbestos (& Hazardous Building Materials) Management Plan*.

Site Controls

The first step in the sequence of operations is to plan the environmental management activities and integrate these with the construction program.

Construction & Demolition Phase:

Hazardous substances/ dangerous goods (HS&DG) storage and handling impacts shall be minimised by incorporation of appropriate control measures in the specification and contract arrangements, and quality assurance inspection and monitoring during construction and demolition.

The installation and maintenance of HS&DG controls during construction phase shall be in accordance with the following principles:

- A Register of HS&DG on site is to be maintained by BLL. All MSDS are to be submitted by Subcontractors prior to commencement on site and filed by BLL in the First Aid files.
- A Hazardous Materials Building Register is to be prepared for the site prior to the demolition, disturbance or removal of any site buildings and structures. Refer to Asbestos (& Hazardous Building Materials) Management Plan.
- All dangerous goods storage areas are to be located within appropriate areas of the site to avoid sensitive site operations such as explosives (quantity and distance) storage, manufacturing or disposal areas as well as identified sensitive receptors including surface waters, residences and potential flood areas of the site.
- Storage area will be appropriately designed and constructed with designated drainage collection systems, hardstand areas, bunding, signage, security, spill kits, emergency first aid facilities and fire-fighting equipment prior to the delivery or storage of any dangerous goods or hazardous substances.
- Any bunding facility will be designed to ensure a storage capacity of 110% of the actual product storage container.
- A HS&DG Diagram will be prepared for the site that details the designated storage locations for all dangerous goods on the site including key areas where these materials are used. The diagram will also include a list of key buildings or structures noted to contain Hazardous Building Materials. Refer to page 34.

- Operations will aim to minimise the need bulk for storage on site of HS&DG.
- The correct operation, maintenance and cleaning of plant and equipment associated with the use of HS&DG will be explained to plant operators in the Subcontractor Site Induction and as part of the EA Training Program. All works to be performed under SWMS prepared by the subcontractor and approved by the nominated EM or EH&S Manager.
- No other general construction material will be allowed to be stored in the designated storage and refueling area.
- Dangerous Goods Waste will be recycled where appropriate and if not, stored in designated containers on-site until it is classified for off-site disposal by a an approved contractor to appropriately licensed DEC waste facility. Appropriate waste control documentation and relevant approvals will be obtained where required.
- All HS&DG wastes will be handled and removed in accordance with SWMS and supported, where required, by inspection and monitoring visits by the EM or EH&S Manager. Appropriate mitigation measures will be implemented, where required, to stabilize waste during the removal, storage or disposal process.
- All spillage on site will be collected using spill kit materials with all waste generated to be disposed to an approved facility and the area remediated to the satisfaction of the DEC. Records of disposal and clean-up measures are to be maintained with site records.
- Toilet waste shall be disposed of via the water authority approved sewerage system to an approved sewage treatment plant or otherwise as approved by the Local Planning Authority. Sanitary facilities shall not be located where a spillage could cause direct pollution of a water body.
- Emergency procedures regarding spillage and/or containment of HS&DG shall be displayed in a prominent position within the site working area or addressed in the site induction with the appropriate training included.
- Stormwater that does not meet the DEC discharge requirements must be treated and disposed of by an approval method and test results supplied to BLL and filed in the site records for verification purposes.

Training

Communication and education material on hazardous substances/dangerous goods controls and procedures will be part of the Site Environmental Awareness Program that will be incorporated into the site induction program.

Performance Measures

- No refuelling, repair, cleaning or decontamination of machinery of equipment outside designated areas.
- Ground surface (pavements) in the storage, refueling, repair and cleaning/decontamination areas maintained as all weather and free draining.
- Spill bunds to be kept free of rainwater and any other matter that may reduce the bunds designated holding capacity (110%).
- Bags of absorbent material (at least 5) on site at any one time and/or by the provision of an approved adequate spill kit.
- No spill or handling incidents with the potential to cause environmental degradation or human health impact.
- No waste disposal incidents or disposal of wastes without appropriate documentation/approvals

Monitoring and Reporting

A Register of HS&DG on site is to be maintained by Bovis lend Lease (BLL) Refer to the HS&DG Register.

Supporting MSDS are to be submitted by Subcontractors and filed by BLL in the First Aid files.

Environmental incidents shall be reported immediately to the CM who in turn will notify the Project EH&S Manager. The CM shall if required, report the environmental incident and corrective action within 7 days of the event to the relevant authorities nominated local office.

The SM will carry out routine site inspections to check bunded areas and re-fuelling procedures with any noted matters being reported to the CM and the EH&S Manager. In the event remedial measures are required, the EH&S Manager will detail the proposed measures along with the recommendations for implementation to the SM.

In the event of a significant incidence involving hazardous materials that could or have entered the environment, the EH&S Manager will advise the local protection authority as soon as possible or in accordance with legislation. The EPA has authority for coordinating any actions in response to an environmental emergency.

Corrective Actions

Non-conformances are to be recorded by way of the System Defects.

The Subcontractor and the BLL SM/CM if applicable shall review and analyse the cause of detected non-conformance and develop a corrective action to prevent recurrence. Details of the non-conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by the CM.

It is the responsibility of the SM to immediately initiate corrective actions if required. The non-conformance and corrective action must include details of the action proposed, desired performance target and action close out date. The system defects report should be signed, dated and filed.

All corrective and preventative action taken by the Subcontractor will be carried out by and at the cost of the Subcontractor.

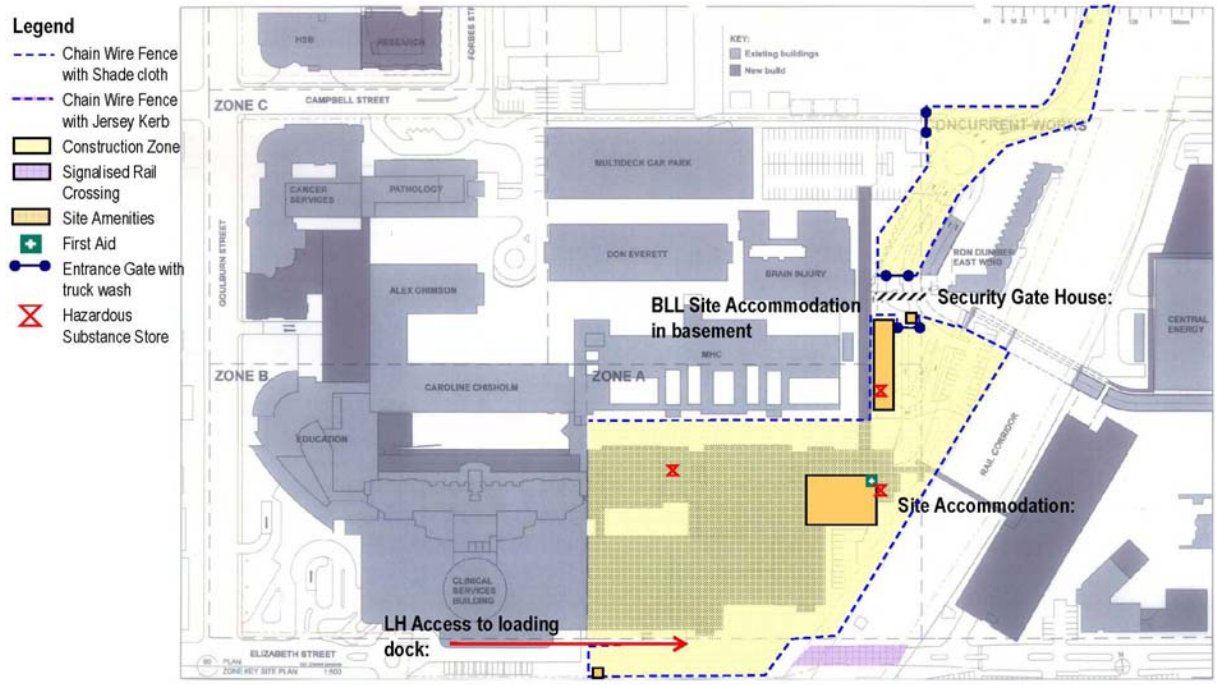
If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the SM in consultation with the SM.

Hazardous Substances/Dangerous Goods Management Implementation Plan

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
Storage of HS&DG					
A HS&DG Diagram will be prepared for the site that details the designated storage locations for all dangerous goods on the site including key areas where these materials are used.	Prior to works commencing	In accordance with the Hazardous Substances/Dangerous Goods Management Plan.	CM/SM	Review of Diagram prior works commencing.	Diagram Map prepared & containing all relevant details. The diagram will also include a list of key buildings or structures noted to contain Hazardous Building Materials.
Storage and handling procedures to be made available during site induction	Prior to works commencing	Covered in the site induction training	CM	Randomly	No employee without site induction
MSDS register and HS&DG Register to be maintained on site.	Prior to substance being used on site.	Contractors to supply MSDS and Dangerous Goods Register prior to use.	SM	Monthly or as required	MSDS centrally located (first aid). No substance being used without MSDS. No substance being stored on-site without inclusion in HS&DG Register.
Appropriate HS&DG stores constructed on site in designated areas. Capacity shall not be less than 110% of stored volume provide a sump for pumping out bund.	At all times	Design and construct HS&DG stores prior to commencing works. List these facilities in the site HS&DG Register.	SM	Random or weekly inspection.	Appropriate structures i.e. sealed floors & bund, covers, signage, designated drainage & sump collection, security. No uncontrolled spills/ leakages.
Site compounds and HS&DG Stores located away from sensitive receptors.	At all times	Conducted as part of the pre-construction review	CM	Review prior to designation as a HS&DG Store.	Not within vicinity of sensitive receptor.
Maintain integrity of storage tanks, drums, bund constructions.	At all times	Checking to minimise potential for spillage. Monitor bund capacity is maintained at 110%.	SM	Randomly or weekly.	No spills.
Appropriate security measures in place for all HS&DG Stores.	At all times	Install security prior to works commencing. Denote areas on a HS&DG Plan. Induct and train all staff and site personnel.	SM	Random or weekly inspection.	No theft or misuse. No HS&DG Stores left open or unlocked without supervision.

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
Use of HS&DG					
All refuelling to be by minitanker.	At all times	In accordance with the HS&DG Management Plan i.e. SWMS supplied.	SM	As required	No refuelling by other means
Maintenance and cleaning done in appropriately designed and designated areas.	At all times	An accordance with the HS&DG Management Plan	SM	Random inspection	No refuelling or maintenance outside designated areas. Designated areas shown on HS&DG Site Plan.
Plant and equipment checklist to be completed weekly by operators and repairs undertaken if required.	As necessary	Using developed checklists	Plant operators/ SM/	Randomly/weekly	No spills.
Availability of suitable spill kit of sufficient quantities (min 5 bags of Dryzsorb).	At all times	As per Hazardous Substances / Dangerous Goods Management Plan	SM	Weekly	Sufficient material available for cleanups based on storage volumes.
Adequate Fire Fighting Equipment to be kept in designated areas.	At all times	As per Hazardous Substances / Dangerous Goods Management Plan	SM	Weekly	Sufficient fire fighting equipment and suitable types based on Dangerous Goods Register.
Management of HS&DG Waste					
Waste substances (oil/ diesel/solvents) to be collected and stored in designated liquid waste containers within bunded area.	As required	Detail required procedures in Environmental Awareness Training and Site Induction.	SM	Inspection weekly	All liquid waste placed in appropriate containers. No uncontrolled spills or leakages.
Waste substances (oil/diesel/solvents) to be recycled, where possible.	As required		SM	As required	Waste dockets from recycling contractors. Examples of waste recycling performed onsite.
Waste substances (oil/ diesel/solvents) to be removed/disposed by an approved sub-contractor.	As required	As per approved contractors list. In accordance with contractor SWMS.	SM	As required	Liquid Waste collection/disposal dockets provided for every load.

Below is a HS&DG Diagram showing details of the designated storage locations for all dangerous goods on the site including key areas where these materials are used. The Diagram will also include a list of key buildings or structures noted to contain Hazardous Building Materials.



Site Establishment
HS & DS Storage Diagram

18.2. ASBESTOS (& HAZARDOUS BUILDING MATERIAL) MANAGEMENT PLAN

Objectives

To identify any asbestos or hazardous building materials in site buildings or structures to be refurbished, disturbed or demolished prior to site works.
To appropriately remove any asbestos or hazardous building materials in site buildings or structures to be refurbished, disturbed or demolished prior to site works.
To appropriately store, transport and dispose of all potential asbestos and hazardous building materials to a licensed waste facility.
To prevent any impact to air quality or site work areas and adjoining properties via inappropriate handling, removal or disposal of asbestos or other hazardous building materials.

Key Management Issues

Asbestos is commonly used as an acoustic insulator, brake pads (i.e. lifts), thermal insulation (i.e. pipes and cables), fire proofing (i.e. steel beams) and in building materials such as ceiling tiles or wall panels, pipes, floor tiles, linoleum and mastic. Asbestos is made up of microscopic bundles of fibres that may become airborne when distributed. These fibres may become inhaled into the lungs with significant potential risks to human health.

Other key hazardous building products include fluorescent light fittings with capacitors containing PCBs and building materials coated with lead-based paints. Both of these materials pose significant potential risks to the environment and human health if removed, handled and/or disposed inappropriately.

These measures must be instituted to prevent risks such as:

- Exposure of site workers, site personnel or adjacent land users to asbestos or lead dust during demolition (Environmental Class P1 Risk)
- Inappropriate disposal of asbestos contaminated waste (Environmental Class P2 Risk)

Site Controls

The first step in the sequence of operations is to plan the environmental management activities and integrate these with the construction program.

A Hazardous Materials Building Survey will be conducted (if deemed necessary) to identify all Hazardous building materials to assist in the management of removal, handling, storage and disposal of such materials.

Unexpected find policy.

1. If working in an area and a suspicious material is discovered then notify nearest BLL supervisor.
2. BLL to ensure the material is inspected by a competent person.
3. If the material still cannot be identified then the area is to be bunted off with sufficient signage and all personnel working near the area made aware of the situation.
4. BLL to contact Hygienist for inspection and test if required.
5. Hygienist to inspect area and give a written all clear to enable work area to be reopened.

Demolition Phase

Environmental Monitoring Services (EMS) were commissioned by Capital Insight to undertake a Hazardous Materials Audits of the existing Liverpool Hospital buildings located on Lots1-2 DP 827031, Lot 1-3 DP596770, Lot 101 DP 793557, Lot 2 DP 805696, Lot 1 DP 863491, Lot 1 DP 581947, Lot A DP 432628, Lots A & B 404423, Lot 1 DP724026 and Lots 2-13 DP 758620 The subsequent controlled removal of asbestos and demolition of the existing buildings was undertaken by Cardinal Project Services prior to Bovis Lend Lease taking procession of the site. The findings were documented in the Hazardous Material Audit and Register (Part 1 & 2) dated January 2007.

18.3. WASTE MANAGEMENT PLAN

Objectives

The objectives of the Waste Management Plan are based on the hierarchy of avoidance/reduce, re-use, recycle, treat and dispose as outlined in the National Waste Minimisation and Recycling Strategy.

To re-use and/or recycle a minimum of 60% of all Hard Waste Material, and Soft Waste Material generated on the construction site, thus achieving up to 60% reduction/avoidance in waste to landfill.

Best Practice should be adopted wherever possible, to achieve waste minimisation and reduction. Key areas that will be targeted in the Waste Management Plan are:

- To avoid, whenever possible, the generation of wastes
- Demolition Materials (including hazardous building materials i.e. asbestos)
- Construction Materials
- Excavated Fill Materials
- Domestic & Human Waste
- Wastewater
- Litter generation due to construction activities

In addition the project will:

- liaise with Subcontractors to identify areas where they can reduce waste and reuse materials in their respective trades;
- meet local, state and federal waste minimisation legislation and environmental standards;
- prevent pollution and damage to the environment; and
- protect the safety and health of our employees, site personnel and the public.

Key Management Issues

Waste Materials generated on site are to be managed such that recycling is maximised and the volume of waste transported to landfill is minimised.

Construction waste minimisation requires early planning and establishment of "Waste minimisation Culture" by all participants in the Design, Construction and End User process. Waste minimisation is a key element in life cycle analysis, material selection and specification.

Materials selected must be fit for use. The use of building materials that are fully recycled and/or include recycled material in their production will be maximised where practicable.

All disposal documentation from construction processes should be supplied to BLL and filed in the site records for verification purposes.

Site Controls

Planning

A Waste Management Contractor will be involved in the early stage of the project to ensure effective planning for the waste management.

Major Subcontractors will be asked to submit prior to commencement on site waste minimisation details including as a minimum the following:

- practical measures associated with their works to prevent waste entering on site;
- waste streams resulting from their works which can be recycled and will be actively managed as part of their waste reduction plan; and
- alternative products containing recycled material that could be utilised in their works, in place of more traditional materials, which conform and meet with the design specification.

All suppliers of building materials will be encouraged to nominate packaging minimisation and reuse initiatives, which have been implemented, as part of product supply to the project.

Bulk handling and reusable/returnable transport containers will be encouraged.

Site set up should include measures to prevent litter entering the stormwater drains and waterways feeding to the adjacent Georges River.

Waste Management will be addressed at any or all of the design coordination meetings.

A Waste storage and Handling Diagram Waste will be prepared for the site showing details of the designated storage locations of Segregated waste, water / washout waste etc.

Construction Phase:

Excavated Fill Materials

Any fill materials identified as requiring excavation from within development footprints will, where suitable, be re-used on the site as part of the site engineering or landscape works.

In the event that excavated soils are deemed unsuitable for re-use on site, the excavated fill materials will require initial waste classification testing in accordance with relevant authorities. Depending on the outcome of the waste classification, a suitably licensed landfill will be chosen to receive and dispose of the soils. Appropriate waste documentation and permits will be maintained throughout this process.

Options for either re-use or off-site disposal of excavated soil materials will be assessed at the design stage of the project.

Refer to *Contaminated Waste (soils/water) Management Plan*.

Waste Materials Bin System

All waste on site will be collected in one bin and sorted off site at the recycling station. The contractor managing this process in DATS waste.

Also refer to Concrete Waste Management Plan.

Signs will be located on each bin, indicating type of bin and what waste may be placed in that bin.

The Subcontractors will be responsible for the daily cleaning of their respective work areas and placing of their waste in the correct bins.

Additional bins will be provided where possible to further separate waste. Adequate number of litter bins be made available within the construction site areas, including work and lunch areas. These bins must be regularly emptied.

The Subcontractors working on site will place all their waste in the correct bins on site.

If a particular bin is found to be “contaminated“ by waste material from a subcontractor that particular Subcontractor will be liable for the cost associated with tipping or sorting of waste.

Waste Water / Washout Areas

Washout processes and facilities for paint and/or finishing trades are to be minimised and water recycling for these activities are encouraged where possible.

Utilisation of BLL guidelines/management plan for disposal of paint and associated wastes are to be implemented.

Finishing trades washout facilities should NOT be plumbed to any building services and will be of a stand-alone nature. The maintenance of these facilities should be the subcontractor's responsibility and should comply with all appropriate Environmental Legislation and local authority guidelines.

Packaging

All suppliers of building materials will be encouraged to nominate packaging minimisation and reuse initiatives, which have been implemented, as part of product supply to the project. Bulk handling and reusable transport containers will be encouraged.

Refer to tender interview checklist.

Recycled Materials

Suppliers will be encouraged to nominate products that include a recycled component and ability/opportunity for recycling of unused components in accordance with the specified 80% waste reduction target. Product selection will include a selection factor associated with recyclables and percent of recycled product.

Domestic & Human Waste

All domestic waste including litter will be managed via a similar bin system that will be provided in the vicinity of designated eating areas, kiosks and kitchen. Materials collected for recycling should include:

- Paper/Cardboard
- Food waste
- Aluminium Cans
- Drink containers: Glass & co-mingled
- General waste

Construction and demolition waste bins and domestic waste bins will be located in separate designated areas on the site to ensure appropriately safe storage and collection of waste. Waste areas will be clearly signposted and colour coordinated to define acceptable waste types suited for each bin and secured where required. The location of the waste bins and recycling areas will be marked on the site waste management plans.

All human waste and associated waste water will be collected via the provision of portable toilet and sanitary systems during the construction and demolition period. Where practicable, a temporary connection will be made to the existing sewer services on site. Where these facilities are too remote to prevent connection, a licensed waste contractor will be appointed to manage the waste collection and disposal in addition to general maintenance and cleaning of the toilets.

Training

Communication and education material on the waste management system will be part of the Site Environmental Awareness Program that will be incorporated into the site induction program.

Additional third party training will be investigated when a waste contractor is nominated.

The responsibility to ensure that waste materials go into the correct bins will be with everyone on site.

Performance Measures

- A Waste Management Contractor will be involved in the early stage of the project to ensure effective planning for the waste management.

- The Waste Management Contractor will coordinate waste recycling, recovery and disposal of all waste during all stages of the project.
- The waste system (bins / signage / training) is in place prior to any major waste generation works.
- All waste transportation and disposal documentation to be maintained on-site and signed as received or disposed by the appropriate contractor or waste receiving facility.
- Destination of all wastes to be approved by the receiving waste facility prior to the commencement of works.

Monitoring and Reporting

The Waste Management Contractor will be responsible for providing monthly reports to the SM: the number and size of bins taken away, tonnage's and m^3 taken away and tonnage's and m^3 recycled. This will include the final destination of materials for recycling.

The Waste Management Contractor will be responsible for providing dockets to the SM for the removal and appropriate disposal of scheduled waste from the project.

The SM will produce monthly reports and other statistic information as per BLL EH&S requirements.

The BLL Project EH&S Manager will formally audit the progress on waste management from the above monthly reports to ensure waste reduction targets are met and appropriate waste documentation maintained.

Correctives Actions

Non-conformances are to be recorded by way of the System Defects.

The Subcontractor and BLL SM/CM if applicable shall review and analyse the cause of detected non-conformance and develop a corrective action to prevent recurrence. Details of the non-conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by the CM.

It is the responsibility of the CM to immediately initiate corrective actions following approval. The non-conformance and corrective action must include details of the action proposed, desired performance target and action close out date. The system defects report should be signed, dated and filed.

All corrective and preventative action taken by the Subcontractor will be carried out by and at the cost of the Subcontractor.

If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the CM in consultation with the Project EH&S Manager.

Waste Management Implementation Plan

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
Waste Identification					
A Waste storage and Handling Diagram Waste will be prepared for the site showing details of the designated storage locations of Segregated waste, water / washout waste etc.	Prior to works commencing	In accordance with the Waste Management Plan.	CM/SM	Review of Diagram prior works commencing.	Diagram Map prepared & containing all relevant details.
Hazardous building materials to be identified in Hazardous Materials Building Survey	prior demolition works commencing	Independent surveyor to prepare a Hazardous Materials Register	CM	To be reviewed by PM and incorporated into WMP.	Preparation of a functioning HazMat Register for building materials.
Project waste types to	Prior to works	Coloured bins will	CM/ PM	To be reviewed by	List of relevant

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
be identified and quantified.	commencing	be supplied for the nominated waste streams in accordance with the Waste Management Plan.		PM and incorporated into Waste Management Plan.	waste streams and volumes from construction & demolition.
Waste Disposal					
Remove all hazardous building materials off-site.	Prior demolition works	Appropriately licensed contractor to remove and transport waste to licensed landfill	SM	Air quality monitoring daily. Clearance Survey by hygienist as required.	Non detect asbestos during ambient air monitoring. Landfill disposal dockets.
Segregation and storage construction/ demolition and domestic waste prior off site disposal.	At all times	Waste contractor to address and follow legislative requirements.	SM	Weekly inspection of Waste Collection Areas.	No cross contamination of wastes. No spillage or loss of wastes from collection containers in storage compound. Waste Dockets.
Transport and handling of demolition/ construction waste and domestic waste by licensed contractors.	At all times	Only approved contractor to be used. Appropriate SWMS for transportation of waste	SM	Random inspection of waste transport licenses. Random inspection of waste transport vehicles.	Correct covers and containers for waste transfer. No spillages/loss of waste during transport.
Demolition/ construction and domestic waste disposal to correct licensed waste receiving facilities.	All times	Only approved waste receiving facilities to be used.	SM	Waste classification reports. Inspect as required.	Waste disposal dockets correspond to waste types/ volumes.
Disposal of excavated fill materials deemed for off-site disposal.	Prior construction	Waste soils (if any) classified in accordance with relevant authority Guidelines (eg: DEC, EPA etc). Licensed waste contractor and landfill used	SM	Waste classification reports. Inspect as required.	Waste disposal dockets correspond to waste types/ volumes.
Collection and storage of wastewater from site operations (i.e. paint washing) or temporary facilities (i.e. toilets).	At all times.	Design and installation of appropriate wastewater collection/storage system.	SM	Weekly inspection of bunds, drains and sumps.	No wastewater spills or uncontrolled discharges.
Appropriate disposal of all wastewater from site operations (i.e. paint	At all times	Collection and disposal of wastewater by	SM	As required	Waste disposal dockets correspond to waste types/

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
washing) or temporary facilities (i.e. toilets).		approved licensed contractor			volumes.
Recycling					
Waste building or demolition materials (i.e. concrete, timber, steel, etc) to be segregated and stored in separate site bins.	All times	Appropriately designed waste storage areas with designated recycling bins.	SM	Weekly inspection	Clean waste bin area. No cross contamination of waste types.
Segregated waste building/demolition materials are appropriately recycled.	All times	Approved waste recycling contractor to collect bins for recycling.	SM (Environment Manager if appropriate)	Established collection schedule. Audit actual recycling volumes compared to waste recycling targets (%).	Waste recycling dockets. Waste recycling targets are met.
Minimisation					
Excavated material to be reused or recycled where possible.	As required	Independent contractor to test soils for environmental/ geotechnical parameters.	CM/SM	Soil testing report to confirm suitability for re-use. Review by Environment Manager.	No contaminated soils re-used on site.
Any fill imported onto the site is to consist of certified clean material only	As required	Indentation of material	CM/SM	Certificate of suitability.	Certificate provided prior to bring to site.
Minimise packaging and maximise use of recycled products by contractors.	At all times	Review contractor materials and packaging proposals	CM/SM	Inspect material deliveries/ specifications.	Proven examples of minimal packaging and recycled materials.
Site Offices					
Recycling bins shall be provided with the site working area.	As required	Coordinated with existing operational facility	CM/SM	Ensure waste is disposed in accordance with existing operations	monthly EH&S Managers review
Site amenities shall be provided on-site as required	Prior to works commencing	Coordinated with site population numbers	CM/SM	Ensure waste is disposed in accordance with existing facilities requirements	all waste disposed of appropriate

18.4. CONTAMINATED SOIL & WATER MANAGEMENT PLAN

Whilst remediation of any contaminated soils and/or groundwater is outside the scope of works for this project it is important that appropriate contingency measures are in place to ensure that these materials, if encountered are managed appropriately.

Bovis Lend Lease have engaged the services of Environmental Investigation Service (EIS) to conduct a preliminary contamination assessment (PCA). They will also under geotechnical assessments and inspections.

Objectives

To identify and remove any contaminated soils and/ or groundwater within the proposed development area that may be encountered during the demolition or construction works.

To render any contaminated soils/groundwater within the footprint of the proposed redevelopment suitable for either re-use on site or for off-site in accordance with relevant state legislation, regulatory requirements and environmental guidelines.

To minimise potential future environmental and human health risks associated with any contaminated soils/ groundwater within the proposed redevelopment area.

Key Management Issues

The potential for soil and/ or groundwater contamination is minor, however, it will be monitored by our excavation contractor

Site Controls

Although not anticipated, it is possible that potentially contaminated material may be encountered during the site excavation and civil works. The first step in the sequence of operations is to plan the contaminated land contingency measures and integrate these with the construction and demolition program via a Preliminary Contamination Assessment and a Waste Classification Assessment.

Planning

Conduct a Preliminary Contamination Assessment (PCA) on the proposed works areas. The PCA will determine the extent and nature of contamination (if any) and identify any associated potential for significant risk of harm to human health or the environment. If existing information is deemed to be inadequate, a Contamination Expert will be commissioned to obtain additional relevant information (e.g. further investigations). If contamination within this area is identified as being within relevant environmental (National Environment Protection Council) thresholds, standard environmental procedures and controls (as outlined in this EMP) will be followed.

Integral to the PCA is the preparation of a Preliminary Waste Classification. The waste classification will be used to determine the appropriate waste classification of any excavated spoil ear-marked for off-site disposal. Waste soils will be classified in accordance with relevant environmental guidelines. The waste classification will include details of waste volume, type and nominated licensed landfill to receive the waste.

A Contaminated Soil & Water Diagram will be prepared for the site that details the designated storage locations for all dangerous goods on the site including key areas where these materials are used. The diagram will also include a list of key buildings or structures noted to contain Hazardous Building Materials.

Site Preparation

Provisions will be made on-site for the temporary stockpiling of soils pending either waste classification testing or advice from the Geotechnical Engineer on the desired option for remediation and re-use (if required). The stockpile storage areas will be segregated into soils pending off-site disposal (contaminated separate from non-contaminated), soils suitable for immediate re-use on site and soils earmarked for remediation with the appropriate Geotechnical Engineer.

BLL will obtain all relevant approvals and permits where required prior to the excavation, handling, transport or disposal of contaminated soils or water.

A civil works contractor with relevant licenses for handling and transported contaminated soils and hazardous building materials (i.e. asbestos) will be used.

Construction & Demolition

- No construction or demolition activities will be performed on the site until a PCA and Preliminary Waste Classification (if required) has been performed to identify and assess any risks associated with potential soil and/or groundwater contamination within that location.
- Construction activities within the areas where contamination is unexpectedly discovered shall cease temporarily whilst the extent and nature of the impact is assessed by an independent Contamination Expert.
- Appropriate environmental monitoring will be performed where required (i.e. VOCs, asbestos or dust) to ensure safe working conditions are maintained during the works.
- Sub contractors will supply all appropriate personal protective equipment to site workers that likely to become exposed to potentially contaminated materials.
- Where practical, soils ear-marked for off-site disposal will be classified based on in-situ sampling and analytical results to minimise the need for stockpiling contaminated materials on-site.
- Contaminated materials requiring stockpiling will be placed in a suitably prepared area of the site with appropriate environmental and human health controls in place. These stockpiles will be segregated, clearly identified by signs and covered to minimise potential exposure.
- Contaminated groundwater or surface water removed from excavations will be pumped into a site storage facility and tested prior to determining the appropriate method of disposal. Any disposal of wastewater should be supported by relevant waste disposal documentation.

Off-site Disposal of Excavated Spoil

Materials ear-marked for off-site disposal will be accompanied by relevant Waste Classification “letter-style” Reports. The Reports will confirm waste types and volumes and be supported by relevant analytical results. The Reports will accompany all materials to be disposed off-site to an appropriately licensed landfill facility. In return, the landfill waste receipt dockets will be retained with the site records for audit purposes.

- Remediation of Contaminated Soil/ Groundwater

Where contamination exceeds the thresholds as identified in the PCA, the appointed Contamination Expert will be requested to provide options for remediation of the materials. Remediation decisions will consider not only the levels of contamination present, but also the feasibility of various remediation options and the capacity of the site for re-use of any materials.

Soil and/ or groundwater remediation will be only be performed by BLL under the written approval of the client. All remediation works will be performed in accordance with relevant legislation, planning and regulatory requirements.

Training

Communication and education material on the contaminated land and schedule wastes will be part of the Site Environmental Awareness Program that will be incorporated into the site induction program.

Performance Measure

- Preliminary Contamination Assessment performed by BLL with support of a Contamination Expert (where required) and copied to the client.
- Preliminary Waste Classification Assessment performed by BLL with support of a Contamination Expert (where required).
- Approval obtained from the client prior to commencing any Remediation.
- Validation certificates obtained for all materials following remediation/ pre-treatment.
- BLL review methodology statement for contaminated material removal (as required) from engaged environmental consultant.
- Retain all copies of tipping and disposal documentation to be supplied to BLL and filed with site records.
- Validation of any remediation works or materials identified for re-use onsite by a Contamination Expert.

Corrective Actions

Non-conformances are to be recorded by way of the System Defects.

The Subcontractor (and EM/ CM/ SM if applicable) shall review and analyse the cause of detected non-conformance and develop a corrective action to prevent recurrence. Details of the non-conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by the CM.

It is the responsibility of the Environment Manager(EM) to immediately initiate corrective actions following approval. The non-conformance and corrective action must include details of the action proposed, desired performance target and action close out date. The system defects report should be signed, dated and filed.

All corrective and preventative action taken by the Subcontractor will be carried out by and at the cost of the Subcontractor.

If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the CM in consultation with the EM.

Contaminated Soil & Water Management Implementation Plan

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
Planning					
Preliminary Contamination Assessment (PCA).	During design/ prior construction.	Review existing data. Additional information to be obtained by Environmental Consultant.	CM/EM	PCA prepared. Copy of Report to client	No works performed in areas without PCA first completed. Need for remedial works identified.
Preliminary Waste (Soil) Classification	During design/ prior construction.	Environmental consultant to prepare plan based on design plans.	CM/EM	Preliminary Waste (Soil) Classification Report Prepared. Copy of Report to client	Soil classified for off-site disposal. Need for any remediation works identified.
Assessment of Remediation Options	If PCA confirms contaminated soils.	Liaison with Environmental Consultant & BLL.	CM/EM	Feasibility assessment provided to client	client consent obtained prior commencing with any remediation.
Site Preparation					
Prepare designated stockpile areas (sealed & bunded) with suitable environmental controls for contaminated soil.	Prior construction.	Contractor to prepare area based on specification.	CM/SM	Inspection of stockpile area prior commencing works.	Area suitable capacity for volumes indicated in Waste Assessment Report.
Obtain relevant waste remediation/ transport/ disposal permits.	Prior construction.	Contractor to obtain relevant permits.	CM	Review permits and approvals prior works.	Copies of valid permits and approvals in site file.
Construction & Demolition					
Ceasing site works when contaminated soils/water are encountered.	At any time	Contractor to seek advice from project Environmental Consultant.	SM/ Contractor/ EM	Monitoring of all excavations works for potential contaminated material.	No environmental incidents. Contaminated materials identified & managed.
Segregation of contaminated soils / water from other inert wastes.	At any time	Contractor to segregate. Consultant to identify level/type of contamination. and place signage on stockpile.	EM	Routine inspection of stockpile areas.	Correct waste classification. No cross contamination of wastes. Appropriate signage present.
Minimise exposure of site workers to contaminated materials.	At all times.	Contractor to supply appropriate PPE and SWMS. BLL to provide training and induction.	EM	Daily inspection of works areas.	No elevated environmental monitoring events. No notifications for incorrect/ inadequate PPE. SWMS are followed.
Safe storage of	During	Contractor to	EM	Inspection of	No uncontrolled

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
contaminated soils/ groundwater pending off-site disposal or treatment.	construction & demolition.	prepare designated waste storage area with environmental controls.		storage area prior commencement of excavation/ demolition works.	runoff from stockpiles. No cross contamination of wastes.
Safe transport of contaminated soils/groundwater to receiving waste facility.	During construction & demolition.	Construction traffic routes to be followed. Approved and licensed contractor used.	SM	Inspect contractor licenses and insurance.	Copies of license and insurance in site files. No use of unauthorised traffic routes.
Remediation & Pre Treatment of Waste					
Where feasible, treat contaminated groundwater/ soil for suitable re-use onsite or disposal as lower waste classification.	When required.	Environmental consultant to provide Remediation Testing Advice.	EM	Approvals for treatment obtained. Validation certificates of remediated materials.	Approvals obtained prior treatment. Validation certificate obtained at completion of treatment. No environmental incidents during treatment.
Re-use on site					
On site re-use treated soils/ groundwater that achieves acceptable clean-up targets.	When remediation successful.	Environmental consultant to confirm fit for purpose.	SM/ EM	Remediation testing report confirms materials fit for purpose. Client Consent to reuse materials.	No soil/ water re-used without client consent. Validation certificate for all re-used wastes.
Off-site Disposal					
Landfill disposal of contaminated soils.	Where remediation and reuse onsite is not feasible.	Contractor to obtain disposal approvals and permits. Environmental consultant to provide Waste Report.	SM	Inspect permits and approvals prior to loading transport vehicles. Waste report attached to waste documents.	Waste report present. Waste dockets correspond to waste volumes/types. Licensed landfill used.
Off site disposal of contaminated groundwater.	Where remediation and reuse onsite is not feasible.	Contractor to obtain disposal approvals and permits. Licensed liquid waste contractor used.	SM	Inspect permits and approvals prior to loading transport vehicles. Waste report attached to waste documents.	Waste report present. Waste dockets correspond to waste volumes/types. Licensed liquid waste facility used.
Validation					

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
Validation of remediation excavations/ materials.	At completion of excavations.	Environmental consultant to perform and confirm validation.	EM	Validation report to confirm subject materials or area suitably remediated.	Remediated materials deemed suitable for re-use. Remediated areas deemed fit for purpose.

18.5. CONCRETE WASTE MANAGEMENT PLAN

Objectives

To prevent excessive concrete waste accumulation on site, and the potential for contamination of the George's River. and other natural watercourses or stormwater inlets with concrete washing's.

Key Management Issues

Waste Management will follow the preferred hierarchy of avoidance/reduce, re-use, recycle, treat and dispose as outlined in the National Waste Minimisation and Recycling Strategy. Best Practice should be adopted wherever possible, to achieve waste minimisation by recycling a minimum of 60% of all Hard Waste Material, and Soft Waste Material generated on the construction site, thus achieving up to 60% reduction/avoidance in waste to landfill.

Concrete waste is unnecessarily accumulated on site with some potential for entry into other natural watercourse is an Environmental Class P2 Risk ;

Site Controls

A Waste storage and Handling Diagram Waste be prepared for the site showing details of the designated storage locations of Segregated waste, water / washout waste etc.

Priority will be given to concrete wash-out operations being performed off-site at the concrete supplier facility with agreement from the supplier the concrete truck deliveries.

A designated concrete wash down area will be established on site as a contingency measure (if required). The designated wash down area will be located and designed so that any excess drainage from the area will be contained within a separate drainage collection and storage site system preventing any off-site discharges without necessary approvals and permits. Signage shall be erected advising all concrete trucks pumping units etc. that all wash down must only take place within the designated area.

Responsibility for maintenance of this facility will rest with a nominated site Subcontractor. The sub-contractor at concrete pumping/ placing locations will also be expected to appropriately contain any possible spillages.

A Waste storage and Handling Diagram Waste will be prepared for the site showing details of the designated storage locations of Segregated waste, water / washout waste etc.

Training

Communication and education material on the concrete waste procedures will be part of the Site Environmental Awareness Program that will be incorporated into the site induction program.

Performance Measures

- Wash down facility constructed and operating prior to any major concreting works commencing.
- Wash down facility is used when off-site wash-out facilities are not provided by concrete supplier.
- Routine maintenance checklist prepared and signed off by responsible party. These checklists are to be filed with the Site EH&S Reporting.

Monitoring and Reporting

The responsible site Subcontractor will carry out weekly maintenance checks.

Corrective Actions

Non-conformances are to be recorded by way of the System Defects.

The Subcontractor (and EM/ CM/ SM if applicable) shall review and analyse the cause of detected non-conformance and develop a corrective action to prevent recurrence. Details of the non-conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by the CM.

It is the responsibility of the EM to immediately initiate corrective actions following approval. The non-conformance and corrective action must include details of the actions proposed, desired performance target and action close out date. The system defects report should be signed, dated and filed.

All corrective and preventative action taken by the Subcontractor will be carried out by and at the cost of the Subcontractor.

If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the CM in consultation with the EM.

Concrete Waste Management Implementation Plan

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
Waste Minimisation					
Waste storage and Handling Diagram Waste to be prepared for the site showing details of the designated storage locations of Segregated waste, water / washout waste etc.	Prior to works commencing	In accordance with the Concrete Waste Management Plan.	CM/SM	Review of Diagram prior works commencing.	Diagram Map prepared & containing all relevant details.
Accurate estimates of concrete materials required for works.	Design Stage	Independent estimates of materials based on final design.	CM	Audit of estimate compared with actual volumes.	No overestimates of concrete materials.
Excess concrete to be re-used elsewhere on-site where possible.	At all times.	Concrete contractor to address.	SM/EM	Monitoring as required by SM	No excess concrete left on site.
Excess concrete to be stored on-site and collected by recycling contractor.	Only when reuse options not available.	Concrete contractor to address.	SM/ EM	Monitoring as required by SM. Waste recycling dockets.	No hardened spills/ pours left on site.
Waste Collection & Storage					
Off site washout facility for concrete pumping equipment.	Prior construction.	Concrete contractor to address.	CM	No monitoring required.	No washout facility required on-site.
Washout facility for concrete pumping equipment to be established on site.	As second option to off site. Prior construction.	Appropriately designed wash-out facility & waste collection system. Concrete contractor to address.	CM/SM	Random and weekly inspection of facility and waste collection.	Concrete washout area kept clean and drains/sumps operating. All washings maintains in collection system.
Signage to be erected advising all of concrete trucks pumping units and wash-out facilities.	At all times	Concreting sub-contractor in accordance with their EH&S Plan	CM/SM	Random and weekly inspections.	All wash downs performed in designated areas. Signage visible.
Spill containment at wash down facility.	At all times	Designed into washout area. Contractor to utilise and maintain.	CM/SM	Weekly inspections or as required.	No uncontrolled discharges from the facility.
Waste Disposal					
Excess concrete waste to be disposed off-site to a suitably licensed receiving landfill.	Only when reuse/ recycling options not available.	Concrete contractor to dispose to licensed landfill.	SM	Waste disposal dockets for all waste disposed.	No waste disposed to unlicensed facilities.

18.6. PAINT WASTE MANAGEMENT PLAN

Objectives

To eliminate damage to the environment caused by disposal of paint and associated wastes

To implement appropriate controls to eliminate damage to the environment caused by disposal of paint and associated wastes.

Key Management Issues

The proposed Liverpool Hospital Redevelopment Project will include the construction and fit-out of a new hospital facility and the refurbishment of an existing facility As part of the works, the buildings interior , external and miscellaneous areas will be painted. As a result, appropriate environmental safeguards are required to ensure that no uncontrolled discharges paint waste and/ or washout occurs from the site and impacts off-site sensitive receptors including waterways (Environmental Class P1 Risk).

In addition to the above, all disposal documentation from construction processes will be obtained from contractors and retained by BLL in the site records for verification purposes.

Site Actions

All paints and associated products are to be stored appropriately to ensure the elimination of damage to the site environment or potential sensitive receptors located off-site.

Paint storage areas are to consist of the following components;

- Secure / lockable area where paints can be stored without risk of vandalism, theft or damage.
- Appropriate washout facilities as described below.
- In the case of enamel paints and thinners, a fire extinguisher is to be stored in the storage area.
- The area is to be well ventilated.

Paint washout facilities are to consist of the following components;

- Water and recycled water storage (approx 10 litres).
- Spinning drum for acrylic paints.
- Spinning drum for enamel paints.
- Enamel paint filter and recycled turpentine storage.
- Paint residue and clean out wastes.
- Empty drum storage for return to the manufacturer.

Procedure for cleaning acrylic based paints.

- Designated painting equipment per type and colour of paint used on the project.
- Transfer as much paint as possible from rollers, brushes and trays back into paint containers at the end of the day or job.
- Clean paint trays with cloth or paper. Do not wash in water. Dispose of cloth or paper as clean out waste in the nominated waste bin located in the paint washout area.
- Place the roller sleeve into a COVERMATE canister, and fill with the appropriate amount of water as specified by the manufacturer, and shake. Replace the canister in the designated location in the paint storage area.
- Place brushes into a storage tin filled with water or recycled water.
- On commencement of the next roller application, remove the roller from the COVERMATE canister and spin off into the appropriate spinning drum. The roller sleeve is now ready for use.
- On commencement of the next brush application, wash brush in storage tin and spin off in the appropriate spinning drum. The brush is now ready for use.
- Repeat above mentioned process on a daily basis or as necessary
- Dispose of old brushes and roller sleeves as clean out waste on completion of the project.
- All paint brushes/equipment to be washed out in enviro washout system (installed and maintained by s/c).

Procedure for cleaning enamel paints.

- Allow a paint brush and roller per type and colour of paint used on the project
- Transfer as much paint as possible from rollers, brushes and trays back into paint containers at the end of the day or job.
- Clean paint trays with cloth or paper. Do not wash in solvent. Dispose of cloth or paper as clean out waste in the nominated waste bin located in the paint washout area.
- Place the roller sleeve into a COVERMATE canister, and fill with the appropriate amount of solvent as specified by the manufacturer, and shake. Replace the canister in the designated location in the paint storage area.
- Place brushes into a storage tin filled with solvent or recycled solvent.
- On commencement of the next roller application, remove the roller from the COVERMATE canister and spin off into the appropriate spinning drum. The roller sleeve is now ready for use.
- On commencement of the next brush application, wash brush in storage tin and spin off in the appropriate spinning drum. The brush is now ready for use.
- Repeat above mentioned process on a daily basis or as necessary
- Dispose of old brushes and roller sleeves as clean out waste on completion of the project.
- Flammable liquid signage to be clearly displayed indicating to keep fire away.
- All paint brushes/equipment to be washed out in enviro washout system (installed and maintained by s/c).

Disposal of clean out wastes

- Filter all washout liquids through filter fabric, eg stocking or biddum, into the appropriate recycled liquid container. (allow for colour and type).
- Dispose of the filter as clean out waste in the nominated waste bin located in the paint washout area.
- When recycled liquid is no longer fit for use and can't be filtered, dispose of as clean out waste in the nominated bin located in the paint washout area.
- When sufficient amount of clean out waste is accumulated, eg 20 litres, seal the drum and return to the manufacturer, or alternately, dispose of at an approved waste disposal facility. Ensure a record of disposal is obtained and submitted to BLL, to be maintained on site in the records.

Performance Measures

- Facility constructed and operating prior to any major Painting works commencing.
- Facility is used regularly.
- Copies of all tipping/disposal documentation to be supplied to BLL and filed with site records.
- Routine maintenance checklist prepared and signed off by responsible party. These checklists are to be filed with the Site Environmental Reporting.

Monitoring and Reporting

The responsible site Subcontractor will carry out weekly maintenance checks.

Corrective Actions

Non-conformances are to be recorded by way of the System Defects.

The Subcontractor (and EM/ CM/ SM if applicable) shall review and analyse the cause of detected non-conformance and develop a corrective action to prevent recurrence. Details of the non-conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by the CM.

It is the responsibility of the EM to immediately initiate corrective actions following approval. The non-conformance and corrective action must include details of the actions proposed, desired performance target and action close out date. The system defects report should be signed, dated and filed.

All corrective and preventative action taken by the Subcontractor will be carried out by and at the cost of the Subcontractor.

If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the CM in consultation with the EM.

A specific Implementation Plan is not required.

18.7. STORMWATER & EROSION MANAGEMENT PLAN

Objectives

To avoid erosion, contamination and sedimentation occurring as a result of the construction or demolition activities associated with the redevelopment.

To control the quality of stormwater leaving the construction site such that no unacceptable impact occurs to adjoining natural watercourses or stormwater drains discharging into these water bodies.

Minimise disturbance to the hydrologic regime of the surrounding landscape and maximise opportunities for stormwater recycling on the site.

Key Management Issues

Construction activity on the project site involves excavation to facilitate the proposed redevelopment of Liverpool Hospital. The soils at the site are noted to be of high erosion potential. In addition the permeability of the site soils and the proximity to groundwater would suggest that dewatering of site excavations may be required

The construction and refurbishment works have the potential to adversely impact ecosystems and water quality within adjacent surface water bodies including the Georges River via sediment loads and potential contaminants contained in runoff. Potential impacts to the site environment, including existing soils and groundwater also need to be considered as part of any stormwater and erosion management plan. Other physical impacts to be considered include the susceptibility of the site to potential flooding events.

The following activities are expected to be the key risk sources during construction:

- Site clearing , spoil and material stockpiling.

The following management issues have been identified:

- Sediment laden water from the construction site may potentially flow into the stormwater system and/or adjacent surface water bodies (Environmental Class P2 Risk);
- Stormwater with excessively high or low pH values could run-off from the selected stockpiles stabilisation area (Environmental Class P3 Risk);
- Stormwater collected in excavations and requiring disposal (Environmental Class P3 Risk);
- Groundwater entering excavations and requiring disposal after dewatering (Environmental Class P1 Risk).
- Site cut off drains eroding and increasing site water sediment loads (Environmental Class P3 Risk);
- Vehicles leaving the construction site depositing dirt/mud on public roads after rain periods (Environmental Class P3 Risk);
- Removal of bulk material off site escaping from vehicles and polluting roadways (Environmental Class P3 Risk); and
- Debris and litter collecting along roads and in catch drains and consequently could affect nearby water bodies quality (Environmental Class P2 Risk).
- Site contamination through the potential for an overflow of fuel/chemical storage containers and contamination from the equipment and plant repair area into the near by Gorges River (Environmental Class P1 Risk
- Stormwater runoff coming into contact with potential contaminated soils may potentially flow into the stormwater inlets and thus thhe nearby Georges River. Natural water courses could be affected and consequently reduce water quality (Environmental Class P2 Risk);

Site Actions

The prevention of soil erosion by water and wind and by sediment pollution are key components of the Stormwater and Erosion Management Plan for the site.

A Stormwater & Erosion Control Diagram will be prepared prior to site activity and Bulk Earthworks. The diagram will detail collection points, temporary drainage flows, sediment controls and general stormwater overflow management.

Construction stage water quality impacts shall be minimised by incorporation of appropriate erosion and sediment control measures in the detailed design, specification and contract arrangements and quality assurance inspection during construction.

Adopt best practice environmental management strategies in accordance with the principles outlined in the Department for Infrastructure, Planning & Natural Resources) document titled "Guidelines for Erosion & Sediment Control on Building Sites" and other key reference documents and legislation previously outlined.

Planning

- Locate all stockpiled soils away from surface waters, potential watercourses and flood prone areas.
- Limit land disturbance to the area needed, especially in the vicinity of existing stormwater drainage.
- Cease works if excess dust is being generated and resolve the problem prior to recommencing works.
- Restrict construction and demolition traffic to designated traffic routes that are well drained and all weather.
- Annual weather patterns to be taken into account when planning general site operations and in particular during planned excavations or land disturbance activities.
- Clearly identify, demarcate and fence off areas of vegetation or landscape on or near the boundaries of proposed excavation and demolition footprint to indicate these areas are not to be entered or disturbed.

Controls

- Divert up slope runoff around disturbed areas;
- Construct earth bunds and similar diversion drains to divert surface water runoff around the perimeter of the proposed demolition or construction areas. Where possible, seed all diversion channels to dissipate water velocity.
- Install temporary sediment and erosion controls to prevent the erosion of soil from disturbed construction areas and stockpiles. Measures may include filter barriers (straw bails or silt fence), temporary covering or revegetation with hydro-mulching and native seeding.
- Control access to construction areas by limiting entry and exit points. Ensure all approved access points shall be marked prior to the commencement of construction within that area.
- Reduce the erosive energy (concentrated flow and velocity) of water using measures such as temporary storage, dissipaters, level spreaders and drain grass planting's.
- Prevent deposition of sediment on the public road network due to truck / equipment movements to and from the site via a purpose built truck/wheel wash facilities at site exit point.
- Collection of stormwater into temporary detention basins (refer to de-watering procedure)

Sediment Fences / Devices:

Sediment fences and devices will be used in areas where temporary sediment control is required. These relatively simple devices will dissipate stormwater velocity and collect moving solids.

Throughout the Pre-excavation and Post Road Construction period of excavation and construction, temporary sediment fences and devices will need to be positioned where erosion is most severe.

Sediment fences will be placed downstream of stockpiles and disturbed areas. It is important that sediment is collected adjacent to these areas to prevent loss of material downstream.

Sediment devices will be placed in areas where energy dissipation is required. When constructed these systems are commonly known as check dams and are placed in areas where a major flow path exists. Straw bales filter coarse sediments but tend to be less effective with fine sediments. For this reason all Straw bales will be lined on the upstream side with a geotextile filter fabric where appropriate. Straw bales will be secured with three stakes and positioned so the bale twine does not degrade due to direct sunlight.

Rehabilitation

On completion of works decommission sediment traps constructed as part of the temporary works by removing all silt material from the base of the trap, removing the trap wall and filling the trap with compacted fill. The diversion drains will be graded to match surface levels.

Temporary silt traps or sediment control devices will not be removed for landscape or streetscape works, but shall only be removed following stabilisation of disturbed areas.

Maintenance of Controls:

- Perform routine maintenance inspections of the stormwater diversions and sediment and erosion controls, particularly after rainfall events or extremely windy conditions.
- Where required, clean or repair diversion drains, storage basins, silt fences and other related control structures to ensure the continued effective operation of these over the duration of the construction and demolition period. Future management of these structures, if required, will be stipulated in the Site Management Plan if applicable for the site.

Stormwater Re-use:

- Any stormwater entering the excavation or works areas will be collected and retained for re-use on-site for uses ranging from dust suppression on construction roads to landscape watering.

Controlled Discharges (Dewatering):

BLL is committed to Stormwater Management during construction, and as such, operates without formal licences but in accordance with industry best practice for the management of stormwater and de-watering discharge.

All site waters during construction and landscaping shall be contained on site, and released only when suspended solids are less than 50mg/L (for storms less than 1 in 5 year time of concentration) in order to avoid pollutants entering the Council's stormwater drainage system.

The collection of stormwater/ground water on a project could be discharged to the stormwater system if it meets certain criteria. This would involve an analysis of the quality of receiving waterways and the collected water within the project boundary. This analysis would need to be carried out by a NATA accredited laboratory and the results and final report supplied to Bovis Lend Lease.

The analysis would need to demonstrate that the collected water within the project boundary does not exceed the tested parameters and have no evidence of the following substances detected:

- nutrients, from fertilisers;
- herbicides and pesticides used in landscaping;
- acids from washing;
- building wastes and litter;
- paint and paint wastes; and
- oils, grease and fuel, from equipment operation and maintenance.

Note:

This initial analysis should be engaged by the BLL site project team to an Environmental Consultant to prepare and interpreted the results for verification and acceptability before any pump-out work can commence.

An on site treatment with discharge to stormwater system could be implemented providing that there is no chemical contamination (as listed above) and water quality during construction must comply with any specific requirements of the Local Planning Authority. In addition to the schedule of analytes outlined below, the potential for contamination of the retained waters should also be determined and if required, additional analysis performed to meet criteria.

- pH is between 8.5 and 6.5
- suspended solids is less than 50 mg/L,

Note:

This site treatment should be sub contracted to an appropriate contractor and the test results supplied to BLL and filed in the site records for verification purposes.

Treatment options could include the use of a mobile specialist plant for this procedure and may prove more cost effective than a procedure of pumping out and/or on site storage of this water.

Ongoing water quality monitoring would need to performed and the contractor engaged to do this work would need to provide a safe work method statement (SWMS) detailing the frequency of sampling and on site procedures to ensure discharge does not exceed the criteria.

Training

Communication and education material on the stormwater, erosion and sediment controls will be part of the Site Environmental Awareness Program that will be incorporated into the site induction program.

Performance Measures

- Control structures constructed and operational prior to earthworks commencing in the nominated area.
- All site cut-off drains unobstructed.
- All major site drains adequately stabilised.
- All controls maintained and functional.
- All stockpiled material adequately stabilised and protected.
- No de-watering stormwater/ground water discharge from the site in a 5 year ARI storm event have a suspended solid content of less than 50mg/L.
- Appropriate parameters for any contaminants of concern (if present) meet the relevant ANZECC (2000) criteria.
- No complaints concerning mud/organic debris on the surrounding public roads to the site.

Monitoring and Reporting

At least weekly, the Bulk Earthworks or Maintenance Subcontractor or nominated Stormwater/ Sediment Control contractors will inspect (and document) the site and, providing particular attention to the following matters:

- Perform daily visual inspection of stormwater diversions and sediment/ erosion control devices ensuring they are operating effectively and at full capacity.
- Maintain erosion and sediment control measures in a functioning condition until all earthwork activities are completed and the site is rehabilitated.
- Devise and implement appropriate remedial measures where any controls or devices are not functioning effectively or are inappropriate.
- Ensure rehabilitated lands have effectively reduced the erosion hazard and initiate upgrading or repair as appropriate.
- The SM will maintain records and comments on the condition of existing erosion and run-off controls (drains, silt fences, catch drains etc.) de-watering procedures and test results, and any site instruction issued to Subcontractors to undertake remedial works.
- Rainfall data will be filed on site by SM and discussed where reports of poor drainage areas occur.
- Water quality parameters meet relevant discharge limits for either re-use on-site or via a controlled discharge.
- All daily inspection reports, environmental incidents and controlled discharge records will be maintained and may be reviewed during any Environmental Audit performed on the site.

Corrective Actions

Non-conformances are to be recorded by way of the System Defects.

The Subcontractor (and EM/ CM/ SM if applicable) shall review and analyse the cause of detected non-conformance and develop a corrective action to prevent recurrence. Details of the non-conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by the CM.

It is the responsibility of the EM to immediately initiate corrective actions following approval. The non-conformance and corrective action must include details of the actions proposed, desired performance target and action close out date. The system defects report should be signed, dated and filed.

All corrective and preventative action taken by the Subcontractor will be carried out by and at the cost of the Subcontractor.

If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the CM in consultation with the EM.

Stormwater & Erosion Management Implementation Plan

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
Planning					
Prepare a Stormwater & Erosion Control Diagram outlining environmental safeguards.	Prior to works commencing	In accordance with the Stormwater & Erosion Management Plan.	CM/SM	Review of Diagram prior works commencing.	Diagram prepared & containing all relevant details.
Installation of Stormwater & Erosion environmental safeguards.	Prior to works commencing	In accordance with Stormwater & Erosion Management Plan & Civil Engineering consultant's documentation.	CM/SM	Weekly inspection	Pre-construction check and daily there after.
Stormwater & Erosion Controls					
Silt stop filter fences to be located below disturbed areas and across all potential runoff sites.	Prior to works commencing	In accordance with the Stormwater & Erosion Management Plan.and Civil Engineering consultant's documentation.	CM/SM	Daily visual inspection & Weekly documented inspection.	Pre construction check. Silt collected at base of fence. No breach of fence line
Truck wheel wash/ shake facility to be installed near construction access.	Prior to construction commencing	Detailed work method statement to be prepared by sub-contractor.	CM/SM	Pre-construction check and daily /weekly maintenance inspections.	Pre-construction check. No mud/silt tracked onto roadways.
Stockpiles located away from watercourses, sensitive ecosystems or flood prone areas.	Prior to construction commencing	Contractor to perform in accordance with the Stormwater & Erosion Management Plan.	CM/SM	Pre-construction check and daily /weekly maintenance inspections.	Pre-construction check. No mud/silt migration into waterways, ecosystems or off-site.
Stockpiles left for > one month to be temporarily seeded using sterile crops.	1 month after stockpile placement	In accordance with the Stormwater & Erosion Management Plan.	SM/EM	Weekly monitoring.	No erosion from stockpiles.
Stormwater inlet sediment traps to be installed.	Prior to construction commencing	In accordance with the Stormwater & Erosion Management Plan & Civil Engineering consultant's documentation	CM/SM	Weekly inspection	Sediment collected in traps.
All erosion controls to be maintained until potential for erosion and sedimentation passed.	At all times	In accordance with the Stormwater & Erosion Management Plan.	SM/ EM	Weekly inspection	Retaining all controls effective. No uncontrolled discharges of sediment off-site or

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
					into waterways.
Stormwater & Runoff					
Parking area and site facilities to be of aggregate material.	Prior to construction commencing	In accordance with the Stormwater & Erosion Management Plan.	CM/SM	Pre-construction inspection	No sedimentation from parking/site facilities.
Collected stormwater to meet reuse onsite or discharge requirements.	Ongoing	In accordance with the Stormwater & Erosion Management Plan and WMS to be prepared by sub-contractor.	EM	Daily inspection and NATA test results.	No discharge to exceed controlling Authority criteria.
Install sediment control devices upstream of existing stormwater pits.	Prior to construction	In accordance with the Stormwater & Erosion Management Plan.and Civil Engineering consultant's documentation.	CM/ SM	Monitor for siltation and sedimentation at downstream locations.	Effective sediment traps.
Stormwater pipes and pits should be well maintained and kept clear of debris and sediment.	Ongoing	In accordance with the SEMP.	SM/ EM	Daily/weekly inspection	Free flowing pipes capable of discharging maximum flows. Monitor for potential blockages.
Sediment Retention					
Sedimentation basin size and construction to meet requirements of the publication mentioned in the Key legislation under key management issues.	Prior to construction	In accordance with the publication mentioned in the Key legislation under key management issues	CM	Daily/weekly inspection	Effective basin that is easily cleaned and maintained. Monitor for sediment build-up and litter collection.
Within 24hrs of a 1in 5 year ARI storm event, inspect the sediment/detention basin and stormwater treatment devices and remove any build up of debris.	As required by storm events	In accordance with the Stormwater & Erosion Management Plan.	EM	Daily/weekly inspection	Basin clear of storm debris.
Rehabilitation					
Stabilisation works & landscaping of batters, open drain etc will be given high priority to ensure that bare ground is rehabilitated.	As required	In accordance with the Stormwater & Erosion Management Plan & Landscape scope of works	CM/ SM/ EM	Daily/weekly inspection Project planning and design meetings.	Appropriate stabilisation of works.

18.8. NOISE & VIBRATION MANAGEMENT PLAN

Objectives

To minimise the generation of noise and vibration from construction activities occurring on site and its impact on site operations and workers.

To minimise the generation of noise and vibration from construction activities occurring on site and its impact on the neighbouring residents, businesses and hospital staff / patients.

Establish and maintain good relations with community and neighbouring sites and hospital staff/patients.

Key Management Issues

Noise generated during construction will be primarily associated with vehicle movements, generators, heavy machinery (eg: Excavators) and hand-held machinery and tools. Some additional vehicle noise may be generated by the thoroughfare of vehicles using transport corridors to and from the site.

Noise and Vibration Impact Statements (NVIS) are to be prepared for the project The plan will be reviewed monthly as part of the EHS Plan review.

The NSW DECC specifies that construction activities (noisy works) are allowed during the period 7.00am to 6.00pm Monday to Friday and 8.00am to 1.00pm Saturday, with no work on Sunday or Public holidays

Works should comply with AS 2436-1981 requirements.

As no driven piling is proposed and the works will be conducted within the hours detailed by the condition of consent, potential noise impacts are predicted to be negligible and expected to pose a minor impact (if any) to the nearest residences to the east of the site. In view of this, the following management issues have been identified:

- Noise and vibration generated during construction and demolition works affecting nearby properties (Environmental Class P2 Risk).
- Vibration generated during construction and demolition works affecting site structures including heritage listed items and explosive storage/manufacturing facilities (Environmental Class P1 Risk).
- Establish and maintain good relations with community and neighbouring sites.

Site Actions – Noise

All noisy construction or demolition activities are to be performed in accordance with hours stipulated by the conditions of consent as outlined below:

- 7:00am to 7:00pm on Mondays to Fridays, inclusive;
- 8:00am to 3:00pm on Saturdays; and
- at no time on Sundays or public holidays, without approval from Liverpool Hospital Council.

Noise limits during the construction works are to meet the Maximum Allowable Noise Contribution as specified in the conditions of consent.

Piling works in existing dock will have to be coordinated with hospital.

No construction works shall commence unless the Subcontractor has submitted a Work Method Statement which details the schedule of demolition / excavation equipment which describes the equipment types to be used, noise levels these will generate, expected time and duration of use, and any measures required to ensure the noise levels are acceptable (such as screen mufflers).

The Major Subcontractors generating noise should consider engaging an acoustic consultant to monitor construction noise level during its identified noisy activities.

Ensure traffic access to and from the site will be via designated entry/exit points.

Fit and maintain appropriate mufflers on construction and earth-moving equipment as required.

BLL will utilise existing Noise Impact Assessment data, where required, to determine noise sources and confirm ambient background levels or will conducting baseline noise monitoring prior to construction work commencing and may engage an acoustic consultant to monitor construction noise level during its activities .BLL will undertake regular noise monitoring. Results of noise monitoring will be made available to Capital Insight.

Personnel safety measures shall be implemented wherever noise exceeds 85dB(A).

All typical plant and equipment used during the construction and demolition works will be within the maximum noise levels specified (at 7 metres) refer to Table 18.8.1.

Site Actions - Vibration

When planning for construction work that will include vibration work make all practical efforts to protect vibration sensitive buildings and the amenity of the occupier's of buildings. Follow the ANZECC guidelines `*Technical Basis for Guidelines to minimise Annoyance to Blasting Over pressure and Ground Vibration'*

Apply a practical and economical combination of vibration control measures to manage vibration impacts such as:

- Substitution by an alternative process
- Restricting times when work is carried out
- Screening or enclosures
- Consultation with affected residents.

All activities involving vibrating rollers will be performed in accordance with the safe working distances to buildings and structures as outlined in Table 18.8.2.

TABLE 18.8.1: TYPICAL NOISE LEVELS

ITEM	TYPICAL PLANT OR EQUIPMENT	MAX NOISE LEVEL (at 7 metres)
Bulldozer	Caterpillar D7, D9	88
Bulldozer	Caterpillar D10	93
Front End Loader	Wheeled	90
Jack Hammers	With silencing bags	85
Air Track Drill	800 CFM Compressor	96
Scraper	Caterpillar 631	89
Scraper	Caterpillar 651	85
Grader	Caterpillar 16	85
Compactor	Caterpillar 825	85
Compactor	Vibrating Plate	92
Vibratory Roller	10-12 Tonne	89
Water Cart		88
Dump Trucks	35 Tonne	96
Excavator	Kato 750	86
Rock Breaker	Hydraulic on Kato 750	97
Truck		80
Crane	Truck Mounted	85
Compressor	600 CFM	75
Compressor	1500 CFM	80
Backhoe		88
Spreader	Asphalt, concrete	70
Asphalt Truck		92
Asphalt Paver		89
Tip Truck		83
Generator	Diesel	79
Spraying Machine		75
Mechanical Broom		83

Piling Hammer	For piles and casing	93
Concrete truck		83
Concrete Pump		84
Concrete Vibrators		80
Drill	Air	85
Drill	Pneumatic	85
Welders		85
Concrete Saw		93
Concrete Leveller		90
Cherry Picker	On Truck	80

TABLE 18.8.2 GUIDELINES FOR RESTRICTION

Roller Class & Weight Range	Centrifugal Force Range	Example of Rollers	Distance from Building A B	Remarks
Very Light Less than 1.25 tonnes	10-20kN	Coates 32RD tandem Davleco 32CR tandem	3m --	Maintenance and patching rollers. Generally not restricted for normal
Light 1 to 2 tonnes	20-50kN	Coates 42RD tandem Pannell 54T drawn	5m --	Generally not restricted for normal road use.
Medium 2 to 4 tonnes	50-100kN	Coates 66Tdrawn Davleco 66 drawn	6m 12m	
Medium-Heavy 4 to 6 tonnes	100-200kN	Coates 72Tdrawn Davleco 72 drawn Pacific V12 drawn Raypo Rascal 400	12m 24m	Not advised for city and suburban streets.
Heavy 7 to 11 tonnes	200-300kN	Coates 78Tdrawn Pacific V24D drawn Raypo Rascal 600	25m 50m	Restricted. Not advised built-up areas.
Very Heavy 12 tonnes and over	Over 300kN	Coates 96Tdrawn Pacific V36D drawn	25m 50m	Restricted to major construction areas away from structures and buildings.

A – to prevent damage to buildings

B- Values suggested to keep claims and complaints to an acceptably low level. For complaints to be stopped completely in residential areas, these values may need to be increased still further.

Training

Communication and education material on the noise and vibration controls and procedures will be part of the Site Environmental Awareness Program that will be incorporated into the site induction program.

Performance Measures

- Non exceedance of specified noise limits during monitoring event
- No noise or vibration complaints received from adjoining operations or from the community.
- The maximum noise level (LA max), when measured at a distance of 7 metres from any item of plant or equipment and must not exceed the following maximum noise level.
- Assessment of performance by number of complaints received from adjoining operations or from statutory Authorities.
- No warnings/notices received from statutory authorities for exceeding noise levels or work outside the approved work hours as set out in the conditions of consent.

Monitoring and Reporting

Bulk earthworks subcontractors shall submit noise monitoring compliance certificate or monitoring results for all major plant and equipment on the project within one month of use on site demonstrating conformance with operational licence.

Routine inspections of plant and equipment should include reference to acoustic performance. Subcontractors to provide details of acoustic performance of plant and equipment on site.

Any noise complaints or feedback from adjoining properties or from the operational facility on site to be recorded, reported and monitored.

The SM may require the Subcontractor to carry out additional noise monitoring if a complaint regarding construction noise is received.

The SM in consultation with the EM will advise the monitoring location and the monitoring required will be manned monitoring.

Corrective Actions

Non-conformances are to be recorded by way of the System Defects.

The Subcontractor (and EM/ CM/ SM if applicable) shall review and analyse the cause of detected non-conformance and develop a corrective action to prevent recurrence. Details of the non-conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by the CM.

It is the responsibility of the EM to immediately initiate corrective actions following approval. The non-conformance and corrective action must include details of the action proposed, desired performance target and action close out date. The system defects report should be signed, dated and filed.

All corrective and preventative action taken by the Subcontractor will be carried out by and at the cost of the Subcontractor.

If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the CM in consultation with the EM.

Noise & Vibration Management Implementation Plan

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
Planning					
Prepare an Noise Monitoring Equipment Diagram. Detailing the locations and type of equipment being used at all stages of works.	Prior to works commencing. Review prior following works stages.	Use of hand held noise monitor.	CM	Review of diagram prior works commencing.	Diagram covers all key areas and site-specific considerations. Detailing the locations and type of equipment eg
Working Hours					
No work shall occur outside permitted working hours.	At all times	Hours and times as specified in conditions of consent.	CM	Continuous	No complaints from public or authorities.
Adjoining properties likely to be affected by noise to be notified.	One month prior to works.	Provide written notice to residences.	CM	Continuous	No complaints from public or authorities. Record of notifications.
Plant & Equipment					
Plant & Equipment Register kept detailing approved equipment, noise compliance certificates and relevant restrictions/ conditions of use (if any).	Prior construction	Sub-contractor tp submit Plant & Equipment Register.	SM	Included in sub-contractors work method statements. Sub-contractor audit	Records maintained.
Plant & Equipment to be operated in a proper and efficient manner.	At all times	Subcontractor to submit SWMS prior to works.	SM	Continuous inspection of operators and activities.	All operators are licensed. No inappropriate use of plant or equipment.
Ensure traffic access is through designated entry/ exit points	Ongoing	Traffic Management Plan.	CM/SM	Continuous monitoring.	No complaints from public or authorities.
Demolition to be conducted in accordance with AS 2601:1991	Prior to engagement	Detailed in subcontractor SWMS. Approved licensed contractor used.	CM/ SM	At tender review.	Registration cited. SWMS provided.
Mitigation Measures					
Plant to be fitted with engine covers and residential class mufflers.	Prior construction	Included into sub-contractors tenders.	SM	Pre-construction inspection. Included in routine environment Audit.	Compliance certificates provided. No complaints
PPE including ear muffs and plugs to be issued and worn where noise exceeds 85dB(A)	At all times	In accordance with the Noise & Vibration Management Plan	SM	Pre construction inspection. Continuous inspection.	Register of use. Personnel using PPE.

18.9. AIR QUALITY MANAGEMENT PLAN

Objectives

Construction and demolition must not prejudice air quality.

Maintain the current levels of local air quality during construction activities.

To minimise the generation of dust on the project site.

To implement appropriate controls to suppress dust and other suspended particulates in accordance with the consent conditions and risk management requirements.

To minimise all potential odour issues relating to contaminated soil or groundwater.

Key Management Issues

Major sources of air emissions from the propose construction works at the site are primarily associated with traffic movements (soil dust and diesel emissions), excavation /stockpiling and handling of soils on site (soil dust). In addition, the likely presence of contaminated soils or groundwater on the site may give rise to potential odour emissions as a result of excavation or soil disturbance

The generation of dust, air emissions or odours from the site can be a major nuisance to adjacent land users, create unsafe working conditions on site and result in environmental degradation via the loss of topsoil and placement of dust onto sensitive ecosystems and adjacent water bodies. In view of this, the following management issues have been identified:

- Dust generating from construction activities from the site affecting adjoining properties or public access (Environmental Class P2 Risk).
- Dust generated on the construction site affecting site operations (Environmental Class P2 to P1 Risk).
- Odours (i.e. volatile hydrocarbons) emitted from any disturbed contaminated soils/ groundwater affecting site workers or site personnel (Environmental Class P2 Risk).

Refer to *Asbestos (& Hazardous Building Materials) Management Plan.*

Site Controls

The minimisation of air-borne pollution is a key component for this environment management plan for the site. Construction and demolition phase air quality impacts shall be minimised or avoided by incorporation of appropriate air quality control measures.

Air Quality Monitoring Equipment Diagram will be prepared prior to site activity and Bulk Earthworks, detailing the locations and type of equipment eg dust gauges or dust loggers.

The installation and application of air quality controls during the construction phase shall be in accordance with the following principles:

Planning

- Ensure that all equipment used and all facilities erected on site are designed and operated to control the emission of smoke, dust, fumes and any other air impurity into the atmosphere;
- spray earthworks, roads and other surfaces as necessary with water;
- seal temporary haul roads where appropriate which will be in use for prolonged periods;

Construction Phase

- Schedule the civil works program in a manner to minimise the length of time that excavations and stockpiles are left exposed.

- Provide adequate truck washdown and wheel washing facilities on site to preventing tracking of muds/ sediment onto public roadways and generating dust.
- Transport routes and traffic areas shall be clearly defined by marker posts or other suitable barriers to prevent unnecessary vehicle movement onto other areas. These roads shall operate under defined speed limits.
- A water cart will be employed as required to dampen work areas and exposed soils to prevent the emission of excessive dust from the site.
- Trucks transporting material from the site shall be covered immediately after loading to prevent wind blown dust emissions and spillages. The covering must be maintained until immediately before unloading the trucks.
- All access roads shall be surfaced in selected materials and where required, hard surfaced. Mud stone, clay stone and shale stone shall not be used.
- Subcontractors will maintain all construction equipment to ensure exhaust emissions comply with the relevant Air Regulations issued under State Legislation.
- All waste material will be removed from the site in a manner described in the Waste Management Plan.
- No cleared vegetation, demolition materials and other waste material shall not be burnt on the site.
- No excavation or similar works involving disturbance of large volumes of soil will be permitted during extremely windy conditions.
- Progressively revegetate and landscape disturbed areas to minimise long durations of soils exposed to weathering. Seed stockpiles with local grasses.
- Development and implementation of an Asbestos (& Hazardous Building Materials) Management Plan.

Training

Communication and education material on the air quality and dust controls and procedures will be part of the Site Environmental Awareness Program that will be incorporated into the site induction program.

Performance Measurements

- Achieve air quality monitoring targets.
- No visible dust for more than 15 continuous minutes during construction activities.
- No odour or dust complaints received from adjoining operations, near by residents or from statutory Authorities.

Monitoring and Reporting

The SM will perform air quality monitoring to determine of the acceptable air quality thresholds are being met for each of the nominated monitoring parameters. This information will be used to determine the effectives of existing air quality mitigation measures and provide for any remedial actions if required.

The Site Manager will visually monitor levels of dust deposition and air quality, the effectiveness of dust emission controls and the construction site and the impacts of any nuisance on adjoining properties.

The SM may require the Subcontractor to carry out additional Air monitoring if a complaint regarding Air Quality is received.

The SM in consultation with the EM will advise the monitoring location and the monitoring required will be manned monitoring.

Dust loggers will be used and results assessed weekly. Refer plan for location of dust loggers.

Corrective Actions

Non-conformances are to be recorded by way of the System Defects.

The Subcontractor (and EM/ CM/ SM if applicable) shall review and analyse the cause of detected non-conformance and develop a corrective action to prevent recurrence. Details of the non-conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by the CM.

It is the responsibility of the CM to immediately initiate corrective actions following approval. The non-conformance and corrective action must include details of the actions proposed, desired performance target and action close out date. The system defects report should be signed, dated and filed.

All corrective and preventative action taken by the Subcontractor will be carried out by and at the cost of the Subcontractor.

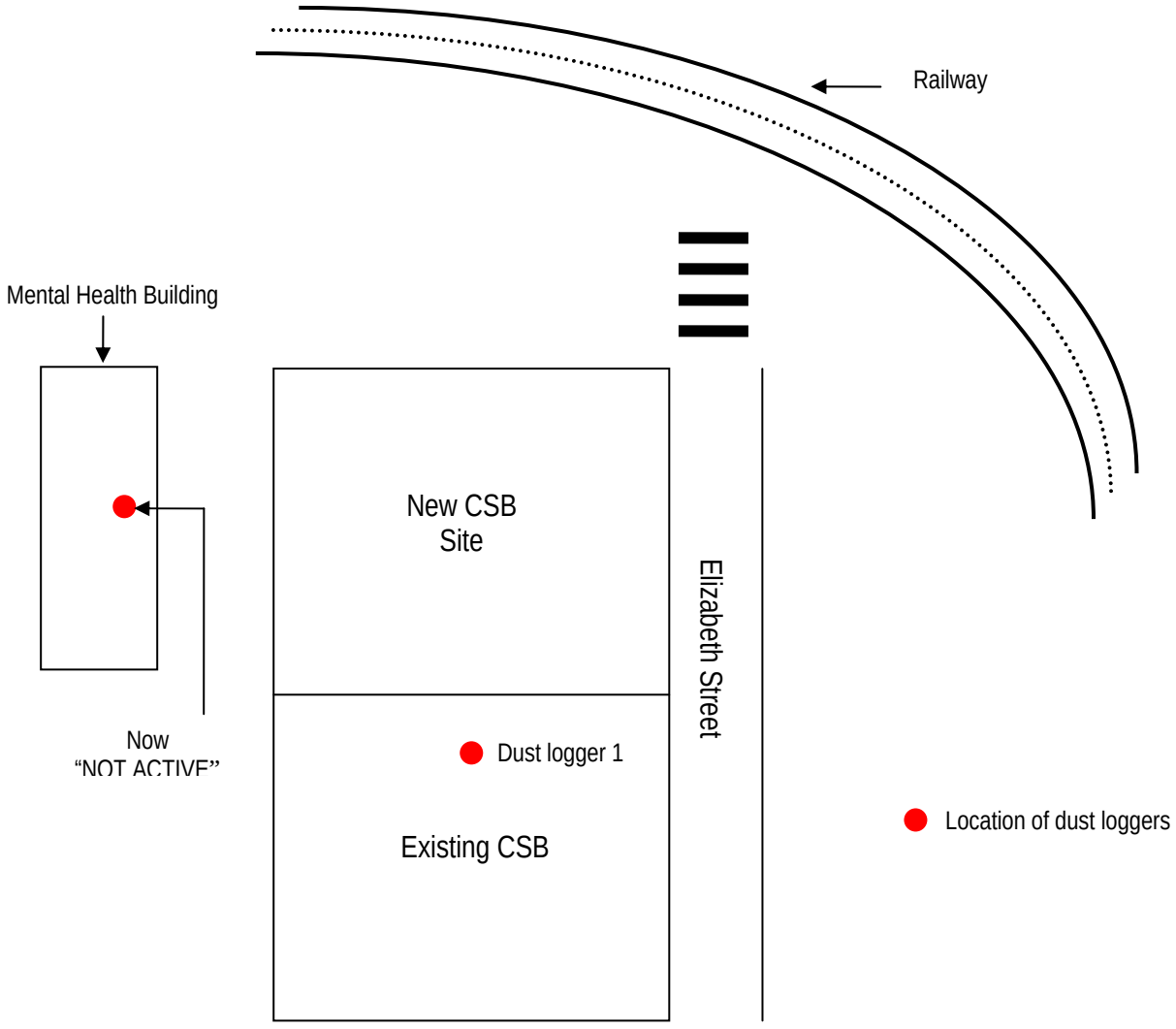
If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the CM in consultation with the EM.

Air Quality Management Implementation Plan

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
Planning					
Prepare an Air Quality Management Diagram Detailing the locations and type of equipment being used at all stages of works.	Prior to works commencing. Review prior following works stages.	Refer Page 72	CM	Review of diagram prior works commencing.	Diagram covers all key areas and site specific considerations. Detailing the locations and type of equipment eg dust gauges or dust loggers.
Design, implement and maintain Air Quality Monitoring Program	Prior to works commencing	Based on (list appropriate documents/ conditions/ requirements). To be prepared by Environmental Consultant.	CM	Air Quality Monitoring Program to detail key parameters, methodology and guidance levels. Monitoring Plan to show monitoring locations.	No exceedance of target values for each parameter. Scheduled air monitoring performed correctly.
Areas to be disturbed will be limited in order to minimise surface with potential to generate dust.	Prior to works commencing.	In accordance with Air Quality Management Plan.	SM	Weekly inspection or as required.	No visible dust. Acceptable dust monitoring levels.
Dust Controls					
Exposed surfaces and stockpiles to be kept moist by spraying with water or dust suppressant	Daily or as necessary when dry and windy weather conditions prevail.	In accordance with the Air Quality Management Plan.	SM	Daily inspection and monitor activities for dust generation.	No visible dust. No reported dust monitoring exceedances.
Exposed surfaces and stockpiles left for longer than 4 week to be stabilised by sealing, seeding or spraying with water or dust suppressant.	Four weeks from completion of activity.	In accordance with the Air Quality Management Plan	SM	Daily inspection and monitor moisture content of exposed areas.	No visible dust. No reported dust monitoring exceedances.
Avoid soil disturbance works during periods of high wind or other extreme weather conditions.	At all times.	In accordance with Air Quality Management Plan.	SM	Monitoring of predicted meteorological conditions.	No works performed during high wind or rainfall events.
Immediate stabilisation works & landscaping batters of disturbed grounds undergoing rehabilitation.	As required	In accordance with the SEMP & landscaping works	CM/ SM	Daily/weekly inspection Project planning and design meetings.	Appropriate stabilisation of works. No areas left exposed for prolonged periods.

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
Truck wheel wash/shaker facility to be installed near access gate	Prior to construction commencing	Detailed work method statement to be prepared by sub-contractor	CM	Pre-construction inspection.	No dust generated by traffic on leaving site
Maintain clean traffic routes and 20km/hr speed limit within site and at site entrance/exist.	Ongoing	Appoint street sweeper and water kart.	SM	Weekly inspection of exterior roadways or immediately after rainfall events.	No complaints from public or authorities. No dust from exterior roads. No speeding vehicles.
All parking areas and roads to be sealed or constructed from gravel or non-dust generating materials.	Prior to construction	In accordance with the Air Quality Management Plan	SM	Pre-construction inspection.	No parking on unsealed areas. No parking off-site
Trucks transporting loose material to and from the site to be covered.	At all times	In accordance with the Air Quality Management Plan.	SM	To be put into tenders for sub-contractors. Compulsory inspection at gate prior to entrance into site.	No visible loose material from trucks. No community complaints.
Appropriate controls during removal and handling of building materials containing asbestos or lead-based paints.	At all times.	In accordance with Asbestos (& Hazardous Building Materials) Management Plan.	CM/SM	Intensive air quality monitoring during and after works. Clearance by occupational hygiene officer.	Building & area cleared of hazardous dust. Non detect asbestos/ lead dust during monitoring.
Dust Quality Controls					
Minimise potentially contaminated dusts being generated from any contaminated site soils.	At all times	In accordance with Air Quality Management Plan.	SM	Dust monitoring to include when contaminated soils encountered or disturbed.	No contaminants detected in dust monitoring samples.
Vapour & Emission Controls					
No elevated Volatile Organic Compound (VOC) vapours within work areas.	At all times	In accordance with Air Quality Management Plan. Applied for HS&DG use or in contaminated areas.	CM/SM	Intensive air vapour monitoring (and personal air monitoring if required) during and after works by consultant.	No elevated VOCs detected during works. No works performed whilst elevated VOCs are detected in work areas.
Combustible waste material shall not be	At all times	Covered in site induction.	SM	Continuous monitoring.	No fires or incineration on site

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
burnt on site				To be put into tenders for sub-contractors.	from construction or demolition works.
Plant and equipment to be fitted with standard pollution/noise control devices.	Prior to construction commencing	In accordance with the Air Quality Management Plan	SM	Routine inspection. To be put into tenders for sub-contractors.	Copies of compliance certificates to be supplied. No complaints from site personnel or adjacent land users.



18.10. TRAFFIC & PARKING MANAGEMENT PLAN VEHICLE MOVEMENT PLAN

Objectives

To minimise any potential conflict associated with site traffic, traffic routes and parking over the duration of the proposed construction and demolition works and to prevent injury to persons from moving plant onsite. Powered mobile plant is extremely hazardous when it is operated in situations where people or other vehicles are sharing the same area. Workers are particularly vulnerable in areas where mobile plant and machinery is operated and the operator's vision may be restricted and plant, which is apparently idle, may move with little warning.

To minimise any adverse environmental impacts related to fauna, flora, air emissions, water quality and soil contamination.

Maintain ecological integrity and surrounding residents amenity.

Key Management Issues

Construction will result in a large workforce of approximately 130 for the first 12 months and approximately 400 employees over the remainder of the construction period.

A Construction Traffic Management Plan which set out access points and heavy vehicle routes, on site parking areas, traffic and circulation within the site and any measures required to reduce traffic congestion or conflict required will e developed and communicate with contractors.

The location of the site will require careful management to ensure that conflicts between construction and operational facilities and community activities in the area will be avoided.

Any changes to the Traffic Management Plan or planned traffic interruptions will be discussed at the CIG meeting for endorsement and SSWAHS will be given time and information to communicate this with staff/visitors/engineering.

Construction traffic and parking on the project site is subject to constraints imposed by site conditions and public traffic movements.

The primary issues that affect construction projects include:

- construction and demolition area site access and egress;
- interaction with existing operational facilities at the site;
- the location and amount of parking;
- the timing and extent of material deliveries;
- traffic conflicts with both existing vehicles and other construction traffic;
- traffic congestion and conflicts on external roads; and
- signage and directions.

Use of specific measure to eliminate or control risks in work areas can be:

- Isolating vehicles and plant used in or around the site and work area from persons on the site or work area. This is to be co-ordinated daily with site foreman and subcontractors.
- Use of fencing, barriers, temporary warning or control signs to secure the area where moving plant is used.
- Planning the direction that plant moves so the visibility of operators is not restricted.
- Using spotters to control traffic movement.
- Implementing safe working distances.
- Reversing alarms on plant.
- Designated walkways to be established and maintained for areas where workers and plant interact.
- Road plates will be used to cover existing services including the sections of the gas line in the laneway adjacent to the multideck corporate and man holes and pit lids within the site as required.

Access & Parking

Access to the site is to be detailed on a Construction Traffic Management Plan taking into account the staging of construction and demolition works over the expected two and a half years;

- Perimeter fencing surrounds Liverpool Hospital Redevelopment. General entry for all vehicles and delivery's are from Campbell and Forbes Street. Project requirements for entry to site are:
- All vehicles enter through gate 1 in an forward direction speed limit 20 kmh
- Watch for moving traffic
- Deliveries will park out of the way of moving vehicles and contact the subcontractor / supervisor to give instructions for delivery
- If reversing is necessary the subcontractor will ensure a suitably trained person will give direction and keep other persons from entering the area.
- After delivery, leave site through Gate 4 in a forward direction.
- General entry requirements to be included in the Site Induction
- general site access and egress and these routes and points clearly signposted
- restricted points of access during the construction and demolition phase.
- Maintain specific access corridors for each construction stage
- Reduce opportunities for vehicle –borne transfer of sediments off-site.

There is no onsite parking and this will be communicated through the site Specific induction. The site is well serviced by public transport; two train stations are in close proximity and regular bus routes service the area. BLL are encouraging subcontractors to use public transport and/or arrange for minibus transportation to site.

Construction Site Entry

Entry gates onto the construction work are via gate 1. No Subcontractor or visitors are to use these entrances without prior review of their vehicle movement plan or under the direction of BLL.

General requirements for all plant and vehicles on site will be

- All vehicles entering the site will be maintained in a safe and serviceable condition (ie road registered or complying to BLL plant requirements ie qualified person sign off and daily inspection). Operators of plant (including all moving plant ie EWP's) will hold appropriate WorkCover certificate of competency or where this is not required be appropriately trained, instructed and supervised into its safe operations.
- Prior to moving a vehicle on site the Supervisor responsible will assess (ie walk) the path of access to ensure it is suitable for entry of that vehicle.
- Those drivers delivering onsite will remain in their vehicle under the instruction of the Supervisor/Subcontractor unless brought in as an inducted person or visitor with the inducted subcontractor. Operators and drivers of plant are to be aware of anyone in the work area.
- All vehicles moving on site will move in a forward direction, if reversing a trained person with full view and knowledge of surrounding activity will guide the vehicle at all times. All plant is required to have a reversing beeper and orange light on top.
- A vehicle and plant holding area is located at Gate 2 which allows vehicles to wait off site if required. This area also prevents vehicles disrupting any public or hospital acitivites.
- Repairs on machines need to be carried out by competent person. All mechanics working out on site with machines need to be inducted or sign visitors' book and be with inducted worker.
    a. Concrete deliveries (DMG) when ordering concrete give gate location to enter site direction traffic movement in and out of site. Every concrete pour (DMG) will have traffic controller for reversing up onto hopper, location of trucks to park on site out of the way of other trucks working on site. (DMG) to isolate pump and associated area with signage and tape.
    b. All mobile cranes are supplied by EMR Cranes. Paperwork for each crane is kept in BLL site office, filed in EHS filing system. Area Foreman will review daily inspection prior to commencing on site.
- If a subcontractor requires bringing an item of plant on an irregular basis the Subcontractor in charge are required to complete a Plant Permit and return to BLL the day before of plant arriving on site. The permit requires the attachment of

the SWMS, Inductions and Plant and equipment inspection report as per item 1. All subcontractors are responsible to ensure those they bring on site meet all BLL requirements for site entry.

- A review of the risk assessment and control measures associated with vehicle movement will be undertaken as a part of the subcontractor's weekly inspection (or more frequent were required) and where necessary the control measures will be upgraded. Weekly safety walk is to inspect all number gates for signage etc.
- Construction Site entry requirements to be included in the Company Specific Induction.

Staff Transport

The access point will be located to ensure safe and efficient connections to the external streets and to ensure no unreasonable impact to any existing facilities and operations.

Traffic safety and the minimisation of traffic impacts will be the responsibility of everyone on the site.

Signage

The CM will be responsible for providing the signage on site regarding traffic management and the updating and maintenance of the signs as required.

On-site signage, speed limits and speed reducers will be used to ensure drivers use appropriate routes through the site and to and from the site access points.

Training

All site personnel will be inducted into the construction traffic management system that will be operating for the site during the site induction and education program.

An ongoing site education and supervision program for site staff will be run on-site during the entire construction and demolition process.

Performance Measures

- Access provided at all times;
- Provision of fencing and gates;
- No complaints received from adjoining operations, statutory authorities or local road users;
- Accurate recording and prompt resolution of public complaints (if any); and
- No parking outside designated areas and no parking off site.

Monitoring and Reporting

The CM will report when required on the implementation of the Traffic & Parking Plan.

The plan will be periodically updated to include but not be limited to: -

- access points in use and regular checking of access corridors and designated parking areas for congestion;
- location of parking areas;
- variations to traffic management plans;
- identification of any safety or operational incidents and actions taken to address the conditions that caused the incidents;
- monitoring complaints and corrective actions;
- Accurate recording and prompt resolution of public complaints; and
- details of signage on internal and external roads.

Corrective Actions

Non-conformances are to be recorded by way of the System Defects.

The Subcontractor (and EM/ CM/ SM if applicable) shall review and analyse the cause of detected non-conformance and develop a corrective action to prevent recurrence. Details of the non-conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by the CM.

It is the responsibility of the CM to immediately initiate corrective actions following approval. The non-conformance and corrective action must include details of the action proposed, desired performance target and action close out date. The system defects report should be signed, dated and filed.

All corrective and preventative action taken by the Subcontractor will be carried out by and at the cost of the Subcontractor.If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the CM in consultation with the EM.

Traffic & Parking Management Implementation Plan

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
Planning					
Development of a Construction Traffic Circulation Diagram.	Prior to works commencing.	In accordance with the Traffic & Parking Management Plan.	CM	Pre-construction inspection.	Diagram covers all key areas of traffic circulation and parking. It must clearly show traffic circulation routes, loading/ unloading areas and parking facilities.
Construction & Demolition Operations					
Only site personnel and authorised visitors shall be permitted to enter the work areas.	At all times	In accordance with the Traffic & Parking Management Plan	CM	Monitor for unauthorised access.	No unauthorised access, parking or deliveries.
Material deliveries to be scheduled to minimise disruption to site operations and the local community.	Any times	In accordance with the Traffic & Parking Management Plan	CM	Ensure deliveries arrive at scheduled times.	No complaints received. No deliveries outside specified working hours.
All construction traffic for internal works shall access the site via the main site access points	At all times	In accordance with the Traffic & Parking Management Plan	CM	Monitor unauthorised access.	No unauthorised access.
Truck movements to be restricted to specified routes. Local roads to be avoided.	At all times	In accordance with the Traffic & Parking Management Plan To be included in sub-contractor tenders.	CM	Specified routes detailed during site induction. Routes shown on traffic circulation map in TPMP.	No complaints from residents, regulatory authorities or site operations.
Parking, visitor and delivery areas to be clearly marked.	Prior to commencing and on going.	In accordance with the TPMP.	CM	Monitoring designated areas for compliance.	No parking off-site or within unauthorised areas. Parking areas clearly signposted.
Speed limit of 20km/h shall be adhered to at all times.	At all times	In accordance with the TPMP.	CM/ All personnel.	Monitor compliance.	No complaints from residents, regulatory authorities or site operations.
Vehicles departing the site shall be not release mud, dust or other matter onto public roadways.	At all times.	Wheel wash and shaking racks to remove mud. All loads covered by contractor.	EM	Monitor compliance.	No complaints from residents, regulatory authorities or site operations.

Attach the Construction Traffic Circulation & Parking Diagram showing details of traffic flow and parking management prior to site work activity and construction commencing.

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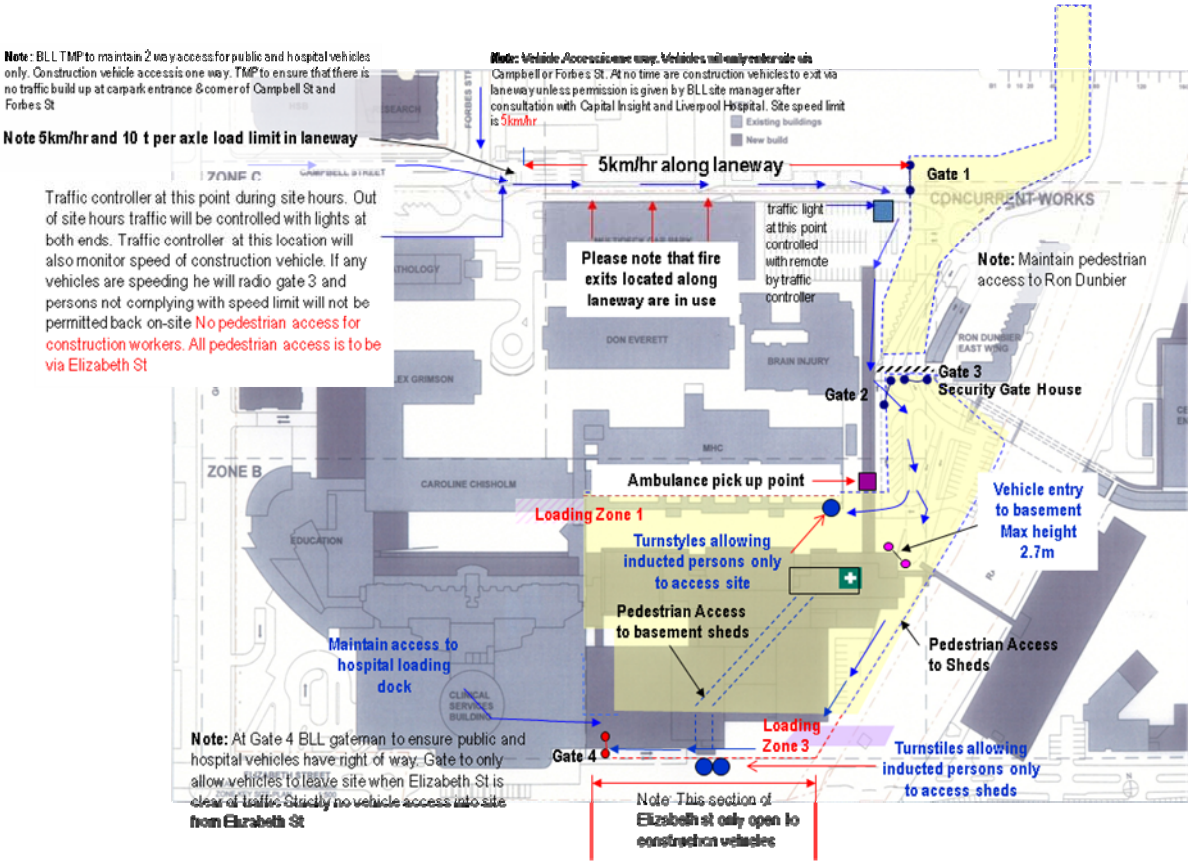

18.11. NEIGHBOURHOOD PARTICIPATION MANAGEMENT PLAN
Please refer to PMP (0.7 Management Plans)

18.12. HERITAGE & ARCHAEOLOGICAL MANAGEMENT PLAN
Please refer to PMP (0.7 Management Plans)

18.13. CONSERVATION & HABITAT MANAGEMENT PLAN

N/A

18.14 Height Mitigation Plan

Please refer to PMP – Project Delivery Plan (0.7 Management Plans)