

SAFER CONSTRUCTION PRACTICES

**DRAFT FOR PUBLIC
COMMENT**

NOTE: The case examples contained in this document will appear in the final document subject to permission from the relevant organizations.

Formatting issues, such as the inclusion of a Preamble and colour-coding will be finalised following receipt of feedback on this document.

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PREAMBLE

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To be provided by the Safer Construction Task Force

GLOSSARY

A **Client** is a person or organisational entity who commissions the design and construction of a construction project. It includes any agent appointed to manage the works on behalf of the Client. However, the appointment of an agent does not relieve the Client of any of their obligations in respect of Safer Construction Practices and the Client will instruct the agent to act on their behalf as if the agent were the Client.

Construction for the purposes of this document covers all work carried out on a work site. It includes construction activities such as building, alterations, installation of services and fittings and commissioning. It also involves associated activities such as: delivery and removal of goods to and from a site; erection or disassembly of components; temporary works such as excavations, working platforms, falsework and formwork; site preparation works such as clearing and grubbing, fencing and relocation of services; and landscaping and ancillary works. It covers all infrastructure considered as civil works such as: buildings, roads, bridges, tunnels, dams, water/sewerage works, railways, canals, telecommunications works, power supply and distribution works, gas works, ports, irrigation works, and airports.

A **Constructor** is a person or organisational entity who is responsible to a Client for controlling the work of construction.

A **Designer** is a person or organisational entity who is responsible to a Client for preparing designs for works to be constructed, altered, renovated, commissioned, fitted out or demolished. Designers include a wide range of professional disciplines such as architecture, engineering, project management, quantity surveying, and landscape architecture.

A **Facility** is the final product of a construction project.

A **Hazard** is any potential exposure to danger or harm.

Key Performance Indicators (KPIs) are specific quantifiable measurements, which measure the critical success factors of a project or organisation. Project safety KPIs should be established at the outset of the project and include both leading and lagging safety performance indicators.

Lagging safety performance indicators measure safety outcomes like the occurrence of incidents, injuries, or illnesses. Such measures are referred to as 'lagging' indicators because they measure events that have already happened. One commonly used lagging safety indicator is the Lost Time Injury Frequency Rate (LTIFR).

Leading safety performance indicators (sometimes called process measures or positive performance indicators) measure positive steps to manage safety *before* the occurrence of incidents, injuries or illness. Leading safety performance indicators try to capture how well an organisation or project is managing safety, for example, by quantifying how many workers have received safety training, how many safety inspections have been conducted etc.

Occupier is a person or organisational entity who occupies a facility upon its completion.

Operator is a person or organisational entity who manages and operates a facility following its completion.

Owner is a person or organisational entity who owns the facility.

The **Project Risk Register** is a repository for project risk information. For each risk identified, the risk register records: a description of the risk, an outline of existing risk controls, an assessment of the consequence of the risk should it eventuate and the likelihood of occurrence of this consequence, a risk rating and a risk treatment priority.

The **Project Safety Charter** is a document publicly and explicitly stating the commitment of the Client to achieving the highest level of safety performance in the project. The Project Safety Charter will include project safety goals and targets and identify Key Performance Indicators (KPIs) for safety.

The **Project Safety Master Plan** is a plan developed in the Planning stage of the project, outlining the overarching safety goals and objectives of the project, establishing performance criteria against which the attainment of these goals and objectives will be evaluated. The Project Safety Master Plan outlines ways in which these safety goals and objectives will be met, establishes responsibilities and allocates resources to the effective management of safety throughout the life of the project. The Project Safety Master Plan is at the top level of a tiered, cascading series of plans, beneath which are the Design Safety Plan, the Construction Safety Plan and the Commissioning Safety Plan.

Residual Risk is the outstanding risk remaining after a risk treatment has been implemented. In a construction project it is especially important that residual risk information be recorded in the Project Risk Register and communicated to parties 'downstream' of an activity. For example, from client to designer; from designer to constructor; from constructor to sub-contractor; and from constructor to owner/occupier/operator of the end facility.

Risk is exposure to an event occurring which may cause death, injury, illness or other harm. Safety risk is measured in terms of the combination of the likelihood of a harmful event and the consequence of the harm should it occur.

Risk Treatment is the selection and application of measures to either eliminate or reduce the risk of death, injury, illness or other harm.

A '**Safe Constructor**' is a person or organisational entity able to undertake the construction of the facility without harm to persons engaged in this construction. In determining whether a constructor is 'safe,' regard should be had to: the scope and technical complexity of the project; the constructor's track record and safety performance of previous projects; the constructor's demonstrated commitment to safety; and the adequacy of the constructor's management processes for delivering a safe design.

A **'Safe' Designer** is a person or organisational entity able to undertake the design of the facility and ensure that safety risks to persons who are engaged to construct the facility, arising as a result of the design, are minimised. In determining whether a designer is 'safe' regard should be had to: the scope and technical complexity of the project; the designer's track record and safety performance of previous designs; the designer's demonstrated commitment to safety; and the adequacy of the designer's management processes for delivering a safe design.

A **Safety Champion** is a person who will, from the outset of the project, lead the project safety effort.

Stage Review is a gateway separating project stages that reviews preceding tasks to ensure that they have been satisfactorily undertaken before moving on to the next stage.

A **Subcontractor** is a person or organisational entity who is engaged by the Constructor to undertake services necessary for the performance of a construction contract. However, the appointment of a subcontractor does not relieve the Constructor of any of its obligations in respect of Safer Construction Practices and the Constructor will instruct the subcontractor to act on its behalf as if it were the Constructor.

A **Supplier** is a person or organisational entity who is engaged by the Constructor to supply materials or goods necessary for the performance of a construction contract. However, the appointment of a supplier does not relieve the Constructor of any of its obligations in respect of Safer Construction Practices and the Constructor will instruct the supplier to act on its behalf as if it were the Constructor.

SAFER CONSTRUCTION PRACTICES

Introduction

Australia has a modern infrastructure which is the equal of any in the world. This has been made possible by the skills of planners, architects, engineers and builders to create a sophisticated, physical environment for the benefit of Australia's communities. Despite these achievements, construction is Australia's third most dangerous industry, with an average of 49 workers killed at work each year since 1997-1998. In 2002-2003, the incidence of workplace fatalities in the Australian construction industry was nearly three times higher than the national average for all industries. It is clear that Australia's construction industry is still a long way short of best practice.

This document - Safer Construction Practices - provides a framework for improving safety performance on construction projects. It covers all stages of a project - from planning and design, through to construction and post-construction (i.e. commissioning). Safety Best Practices are identified from industry leaders in safety within each stage in the project process.

Creating a Robust Safety Culture

There is an obligation on all providers of goods or services - whether businesses or individual persons - to exercise due diligence and act with a certain standard of care. Furthermore, the construction industry has an obligation to ensure safety for the public, subcontractors, suppliers, and the operators of the completed facility. Establishing and applying effective safety management programs and systems is the accepted means of fulfilling this obligation and is, in fact, demanded by law as a normal and usual requirement. Whether a business is a construction Client, Designer or Constructor, it is incumbent upon senior management and board members to oversee the operation of safety management systems and programs and ensure that these systems are implemented consistently and effectively throughout the business.

Safer Construction Practices are driven by the over-arching aim of creating a strong safety culture in all project stakeholders. They demonstrate to stakeholders that they will be expected to treat safety as an integral part of project management and that safety objectives stand on an equal footing with other project objectives. They also demonstrate the importance of collaboration and teamwork between all stakeholders. In the past, traditional safety efforts focused on technical and engineering aspects, but it is now recognized that a strong and positive safety culture is essential to the improvement of safety in the construction industry.

A safety culture describes a shared set of organisational values, assumptions and beliefs. It is characterised by high levels of communication, confidence and trust. One threat to the development of positive safety cultures is a lack of inter- and intra-organisational understanding of the importance of safety. Consequently, senior managers of all project participants should actively demonstrate their commitment to safety through

participation in their organisation's safety management processes and the allocation of safety responsibilities from senior management to the workforce level.

The major stakeholders in a project are the Client, the Designer and the Constructor. A major aim of Safer Construction Practices is to encourage these stakeholders to work collaboratively and continuously throughout the project to achieve the highest possible standards of project safety management. The Designer and Constructor should be engaged at the earliest possible time so that they can provide their inputs into the Project Safety Master Plan - and they, in turn, should include their subcontractors and suppliers as early as possible in planning for safety. Within projects, Clients should drive strong and positive safety cultures through their procurement processes. All efforts should be made to ensure that the major stakeholders (i.e. Client, Designer and Constructor) work constructively to appropriately allocate responsibility for safety and integrate safety considerations into all project decision-making. Analyses of case studies indicate that, in those cases where safety best practice was identified, a high level of integration and participation was a key factor in improving safety outcomes.

Project safety should not be a 'blame game'. An incident that could have been avoided on a construction site reflects poorly on all project stakeholders, and it is important that a just and fair allocation of responsibility for eliminating or reducing safety risks exists within construction project teams.

The Principles of a Safety Culture

The framework for this Code is driven by six principles for creating a strong safety culture.¹ These principles are intended to operate at an industry level and establish broad values by which organisations within the industry should operate. The best practice principles also establish a foundation for the development of a shared understanding of the importance of safety and the development of a safety culture within project teams. The success of these practices is highly dependent upon their adoption at both corporate and project-levels.

The best practice principles are:

- Principle 1: Demonstrate Safety Leadership;
- Principle 2: Promote Safety in Design ;
- Principle 3: Communicate Safety Information;
- Principle 4: Manage Safety Risks;
- Principle 5: Continuously Improve Safety Performance;
- Principle 6: Entrench Safety Practices;

These principles have been described below:

¹ The Safer Construction Principles were adapted from and therefore consistent with the Federal Safety Commissioner's Safety Principles and Guidance released in September 2006.

Principle 1: Demonstrate Safety Leadership

Safety leadership involves communicating the importance of safety in all interactions with subordinates, subcontractors, suppliers and other project stakeholders throughout all processes within the project lifecycle.

In any construction project there are many competing objectives such as quality, cost, time and production. Different stakeholders also have their own objectives. In the context of these pressures, safety messages can become mixed and organisations do not always do what they commit to in formal policy statements and safety plans.

For this reason, it is critical that, from top management down to front-line supervisors, strong safety leadership is demonstrated. Safety should be enshrined in corporate goals with strategic objectives and plans for achievement like other corporate directions.

There is a strong behavioural component to safety leadership. It is important that senior managers, such as Chief Executive Officers, Managing Directors and Board members, lead by example and are consistent in the way they behave in relation to safety. Safety leadership is as much about what is not discussed as what is. When senior managers constantly talk about cost or production and say little about safety, this creates the impression that safety is less important than these other project goals.

Safety leadership also includes the recognition and reward of good safety management and performance as well as the constructive correction of sub-standard safety management or performance. Senior managers should 'walk' construction sites and collaborate with site project managers and workforce members alike, to reinforce the corporate commitment to safety and to ensure that all resources are provided to support safety best practices.

Within the construction supply chain, safety leadership should also be demonstrated. Clients should demonstrate leadership through establishing clear safety objectives for the projects they procure and by appointing safety champions for the project. Prime contractors should also establish safety leadership in the way that they manage subcontractors and suppliers.

Principle 2: Promote Safety in Design

Effective safety management at the design stage can minimise risks to the health and safety of persons who subsequently construct, occupy and maintain a facility.

Consequently the Client should ensure that a Designer who has a demonstrable track record or suitable safety credentials and awareness of safety in design is engaged. Comprehensive and systematic design safety reviews should be conducted at appropriate intervals during the design process. These reviews should be based upon appropriate risk management methods. Design safety reviews should be collaborative in nature, enabling an assessment of safety risk from the design, construction and maintenance perspectives.

Safety risks arising as a result of the design should be eliminated wherever possible. Where elimination is not possible, efforts to reduce safety risk through design modification should be made.

Residual risk, i.e. the risks remaining following the design safety risk management process, should be documented and clearly communicated to relevant stakeholders - including the Client, the Constructor, the Owner/Occupier and personnel involved in the maintenance of the facility - where these would, or may not be normally apparent to 'downstream' stakeholders in their own risk assessment.

Principle 3: Communicate Safety Information

Communication and consultation are essential to the management of safety. Within construction projects, safety information should be exchanged between the different stakeholders. Open and honest dialogue regarding safety information between the Client, the Designer and the Constructor (including subcontractors) must be maintained throughout the project lifecycle. This may be verbal or non-verbal, formal or informal, written or spoken.

It is very important that safety communication and consultation commence as early as possible in the project process. Wherever possible, potential constructors should be consulted during the planning and design stages and given the opportunity to comment on project definition and design.

Throughout construction, safety risk information should be communicated to relevant stakeholders, including (but not limited to) subcontractors, suppliers, workers, trade unions, regulators and members of the public. Within stakeholder organisations, safety expectations and procedures should be clearly communicated to the workforce.

It is also vital that bottom-up communication of safety issues occurs. Consultative processes should be established to enable worker participation in the making of decisions that impact upon safety. A 'no-blame' culture should be fostered to ensure that consultative processes are open, honest and effective.

Project safety communications strategy should be formalised and documented as a critical component of the Project Safety Master Plan.

Principle 4: Manage Safety Risks

The systematic management of safety risks through the elimination or reduction of risks is a requisite for improved safety performance within the construction industry.

At all stages in the project process, decisions must be made on the basis of a careful consideration of the safety implications of available options. Decisions made about project options, design of the permanent structure, design of the construction process, choice of plant, equipment, materials and construction methods and project organisational arrangements should be made following an assessment of safety risks, using an appropriate and recognized risk assessment method.

Wherever possible, safety risks should be eliminated through design or engineering solutions to create a safe workplace. Where workplace risks cannot be physically removed, they should be reduced so far as is possible. It is always better to make the workplace safer than rely upon behavioural controls because people are fallible and will always make mistakes. However, even when a work site has been made as safe as possible, there is an opportunity to reduce the likelihood of incidents further by ensuring that safe work procedures are developed and that these procedures are understood by everyone and consistently followed. Providing people with the correct equipment as well as the knowledge, skills and abilities they need to work safely is a critical aspect of risk reduction.

Safety risk information relating to the project should be recorded and made available to those who must manage or work with a risk - in accordance with the project safety communications strategy. All project decision making that could have an impact upon safety risk should involve input from those parties that could be affected by that risk.

Principle 5: Continuously Improve Safety Performance

Safety management should strive for continuous improvement by regularly reviewing safety performance, seeking feedback from project stakeholders, and using the lessons learned to improve performance and to share and promote best practices to the construction industry.

In order for the industry to maintain sustained improvement in safety, clear targets and appropriate Key Performance Indicators (KPIs) should be established for safety at an industry, organisation and project level and safety performance must be rigorously monitored and measured.

This measurement should incorporate traditional 'lagging', as well as proactive 'leading' indicators of safety performance. The continuous improvement of safety also requires industry-wide collaboration in the form of benchmarking and information sharing.

Regular reviews of safety management performance should be undertaken through all stages of the project lifecycle. These should be conducted collaboratively between all project stakeholders including subcontractors.

Upon the completion of construction projects, a post-project review of safety performance and processes of clients, designers and constructors should be undertaken. This review should also evaluate the extent to which these parties have worked cooperatively to ensure safety in the project. Lessons from these post-project safety reviews should be captured and shared, within and between organisations in the industry.

Principle 6: Entrench Safety Practices

Through the diligent application of all the preceding principles, best safety practices should be entrenched in the industry as an integral part of an industry-wide safety culture.

The vast majority of firms operating in the construction industry are small to medium-sized enterprises (SMEs). SMEs may experience difficulty in fulfilling their statutory safety obligations and often do not have the requisite safety knowledge or resources to implement systematic safety risk management processes. It is essential that larger construction organisations work to disseminate safety knowledge and best practice among the SMEs with whom they do business.

This dissemination can be facilitated by the establishment of clear safety requirements in the selection of SME subcontractors/suppliers and the inclusion of safety requirements in sub-contracts. Construction organisations can also support the development of safety capability in SME firms through the development of long-term relationships with subcontractors/suppliers (perhaps through preferred provider schemes) and the implementation of safety mentoring schemes for SME subcontractors/suppliers.

Construction organisations should also require SME subcontractor to participate fully in project safety management programs, including safety planning, training, monitoring and reporting processes.

HOW TO USE THIS CODE

The Code comprises three sections:

- Principles in Practice;
- Leadership Responsibility Matrix;
- Safety Best Practices.

These sections are described below:

Principles in Practice

This section identifies how the six best practice principles previously described are applied through the four stages of a project lifecycle - planning, design, construction and post-construction. The principles are shown in descending order down the page while the project lifecycle stages are shown across the page. Within each principle and at each stage of the project lifecycle best practice tasks are identified. They are numbered consecutively according to the stages of the project lifecycle. For purposes of clarity, the principles are colour-coded and these colour codes remain consistent throughout Sections 2 and 3.

Although the stages imply a time-scale across the page, the tasks are grouped to provide continuity within each principle and are contained within a project stage. However in reality, some of these will overlap with other tasks as the project evolves.

The project process model that underpins Safer Construction Practices comprises four project stages, separated by stage reviews. The purpose of these stage reviews is to ensure that all safety practices have been completed prior to moving to the next project stage. In this way, stage reviews act as 'gateways' in the project process. Before progressing to the next stage of the project, each of the participants can check whether all safety practices from the preceding stage have been completed. Stage reviews also provide an opportunity for project participants to reflect upon the safety processes and outcomes of the preceding stage and feed safety information forward for use in subsequent stages of the project.

During a stage review, safety information arising in one project stage should be collated and communicated to parties involved in subsequent stages of the project to ensure that they are fully informed about project safety matters. It is also an opportunity for the project team to review all stakeholders in the project, and ensure that any new stakeholders (such as suppliers, subcontractors and technical service providers) joining in the succeeding stages are fully informed and incorporated into the collaborative project safety processes.

Stage reviews are intended to be undertaken in a collaborative way, providing an opportunity for the Client, Designer and Constructor to reflect on their own safety practices and those of other parties to the project, share information about safety initiatives or identified risks and resolve any safety issues that might become apparent in the course of the Stage Review.

Participation in Stage Reviews will depend, in part, upon the project delivery method selected by the Client. In a traditional delivery method, only the Client and the Designer would participate in the first Stage Review because the Constructor would not yet have been appointed. However, in a collaborative delivery method, such as an alliance, the Client, Designer and Constructor would all participate in every Stage Review.

Leadership Responsibility Matrix

This section of the Code identifies the leadership responsibilities of project stakeholders in relation to best practices identified in the Principles in Practice diagram in Section 1. The Leadership Responsibility Matrix shows the roles of the three principal stakeholders in a project - the Client, the Designer and the Constructor - for each of the project delivery models of:

Traditional - where the Client undertakes the planning and engages a Designer to carry out the design and a Constructor to build the facility.

Design and Construct - where the Client undertakes the planning and engages a consortium of a Designer and a Constructor to design and build the facility.

Collaborative - where the Client forms an alliance with the Designer and the Constructor to plan, design and build the facility.

The degrees of responsibility are shown for each major stakeholder in each matrix and the colour coding of the principles and best practices is consistent with Section 1.

Safety Best Practices

Each safety best practice is described in a table with its heading colour-coded according to the best practice principle under which they fall. Each safety best practice heading includes a task number relating to the project stage and a brief description of the best practice, followed by:

- **Action** - which describes the task to be carried out,
- **Description** - which provides a short description of the safety best practice, an explanation of the importance of the action, and some suggested strategies for consideration,
- **Key Benefits** - which describes the benefits to be achieved by implementing the safety best practice,
- **Desirable Outcome** - which describes the behavioural and procedural changes effected by the implementation of the safety best practice,
- **Performance Measure** - which describes the outputs that can be measured and recorded as evidence that the safety best practice has been carried out, and
- **Leadership** - which identifies the stakeholder with prime responsibility for implementing the action.

The tasks have been collated by the project stage - and not by principle. Thus they have been grouped to convey the application of the principles in each stage of the project cycle. This provides the reader with an insight to the application of the six principles in the planning stage, followed by the design stage, the construction stage and finally, the post-construction stage.

Throughout Safer Construction Practices, case examples of best practice are provided to illustrate implementation of safety best practices in the Australian construction industry.

STAGE 1: PLANNING

- Principle 1**
Demonstrate Safety Leadership
- 1.1 Establish a Project Safety Management Framework
 - 1.2 Identify Safety Champions for Appointment to the Project Safety Leadership Team
 - 1.3 Appoint a Project Safety Leadership Team
 - 1.4 Develop Project Safety Charter
 - 1.5 Develop Project Safety Master Plan

- Principle 2**
Promote Safety in Design
- 1.6 Specify Safety Requirements in Project Design Brief
 - 1.7 Include Safe Design Requirements in Design Consultant Contracts
 - 1.8 Select 'Safe' Designer
 - 1.9 Establish Requirements for Safety in Design

- Principle 3**
Communicate Safety Information
- 1.10 Communicate Safety Commitments to Prospective Stakeholders
 - 1.11 Communicate Project Safety Risk Information to Relevant Stakeholders

- Principle 4**
Manage Safety Risk
- 1.12 Conduct Risk Analysis of Project Options
 - 1.13 Undertake Technical Feasibility Studies of Viable Options
 - 1.14 Select Preferred Project Option Based on Robust Risk Assessment
 - 1.15 Record Safety Information in Project Risk Register

- Principle 5**
Continuously Improve Safety Performance
- 1.16 Establish Key Performance Indicators (KPIs) for Safety

- Principle 6**
Entrench Safety Practices
- 1.17 Continuously Develop Safety Capabilities
 - 1.18 Develop Long-Term Relationships Within the Supply-Chain

STAGE REVIEW

STAGE 2: DESIGN

- 2.1 Develop Design Safety Plan
- 2.2 Specify How Safety is to be Addressed in Tenders for Construction
 - 2.3 Include Safety Requirements in Construction Contract Documents
 - 2.4 Establish Assessment Criteria for Prospective Constructors
 - 2.5 Evaluate Tenders Against Safety Criteria
 - 2.6 Select 'Safe' Contractor

- 2.7 Conduct Design Reviews to Eliminate/Reduce Risks at Concept and Detailed Design Stages
- 2.8 Consider Constructability/Maintainability in Design Safety Reviews

- 2.9 Include Safety Information in Design Documentation
- 2.10 Communicate Relevant Project Safety Risk Information to Prospective Constructors via the Project Risk Register

- 2.11 Record Residual Safety Risk Information in the Project Risk Register

- 2.12 Review Key Performance Indicators (KPIs) for Safety

- 2.13 Continuously Develop Safety capabilities
- 2.14 Provide Mentoring Schemes for SME Designers

STAGE REVIEW

STAGE 3: CONSTRUCTION

- 3.1 Develop Construction Safety Plan
 - 3.2 Demonstrate Management Commitment to Safety Processes at All Levels
 - 3.3 Implement Senior Management- Led 'Safety Walks'
 - 3.4 Conduct Regular Site Inspections
 - 3.5 Consultation & Talking Safety

- 3.6 Develop Safe Construction Methods
- 3.7 Review Safety Risk in Design Changes

- 3.8 Communicate Safety Risk Information to Relevant Stakeholders
- 3.9 Provide Regular Safety Performance Feedback to Project Personnel

- 3.10 Implement Systematic Risk Management Processes
 - 3.11 Identify & Rectify Safety Deficiencies
 - 3.12 Record Risk Information

- 3.13 Undertake Regular measurement of Project Safety Performance
- 3.14 Regularly Analyse Project Safety Performance Data

- 3.15 Continuously Develop Safety Capabilities
- 3.16 Promote Safety Management Practices Within SME Subcontractor Organizations
- 3.17 Implement Safety Mentoring System for SME Sub-Contractors

PROJECT REVIEW

STAGE 4: POST-CONSTRUCTION

- 4.1 Develop Commissioning Safety Plan
 - 4.2 Perform Post-Construction Review
 - 4.3 Evaluate Post-Project Performance
 - 4.4 Recognise and Reward of Good Safety Management & Leadership

- 4.5 Evaluate Effectiveness of Design Safety Review
- 4.6 Record Effective Design Solutions for Future Projects

- 4.7 Communicate Safety Knowledge to All Project Stakeholders

- 4.8 Establish Safety Requirements for Facility Maintenance
 - 4.9 Conduct Appropriate Testing of Plant and Equipment Prior to Commissioning
 - 4.10 Record Safety Information Relevant to the Facility's Operation and Maintenance

- 4.11 Undertake Collaborative Post-Project Review of Safety Performance
- 4.12 Capture and Record Lessons Learnt for Future Projects

- 4.13 Review Long Term Relationships with SMEs
- 4.14 Future Interface Between Prime Contractors and Sub-Contractors

PRINCIPLES IN PRACTICE - Creating a Strong Safety Culture

This map is adapted from a best practice model developed by the School of Property, Construction & Project Management, RMIT University.

SECTION 2

LEADERSHIP RESPONSIBILITY MATRIX

		Traditional Type Contract			Design and Construct Contract			Collaborative Contract		
		Client	Designer	Constructor	Client	Designer	Constructor	Client	Designer	Constructor
BEST PRACTICES										
Stage 1: Planning	1.1 Establish a Project Safety Management Framework	L	C	C	L	C	C	L	P	P
	1.2 Identify Safety Champions for Appointment to the Project Safety Leadership Team	L	C	C	L	C	C	L	P	P
	1.3 Appoint a Project Safety Leadership Team	L	C	C	L	C	C	L	P	P
	1.4 Develop Project Safety Charter	L	C	C	L	C	C	L	P	P
	1.5 Develop Project Safety Master Plan	L	C	C	L	C	C	L	P	P
	1.6 Specify Safety Requirements in Project Design Brief	L	C	C	L	C	C	L	P	P
	1.7 Include Safe Design Requirements in Design Consultant Contracts	L	C	C	L	C	C	L	P	P
	1.8 Select 'Safe' Designer	L	C	C	L	C	C	L	P	P
	1.9 Establish Requirements for Safety in Design	L	C	C	L	C	C	L	P	P
	1.10 Communicate Safety Commitments to Prospective Stakeholders	L	C	C	L	C	C	L	P	P
	1.11 Communicate Project Safety Risk Information to Relevant Stakeholders	L	C	C	L	C	C	L	P	P
	1.12 Conduct Risk Analysis of Project Options	L	C	C	L	C	C	L	P	P
	1.13 Undertake Technical Feasibility Studies of Viable Options	L	C	C	L	C	C	L	P	P
	1.14 Select Preferred Project Option Based on Robust Risk Assessment	L	C	C	L	C	C	L	P	P
	1.15 Record Safety Information in Project Risk Register	L	C	C	L	C	C	L	P	P
	1.16 Establish Key Performance Indicators (KPIs) for Safety	L	C	C	L	C	C	L	P	P
	1.17 Continuously Develop Safety Capabilities	L	C	C	L	C	C	L	P	P
	1.18 Develop Long-term Relationships Within the Supply Chain	L	C	C	L	C	C	L	P	P
Stage 2: Design	2.1 Develop Design Safety Plan	P	L	C	P	L	P	P	L	P
	2.2 Specify How Safety is to be Addressed in Tenders for Construction	L	P	C	L	C	C	L	C	C
	2.3 Include Safety Requirements in Construction Contract Documents	L	P	C	L	C	C	L	P	P
	2.4 Establish Assessment Criteria for Prospective Constructors	L	P	C	L	C	C	L	P	P
	2.5 Evaluate Tenders against Safety Criteria	L	P	C	L	C	C	L	C	C
	2.6 Select 'Safe' Constructor	L	P	C	L	C	C	L	C	C
	2.7 Conduct Safety Reviews to Eliminate/Reduce Risk at Concept and Detailed Design Stages	P	L	C	P	L	L	P	L	P
	2.8 Consider Constructability/Maintainability in Design Safety Reviews	P	L	C	P	L	L	P	L	P
	2.9 Include Safety Information in Design Documentation	C	L	C	C	L	L	P	L	P
	2.10 Communicate Relevant Project Safety Risk Information to Prospective Constructors	L	P	C	L	P	P	L	P	P
	2.11 Record Residual Safety Risk Information in the Project Risk Register	L	P	C	L	P	P	P	L	P
	2.12 Review Key Performance Indicators (KPIs) for Safety	L	P	P	L	P	P	L	L	L
	2.13 Continuously Develop Safety Capabilities	L	P	C	L	P	P	L	L	L
	2.14 Provide Mentoring Scheme for SME Designers	L	P	C	L	P	P	L	L	L
Stage 3 :Construction	3.1 Develop Construction Safety Plan	P	C	L	P	P	L	P	P	L
	3.2 Demonstrate Management Commitment to Safety Processes at All Levels	L	C	L	L	P	L	L	L	L
	3.3 Implement Senior Management-led 'Safety Walks'	L	C	L	L	P	L	L	L	L
	3.4 Conduct Regular Site Inspections	L	C	L	L	P	L	L	L	L
	3.5 Consultation & Talking Safety	L	C	L	L	P	L	L	L	L
	3.6 Design Safe Construction Processes	C	C	L	C	L	L	L	L	L
	3.7 Review Safety Risk in Design Changes	C	L	P	C	L	P	L	L	L
	3.8 Communicate Safety Risk Information to Relevant Stakeholders	P	C	L	P	P	L	L	L	L
	3.9 Provide Regular Safety Performance Feedback to Project Personnel	P	C	L	P	P	L	L	L	L
	3.10 Implement Systematic Risk Management Processes	P	P	L	P	P	L	L	L	L
	3.11 Identify & Rectify Safety Deficiencies	C	P	L	P	P	L	L	L	L
	3.12 Record Risk Information	C	C	L	P	P	L	L	L	L
	3.13 Undertake Regular Measurement of Project Safety Performance	C	C	L	P	P	L	L	L	L
	3.14 Regularly Analyse Project Safety Performance Data	C	C	L	L	P	L	L	L	L
	3.15 Continuously Develop Safety Capabilities	L	P	L	P	L	L	L	L	L
	3.16 Promote Safety Management Practices within SME Subcontractors	C	C	L	P	P	L	L	L	L
	3.17 Implement Safety Mentoring System for SME Subcontractors	C	C	L	P	P	L	L	L	L
Stage 4: Post-Construction	4.1 Develop Commissioning Safety Plan	P	L	P	P	L	P	P	L	P
	4.2 Perform Post-Construction Review	L	P	P	L	P	P	L	P	P
	4.3 Evaluate Post-Project Performance	L	P	P	L	P	P	L	L	L
	4.4 Recognition and Reward of Good Safety Management & Leadership	L	L	L	L	L	L	L	L	L
	4.5 Evaluate Effectiveness of Design Safety Reviews	P	L	L	P	L	L	L	L	L
	4.6 Record Effective Design Solutions for Future Projects	P	L	P	P	L	L	L	L	L
	4.7 Communicate Safety Knowledge to all Project Participants	L	P	P	L	P	P	L	L	L
	4.8 Establish Safety Requirements for Facility Management	L	P	P	L	P	P	L	L	L
	4.9 Conduct Appropriate Testing of Plant/Equipment Prior to Commissioning	C	P	L	C	L	L	L	L	L
	4.10 Record Safety Information Relevant to the Facility's Operation & Maintenance	C	L	L	C	L	L	L	L	L
	4.11 Undertake Collaborative Post-Project Review of Safety Performance	L	P	P	L	P	P	L	L	L
	4.12 Capture and Record Lessons Learnt for Future Projects	L	L	L	L	L	L	L	L	L
	4.13 Review Long Term Relationships with SMEs	L	L	L	L	L	L	L	L	L
	4.14 Future Interface Between Prime Contractors and Sub-contractors	C	C	L	C	L	L	L	L	L

L =Takes a leadership role in P= Participates in C = Is Communicated to

SECTION 3 SAFETY BEST PRACTICES

STAGE1 PLANNING

In the Planning Stage the Client identifies and articulates the need for a particular facility. Often, a number of options are investigated in order to select the preferred option which best suits the Client’s needs. Project safety ought to be a criterion used in evaluating options and arriving at a preferred solution - as should safety in the operation of the facility after commissioning.

For a traditional project delivery model - where the Client undertakes the planning before engaging a Designer - most of the actions during the Planning Stage are the responsibility of the Client. However the Client may engage a Designer to assist during this stage, in which case these actions will be a joint responsibility. For a collaborative project delivery model such as an alliance, the Constructor would also share these responsibilities with the Client and the Designer.

Principle 1 - Demonstrate Safety Leadership

Task 1.1	Establish a Project Safety Management Framework
Action	At the outset of a project, the Client will establish terms of reference for a Project Safety Leadership Team whose responsibility it will be to establish a culture of safety across the project and to oversee the day-to-day management of safety throughout the entire project lifecycle.
Description	<p>It is essential to ensure that the Project Safety Leadership Team is led by a senior member of the organisation rather than a safety professional. The leader should have the ability and delegated authority to make independent, high-level decisions about safety matters on behalf of the organisation.</p> <p>The composition of the safety team will be fluid. At first it might only comprise people from the Client’s staff, but as the project evolves, representatives of the Designer, the Constructor and subcontractors will join the team as those organisations become engaged. For some projects, it may be warranted for other stakeholders such as community groups, industry groups or Government organisations to participate in the safety team.</p> <p>Procedures and rules of operation of the safety team will cover aspects such as:</p> <ul style="list-style-type: none"> ▪ Development of a project safety vision setting out the commitment of the Client to a the creation of a strong safety culture, ▪ a general policy statement setting out goals and attitudes which will be linked to the project QA plan, where relevant, ▪ composition of the safety team, ▪ determination of core practices which will support the desired safety culture, ▪ responsibilities of team members, ▪ delegations of authority, ▪ reporting protocols, ▪ communications plans and strategies, ▪ meeting frequency, ▪ meeting procedures,

	<ul style="list-style-type: none"> management of records, arrangements for establishing other work place safety committees required by legislation (which will report to the Project Safety Leadership Team), and arrangements for expanding the team when other stakeholders such as the Designer and the Constructor become involved in the project.
Key Benefits	<ul style="list-style-type: none"> Clear management framework for safety, and rules and procedures for the management of safety on the project.
Desirable Outcomes	<ul style="list-style-type: none"> Demonstration of the Client's commitment to a strong culture of safety.
Performance Measure	<ul style="list-style-type: none"> Establishment of a safety management framework.
Leadership	<ul style="list-style-type: none"> Client.

Task 1.2	Identify Safety Champions for Appointment to the Project Safety Leadership Team
Action	The Client will identify safety champions from within its ranks to participate in the Project Safety Leadership Team to ensure that a culture of safety is instilled in the project.
Description	<p>Ideally, safety champions will be drawn from line management positions across the organisation so that they cover a broad range of skills and functions. They should be advocates for safety as distinct from being safety professionals.</p> <p>Safety champions will have:</p> <ul style="list-style-type: none"> A philosophical commitment to a safety culture, an understanding of the range of disciplines required to undertake the project safely, an understanding of statutory obligations relating to safety, an ability to interact and relate with the workforce and be able to communicate safety policy and messages, an understanding of the project's in-service functions; and a strong safety awareness and competence relevant to the management of the design and construction of the project as well as the operation of the facility. <p>Safety champions don't necessarily have to be people directly involved in the project. It is often an advantage to have some champions who are not directly associated with the project. They can act more independently and impartially than people who are involved in the project at a day-to-day level. Among the safety champions there should be some senior managers of the organisation and one of them should be the chair of the safety team (see Task 1.1 above).</p>
Key Benefits	<ul style="list-style-type: none"> Enlistment of dedicated advocates for safety, and a range of diverse skills.
Desirable Outcomes	<ul style="list-style-type: none"> A dedicated team of people committed to an organisational culture of safety.
Performance Measure	<ul style="list-style-type: none"> Selection of Project Safety Leadership Team members for appointment in Task 1.3 which follows.
Leadership	<ul style="list-style-type: none"> Initially the Client, but as the project evolves, the Designer and Constructor will also have a role to play.

Safety leadership in the Roads and Traffic Authority (RTA) - NSW

The RTA has developed a leadership matrix which identifies both pro-active and reactive safety systems applicable to the various services (departments) within the RTA. The matrix clearly links these systems to various management positions. Each manager will participate in his/her nominated safety role and minimum participation rates are specified. The matrix forms part of the manager's performance requirements and is reported against twice a year.

The visible commitment of senior management has placed safety management squarely on the RTA's agenda. This translates directly into senior and frontline managers who are taking a

leadership role in driving safety improvement. Safety improvement targets are set annually and performance against them is closely monitored.

The RTA's investment in safety leadership has produced strong bottom line results. The number of injuries sustained over the last 17 years has reduced by over 200% with a commensurate reduction in the incidence rate of claims and costs.

Task 1.3	
Appoint a Project Safety Leadership Team	
Action	A Project Safety Leadership Team comprising the champions enlisted in Task 1.2 will be established to be responsible for overseeing safety throughout the entire project lifecycle.
Description	<p>The Project Safety Leadership Team will be formally appointed to operate within the project safety management framework established in Task 1.1. Initially, the Chairperson will be a senior-level representative of the Client although as the project evolves, the position may rotate to a senior officer of one of the other major stakeholders as its contribution to the project and responsibility demands.</p> <p>The Chairperson will have:</p> <ul style="list-style-type: none"> ▪ Authority and influence within the organisation to allocate resources; ▪ strong consultative and negotiation skills, ▪ familiarity and good relationships with external stakeholders with an interest or involvement in project safety, such as consultants, contractors, government agencies and unions, ▪ an 'open door' management style that encourages input from all levels in the organisation; ▪ a commitment to a culture that fosters open and honest dialogue, and ▪ strong safety leadership and advocacy skills. <p>The chairperson and team composition may change during the various stages of the project. For example, during the construction stage, the Chairperson will most likely be a senior staff member of the Constructor and most of the team members will be from the Constructor's staff. However, the Client and the Designer will always have representation on the team. Safety team members will be representative of a vertical slice of the project's organisational structure i.e. from senior management through middle management to workforce and operational levels.</p> <p>The Project Safety Leadership Team will be the peak safety management committee for the project. It will ensure that consultative work place safety committees are established in accordance with any statutory requirements and that appropriate collaborative mechanisms are developed to ensure full collaboration with workforce personnel. Some members of the workplace safety teams may also serve on the Project Safety Leadership Team.</p>
Key Benefits	<ul style="list-style-type: none"> ▪ An authoritative safety team providing a single, unambiguous point of contact for safety matters, ▪ clear responsibilities for safety, and ▪ representation on the Project Safety Leadership Team at all levels of the project's organisation.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ During the planning stage, a Client safety champion for the project who will provide pro-active leadership in safety management, and ▪ a team capable of developing and managing a risk management strategy to eliminate hazardous work practices, materials and behaviours.
Performance Measure	<ul style="list-style-type: none"> ▪ Appointment of a strong, responsive Project Safety Leadership Team with accountability to direct and oversee

	project safety.
Leadership	<ul style="list-style-type: none"> Initially, the Client, but as the project evolves, the Designer and Constructor will also have a role to play.

Safety leadership in MIRVAC

All senior managers in MIRVAC are required to be actively involved in safety management. Each manager's role and duty statement contains KPIs relating to safety and he/she will have a nominated number of safety management tasks in which the manager must participate. In addition to managing the safety related KPIs, senior managers play an active role in the Workplace Leadership Teams - which are the safety champions of their respective sites. These teams are made up of management personnel and workforce members.

Task 1.4	Develop a Project Safety Charter
Action	A Project Safety Charter will be developed. The charter will be a public document posted on the Client's website and displayed prominently in project offices to declare the Client's intentions in relation to project safety.
Description	<p>The Project Safety Charter will be a project-specific statement of intent indicating the commitment of the Client to provide pro-active management and oversight of safety through the project lifecycle. It will set out:</p> <ul style="list-style-type: none"> A policy statement including broad roles and responsibilities of all stakeholders in the project - including those not yet engaged i.e. the Designer and Constructor - and will include the safety of the public, a basis for consensus that all stakeholders will strive for high standards of safety performance and will actively participate in the pursuit of the project's safety goals, and a statement of respect for all statutory obligations. <p>The Project Safety Charter should be a fluid document and may change as the project evolves and as other stakeholders join the project.</p>
Key Benefits	<ul style="list-style-type: none"> A public declaration of the project's commitment to best quality safety practice, consensus on the shared vision of the importance of safety, shared understanding of responsibilities of all project stakeholders, communication to field staff that the Client is serious about safety and is prepared to invest in safety, and field staff assurance of the high level of importance placed by the Client on safety relative to other project goals.
Desirable Outcomes	<ul style="list-style-type: none"> Openly demonstrates the Client's commitment to a safety culture, communicates information about the importance of safety to all potential project stakeholders at the planning stage, clarifies roles and responsibilities of stakeholders, and articulates project safety objectives and targets.
Performance Measure	<ul style="list-style-type: none"> Publication and display of a Project Safety Charter which has been signed off by the Client's CEO (or equivalent) as a statement of intention to achieve best practice.
Leadership	<ul style="list-style-type: none"> Initially, the Client, but as the project evolves, the Designer and Constructor will also have a role to play.

Task 1.5		Develop a Project Safety Master Plan	
Action	A Project Safety Master Plan will be developed during the planning stage of the project. It will be an overarching plan which will inform and guide the development of subordinate safety plans for design, construction and commissioning of the finished facility.		
Description	<p>The Project Safety Master Plan will be a project-specific plan which will set out:</p> <ul style="list-style-type: none"> ▪ Roles and responsibilities for managing safety, ▪ allocation of resources to manage project safety, ▪ project-specific safety goals and targets, and ▪ performance criteria for monitoring and evaluating project safety strategies to meet safety goals and targets. <p>The Project Safety Master Plan may change over the course of the project to meet evolving challenges and through the involvement of other stakeholders after their engagement in the project.</p> <p>It will be the top level, strategic safety plan spanning the entire time frame of the project. It will be expressed in broad terms and will be formulated at senior levels of the organisation. It should aspire to exceed normal industry levels and be aimed at excellent performance. Below it will be project level safety plans for design, construction and commissioning - and below these would be workface safety plans aimed at safety planning tasks within each project stage. This hierarchy of plans is illustrated in Figure 1 below.</p>		
Key Benefits	<ul style="list-style-type: none"> ▪ Establishment of clear goals and targets for safety, ▪ Development of performance criteria (see Task 1.16), and ▪ a safety master plan which aims for game-breaking performance. 		
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Provides guidance for the development of project stage safety plans, ▪ by setting ambitious targets, demonstrates the Client’s commitment to establishing a strong project safety culture, ▪ communicates information about the importance of safety to all potential project stakeholders at the planning stage, ▪ clarifies roles and responsibilities of future stakeholders, and ▪ clearly articulates project safety objectives and targets. 		
Performance Measure	<ul style="list-style-type: none"> ▪ A Project Safety Master Plan which has been endorsed by the Client’s CEO (or equivalent). 		
Leadership	<ul style="list-style-type: none"> ▪ The Client, but as the project evolves, other stakeholders may also have an influence. 		

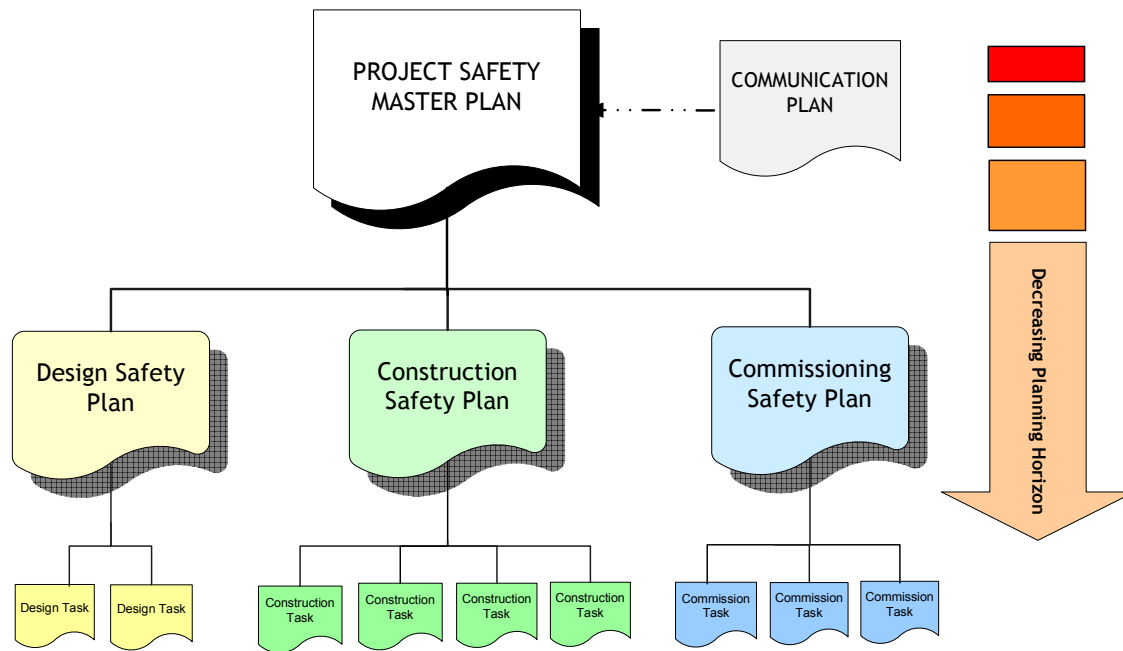


Figure 1: Multiple layers of safety planning

Multi-layered safety planning at the Sydney Airport Gates project

A project-specific safety policy was provided in the contract documents distributed to prospective project participants during the tender process. The Constructor was required to respond to this policy by providing a Construction Safety Plan. The Construction Safety Plan was independently reviewed by a specialist consultant, working on behalf of the Client. This plan was approved before the construction team could access the site.

The Construction Safety Plan established the way in which the site was to be set up safely, site emergency procedures and evacuation points, and arrangements for the provision of first aid. Each Sub-Contractor subsequently engaged on the project was also required to draw up their own safety plan relating to their part of the works.

The Client was responsible for establishing safety goals for the project and established a qualification procedure to evaluate the safety capability of all prospective Contractors and Sub-Contractors prior to their engagement. Key personnel of prospective project participants were interviewed before their selection in order to assess their commitment to safety.

Principle 2 - Promote Design for Safety

Task 1.6	Specify Safety Requirements in Project Design Brief
Action	The Client will prepare a project brief that sets out the safety responsibilities of the Designer in relation to project safety. The Client will also collate all data relating to the site to be provided to the Designer.
Description	The Project Safety Brief will establish performance criteria for safety in the design stage. Key stakeholders whose safety might be affected through the project lifecycle will be identified - including personnel involved in construction, occupation, maintenance, cleaning and the eventual demolition of the facility. The Project Safety Brief will also include the details of the Client’s project safety management framework set out in Tasks 1.1 to 1.4 and specify how the Designer will be incorporated in

	the framework. The brief will also include a statement of the Client's requirements for safety in design - see Task 1.7 below.
Key Benefits	<ul style="list-style-type: none"> From the project outset, safety in design will be a key project driver, and designers will have early notice of their obligations to promote and build safety into the project design.
Desirable Outcomes	<ul style="list-style-type: none"> Clearly documented Client requirements to provide a shared understanding of safety expectations among the Client- Designer team, clear message to the Designer that safety is a key driver of the project - to be given an equal weighting to other aspects of design - such as functionality, aesthetics, cost, program and quality, identification of project stakeholders whose interests must be considered.
Performance Measure	<ul style="list-style-type: none"> Preparation of a project safety brief relating to the design of a project.
Leadership	<ul style="list-style-type: none"> Client

Requiring 'safe' design at the Alice Springs to Darwin Rail Link

This project was a design and construct contract. A design working group was developed by the Client, and included representatives of the Client, State Government and other external stakeholders. Weekly meetings held during the design stage to ensure that the design was both practical safe to build and operate. An independent reviewer was engaged by the Client, to audit and certify all work performed by the design working group. Monthly design reports were required documenting (among other things) the safety aspects of the design. Members of the design working group were located on-site during the construction work and were able to be directly involved. All sub-contractors were required to submit a safety plan describing how they would manage safety in the project. These plans were reviewed by the Client, with input from the Design and Construct team.

Design safety at MIRVAC

MIRVAC uses a process known as DOOR (Designing Out Our Risk). DOOR is used for every project, prior to the commencement of construction, with the aim of identifying all risks at the design stage - including occupational health and safety.

A hierarchy of control is used to form the basis of assessment with elimination of a risk being viewed as the first option. If this is not possible then the other hierarchies are reviewed against the risk sequentially. DOOR assists in finding solutions to safety issues without having to rely on personal protective equipment as the resolution.

DOOR is utilised for each of the project lifecycle stages - concept design, detailed design, construction and pre-commission. DOOR has enabled MIRVAC to identify issues that have continually occurred on various projects over time. These commonly occurring issues have been used as a learning tool and now, every design incorporates standard design requirements to alleviate these common risks.

DOOR is not only used for new construction projects, but is also used when MIRVAC acquires an existing facility such as a building. The use of DOOR in these cases has identified common safety risks associated with existing buildings as well as Public Liability issues. These can form the base line for bench marking against other projects.

Task 1.7	Include Safe Design Requirements in Design Consultant Contracts
Action	The Client will ensure that the contract for the engagement of the Designer contains requirements for safety in design.
Description	In selecting a Designer, the Client should ensure that safety requirements are adequately considered in the tender or proposal for the appointment of the Designer and that all

	<p>proposals are considered on an equal footing.</p> <p>The responsibilities of the Designer in regard to designing for safety should, as far as is practicable, be specified in the contract. These responsibilities could include participation in the project safety management framework as set out in the Project Safety Charter, and defined ‘hold points’ in the design process to review safety.</p> <p>The Client may undertake a prequalification process for the selection of a Designer, in which case, prospective designers could be asked to submit evidence of their previous track record, competency and performance in designing for safety. However, the effective performance of the Designer in designing for safety is as much about the Designer’s attitude to safety as it is to responding to or complying with specified requirements. Interviews could be held with prospective designers, to assist the Client in evaluating attitudes to safety in design when making the final selection of the Designer.</p> <p>The approach taken to Task 2.4 in selecting a ‘safe’ Constructor could apply equally to the selection of a ‘safe’ Designer.</p>
Key Benefits	<ul style="list-style-type: none"> Provides the Designer with a clear understanding of the requirements for safe design.
Desirable Outcomes	<ul style="list-style-type: none"> Engagement of a Designer with a strongly entrenched safety culture.
Performance Measure	<ul style="list-style-type: none"> Appropriate clauses are included in the contract.
Leadership	<ul style="list-style-type: none"> Client

Task 1.8	Select a ‘Safe’ Designer
Action	<p>Following the preparation of the Project Brief (Task 1.6), the Client will engage a Designer. The selection of the preferred Designer will be made on the basis that the Designer has demonstrated competence in and commitment to safety in design and the principles proposed in the Project Safety Charter (Task 1.4).</p>
Description	<p>In the selection criteria for the engagement of a Designer, clear requirements for safety performance and competence should be included. Prior to the final appointment of the Designer, the Client should have clearly expressed the need for the Designer to actively participate in safety reviews and abide by the general principles of the Project Safety Charter. Clear and specific safety requirements for design documentation should be specified and communicated to prospective designers.</p> <p>In selecting the Designer, the Client needs to be satisfied that the Designer has the appropriate knowledge, skills and resources to undertake project design with lifecycle safety as a driving force. This will need evidence of:</p> <ul style="list-style-type: none"> Understanding of statutory obligations relating to safety - including an understanding of the duty of care to ensure that personnel are not exposed to risks or hazards, an appreciation of construction methods and their impact on design, an appreciation of the operation of the facility, its maintenance requirements and issues relating to its eventual demolition, the environmental impact and sustainability of the project, and the methods of communication between the design office and the construction site to ensure that safety risks are fully conveyed to field personnel.
Key Benefits	<ul style="list-style-type: none"> Engagement of a competent designer committed to a safety culture, and Client expectations relating to safety issues at the design stage are unambiguously communicated to prospective designers.

Desirable Outcomes	<ul style="list-style-type: none"> ▪ Designer fully integrates safety into design decision-making, ▪ elimination or reduction of risks at the Design Stage is maximized, and ▪ residual risks are clearly identified and effective management strategies designed.
Performance Measure	<ul style="list-style-type: none"> ▪ Selection of the Designer is based, <i>inter alia</i>, on competence and performance in designing for safety.
Leadership	<ul style="list-style-type: none"> ▪ Client

Task 1.9	Establish Requirements for Safety in Design
Action	Following Task 1.6 the Client will collaborate with the Designer in order to establish and agree on the general design requirements to be considered during concept and final, detailed design. These requirements will be flexible to respond to any emerging safety issues that might arise as the project evolves.
Description	<p>It is not always possible to identify safety risks at the commencement of a construction project, especially for fast track projects where design may not be complete when construction commences. Nevertheless, early identification and safety risk assessment is important to commence safety strategies and to entrench safety in project decision-making. There are many potential design issues that affect safety. Without being exhaustive, issues may include:</p> <ul style="list-style-type: none"> ▪ Proximity to adjacent property or to nearby roads, ▪ surrounding land use, ▪ clearances required for construction equipment and techniques, ▪ demolition of existing assets, ▪ proximity to underground or overhead services - especially electrified lines, ▪ rapid construction techniques i.e. pre-fabrication versus in-situ construction, ▪ staging and co-ordination with other works, ▪ exposure (and length of exposure) of field staff to adjacent traffic or other hazards, ▪ provision of safe working platforms, ▪ materials to be used in construction, ▪ site conditions - including foundations, construction over other assets/water, ▪ safety of the public, ▪ use of adjacent streets, and ▪ safe operation and maintenance of the facility after commissioning.
Key Benefits	<ul style="list-style-type: none"> ▪ Safety is built into the design both for construction and in-service conditions, ▪ accountability for the Designer to consider safety in the design, and ▪ where possible, safety risks are eliminated or reduced through judicious design decisions.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ A thorough understanding by the Designer of the need for safe design and the safety issues that should be considered in the design of the project.
Performance Measure	<ul style="list-style-type: none"> ▪ A set of agreed principles for providing for safety in the design of the project.
Leadership	<ul style="list-style-type: none"> ▪ Client

Principle 3 - Communicate Safety Information

Task 1.10	Communicate Safety Commitments to Prospective Stakeholders
Action	Communication of safety policy to all stakeholders (and potential stakeholders) is essential. The Client, in collaboration with other stakeholders, will develop a project communications plan and strategy to inform all stakeholders of its commitment (and their obligations as partners in safety) to a safety culture for the project.
Description	<p>Communication and consultation with prospective stakeholders will commence as early as possible in the project lifecycle. If a process of prequalification is used to appoint the Designer and the Constructor, the Project Safety Charter developed in Task 1.4 - and any other relevant safety information - can be conveyed to the pre-qualified consultants/contractors as soon as possible to provide advance notice of project safety requirements.</p> <p>If pre-qualification is not proposed, peak bodies representing consultants/contractors could also be informed of proposed arrangements so that they can inform their memberships. Because project safety management will adopt a participatory approach through progressive engagement, stakeholders should be invited to comment on the Project Safety Charter which will be amended and reissued after any agreed modifications.</p>
Key Benefits	<ul style="list-style-type: none"> ▪ Prospective stakeholders receive early notice of safety expectations and commitments and understand their role in the project in regard to safety, ▪ prospective stakeholders understand that management of safety is a shared responsibility and that collaboration and cooperation is required from all participants, ▪ dialogue about safety between project stakeholders is commenced as early as possible, providing an opportunity for stakeholders to express their views and opinions to enhance the Project Safety Charter, and ▪ it is demonstrated to all stakeholders that they will be expected to treat safety as a high priority in the project and that safety objectives stand on an equal footing as other project objectives.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ All prospective stakeholders thoroughly understand prior to engagement, the safety aims and objectives of the project and the level of commitment required of them and other partners.
Performance Measure	<ul style="list-style-type: none"> ▪ Confirmation from prospective stakeholders that they understand and agree to conform to the requirements of the Project Safety Charter.
Leadership	<ul style="list-style-type: none"> ▪ Client, with significant participation by the Designer.

Task 1.11	Communicate Project Safety Risk Information to Relevant Stakeholders
Action	Following the creation of the Project Risk Register in Task 1.15 below, all project safety risk information will be conveyed by the Client and the Designer to relevant stakeholders.
Description	Project safety risk information will be communicated to relevant (prospective) constructors and other relevant stakeholders to provide advance information on safety risks. This early notice will enable them to plan their work to either eliminate or minimise project safety risks.
Key Benefits	<ul style="list-style-type: none"> ▪ Provides advance notice of safety risks to all stakeholders, and ▪ reinforces the project's safety culture.

Desirable Outcomes	<ul style="list-style-type: none"> All stakeholders have an improved knowledge of project risks and can plan their work accordingly.
Performance Measure	<ul style="list-style-type: none"> Project Risk Register communicated to relevant stakeholders.
Leadership	<ul style="list-style-type: none"> Client, with signification participation of the Designer.

Principle 4 - Manage Safety Risk

Task 1.12	Conduct Risk Analysis of Project Options
Action	The Designer, in collaboration with the Client will undertake a safety risk analysis for each project option.
Description	<p>A safety risk analysis will be prepared by assessing the relationship between the project stakeholders, the public, the eventual users of the facility and the environment. It will concentrate on what can happen, and how and why it can happen in the implementation of the project. It will also concentrate on separating acceptable risks from major risks and identify data to assist in the evaluation and treatment of each risk.</p> <p>Risks will be evaluated by comparing levels of risk so that they can be ranked for further analysis. A range of options for treating risks will be identified and the feasibility of options determined together with appropriate risk treatment plans which aim to eliminate, contain or ameliorate the risks.</p> <p>For ease of ranking, risks may be entered into a matrix where the likelihood of a risk occurring (common, probable, possible, not likely and hardly ever) can be entered against severity of the risk (low, moderate, high and extreme). Guidelines can be found in AS/NZ 4360: 2004.</p>
Key Benefits	<ul style="list-style-type: none"> Most of the risks of all project options will be identified during the planning stage, management of the most severe risks will guide the feasibility of options - options with unacceptable risks can be eliminated, senior management of the Client will become aware of the risks and be engaged in risk management strategy, and key personnel involved in risk analysis and management will ensure that risk management strategy is streamlined into the project via documentation and communication.
Desirable Outcomes	<ul style="list-style-type: none"> A thorough safety risk analysis is undertaken by the Client and Designer to guide the evaluation of options, and awareness of safety management issues is heightened at the planning stage.
Performance Measure	<ul style="list-style-type: none"> Documentation of a complete safety risk management analysis and review.
Leadership	<ul style="list-style-type: none"> Client, with input from the Designer if appointed..

Task 1.13	
Undertake Technical Feasibility Studies of Viable Options	
Action	The Designer (with the assistance of the Client) will undertake preliminary feasibility studies of design options proposed to meet the facility's need.
Description	Safety risks should be identified for each option and ranked for degree of severity. For options where risks are identified as extreme, they may be declared infeasible and other alternatives may need to be considered. Issues to be considered include those listed in Task 1.9 among others. The feasibility studies will take account of the risk assessment made in Task 1.12 as well as the usual aspects of technical considerations, cost, amenity, aesthetics and environment. Other considerations may include safer alternative construction processes and the levels of skills and resources required by the Constructor to build the facility using safe construction processes.
Key Benefits	<ul style="list-style-type: none"> ▪ Options that present severe safety risks can be quickly eliminated from consideration, and ▪ confirmation that safety risks identified for other options for further development can be managed.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Identification of feasible project options having acceptable and manageable project risk profiles.
Performance Measure	<ul style="list-style-type: none"> ▪ Safety risk identification/assessment based on technical feasibility criteria.
Leadership	<ul style="list-style-type: none"> ▪ Client, with input from the Designer when appointed..

Task 1.14	
Select Preferred Project Option Based on Robust Risk Assessment	
Action	Taking into account the feasibility studies conducted in Task 1.13 above, the preferred option will be selected.
Description	The selection of the preferred option will be based on all considerations i.e. quality, cost, time aesthetics, amenity, environment and safety. The preferred option will be accompanied by the Project Risk Register described in Task 1.15 below.
Key Benefits	<ul style="list-style-type: none"> ▪ Selection of a preferred option which will proceed to detailed design.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Selection of a feasible design after undergoing a rigorous analysis in which project safety was a key performance criterion.
Performance Measure	<ul style="list-style-type: none"> ▪ Final design report.
Leadership	<ul style="list-style-type: none"> ▪ Client, with input from the Designer when appointed.

Task 1.15	
Record Safety Information in a Project Risk Register	
Action	A Project Risk Register will be compiled by the Client and the Designer following the selection of the preferred project option. This will be a 'living document'. It will be updated, as required, throughout the project lifecycle as new risks are identified. When risks are eliminated they will be recorded as such but still remain on the risk register.
Description	<p>The Client and the Designer will develop the Project Risk Register during the planning stage of the project. As the project evolves, the risk register will be shared continuously with stakeholders who will collaboratively review and update it to add new risks. At the end of the project, risks identified at all stages of the project lifecycle will have been captured in a central repository and provide clear insight into safety decisions throughout the project.</p> <p>The Project Risk Register will be a key tool for the communication of safety information between stakeholders and during the transition between project stages. The Project Risk Register will be owned by the Client but it will be readily available to all stakeholders throughout the project lifecycle.</p>

	Before construction commences, the Client and Designer will ensure that the risk register is updated and transferred to the Constructor. Similarly, the Constructor will update it as required during construction and pass it on to the owner at commissioning of the facility, and the owner will pass it on to the user and, if necessary, the demolisher. The Client will retain full ownership of the risk register at all times.
Key Benefits	<ul style="list-style-type: none"> ▪ Single source of risk information which can be shared with all project stakeholders, and ▪ a mechanism for monitoring the implementation of risk management actions.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ All identified risks recorded in a central repository, and ▪ a mechanism for recording newly identified risks.
Performance Measure	<ul style="list-style-type: none"> ▪ Central repository for project risk information, and ▪ continuous updating of all identified risks, risk management decisions and on-going monitoring of risk management actions.
Leadership	<ul style="list-style-type: none"> ▪ Client and other stakeholders as they become engaged in the project.

Principle 5 - Continuously Improve Safety Performance

Task 1.16	Establish Key Performance Indicators (KPIs) for Safety
Action	Appropriate KPIs for measuring project safety performance against project and organisational objectives and industry standards will be established. These will be developed initially by the Client but they may be modified as other stakeholders engage with the project.
Description	<p>Management of safety will be a process of continuous improvement where stakeholders strive for ‘game-breaking’ performance. It will require industry-wide collaboration for benchmarking against other projects and information sharing. KPIs will be developed in accordance with project safety objectives and reflect an approach to safety management which aims for excellence.</p> <p>KPIs should include both leading and lagging indicators. Leading indicators measure how well an organisation is managing safety e.g. how many workers have received training, how many safety inspections have been undertaken etc. Thus leading indicators measure positive actions to manage safety before the occurrence of incidents or injuries.</p> <p>On the other hand, lagging indicators measure negative events after they occur, such as incidents, injuries, fatalities and other losses. Lost Time Injuries (LTIs) and Medical Treatment Injuries (MTIs) are derived from lagging indicators.</p>
Key Benefits	<ul style="list-style-type: none"> ▪ Standard methods of measurement for safety performance will facilitate continuous improvement and enable benchmarking performance against other, similar projects, ▪ measurement of positive safety performance (leading KPIs) rather than reactive identification of things that have gone wrong, ▪ heightened awareness of stakeholders of project safety aims, ▪ establishment of levels of responsibility and accountability for safety, and ▪ provision of targets against which safety performance can be measured - both internally and externally.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ ‘Sets the bar’ for all stakeholders, ▪ raises awareness of all personnel involved in the project, ▪ fosters teamwork (collaboration and co-operation), ▪ leading KPIs focus the Constructor’s attention on safety

	<p>management,</p> <ul style="list-style-type: none"> ▪ benchmarking provides opportunities to transfer best practice to other projects, ▪ alerts managers to non-performance so that immediate actions can be taken to improve, and ▪ provides a mechanism to monitor project and organisational safety performance.
Performance Measure	<ul style="list-style-type: none"> ▪ A set of KPIs to measure the effectiveness of safety management, and ▪ consistency of reporting against KPIs.
Leadership	<ul style="list-style-type: none"> ▪ Client with participation of the Designer. When the construction stage is reached the Constructor will play a leading role.

Principle 6 - Entrench Safety Practices

Task 1.17	Continuously Develop Safety Capabilities
Action	All project stakeholder organisations will implement programs for induction and on-the-job performance of staff to ensure that they are familiar with the aims and objectives of the Project Safety Charter (Task 1.4) and that their safety capabilities are continuously enhanced.
Description	<p>Improving safety performance embraces aspects such as re-designing work practices, training, raising awareness, recognition and acknowledgement of good performance, coaching, mentoring, pro-active and preventative management, and standards of behaviour. A culture of safety should be fostered whereby every individual is a driver and deliverer of safety. It requires an open and trusting approach, conducive to teamwork but in which responsibility for safety is fairly and appropriately allocated. Good practices and effective results should be positively reinforced and communicated to others. Individuals should be empowered to provide feedback and express views in a collegiate environment to further develop safety capabilities.</p> <p>There are also statutory obligations for employers to consult with employees on matters that may directly affect their health, safety and welfare. Employers also have an obligation to provide and maintain safe working environments, safe plant and equipment, safe working systems and to provide such information, instruction, training and supervision as to enable employees to perform their work in a manner that is safe and without risk to health.</p>
Key Benefits	<ul style="list-style-type: none"> ▪ Improved safety experience and capabilities that can be applied to future projects, ▪ hazard reduction, ▪ reduction in unsafe incidents, ▪ decreased costs caused by LTIs and MTIs, ▪ reduced construction delays, and ▪ improved field staff morale, efficiency and productivity.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Safety capabilities show continuous improvement.
Performance Measure	<ul style="list-style-type: none"> ▪ Measurement against KPIs exceeds targets and shows continuous improvement, ▪ a register and auditable record of safety training and development activities, and ▪ a register of employees (or subcontractors) required to hold authorisations, permits, licences, and certificates of competency to undertake tasks for which these instruments are mandated.
Leadership	<ul style="list-style-type: none"> ▪ All major stakeholders i.e. Client, Designer and Constructor, when engaged.

Task 1.18	Develop Long-term Relationships Within the Supply Chain
Action	As early as possible in the project lifecycle, the Client will develop relationships with consultants, contractors, sub-contractors and other key project stakeholders in order to engage them in project safety management processes.
Description	In addition to providing their knowledge - and lessons learned from other projects - other project stakeholders will be able to contribute productively to project safety strategies. This type of collective approach will assist in reinforcing the growth of a safety culture for the project with all parties sharing information and contributing equally. It will also foster confidence between the participants and encourage innovation. These relationships may evolve through synergy between organisations with a successful history of working together or they might be created through normal subcontracting processes - in which case, safety consciousness and capability is a consideration in the final selection of a subcontractor. The aim is to develop a collegiate approach to safety management where all partners can openly express views about safety issues for mutual benefit and disputes can be resolved harmoniously and as quickly as possible.
Key Benefits	<ul style="list-style-type: none"> ▪ Improved understanding of safety issues through the supply chain, ▪ consistent and more effective safety processes in future projects, and ▪ stronger project safety culture through shared understandings,
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Earliest possible engagement of key stakeholders in project safety management, and ▪ successful, long-term relationships could extend beyond the project for mutual benefits in continuous improvement of safety management.
Performance Measure	<ul style="list-style-type: none"> ▪ Contracts and agreements with project stakeholders, and ▪ establishment of long term partnerships or strategic alliances within the supply chain.
Leadership	<ul style="list-style-type: none"> ▪ Client, with progressive involvement by the Designer and Constructor.

STAGE 2 DESIGN

The Design Stage converts the planning concepts and the preferred technical solution for a facility into drawings and technical specifications. Project safety is an integral component of the design process - as is safety in the operation of the facility after commissioning.

For a traditional project delivery model - where the Client engages a Designer to undertake detailed design - the project safety actions during the Design Stage are shared between the Designer and the Client. However, in a design/construct or a collaborative project delivery model, the Constructor would be jointly involved during this stage.

Principle 2 - Demonstrate Safety Leadership

Task 2.1	Develop Design Safety Plan
Action	<p>Following the selection of a 'safe' Designer (Task 1.8), a project-specific design safety plan will be prepared. The plan will be developed by the Designer with collaboration by the Client. The Client may engage a suitably experienced third party to independently review the plan if no such expertise exists within the Client's organisation.</p> <p>The Client's involvement in checking the design safety plan does not relieve the Designer of the responsibility for ensuring that safe design practices are employed and that a safe working environment will be provided from a design perspective.</p>
Description	<p>This will be the first task to be carried out after the appointment of a Designer. The Design Safety Plan will include, as a minimum requirement, the following details:</p> <ul style="list-style-type: none"> ▪ A nominated officer from within the Designer's organisation who will be the design safety champion, ▪ a design risk assessment which identifies and evaluates potential design safety issues including any risks arising due to likely construction methods, ▪ a communications plan to inform all stakeholders on design safety issues, ▪ safety design monitoring (audits and inspections) and reporting processes, ▪ statutory obligations which may impact on design issues, ▪ approach to management of identified major areas of hazard/risk and proposed control measures, ▪ dangerous goods and hazardous substances management, ▪ general provisions for traffic management, and ▪ arrangements for protecting the public and adjacent property. <p>The Design Safety Plan will conform with any requirements set out in the Project Safety Master Plan (Task 1.5).</p>
Key Benefits	<ul style="list-style-type: none"> ▪ Design safety issues are comprehensively considered before design work is undertaken, ▪ clear design safety management processes and responsibilities are established, ▪ appropriate resources are allocated, and ▪ a framework for monitoring safety through the Design Stage is provided.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Safety management through the Design Stage is enhanced through planning.

Performance Measure	<ul style="list-style-type: none"> A Design Safety Plan is endorsed by the Client before commencing design.
Leadership	<ul style="list-style-type: none"> Designer. with collaboration by the Client.

Task 2.2	Specify How Safety is to be Addressed in Tenders for Construction
Action	The Client and Designer will give consideration as to how safety will be addressed in tenders to provide a basis for evaluation and comparison between tenders.
Description	<p>When a Constructor is selected using a competitively tendered process, the Client could specify in tender documentation how tenderers must address safety issues - including the pricing of safety aspects of a construction project. This approach provides a standardised basis for which an objective comparison could be made in evaluating tenderers' safety processes/provisions. It ensures that tenderers responsibly identify their proposed investment in project safety by allocating a financial cost to safety management. (This same provision can be also adopted if another process of engagement of the Constructor is used such as by direct negotiation.)</p> <p>If a prequalification process is adopted to short-list prospective contractors, applicants should be required to submit evidence of safety performance, innovations, and management processes for previous projects - together with references from past clients.</p>
Key Benefits	<ul style="list-style-type: none"> Safety requirements are adequately considered in tenders/proposals; and comparisons can be made between tenders because all tenderers are required to submit the same information on an equal footing.
Desirable Outcomes	<ul style="list-style-type: none"> Tenders that do not comply with safety requirements can be excluded from further consideration, and all tenders will contain pricing based on a realistic estimate of tenderers' investment in safety management for the project.
Performance Measure	<ul style="list-style-type: none"> All tenders contain complete and detailed safety information on an equal footing and in a standard format.
Leadership	<ul style="list-style-type: none"> Client, with the participation of the Designer.

Task 2.3	Include Safety Requirements in Construction Contract Documents
Action	The Client, in collaboration with the Designer, will specify how safety is to be addressed in contract documents.
Description	<p>Standard construction contracts do not usually specify safety requirements beyond compliance with relevant legislation. The Client should carefully assess the safety provisions in its standard construction contracts and consider the inclusion of specific safety requirements. Examples for consideration should include:</p> <ul style="list-style-type: none"> Including the Project Safety Charter in the contract, articulating the Constructor's role and responsibilities in managing safety on the site, mandating the submission of a Construction Safety Plan (Task 3.1), specifying reporting requirements for safety performance against agreed KPIs; requiring safety performance reports to be submitted monthly, mandating immediate submission of reports of injuries or incidents to the Client, and requiring specific safety management processes to be implemented.

Key Benefits	<ul style="list-style-type: none"> Constructors are contractually bound to implement specific safety measures over and above those required by legislation, the inclusion of detailed safety requirements in construction contracts reinforces the importance that the Client places on safety during the construction stage, and procedures for non-compliance and issue resolution are clearly stipulated in contract documents and could apply to safety requirements.
Desirable Outcomes	<ul style="list-style-type: none"> The Constructor fully understands safety requirements as a contractual responsibility.
Performance Measure	<ul style="list-style-type: none"> All construction contracts contain specific safety clauses.
Leadership	<ul style="list-style-type: none"> Client, with the participation of the Designer.

Task 2.4	Establish Assessment Criteria for Prospective Constructors
Action	The Client will specify assessment criteria for the evaluation of tenders - including project safety management and performance.
Description	<p>Tenders can be assessed using a number of criteria such as price, quality, construction period, amenity and aesthetics. The weightings given to these attributes will vary from project to project and often, price is the only consideration - with quality and time requirements built into specifications. Safety management is also a valid attribute in assessing tenders. Weightings given to these criteria will be influenced by the nature and size of the project and its proximity to public areas. Tenders can also be assessed quantitatively (price, time), qualitatively (quality) or subjectively (aesthetics, amenity) - or a combination of any.</p> <p>It is the responsibility of the Client to determine the appropriate assessment criteria and the weightings to be applied in order to evaluate tenders. Some suggestions for assessing safety competence include:</p> <ul style="list-style-type: none"> The submission of a draft Construction Safety Plan - as a precursor to Task 3.1, a written response to the Project Safety Charter with suggestions for improvements or modifications, presentations on safety management by tenderers, project data sheets outlining safety performance on previous projects, and curricula vitae of proposed personnel responsible for managing safety on the project. <p>A percentage weighting could be applied to these responses to be taken into account along with other selection criteria.</p>
Key Benefits	<ul style="list-style-type: none"> An appropriate weighting can be given to safety according to the scope, nature and risk profile of a project.
Desirable Outcomes	<ul style="list-style-type: none"> Tenderers have a full understanding of the importance given to safety management for a project and will strive to submit the most attractive proposal in a competitive environment.
Performance Measure	<ul style="list-style-type: none"> A specified weighting for safety in the contract documents.
Leadership	<ul style="list-style-type: none"> Client, with the participation of the Designer.

Establishing criteria for the selection of a 'safe' constructor at the Morwell River Diversion

Constructors were chosen on account of their ability to demonstrate that they could maintain safety as a key priority. In the tender phase, potential Constructors needed to develop a detailed safety-management plan and identify appropriate safety systems upfront. The Client established a project team who undertook independent assessments of these plans and the Constructors were then selected on the basis of their plans. The translation of the project management plans to the actual site was the critical aspect analysed.

The Client also required the names of the key personnel who would be involved in the project and, as part of due diligence, undertook interviews with those people in order to identify whether safety was a priority and the way in which safety was to be managed *“because at the end of the day, companies can lay out their magnificent documentation, but if you don’t get the key people, that is where you fall down”*.

Task 2.5	Evaluate Tenders Against Safety Criteria
Action	The Client will evaluate tenders in accordance with the specified evaluation criteria.
Description	The establishment of evaluation criteria makes the assessment of tenders fair and impartial - at the same time reflecting the importance of safety management in the project.
Key Benefits	<ul style="list-style-type: none"> All tenders are assessed on a like-for-like basis, and the tender evaluation process is fair and transparent in its treatment of safety.
Desirable Outcomes	<ul style="list-style-type: none"> Acceptance of a tender in which safety management is a key attribute.
Performance Measure	<ul style="list-style-type: none"> A ‘safe’ tender is recommended for acceptance.
Leadership	<ul style="list-style-type: none"> Client, with the participation of the Designer.

Task 2.6	Select a ‘Safe’ Constructor
Action	In selecting a ‘safe’ Constructor, the Client will take into account the safety competencies of the proposed project team and the proposed approach and innovation for the management of safety in the project.
Description	Other evaluation criteria - such as price, quality and construction period - will also be considered, but safety will be an important evaluation criterion on which tenders will be assessed. It is therefore essential that the safety components of tenders are carefully assessed and considered as part of the overall selection process.
Key Benefits	<ul style="list-style-type: none"> The selection of the preferred Constructor will be influenced by the safety management competence of the proposed team and the quality of safety content of tender submissions.
Desirable Outcomes	<ul style="list-style-type: none"> The selected Constructor will have a clear vision for managing safety on the project and demonstrable competence in managing safety, and selection decisions are, in part, contingent on the response to safety management aspects of tender submissions.
Performance Measure	<ul style="list-style-type: none"> Response to project safety requirements is given an appropriate weighting against other tender evaluation criteria, and a ‘safety’ Constructor is selected.
Leadership	<ul style="list-style-type: none"> Client, with the participation of the Designer.

Principle 2 - Promote Design for Safety

Task 2.7	Conduct Design Reviews to Eliminate/Reduce Risks at Concept and Detailed Design Stages
Action	The Client, in collaboration with the Designer, will review designs at both the concept and detailed design stages to identify potential safety hazards associated with design elements and to assess the risks presented by these hazards.
Description	Design safety reviews should consider safety in the construction, commissioning, operation and maintenance of the project facility. Wherever possible, design safety reviews should involve the people who will eventually construct, occupy and maintain the facility. However, where this is not possible, the Client and

	<p>Designer should make every effort to include persons with knowledge and experience in the construction and maintenance processes in the design safety reviews. Their experience and expertise will assist in identifying safety issues which may have been overlooked in the design.</p> <p>Design safety reviews should conform to a systematic approach to safety risk management. This involves:</p> <ul style="list-style-type: none"> ▪ the identification of potential and known hazards, ▪ the assessment of risks, ▪ the evaluation of these risks against pre-established levels of tolerance and, ▪ where practicable, the selection of measures to eliminate or reduce risks through design modifications. <p>Residual safety risks should be recorded in the Project Risk Register (Task 1.15).</p>
Key Benefits	<ul style="list-style-type: none"> ▪ Safety risks inherent in a design are systematically assessed, ▪ where practicable, safety risks are eliminated or reduced through design modification, and ▪ design decision-making is based on a robust assessment of safety risks.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Safety risks arising from the design of a facility are minimised.
Performance Measure	<ul style="list-style-type: none"> ▪ Design safety reviews conducted throughout the design process, and ▪ risk mitigation changes during design are recorded in the Project Risk Register.
Leadership	<ul style="list-style-type: none"> ▪ Designer, with oversight from the Client.

Safe design at Bovis Lend Lease

Bovis Lend Lease has developed a process called Risk and Opportunity Analysis at Design (ROAD). In this process, safety risks and opportunities for safety improvements are identified at the design stage of projects. A ROAD analysis is performed in all projects, regardless of type, size or cost. Standard documents are completed prior to the commencement of the ROAD analysis clarifying the roles and responsibilities of participants. The client and other contractors involved in the project are included in the assessment process.

The project manager facilitates or chairs the process and is the 'owner' of the ROAD analysis. Participants are selected to ensure their experience and expertise match the specific requirements of the project. Once project risks and opportunities have been identified, the information is placed into a formal document and distributed to participants for review. The ROAD report becomes a 'living document' used throughout the whole of the project. This document continues to evolve as the project progresses through its life cycle stages.

The initial ROAD assessment is only designed to identify risks and opportunity. It is at subsequent project meetings in which appropriate mitigation strategies are selected. ROAD forms part of the ongoing project management activities and discussion of the ROAD process becomes a standing agenda item in project meetings. The ROAD analysis is reviewed at least once a month.

Prior to construction each project is required to have a safety plan. ROAD forms part of this safety plan. A safety plan will not be signed off unless a ROAD analysis has been completed for a project. Regular audits of the ROAD analyses are done.

One of the aims of ROAD is to ensure that all working drawings reflect safety issues. For example the electrical plans will provide relevant details of existing cables on the site. To ensure adequate training in the ROAD process, training requirements are reflected in the company training matrix.

Details of the project are electronically recorded and able to be viewed by others within Bovis Lend Lease, who may not be associated with the specific-project. The company intranet has a site dedicated to lessons learnt during ROAD analyses from which information can be

downloaded for others to read/use as a reference. This facilitates organisational learning. Bovis Lend Lease also maintains an additional web site through which questions can be posted asking for help, guidance, knowledge and/or experience on a particular safety topic.

Task 2.8	Consider Constructability and Maintainability in Design Safety Reviews
Action	The Client and the Designer will take account of the proposed construction and maintenance methods and practices to ensure that they do not present inherent risks.
Description	<p>Final design solutions should be capable of being built with a minimum of risk. Likewise, the facility should be able to be maintained in the future without risk. Factors for consideration could include:</p> <ul style="list-style-type: none"> ▪ Use of prefabricated elements which can be made under safer factory conditions and which reduce construction times and therefore limit exposure to risk, ▪ selection of durable and non-hazardous materials, ▪ built-in features in the design to assist in operation of maintenance equipment, ▪ specification of sufficient tolerances and features to aid safe alignment and initial connection of structural elements, ▪ standardization of details as much as possible, ▪ design of ready access for maintenance of services, ▪ provision of adequate ventilation in confined spaces, ▪ consideration for safety during the demolition of the facility, ▪ clearly identification in the design of staged construction when the permanent structure becomes self-supporting - and the criteria to be met to achieve this state, ▪ consideration of proximity to traffic, ▪ consideration of site access and storage areas, ▪ consideration of access to critical structural elements which may need replacement such as bearings and expansion joints, ▪ consideration of clearances for construction and maintenance equipment, and ▪ consideration of emergency evacuation arrangements.
Key Benefits	<ul style="list-style-type: none"> ▪ Design takes into account how the facility will be constructed and maintained.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Safer construction and maintenance environments, and ▪ reduced maintenance costs.
Performance Measure	<ul style="list-style-type: none"> ▪ Design reviews have taken account of safety issues in construction, operation and maintenance of the facility.
Leadership	<ul style="list-style-type: none"> ▪ Designer, with oversight from the Client.

Principle 3 - Communicate Safety Information

Task 2.9	Include Safety Information in Design Documentation
Action	In collaboration with the Designer, the Client will review all design documentation produced to ensure that safety issues and information about residual risks have been recorded in the Project Risk Register.
Description	A final review of the production design documentation will be undertaken prior to calling tenders or negotiating engagement. Safety risks inherent in the design will be clearly and comprehensively identified and listed. Hazards should be noted on the drawings and information about construction sequence should address safety requirements. Details of staged construction sequences should be provided. Likewise, any necessary traffic management sequences and diversions should

	be provided in sufficient detail to provide the basis of safe practice. Any identified residual safety risks should be brought to the attention of prospective constructors via the Project Risk Register - in particular, any that may not readily be apparent to constructors in their own risk assessments.
Key Benefits	<ul style="list-style-type: none"> ▪ Design documentation contains detailed information about safety risks; and ▪ the Client's general specifications for safety in construction, and ▪ safety requirements for operation and maintenance of the facility are clearly documented in Design Reports to the Client.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Design safety information is fully communicated to those who will engage in the construction, operation and maintenance of the facility.
Performance Measure	<ul style="list-style-type: none"> ▪ Design documents have recorded appropriate safety issues and information about residual risks.
Leadership	<ul style="list-style-type: none"> ▪ Designer, with oversight from the Client..

Task 2.10	Communicate Relevant Project Safety Risk Information to Prospective Constructors via the Project Risk Register
Action	Project safety risk information will be communicated to prospective constructors to provide advance information on safety prior to advertising tenders.
Description	<p>The Project Risk Register established in Task 1.15, is a living document which will evolve throughout the project lifecycle. It is a repository of accumulated information relating to safety risks on the project. It should be made available to prospective constructors by application to the Client.</p> <p>The Client could also advertise for Expressions of Interest from the construction industry - or through a prequalification process - in order to identify interested parties to whom this information could be communicated.</p>
Key Benefits	<ul style="list-style-type: none"> ▪ Provides advance information to interested constructors, and ▪ reinforces the project's safety culture.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Provides ample time for constructors to develop strategies to manage safety risks.
Performance Measure	<ul style="list-style-type: none"> ▪ Project Risk Register provided to interested constructors.
Leadership	<ul style="list-style-type: none"> ▪ Client, with participation of the Designer.

Principle 4 - Manage Safety Risk

Task 2.11	Record Residual Safety Risk Information in the Project Risk Register
Action	Residual safety risks will be recorded in the Project Risk Register throughout the project lifecycle to inform all stakeholders of the current status of project risks.
Description	<p>This is a continuing process. Safety risk information should be recorded and made available to those who manage or work with a risk.</p> <p>Wherever possible, safety risks should be eliminated through the implementation of engineering controls. All project decision making that could have an impact on safety risk should involve input from those parties that could be affected by that risk.</p> <p>The Project Risk Register will form an annexure to the Project Safety Management Plan and it will be reviewed regularly as part of the normal review cycle of the safety management plan.</p>
Key Benefits	<ul style="list-style-type: none"> ▪ Keeps an up-to-date record of project risks which is available to all stakeholders

Desirable Outcomes	<ul style="list-style-type: none"> Alerts managers and people working in an area of risk about the risk so that strategies can be developed to eliminate or reduce the risk.
Performance Measure	<ul style="list-style-type: none"> An up-to-date Project Risk Register.
Leadership	<ul style="list-style-type: none"> Client, with participation of the Designer.

Principle 5 - Continuously Improve Safety Performance

Task 2.12	Review Key Performance Indicators (KPIs) for Safety
Action	In collaboration with the Designer, the Client will review the KPIs for measuring project safety performance established in Task 1.16.
Description	Management of safety is a process of continuous improvement and KPIs will need to be reviewed during all stages of the project lifecycle. During the development of the project design, KPIs should be tested for relevance and, if necessary, modified.
Key Benefits	<ul style="list-style-type: none"> Sharpens the focus on measurable KPIs, entrenches systemic continuous improvement, continues to raise awareness among stakeholders of project safety aims, and refines targets against which performance can be measured.
Desirable Outcomes	<ul style="list-style-type: none"> Continuously improves the outcomes detailed in Task 1.17 as the project evolves.
Performance Measure	<ul style="list-style-type: none"> Systemic, continuous review - and if necessary, refinement - of key performance indicators to measure the effectiveness of safety management.
Leadership	<ul style="list-style-type: none"> Client, with participation of the Designer.

Principle 6 - Entrench Safety Practices

Task 2.13	Continuously Develop Safety Capabilities
Action	During the Design Stage, all stakeholders will continue to review, improve and implement programs for induction and on-the-job performance of staff - commenced in Task 1.17 - to entrench safety practices as an integral part of the safety culture.
Description	This task builds on the work commenced in Task 1.17 to improve safety performance and entrench safety practices.
Key Benefits	<ul style="list-style-type: none"> Building on the benefits detailed in Task 1.17.
Desirable Outcomes	<ul style="list-style-type: none"> Continuous improvement of safety capabilities.
Performance Measure	<ul style="list-style-type: none"> Measurement of KPIs continues to indicate improvement in safety outcomes, and training and development records show appropriate development of safety knowledge, skills and behaviours at all levels.
Leadership	<ul style="list-style-type: none"> Client, with participation of the Designer and any other stakeholders involved at this stage in the project. This task will become a prime responsibility of the Constructor after its appointment.

Safety Leadership at John Holland Construction

John Holland Construction has implemented a 'Passport to Safety Excellence' Program. A large number of employees, including senior management and the company's Chairman, have attended Leadership training as part of this program. The program contains 16 training modules. Employees who complete the training are awarded a Certificate IV - in Safety Leadership - Construction. John Holland is further developing this program with a view to establishing Passport to Safety Excellence as an industry-wide training program. John Holland Construction has also pioneered the use of e-learning in the area of safety training, developing on-line training in safety procedures and safety inductions for new starters on John Holland Construction projects.

Task 2.14	Provide Mentoring Schemes for Small to Medium-sized Enterprise (SME) Designers
Action	The Client and Designer will actively support any SME Designers involved in the project in developing safety risk management skills - in designing for safety throughout the project lifecycle.
Description	<p>SMEs may not have the requisite safety knowledge or resources to implement systematic safety risk management processes. Larger enterprises, on the other hand, are increasingly developing systems and skills in safety risk management. Larger organisations should proactively work towards assisting SMEs in developing safety risk management skills through sharing and dissemination of information on best practice, mentoring, and requiring SMEs to participate fully in project safety management programs - including planning, training, monitoring and reporting processes.</p> <p>Raising awareness among SMEs can be achieved through:</p> <ul style="list-style-type: none"> ▪ Establishing clear safety requirements in the selection of SME consultants, subcontractors, or suppliers, ▪ inclusion of safety requirements in sub-contracts, and ▪ development of long-term relationships with SMEs in the supply chain - as described in Task 1.18 - perhaps through preferred provider arrangements.
Key Benefits	<ul style="list-style-type: none"> ▪ Enhanced knowledge of safety risk management in the construction industry, ▪ more effective risk reduction at source i.e. at design, ▪ reduced costs due to reductions in LTIs and MTIs, and ▪ improved teamwork and morale.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ A safer work environment through dissemination of knowledge and information.
Performance Measure	<ul style="list-style-type: none"> ▪ A mentoring system for SMEs in place.
Leadership	<ul style="list-style-type: none"> ▪ Client and Designer.

STAGE 3 CONSTRUCTION

The Construction Stage usually commences after the finalisation of design and the engagement of a Constructor. The Constructor is usually responsible for the prosecution of all works including provision of all materials, labour, and equipment required to complete the project - including the management of any sub-contracts. On completion of the works, following a specified Defects Liability Period, the facility is handed over to the Client. Commissioning of the facility may also be included in the contract.

This is a critical stage for safety risk management. Construction personnel are exposed to risks through all activities and adjacent property and the public may also be exposed to risk as a result of construction activities.

For a traditional project delivery model, most of the safety risk management actions during the Construction Stage are the responsibility of the Constructor. However the Client and the Designer will also assist during this stage, so that safety actions and management processes are a joint responsibility. For a project delivery model such as an alliance, the Constructor would share these responsibilities with the Client and the Designer from the outset.

Principle 1 - Demonstrate Safety Leadership

Task 3.1	Develop Construction Safety Plan
<p>Action</p>	<p>Following the selection of a 'safe' Constructor (Task 2.6) a project-specific plan will be prepared by the Constructor prior to the occupation of the site. The plan must demonstrate, as a minimum, compliance with statutory regulations of the State (or the Commonwealth) in which the project is located. The Client and Designer will collaborate with the Constructor to provide assistance and input into the development of the Construction Safety Plan.</p> <p>The Client may engage a suitably experienced third party to independently review the plan if no such expertise exists within the Client's organisation.</p> <p>The Client's involvement in checking the construction safety plan in this way does not take away the responsibility of the Constructor to ensure that a safe working environment and processes are provided.</p>
<p>Description</p>	<p>This work will be one of the first tasks to be carried out after the appointment of a Constructor. The Constructor will be the main driver of the Construction Safety Plan as it will have to be developed to complement the proposed construction techniques and match the Constructor's labour and equipment resources. However, the Client and the Designer will still play roles in monitoring, consulting and managing safety under the shared responsibility set out in the Project Safety Charter.</p> <p>The Construction Safety Plan will include, as a minimum requirement, the following details:</p> <ul style="list-style-type: none"> ▪ Responsibilities for safety management, ▪ details regarding management of subcontractors, ▪ resources to be allocated to safety management, ▪ communications plan, ▪ incident/accident reporting procedures, ▪ safety monitoring (audits and inspections) and reporting processes,

- processes for employer/employee consultations,
- injury management and rehabilitation,
- statutory obligations,
- safety training needs analysis and plans,
- safety requirements for proposed plant and equipment,
- approach to management of identified major areas of hazard/risk and proposed control measures,
- dangerous goods and hazardous substances management,
- traffic management arrangements,
- safety equipment and protective clothing,
- arrangements for protecting the public - including visitors to the site,
- site security,
- arrangements for deliveries to the site, and
- emergency preparedness and response plans.

Emergency procedures should be documented with the names of responsible personnel, contact numbers, training and rehearsal arrangements, emergency equipment and alarm systems.

Constructors should be encouraged to consult with peer organisations that have carried out similar works with effective safety results. Likewise, peers should be encouraged to share safety management strategies and experiences to build industry-wide efficiencies and effectiveness in managing safety. The Construction Safety Plan will conform to any requirements set out in the Project Safety Master Plan (Task 1.5).

The Client - in collaboration with the Designer - will review the Construction Safety Plan and continuously monitor risk assessments and safety planning processes to inform the Constructor on any unidentified safety risks that remain undetected. Notwithstanding this task, it is the responsibility of the Constructor to ensure that safety risks are being systematically managed during the construction stage.

The Construction Safety Plan will also identify the range of workforce plans for specific short-term tasks that will be required and describe the mechanisms for collaboration with members of the workforce to ensure that their views have been taken into account.

By reviewing method statements, job safety analyses and other safety plans, the Client can confirm that safety has been appropriately considered before the commencement of construction and that the Constructor is applying the requisite resources to safety management. These aspects will also be continuously reviewed throughout the entire construction stage.

Method statements, job safety analyses and other safety plans should be developed specifically for the project and the site. The Construction Safety Plan should not just include generic risk assessments - i.e. those conducted on previous projects that can be transferred from one project to the next, using the justification that the work being conducted is similar. Rather, the Construction Safety Plan should be explicit in specifying hazards associated with the particular project, its construction methods and the site, and that these are emphasised and clearly articulated.

The Client should also assess the extent to which the Constructor's safety planning processes involve genuine participation of field personnel who will actually perform the construction work - including those working for subcontractors. It is also important to check the efficacy with which the contents of method statements, job safety analyses and other safety plans are communicated to ensure that their intent are effectively and unambiguously understood by field personnel. This should include communication of safety information in languages other than English where necessary.

	The Client and the Designer should also examine the extent to which the Constructor monitors the implementation of the project's Safety Management Plan to ensure that all works are conducted with minimum and managed risk.
Key Benefits	<ul style="list-style-type: none"> ▪ Safety issues are comprehensively considered - by the Constructor - prior to work commencing, ▪ clear safety management processes and responsibilities are established, ▪ appropriate resources are allocated, and ▪ a framework for monitoring safety through the Construction Stage is provided.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Safety management through the Construction Stage is enhanced through careful pre-construction planning.
Performance Measure	<ul style="list-style-type: none"> ▪ A comprehensive Construction Safety Plan is agreed by the Client well before commencing construction.
Leadership	<ul style="list-style-type: none"> ▪ Constructor, with the participation of the Client and the Designer.

Active monitoring of safety at the Wivenhoe Alliance

The design and construction team in this project worked closely together. This arrangement provided a constant and seamless channel of communication. The alliance team was driven by an external facilitator supplied by the Client, who worked through the Alliance's goals and objectives.

At each new stage of the project, the Designer and the Constructor undertook a risk assessment process and induction procedures. These 1.5-hour inductions addressed specific safety and environmental requirements, emergency procedures and issues relating to the progress of the project. The Client played a key leadership role in developing the safety inductions that took place during the construction stage and a representative of the Client monitored the construction progress. Progress was monitored at board level and through project team meetings. The management board met monthly and included a representative of the client in addition to the other Alliance participants. The Alliance Management Team met weekly to discuss project issues. The Team comprised management representatives of the Client, Designer and Constructor.

Key Performance Indicators (KPIs) were set at initial meetings and used to monitor progress of the project. KPIs included safety, social and environmental indicators. Initiatives for meeting these targets could then be built into the project's operation. Senior management and the project team were able to map progress against KPIs. Flexibility in safety and design was encouraged and all new suggestions to improve safety and to modify the design where necessary were considered.

However, it was also noted that any changes made to the design needed to be clearly communicated in order to ensure that all parties worked from the same design. The Client recognised that the data management system used to record all information relating to the project was an effective method of information storage. It allowed ways to monitor progress on every part of the project, including safety, and ensured a system of monitoring the events of each day. The Client also recognised the importance of team-building exercises, primarily sporting activities, in order to familiarise workers with each other and foster a considerate and caring safety culture. The Client said that these initiatives encouraged workers to work better on-site as a team, "*not just showing up for work, but looking after each other*".

Managing contractors' safety at Delfin Lend Lease

Delfin Lend Lease is primarily a residential developer. As a client, Delfin Lend Lease recognizes that contractors undertaking works on their sites are 'the face' of Delfin Lend Lease and so they have established a process of auditing the safety practices and management activities of all their contractors. The safety audit includes a desk top audit of the contractors' safety management processes in addition to visiting project sites where contractors are working. This enables Delfin Lend Lease to verify that the contractors' safety systems are being actually implemented on site. Contractors who demonstrate satisfactory safety processes are included in a Preferred Provider list of contractors, which is drawn upon for future projects.

At Delfin Lend Lease, contract documents specifically address safety requirements for the project and require contractors to include safety provisions in their costings. Safety details within the project documents are made clear to prospective contractors through workshops and discussions specifically designed to communicate Delfin Lend Lease’s safety expectations.

The safety requirements stipulated within project documents are based on the safety requirements typically imposed on commercial projects. This has led to the implementation of safety processes that exceed minimum legislative requirements and which foster safety behaviour, rather than a ‘compliance’ culture.

At Delfin Lend Lease, prospective contractors are required to submit site specific safety plans. These plans are carefully audited to ensure that all aspects of safety have been identified and factored into construction costing. To overcome the common occurrence of paper-based safety plans being submitted by office staff, with field personnel having little knowledge of their content, Delfin Lend Lease conducts site-specific safety inductions that focus on the content of the submitted safety plan. This ensures the safety plan becomes a ‘living document’ the requirements of which are clearly understood by field staff.

Once a contractor is engaged, periodic reviews of project safety are undertaken. Safety reviews include weekly site visits, quarterly desktop and site-based audits and quarterly performance reviews. The quarterly performance reviews are based on feedback and communication between Delfin Lend Lease personnel and the contractor, allowing both parties to comment on safety performance.

Task 3.2	Demonstrate Management Commitment to Safety Processes at All Levels
Action	Senior managers of the Client, Designer and Constructor will actively participate in the on-site safety risk management program during the construction phase.
Description	<p>The active involvement of senior managers in safety risk management programs during the construction stage can play a significant role in reinforcing the importance placed upon safety by the major project stakeholders. It sends a clear message to field personnel, subcontractors and the public that safety is a critical priority. While the Constructor is primarily responsible for safety during the construction phase, there are roles that the Client and Designer can play to support the Constructor’s safety program such as participation in:</p> <ul style="list-style-type: none"> ▪ Safety training and induction programs. ▪ safety walks, site inspections and hazard-spotting exercises (Task 3.3), ▪ project safety meetings, and ▪ investigation of incidents and near misses. <p>Involvement of senior management personnel of the Client and the Designer in such activities demonstrates that all stakeholders are genuinely committed to the welfare and safety of the project and not solely interested in transferring the risks of safety management to the Constructor.</p>
Key Benefits	<ul style="list-style-type: none"> ▪ Demonstration of senior management leadership of all project stakeholders in safety during construction, and ▪ the development of Client/Designer/Constructor partnerships with regard to the management of project safety.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Strong project safety culture driven by a shared understanding that managing construction safety is ‘everyone’s responsibility’, and ▪ visible demonstration that the stakeholders are ‘caring clients’ and service providers.
Performance Measure	<ul style="list-style-type: none"> ▪ Records of senior management involvement in on-site

	safety programs.
Leadership	▪ Client, Designer and Constructor jointly.

Safety Leadership at Leighton Contractors Pty Ltd

Leighton Contractors Pty Ltd has implemented a national Safety Health and Environment (SHE) Leadership Program. Within this program, managers at all levels are informed of the importance placed by Leighton Contractors Pty Ltd on safety. Key Performance Indicators associated with every manager's position description also include safety KPIs. The safety leadership program requires managers based in corporate or regional offices to undertake a specified number of site visits within a twelve month period. The number of visits required is based upon the seniority of the manager. Prior to site visits, the manager undertakes a site induction and has an opportunity to learn about the idiosyncrasies of the project to be visited. If, during the visit, the manager notices an unsafe work practice they are required to bring it to the attention of the person involved in the act (if applicable). It is not the role of the manager to 'police' safety, but to offer constructive advice about safe work practices. The manager would talk to the worker involved in the observed unsafe practice, explain why the practice is unsafe and suggest an alternative, safe way of working.

Upon completion of the site visit, managers have the opportunity to de-brief site workers on their observations. Formal notification of these observations is then produced in a report that is forwarded to the project manager. The site visit outcomes are formally recorded and can be tracked. The site visit program serves as a safety communication tool and demonstrates managerial concern for safe work practices. Also, within the leadership program, all prospective managers are required to undertake a 'safety awareness' test that provides insight into the level of commitment to safety, safety knowledge and safety awareness of candidates for managerial positions. Safety leadership training is also provided to all managers and is in line with the National Safety Competency Matrix.

Roads and Traffic Authority (RTA) - NSW - Management Commitment

The RTA is responsible for a large number of projects in remote locations where there is no RTA representation on-site. To ensure that RTA managers keep abreast of safety management of these remote sites, they have implemented a safety program called "Incident Attendance (5 minutes + Travel Time)".

When an incident occurs, regardless of its severity, the RTA supervisor is required to attend the scene and conduct an incident investigation. The supervisor must attend the site within 5 minutes of being notified of the incident plus the time taken to travel there. If there is the potential for an LTI, then the Business Manager (or a delegate) must also attend the incident. All incidents are investigated in this way - including works undertaken by contract, subcontract or direct labour.

The program has had a positive impact. Field staff appreciate the participation of senior managers, and since its introduction, there has been a reduction in incidents. Additionally the amount of time taken to 'close out' an incident investigation has reduced.

Task 3.3	
Implement Senior Management-led 'Safety Walks'	
Action	Senior managers of the Client, the Designer and the Constructor will undertake unscheduled 'safety walks' around the construction site.
Description	These 'safety walks' are spot checks by senior management to ensure that the Construction Safety Plan is being implemented in the proper way and in accordance with the spirit of the Project Safety Charter. They should be conducted at regular but unscheduled intervals so that senior management can observe construction processes and safety risk mitigation measures at first hand. The walks will provide an opportunity for senior managers to talk to field personnel at the workface to get feedback on the Safety Management Plan and to see if there are any suggestions for improvement.
Key Benefits	▪ A strong message is conveyed to field personnel that senior

	<ul style="list-style-type: none"> management is committed to a culture of safety, and project managers remain vigilant about safety.
Desirable Outcomes	<ul style="list-style-type: none"> Reinforces commitment to a safety culture at all levels of the project organisation.
Performance Measure	<ul style="list-style-type: none"> Number of 'safety walks' conducted by senior management.
Leadership	<ul style="list-style-type: none"> Client, Designer and Constructor jointly.

Roads and Traffic Authority (RTA) - NSW - Communications with the workforce

The RTA has a program called SAFE (Safety Awareness For Everyone) which is aimed specifically at senior managers. It requires them to attend work sites to observe safety management practices and to informally discuss with workers issues relating to safety. These discussions focus not only on any unsafe situations or practices that have been identified, but also to give recognition and encouragement for best safety practices and behaviours.

SAFE is designed to send a positive message to the workforce that senior managers take safety seriously through active participation. It also takes managers out of their offices to the workforce, breaking down 'silos' and keeping managers 'in touch' with what is happening on site. Any issues identified by senior managers may be able to be resolved on the spot - otherwise they are referred to appropriate safety personnel for resolution.

Task 3.4		Conduct Regular Site Inspections	
Action	The Client and the Designer will undertake active monitoring of the Constructor's safety performance through planned inspections and audits. These inspections and safety audits will be undertaken with the Constructor - to reinforce a team approach to improvement of safety management.		
Description	<p>Active monitoring of project safety performance should be undertaken through inspections of the physical work environment as well as through audits of the Constructor's safety management processes and performance. Active monitoring reinforces the Client's interest in the safety performance of their construction projects and is a key aspect of safety leadership.</p> <p>Where possible, 'cross audits' should be conducted at regular intervals. These are audits undertaken by the Client's safety team members, external safety specialists and/or construction personnel from other projects. The benefit of cross audits is that they provide an independent review of safety management processes and provide a mechanism for sharing best safety practices between projects and organisations - thus strengthening safety culture industry-wide.</p> <p>The results of these inspections and audits should be clearly communicated to the Constructor so that any non-compliance can be rectified and improvements can be implemented.</p>		
Key Benefits	<ul style="list-style-type: none"> Provides a systematic evaluation of project safety performance, enables the timely identification and rectification of safety problems, and provides a basis for feedback to the Constructor regarding safety performance. 		
Desirable Outcomes	<ul style="list-style-type: none"> Identification and resolution of safety issues before the occurrence of incidents. 		

Performance Measure	<ul style="list-style-type: none"> Client/Designer/Constructor audit/inspection schedule, audit/inspection reports, and
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	<ul style="list-style-type: none"> communications to the Constructor regarding audit/inspection findings and follow up improvement processes.
Leadership	<ul style="list-style-type: none"> Client, Designer and Constructor jointly.

Delfin Lend Lease’s policy for protection of the public

Delfin Lend Lease has identified that access by the public to site areas presents a high risk. In the majority of projects, all work areas are to be fenced during construction. This requirement extends to all types of works and includes activities like landscaping, as well as construction.

If the risk to public safety for a particular project is considered to be low, a risk assessment must be completed and submitted to the Safety Manager for review of the company’s policy. Only in exceptional cases, and only with the consent of the Safety Manager, is it permissible not to fence a work area.

Although this policy presents a significant cost, the protection of public safety is a higher priority and Delfin Lend Lease requires that cost estimates for fencing are included in all estimates.

Task 3.5	
Consultation and Talking Safety	
Action	The Constructor will consult with workforce personnel about all aspects of work safety prior to commencing construction and regularly throughout the construction stage.
Description	<p>This task requires a two-way conversation between the Constructor’s management and the workforce to talk about safety on the site. Subcontractors should also be included in this dialogue. The extent of consultation will vary from project to project - according to the scope and complexity of the work. For small projects, a pre-construction session may suffice, while for larger projects, regular consultations may be held especially when projects evolve into new stages of work or new subcontractors are engaged in the project. Management needs to take a proactive, practical approach to motivate workforce personnel by:</p> <ul style="list-style-type: none"> providing them with an opportunity to express their views so that they feel their voices are being heard and that they are being encouraged to assist in solving safety problems, taking serious account of their views - they can help to shape decisions rather than hearing about them after the decisions have been made, sharing information which is provided to them at the right time - not after an incident, providing information in a form that is understood by the workforce - interpreters may be required for members who do not have a good command of English, and if there are a number of employers - such as subcontractors - they should work together to ensure they all meet their respective safety responsibilities. <p>For larger projects, weekly safety meetings could be held where staff can discuss safety issues and their wellbeing. Issues such as hours of work and work/life balance could be discussed at these meetings to ensure that staff has adequate time away from work. These meetings will also encourage individuals to adopt a responsibility towards the safety of their fellow team members. Good performance on the part of individuals can be rewarded along the lines suggested in Task 4.4. Exit meetings with workforce personnel can also assist in gathering valuable feedback that can be transferred to future projects (Tasks 4.12 and 4.13).</p>
Key Benefits	<ul style="list-style-type: none"> Demonstrates commitment to a culture of safety, raises awareness of safety in the workforce, and

	<ul style="list-style-type: none"> provides opportunities for feedback.
Desirable Outcomes	<ul style="list-style-type: none"> Creates a cooperative spirit of teamwork where everyone is empowered to have a say on safety matters, workers feel able to freely and honestly express their safety concerns, and safety issues identified during consultative processes are dealt with promptly and without prejudice to anyone involved.
Performance Measure	<ul style="list-style-type: none"> Regular and effective consultations held between management and the workforce.
Leadership	<ul style="list-style-type: none"> Constructor.

MIRVAC's 'Lookout' Program

Recognizing that workforce members who are new to the construction industry are the most vulnerable group likely to be involved in an incident, MIRVAC has developed its 'Lookout' program - to "keep an eye on the new guy". It is an induction training and mentoring program aimed at workforce members less than 25 years of age and/or with less than two years industry experience.

Each "new guy":

- undergoes special training aimed at safety awareness in the construction industry,
- is allocated a mentor to supervise him/her,
- is initially placed on restricted duties with limited safety risks,
- has an identification sticker placed on their hard hat, and
- wears a high visibility shirt to distinguish them as a "new guy".

Principle 2 - Promote Design for Safety

Task 3.6	Develop Safe Construction Methods
Action	Prior to commencing construction, the Constructor will develop safe construction methods to minimize safety risks on the project.
Description	<p>This task applies to aspects such as:</p> <ul style="list-style-type: none"> Design of falsework, formwork, scaffolding and temporary access structures, safe handling and placement of slender components to counteract instability prior to their permanent incorporation into the works, the effects of erection sequence on stability, temporary prestressing requirements, attachment of construction equipment such as tower cranes, use of hoists and cranes of sufficient lifting capacity and reach within specified limits, shoring of excavations in unstable ground, checking with the Designer regarding temporary or short-term loading and the stresses induced in structures during the construction process - for example in balanced cantilever construction or bridge jacking, applied loads of construction equipment, safe means of connecting components, the criteria to be met before installation of plant and equipment, protection against traffic incursions, low ground bearing pressures, and design features that contribute to safe access and working platforms - such as guard rails, toe boards, and attachment points for ladders.
Key Benefits	<ul style="list-style-type: none"> Ensures that all realistic load combinations likely to be

	<p>encountered during construction have been considered and accounted for in the design for construction,</p> <ul style="list-style-type: none"> ▪ detailing is standardized as far as possible and is as simple as possible, and ▪ the selection and stability of construction equipment is assured within safety requirements.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ design of construction processes is undertaken in compliance with statutory obligations and in accordance with appropriate engineering design principles, codes of practice and standards.
Performance Measure	<ul style="list-style-type: none"> ▪ Submission of design details for construction processes.
Leadership	<ul style="list-style-type: none"> ▪ Constructor.

Task 3.7	Review Safety Risk in Design Changes
Action	Any changes to the design occurring during the construction stage will be examined to ensure that safety is not compromised - either in the design of the facility or the design for construction - and any safety risks arising in the change will be recorded in the Project Risk Register.
Description	Changes in design can often lead to a new set of safety risks. The intention of this task is to ensure that all changes are investigated for their risk potential and if the change is accepted, that the new risks are recorded, communicated and eliminated or mitigated.
Key Benefits	<ul style="list-style-type: none"> ▪ New safety risks are identified with any change in design and appropriate strategies are developed for their elimination or mitigation.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Design for safety applies equally to design changes as to the original design (refer to Task 2.7).
Performance Measure	<ul style="list-style-type: none"> ▪ Changes in design are reviewed for safety implications and the Project Risk Register is updated accordingly.
Leadership	<ul style="list-style-type: none"> ▪ Designer and Constructor jointly, with the participation of the Client.

Risk reduction through design change at Bovis Lend Lease

In a Design and Construct project in Melbourne, the Risk and Opportunity Analysis at Design (ROAD) process identified a number of risks relating to the on-going maintenance of the building under construction. As a result, design changes were made.

The building consisted of a glazed saw tooth roof with suspended lighting. Inside, there was a fully glazed atrium covering all nine floors. In the initial design there had been some consideration given to the maintenance of all the glazing components and access to services installed on the roof. In the original design, protection from falling during maintenance work was to comprise a railing with rope access. The ROAD team deemed this to be unsuitable and designers investigated ways in which maintenance work could be performed more safely. The final design included a purpose-designed gantry to be installed across the atrium. On top of the gantry was a safe working platform. The platform was installed on hydraulic lifts enabling safe access to the services located high in the ceiling space. When the platform was not in use it was retracted and positioned on top of the gantry. Another moveable working platform was suspended under the gantry, allowing access to the glazed atrium below.

Not only did this arrangement provide a safe environment for routine maintenance, but the gantry, which was erected early in the construction process, was also used for access during the construction of the atrium and roofing. The gantry design also contributed to substantial cost savings and improved constructability of the atrium and roof, thus reducing construction time. The case highlights that careful analysis of safety issues at the design stage can improve outcomes in subsequent project stages.

Principle 3 - Communicate Safety Information

Task 3.8	Communicate Safety Risk Information to Relevant Stakeholders
Action	Safety risk information will be communicated to all relevant stakeholders to ensure that all personnel are aware of the safety risks and the risk mitigation measures to be practised.
Description	Following on from Task 1.10, communication and consultation with all stakeholders will commence prior to construction. All stakeholders should be provided with the current version of the Project Risk Register and any other relevant information - to provide them at the outset of the project's safety requirements. All stakeholders should also be informed of the Project Safety Charter and they should be encouraged to submit any suggestions of their own which might improve safety management plans and arrangements.
Key Benefits	<ul style="list-style-type: none"> ▪ All stakeholders are informed of safety risk information and commitments and understand their role in the project in regard to safety, ▪ stakeholders understand their roles in safety management, ▪ dialogue on safety issues is encouraged and stakeholders are provided an opportunity for stakeholders to express their views and opinions to enhance the Project Safety Charter, and ▪ it is demonstrated to all stakeholders that they will be expected to commit to safety.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ All stakeholders thoroughly understand the safety aims and objectives of the project and the level of commitment required of them and other partners.
Performance Measure	<ul style="list-style-type: none"> ▪ Confirmation from prospective stakeholders that they understand and agree to conform to the requirements of the Project Safety Plan and the Project Safety Charter.
Leadership	<ul style="list-style-type: none"> ▪ Client, Designer and Constructor jointly.

Communication of Safety Risk Information at EastLink

A proprietary software package was used to track the project throughout the planning and execution, as well as operating as a documentation repository. This system was used as a management tool to communicate and liaise with all parties on project issues including safety aspects. The 'risk' section of the package was utilised to monitor project safety risks identified from the safety and design workshops. Safety aspects were either resolved at the workshops and logged onto the database for future reference or entered for ongoing attention. For example, a lifting mechanism for a bridge identified as a potential problem was re-designed to solve a number of issues. The design was communicated by the Designer to the Constructor through the package and also through a handover workshop of the design. In this way, all the parties were made aware of the resolution of certain safety issues and there was a documented chain of information and responses relating to safety in the project.

Task 3.9	Provide Regular Safety Performance Feedback to Project Personnel
Action	All project personnel - office-based, field-based and including subcontractors - will be kept apprised of project safety performance.
Description	<p>Safety performance should be an agenda item for all project meetings and the latest data available should be recorded in the minutes of meetings. Safety performance should also be discussed at field meetings and foremen and supervisors should be encouraged to raise safety issues when planning new construction processes.</p> <p>Regular bulletins should be issued providing information to field staff about safety performance. These bulletins should be distributed and posted in all project offices, recreation areas, crib huts and other areas where field staff are likely to congregate. As well as providing the latest KPIs on safety</p>

	<p>management, the bulletins can also be used to:</p> <ul style="list-style-type: none"> ▪ acknowledge good practice in the field and name individuals responsible for good performance, ▪ alert personnel to imminent risks arising at various stages of construction - e.g. safety requirements for prestressing, ▪ provide details of recent incidents and the lessons that can be learned from them, and ▪ invite suggestions for improving performance.
Key Benefits	<ul style="list-style-type: none"> ▪ All project personnel are kept up-to-date on project safety performance.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Raises awareness of all project personnel on safety issues
Performance Measure	<ul style="list-style-type: none"> ▪ Records of safety performance in minutes of meetings and in bulletins posted regularly around the site.
Leadership	<ul style="list-style-type: none"> ▪ Constructor in close collaboration with the Client and Designer.

Safety Communication at John Holland Construction sites

At John Holland Construction, safety communication between workers and site management is conducted through the standard channels of toolbox talks and site meetings. However, a suggestion box scheme has also been implemented to provide an opportunity for workers to contribute their own ideas for safety improvements. Any person on a John Holland site is able to place a suggestion in the safety suggestion box.

The scheme is not restricted to John Holland Construction employees and many useful suggestions come from sub-contracted workers. All suggestions received are reviewed by the safety committee. Suggestions which result in safety improvement actions are recognized. The person who made the suggestion is provided with a monetary voucher and has their photo taken. The photo is displayed on the site noticeboard. Details of safety actions implemented as a result of the suggestions are publicised through the site noticeboard, toolbox talks, sub contractors meetings and site safety reports.

As site safety reports are distributed to other John Holland Construction sites, there is an opportunity for good safety ideas to be shared between projects. Photos of any safety related incidents that have happened on the company's construction sites are also placed on site notice boards. This enables any lessons learned to be shared between projects and organisation-wide responses to be developed. If a safety incident occurs in construction organisations similar to John Holland Construction, available information about these incidents is also posted on site notice boards to alert site workers and managers to the incident and enable appropriate safety measures to be implemented to prevent similar occurrences at the John Holland Construction site.

Principle 4 - Manage Safety Risk

Task 3.10	
Implement Systematic Risk Management Processes	
Action	This task is aimed at ensuring that the Constructor implements the Construction Safety Plan effectively and in the spirit of the Project Safety Charter. The Client will oversee the Constructor's performance in regard to contractual requirements relating to safety and work collaboratively with the Constructor in analysing safety performance data with a view to further improving safety processes and performance
Description	This task involves monitoring of all aspects of the Construction Safety Plan during implementation. This includes aspects such as: project hazard analysis, safety organisation and management, inspections of workplaces, plant safety, safe working procedures/instructions, dangerous goods and hazardous substances, safety training/induction/competencies, consultative arrangements, emergency procedures, accident/incident reporting and management of subcontractors. Reviewing and analysing safety data is essential for monitoring and evaluating the Constructor's safety performance. The

	<p>benefits of collecting and analysing these data include:</p> <ul style="list-style-type: none"> ▪ The provision of information about how the Constructor is performing in relation to the Project Safety Charter, industry standards and project goals, ▪ the quick identification of problem areas enabling the development of appropriate improvements or containment strategies, ▪ the ability to measure the effectiveness of the Constructor’s safety management interventions; and ▪ the ability to provide timely feedback to subcontractors regarding their safety performance.
Key Benefits	<ul style="list-style-type: none"> ▪ Early and accurate diagnosis of project safety problems, ▪ focused development of continuous safety improvement strategies, and ▪ evidence-based evaluation of the impact of safety improvement interventions.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ The use of project safety data for benchmarking and comparative performance reviews.
Performance Measure	<ul style="list-style-type: none"> ▪ Regular safety reports - including analyses of data and performance measured against project goals.
Leadership	<ul style="list-style-type: none"> ▪ Constructor and Client jointly.

Implementation of systematic risk management at Rouse Hill

Safety was outlined from the outset with an EHS (environment, health and safety) plan, and in addition was an “Incident and Injury Free” program. The Incident and Injury Free programme was divided into six imperatives: leadership, employees, systems, supply chain, client and community. A steering committee implemented and monitored the programme. The role of the steering committee was to ensure that the programme stayed on track and achieved milestones through the life of the project. The programme also focused on 15 to 20 small initiatives to encourage a cultural shift within the organisation.

One component related to mentoring apprentices by getting them involved in work groups in a “buddy system”. This encouraged younger workers to pay more attention to safety. In addition Site managers were rotated with a view to facilitating the sharing of safety information across projects.

An on-site safety team day was held once every six weeks over four hours. On the day, project members concentrated on an area of safety which was largely unfamiliar to them. The day was run so that people were split into teams with briefs to monitor safety in a number of different areas. One brief was to identify and remove hazards. If hazards could not be removed, they were made safe and notes were recorded for future rectification.

The other two items were: first to review at least two work method statements when they were in the field to check for accuracy and that they were working successfully and the fourth item was to engage with 20 workers in the field and ask for feedback on how the site was being run and if anything could be done better.

A proprietary web based system was used which enabled all safety statistics to be recorded so that, for example, if there were first-aid injuries or lost-time injuries occurring these could be analysed with a view to looking for trends. As this was a real-time reporting system, on any given day the system provides the ability to understand trends and possible risks in comparison with other projects.

Roads and Traffic Authority (RTA) - NSW - Managing safety risk

The RTA recognizes that it operates in one of the highest safety risk industries in Australia. Consequently, it has developed a series of Leadership and Accountability programs aimed at improving safety performance by example - lead by management.

Safety management is included in the long term strategic planning for the organisation. From the strategic plans, annual safety objectives are set to drive improvements in performance

across the organisation via the Annual Business Plan. Managers responsible for designated areas report their safety performance against the business plan, monthly.

Since this approach was adopted, managers have taken a more active role in the development of initiatives to prevent injuries. The subsequent reduction in injuries reflects the greater understanding managers now have of the issues that impact on their safety performance - and a greater awareness of safety strategies to achieve better outcomes.

Task 3.11	
Identify and Rectify Safety Deficiencies	
Action	All identified safety deficiencies will be rectified by eliminating the hazard or managing the risk by changing the work environment or work processes.
Description	<p>The driving aim of the Construction Safety Plan is to anticipate risks before they arise and to either eliminate them or manage them in such a way to provide a working environment in which construction processes can proceed in a safe manner. However unforeseen hazards do arise and this is why it is important to be constantly vigilant during work processes and site inspections to identify and rectify any such hazards.</p> <p>As part of the culture of safety, all personnel are responsible for identifying hazards in the workplace. Sometimes, the person identifying the hazard can rectify it on the spot, if it is practical to do so. If this is not the case, a control such as a barrier, warning sign or a watch person should be posted until a proper treatment can be undertaken.</p> <p>When an immediate safety risk is identified, work should always be halted until the risk can be addressed and the workplace or process is made safe. No work should be permitted to proceed until corrective action has been taken in accordance with the requirements of the Construction Safety Plan. Where there is an immediate threat, work must be stopped.</p> <p>Where a dispute or a difference of opinion about a safety risk arises, it is best to resolve it in a collaborative manner using coaching and counseling to achieve cooperation. If the dispute cannot be solved on site, work should be suspended and the dispute referred to the Chairperson of the Project Safety Leadership Team and the Client whose decision will be binding. If the dispute relates to a specified contractual or statutory requirement, the requirements of the contract or the law will apply.</p>
Key Benefits	<ul style="list-style-type: none"> All identified hazards are identified and rectified in a timely manner to provide a safe working environment.
Desirable Outcomes	<ul style="list-style-type: none"> Continuous improvement in managing safety risks.
Performance Measure	<ul style="list-style-type: none"> Corrective action reports submitted.
Leadership	<ul style="list-style-type: none"> Constructor.

Task 3.12	
Record Risk Information	
Action	All hazards identified in Task 3.11 shall be reported and recorded in the Project Risk Register
Description	Regardless of the potential severity of the hazard, it should be reported and, if necessary, investigated. Near miss incidents should also be reported, investigated and communicated to stakeholders so that they can benefit from any lessons that can be learned from the incident. The potential for a LTI, MTI or a serious incident should also be noted. The method of communication of this risk information will be included in the project safety communication plan (Task 1.10).
Key Benefits	<ul style="list-style-type: none"> All hazards identified and communicated via the Project Risk Register.
Desirable Outcomes	<ul style="list-style-type: none"> Continuous improvement in managing safety risks.
Performance Measure	<ul style="list-style-type: none"> Hazard identification reports submitted and entered into the Project Risk Register.

Leadership	<ul style="list-style-type: none"> ▪ Constructor in collaboration with the Client and Designer.
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Principle 5 - Continuously Improve Safety Performance

Task 3.13	Undertake Regular Measurement of Project Safety Performance
Action	The major project proponents - the Client, the Designer and the Constructor - will continuously monitor project safety performance and measure it against the agreed targets to identify trends and deficiencies.
Description	The aim of this task is to evaluate the efficacy of the project safety management processes and to enable corrective actions to be taken to further improve performance. By regularly measuring performance, emerging trends will reveal whether strategies are working or not. Regular measurement will also facilitate benchmarking against industry standards and other projects and generally provide feedback to assist in continuous improvement strategies.
Key Benefits	<ul style="list-style-type: none"> ▪ Project safety management can see whether goals are being achieved, and ▪ negative trends can readily identify deficiencies which require corrective action.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Continuous improvements are made in response to emerging trends.
Performance Measure	<ul style="list-style-type: none"> ▪ Regular reports on measurement of project safety performance.
Leadership	<ul style="list-style-type: none"> ▪ Client, Designer and Constructor jointly.

Safety performance measurement at the Tullamarine Calder Interchange (TCI) Alliance

At the Tullamarine Calder Interchange Alliance project, safety performance is routinely measured and monitored. Performance is measured using a combination of traditional lagging indicators - such as lost time injury frequency rates, medical treatment incidents and first aid treatment incidents - and 'leading' indicators. These leading indicators are designed to measure positive steps to manage safety *before* the occurrence of incidents or injuries.

A Project Safety Index was developed combining leading and lagging indicators. Each of these indicators was given a weighting as to its level of importance in determining the overall safety performance score. Performance against these indicators was assessed on a monthly basis to obtain a rating of overall project safety performance. The safety index was useful because:

- it could be applied to multiple projects and data from each project could be easily compared;
- areas of weakness in the safety management system could be quickly identified; and
- any necessary corrective action could be put in place.

The indicators and weightings that make up the index were developed collaboratively by the project team to encourage particular types of behaviour.

Also at the TCI project, a Wellbeing Indicator Survey was developed. All site and office workers were invited to complete this survey every three months. Survey data were analysed to reveal workers':

- perceptions about management commitment to safety in the project;
- satisfaction with work conditions and the quality of safety training provided;
- perceptions about supervisory safety leadership in the project; and
- satisfaction with work hours, work-life balance and wellbeing.

At the end of the survey, workers were invited to provide comments about what could be done to improve safety, work-life balance or wellbeing at the TCI project. All written suggestions were transcribed and listed in a large wall chart 'Action Plan.' This Action Plan allocated responsibilities for all items to be implemented. The Action Plan was then posted in the site shed/lunch room areas. Workers were able to monitor the implementation of their suggestions and site management was held accountable for this implementation. The Project Manager commented *'the biggest thing is that we listen and people feel and are heard because we*

respond to all of the comments that are made...people are heard in relation to how they feel about the project and their wellbeing.'

Task 3.14	Regularly Analyse Project Safety Performance Data
Action	The measurements undertaken in Task 3.13 will be regularly analysed in order to determine trends.
Description	Analysis of safety data will identify problem areas as well as evaluating the effectiveness of improvement strategies.
Key Benefits	<ul style="list-style-type: none"> Up-to-date status of performance can influence further interventions to improve performance.
Desirable Outcomes	<ul style="list-style-type: none"> 'Live' information can alert the safety team and managers on changes in performance.
Performance Measure	<ul style="list-style-type: none"> Regular reports on safety performance.
Leadership	<ul style="list-style-type: none"> Client, Designer and Constructor jointly.

Principle 6 - Entrench Safety Practices

Task 3.15	Continuously Develop Safety Capabilities
Action	During the Construction Stage, all stakeholders will continue to review, improve and implement programs for induction and on-the-job performance of staff - commenced in Task 2.13 - to entrench safety practices as an integral part of the safety culture.
Description	This task builds on the work commenced in Task 2.13 to improving safety performance and entrench safety practices.
Key Benefits	<ul style="list-style-type: none"> Building on the benefits detailed in Task 2.13.
Desirable Outcomes	<ul style="list-style-type: none"> Continuous improvement of safety capabilities.
Performance Measure	<ul style="list-style-type: none"> Measurement of KPIs continues to indicate improvement in safety outcomes, and the Project Risk Register continues to be up-dated.
Leadership	<ul style="list-style-type: none"> Constructor, with participation of the Client and Designer.

Task 3.16	Promote Safety Management Practices Within SME Subcontractors
Action	The Constructor will proactively promote a safety culture in SME subcontractor stakeholders.
Description	Subcontractors commonly participate in projects, and sometimes their personnel outnumber those of the prime contractor. For example, large housing estate developments often engage subcontractors of different trades - including individuals. Many of these people have not worked under any guidelines for risk management. It is therefore incumbent on the Constructor to induct and train these subcontractors to ensure that their workforces are familiar with the Project Safety Charter and the Construction Safety Plan. Where a subcontractor has an extended role in an important aspect of the project, it may be appropriate to have a representative of that subcontractor on the Project Safety Leadership Team. Subcontractors should be included in any safety consultation forums and their personnel ought to be encouraged to provide comments and feedback to improve safety performance.
Key Benefits	<ul style="list-style-type: none"> Subcontractors treated exactly the same as prime contractor personnel, all subcontractor staff are aware of their rights and responsibilities under the Project Safety Management Plan, minimise LTIs and MTIs among subcontract staff, and continuous improvement of safety performance.
Desirable Outcomes	<ul style="list-style-type: none"> All staff members, regardless of their status, are part of the project safety culture.
Performance Measure	<ul style="list-style-type: none"> Records of induction and training of subcontractors in

	project safety systems and procedures.
Leadership	<ul style="list-style-type: none"> ▪ Constructor.

Delfin Lend Lease - managing safety in the supply chain

Delfin Lend Lease recognizes the influence a client can have over the organisations that supply goods or services to them. As part of an initiative to ensure safer projects, Delfin Lend Lease has initiated a Supply Chain Safety Program. While this program is still under development, Delfin Lend Lease is seeking to enter into formal agreements with suppliers, committing both parties to providing safe worksites.

A Memorandum of Understanding (MOU) establishes, in broad terms, shared safety objectives and a commitment from each party to working collaboratively to ensure safe sites. The intention is to ensure that suppliers are made aware of Delfin Lend Lease’s safety expectations and commit to meeting these.

Delfin Lend Lease also acknowledges that not all the organisations they engage will have the resources or the ability to implement proactive and innovative safety programs. But, by entering into the MOU, Delfin Lend Lease seeks to establish minimum safety requirements and assist in developing safety competencies, knowledge and practices within the supply chain.

The MOU will also document tools to be used in assessing contract performance, a safety action plan and methods for measuring safety performance at project sites.

Task 3.17	Implement Safety Mentoring System for SME Subcontractors
Action	The Constructor will implement a safety mentoring system for SME subcontractors.
Description	At the time of induction of subcontractors’ staff in Task 3.16, the Constructor will allocate members of its workforce to act as mentors on matters of project safety. The mentors should be working in close proximity to the subcontractor and have daily contact. At the beginning of each day, the mentor should briefly consult with the subcontractor to see if there are any specific risks likely to arise that day and what are the appropriate actions needed to minimise the risks involved. The mentors will coach subcontractor staff on all aspects of project safety and generally provide advice on safety. Subcontractors should report accidents and incidents as per the management plan and should submit data for inclusion on the Project Risk Register.
Key Benefits	<ul style="list-style-type: none"> ▪ Subcontractors have a point of contact regarding safety issues, and ▪ minimise LTIs and MTIs for subcontractor staff.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Increased safety awareness and knowledge in subcontractors with a flow-on effect in the construction industry.
Performance Measure	<ul style="list-style-type: none"> ▪ Evidence of mentoring in project reporting.
Leadership	<ul style="list-style-type: none"> ▪ Constructor.

STAGE 4 POST-CONSTRUCTION

The Post-Construction Stage follows the handover of the facility to the Client. Depending on the type of facility, it may include commissioning of plant and management equipment into service. Some projects have a staged handover whereby a part of the facility is brought into operation ahead of another section which is still under construction. During this stage, the Client may pass the facility into the hands of the Occupier who will be responsible for the operation of the facility and its maintenance.

The safe operation of the facility will have been considered in the design including maintenance, servicing, cleaning, and facilities management. Design issues to improve safety include access for internal and external maintenance and cleaning, floor surfaces, elimination of manual handling, storage areas, fire evacuation, disabled access, security systems, and access.

This is also the stage where a post-construction review is made right back to the Planning Stage, to see if there are any lessons that can be learned which could be fed into safety management processes for future projects.

Principle 1 - Demonstrate Safety Leadership

Task 4.1	Develop a Commissioning Safety Plan
Action	A Commissioning Safety Plan will be developed prior to handing the facility over to the Owner/Occupier. The plan will be developed by the Designer with collaboration by the Client and the Constructor. The Client may engage a suitably experienced third party to independently review the plan if no such expertise exists within the Client's organisation.
Description	<p>The Commissioning Safety Plan will set out the procedures necessary to ensure that the facility and its plant and equipment are not put into service until it is deemed safe for use. After installation of any plant and equipment, all relevant safety data including the Project Risk Register are to be provided to the Owner/Occupier.</p> <p>The Commissioning Safety Plan will include:</p> <ul style="list-style-type: none"> ▪ A nominated officer responsible for the commissioning stage of the project - to act as a champion for this stage of the project, ▪ a commissioning risk assessment which identifies and evaluates potential commissioning safety issues, ▪ a communications plan to inform all stakeholders on commissioning safety issues, ▪ safety monitoring (audits and inspections) and reporting processes, ▪ legal and statutory obligations such as obtaining of certificates and clearances and appropriate registrations, ▪ approach to management of identified major areas of hazard/risk and proposed control measures, and ▪ management of dangerous goods and hazardous substances. <p>The Commissioning Safety Plan will conform to any requirements set out in the Project Safety Master Plan (Task 1.5).</p>
Key Benefits	<ul style="list-style-type: none"> ▪ Commissioning safety issues are comprehensively considered before installation of plant and equipment

	<p>commences,</p> <ul style="list-style-type: none"> ▪ clear commissioning safety management processes and responsibilities are established, ▪ appropriate resources are allocated, and ▪ a framework for monitoring safety through the Commissioning Stage is provided.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Safety management through the Commissioning Stage is enhanced through planning.
Performance Measure	<ul style="list-style-type: none"> ▪ A Commissioning Safety Plan is endorsed by the Client before commencing installation of plant and equipment or before opening the facility for service.
Leadership	<ul style="list-style-type: none"> ▪ Designer, In collaboration with the Client and the Constructor.

Task 4.2	Perform Post-Construction Review
Action	The Client, Designer and Constructor will undertake a safety review of the facility to identify any hazards requiring rectification prior to occupation.
Description	<p>Prior to handover and before users commence operations, a review of the completed project should be carried out. The issue of a certificate of completion or occupancy does not necessarily mean that all safety hazards have been eliminated. It is at this stage in a roadworks project where a road safety audit would be conducted to identify any safety issues unforeseen during planning, design and construction. So a review at this stage might reveal new issues. Any such risks identified should be subject to rigorous assessment and strategies developed to reduce their impact. Residual risks should be recorded in the project risk register and requirements for ongoing monitoring or further review should be documented. This is also a good time to conduct exit interviews with workforce personnel to gain a better understanding of how people at the workplace felt about the safety management processes and strategies - and any suggestions for further improvement.</p>
Key Benefits	<ul style="list-style-type: none"> ▪ Pro-active OHS risk mitigation strategy.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Handing over a facility with minimal safety hazards for users prior to occupation/operation, and ▪ an assessment of the facility prior to hand-over to ensure its safe operation.
Performance Measure	<ul style="list-style-type: none"> ▪ Record of all the identified safety hazards placed in the project risk register.
Leadership	<ul style="list-style-type: none"> ▪ Client, Designer and Constructor jointly.

Task 4.3	Evaluate Project Performance
Action	The Client, Designer and Constructor will evaluate the risks captured in the Project Risk Register during the planning, design and construction of the project and the overall safety performance of the project.
Description	<p>This post-project review should be a team exercise, involving the Client, Designer and Constructor and major subcontractors. The review would assess aspects such as:</p> <ul style="list-style-type: none"> ▪ The efficacy of the Project Safety Management Plan through all stages of the life-cycle, ▪ strategies and interventions which worked or did not work, and ▪ the processes and systems that were successful which could be used in future projects. <p>It would also be useful to compare the outcomes of safety risk assessments during the design stage and compare them with those actually experienced during the construction stage. This could provide useful information about the efficiency of the</p>

	design safety review process. Accidents, incidents and near misses should also be analysed as well as the quality of safety communications and the co-operation between stakeholders.
Key Benefits	<ul style="list-style-type: none"> Feedback leading to improvements in the future provides a basis for continuous improvement of safety performance.
Desirable Outcomes	<ul style="list-style-type: none"> A comprehensive post-project review report highlighting both positive and negative aspects of the project's safety performance, aspects where improvements could be made, and feedback and learning from all stakeholders, and a record of lessons learned and communication of these to other industry organisations so that the information can be shared.
Performance Measure	<ul style="list-style-type: none"> Post-project review report completed within one month after project completion, a final repository of data, and post-project review reports circulated to all project stakeholders to assist them in future projects.
Leadership	<ul style="list-style-type: none"> Client, Designer and Constructor jointly.

Promoting a safety culture at Baulderstone Hornibrook Pty Ltd

Baulderstone Hornibrook Pty Ltd has developed a company 'Safety Journey' to support its safety policies, processes and systems. The Safety Journey is an innovative behaviour change program designed to reduce workplace incidents, injuries and illnesses. The Safety Journey establishes principles by which the company's employees and projects are to operate. These principles are:

- (1) That safety and business objectives must both be achieved. Neither is to be compromised,
- (2) That all injuries are preventable,
- (3) That managers are to be accountable for safety performance,
- (4) That everyone has a responsibility for safety performance, which is a condition of employment, and
- (5) That risk assessment, audit and review, training and recognition are essential elements of an effective Safety System.

The program emphasises personal responsibility for safety and is designed to encourage people, at all levels, to talk about safety in their day-to-day activities. The program seeks to bridge the gap between formal policies and procedures and safety practices by clearly communicating that safety is not to be compromised by production and encouraging counselling people who are not working safely and, where necessary, stopping activities to support safety. Baulderstone Hornibrook Pty Ltd requires subcontractors to participate in the Safety Journey program along with Baulderstone Hornibrook Pty Ltd employees and also encourages client organisations to adopt the program.

Task 4.4	Recognise and Reward Good Safety Management and Leadership
Action	The project stakeholders will recognize and reward their staff members who have contributed to good safety outcomes on the project.
Description	<p>It is important to recognize - and celebrate - excellent performance in safety management and leadership. This recognition should extend from the workforce up to senior management. Recognition and reward acknowledges the contributions made by individuals and helps in further promoting safety in the workplace.</p> <p>The types of rewards offered will vary according to different company policies and practices - and generosity. It should be remembered that a good safety record on a project provides excellent returns to a company through reduced work stoppages, LTIs, MTIs, insurance claims, premiums and increased motivation and morale in the workforce.</p> <p>Suggested ways of rewarding good performance include plaques, certificates, letters of appreciation from the CEO, gifts, dinners and the like. The real message is the expression of acknowledgement of a job well done and appreciation for the</p>

	participation and cooperation. Everyone likes to be thanked.
Key Benefits	<ul style="list-style-type: none"> ▪ Workforce members and safety management personnel are motivated by management's recognition of their efforts, ▪ identifies safety champions who can pass their knowledge on to others or who can participate in future projects, and ▪ promotes increased awareness of safety in the workplace.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Safety culture becomes entrenched in the corporate culture.
Performance Measure	<ul style="list-style-type: none"> ▪ Evidence of formal acknowledgement and rewards.
Leadership	<ul style="list-style-type: none"> ▪ Client, Designer and Constructor jointly.

Recognising safe performance at Leighton Contractors Pty Ltd

Leighton Contractors Pty Ltd has developed an internal safety award program to recognize good safety performance and innovation in safety management within the Leighton Contractors Group. In 2007, the three awards to be won are the Safety and Health Initiative Award, the Safety, Health and Environment (SHE) Project Excellence Award and the Managing Director's Leighton Safe Award. The Safety and Health Initiative Award recognizes safety and health initiatives (by an individual or a team) that have contributed significantly to improved safety performance. The SHE Project Excellence Award recognizes excellence in safety at a project level. The Managing Director's Leighton Safe Award recognizes the most outstanding contribution to safety within the Leighton Contractors Group. Awards have been given for cultural change programs, innovative solutions to the prevention of eye injuries, and exemplary project safety performance.

Rewarding Safety performance at Delfin Lend Lease

Delfin Lend Lease has incorporated safety behaviour requirements in the roles and responsibilities contained in the job descriptions of senior managers. Each manager is set a number of safety Key Performance Indicators (KPIs). Performance in relation to these KPIs is reviewed yearly and is directly linked to the manager's financial remuneration.

The KPIs are based upon a competency matrix. The competency matrix identifies a range of safety behaviours. An assessment is conducted and results plotted against the competency matrix to identify the manager's level of safety competence. Staff development plans contain goals and targets to extend these competencies and managers' progress in attaining safety competency is reviewed on a quarterly basis.

Principle 2 - Promote Design for Safety

Task 4.5	Evaluate Effectiveness of Design Safety Reviews
Action	On completion of construction, the Project Safety Team will review and evaluate the effectiveness of the design safety reviews conducted in Tasks 2.7 and 2.8.
Description	The Post-construction stage is a time for reflection on successes and failures - what worked in the design reviews and what didn't. This task will ensure that the most effective design practices are identified so that they can be adopted for future projects. This review could best be carried out in a post-construction workshop attended by all stakeholders but with a strong workforce representation. A record of the workshop should be posted on the websites of the relevant stakeholders and distributed via their intranets to inform other personnel - not involved in the project - of the effectiveness of the design reviews.
Key Benefits	<ul style="list-style-type: none"> ▪ Provides feedback to project stakeholders and informs a wider construction industry of safety design innovations that can be used on other projects.
Desirable Outcomes	<ul style="list-style-type: none"> ▪ Good safety design practices can be identified to continuously improve safety management of future

	projects.
Performance Measure	<ul style="list-style-type: none"> Record of a post-construction workshop on design reviews.
Leadership	<ul style="list-style-type: none"> Client, Designer and Constructor jointly.

Task 4.6	Record Effective Design Solutions for Future Projects
Action	From the workshop conducted in Task 4.5 above, the effective design solutions identified will be recorded in a permanent record for use on future projects.
Description	The record should identify people involved in the design solution so that they can be contacted to clarify any points or for consultation on any future, similar problems. The completed report could be distributed via the company's intranet and on the website to inform the widest possible audience.
Key Benefits	<ul style="list-style-type: none"> Best design safety practices are captured in a permanent record to enable the industry to learn from the experience of others, and designers become more aware of designing for safety.
Desirable Outcomes	<ul style="list-style-type: none"> Continuous improvement in the industry with respect to designing for safety, and wide dissemination of lessons learned will lift industry-wide design standards for safety.
Performance Measure	<ul style="list-style-type: none"> A permanent record of the project's effective design solutions to be provided to managers of future projects.
Leadership	<ul style="list-style-type: none"> Client, Designer and Constructor jointly.

Principle 3 - Communicate Safety Information

Task 4.7	Communicate Safety Knowledge to All Project Stakeholders
Action	The evaluation of safety performance arising from Tasks 4.1 and 4.3 above will be communicated to all project stakeholders.
Description	This task will ensure that all stakeholders receive feedback on their performance and provide valuable assistance in continuous improvement of safety management in future projects. Responsibility for this task lies with the Project Safety Leadership Team. Both positive (strength) and negative (weakness) outcomes should be communicated. In fact most benefit is likely to arise from the lessons to be learned from things that went wrong - and how they might be corrected in the future - than from the positive events. It is important also that knowledge be conveyed to the SME subcontractors. Because of their size and the nature of their work, these stakeholders are the least likely to have been exposed to a strong safety culture. Potentially, they will have the most to gain from the lessons learned that can be applied in future projects. Communication in an open and honest way will be the best way to improve safety risk management for future projects and to promote a strong safety culture. There is nothing to be gained by glossing over the facts.
Key Benefits	<ul style="list-style-type: none"> All stakeholders are informed of all the safety issues and actions on the project and can assess their performance against other benchmarks, and Lessons learned from their experiences can be applied in future projects.
Desirable Outcomes	<ul style="list-style-type: none"> All stakeholders can continuously improve their safety performance.
Performance Measure	<ul style="list-style-type: none"> Confirmation that an overall report on safety performance has been issued to all stakeholders.
Leadership	<ul style="list-style-type: none"> Client, Designer and Constructor jointly.

Principle 4 - Manage Safety Risk

Task 4.8	Establish Safety Requirements for Facility Maintenance
Action	The Client/Occupier will make appropriate arrangements for the safe maintenance of the facility during its operational life.
Description	<p>Maintenance of a facility can be undertaken by the occupier, a contracted provider or under a preferred provider scheme. Regardless of which mode is adopted, the maintenance organisation must have competence in and commitment to safety risk management.</p> <p>The Project risk Register should be passed on to the maintenance organisation who should be briefed by the Client, Designer and Constructor on all safety risks prior to commencing their duties.</p> <p>All plant and equipment must be inspected, serviced, maintained and cleaned in accordance with the manufacturer's specifications and any other conditions set down by the Client, Designer and Constructor and which has been approved by the Occupier. All statutory requirements must be observed.</p> <p>Maintenance should be conducted by experienced, competent and – where necessary, licensed - personnel who will receive appropriate induction and training for safe operations.</p>
Key Benefits	<ul style="list-style-type: none"> Maintenance personnel are aware of safety risks in operation and maintenance and can take appropriate mitigation measures.
Desirable Outcomes	<ul style="list-style-type: none"> Safety risks will be competently managed during maintenance and operations.
Performance Measure	<ul style="list-style-type: none"> Evidence of handover of the Project Risk Register to the Occupier and a briefing on safety risks in operations and maintenance.
Leadership	<ul style="list-style-type: none"> Client.

Task 4.9	Conduct Appropriate Testing of Plant and Equipment Prior to Commissioning
Action	For projects which include the commissioning of plant and equipment, the Client will ensure that the plant is appropriately tested and commissioned and only put into active service when it is deemed safe for use.
Description	<p>Once plant and equipment are installed all relevant safety information regarding the plant/equipment should be provided to the Occupier. All necessary certificates and approvals will be obtained according to statutory requirements. The location of plant and equipment will be designed to have sufficient clear space for the plant to be operated, serviced, maintained and repaired safely.</p> <p>The Occupier must ensure that all equipment is used safely and all personnel conducting maintenance operations have all the necessary information, training and supervision needed to work and operate on the plant. Any warning devices or other safety features for the plant must be identified and used. All safety information is to be provided to anyone involved in installing, commissioning, testing, inspection, maintenance, de-commissioning, dismantling and disposal of plant.</p> <p>The Occupier must also ensure that plant which is subject to registration is not used until it has been registered.</p>
Key Benefits	<ul style="list-style-type: none"> Maintenance staff has a clear understanding of inherent safety risks during operations and maintenance.
Desirable Outcomes	<ul style="list-style-type: none"> Safety risks are eliminated or managed appropriately during testing and maintenance of plant and equipment.
Performance Measure	<ul style="list-style-type: none"> Identification and registration of all required plant/equipment as per the requirements of the applicable statutory regulations.
Leadership	<ul style="list-style-type: none"> Client.

Task 4.10	Record Safety Information Relevant to Facility Operations and Maintenance
Action	All safety information relevant to the operation and maintenance of the facility will be entered into the Project Risk Register.
Description	This is a responsibility of the Client, Designer, Constructor and the Owner/Occupier. Aspects such as checklists, parts register, inspection personnel, history, must be recorded in the risk register and the Owner/Occupier will ultimately be responsible for ensuring that the Project Risk Register is maintained and updated and all identified risks are addressed. In this way, the safety culture will be sustained throughout the entire lifecycle.
Key Benefits	<ul style="list-style-type: none"> Operational and maintenance personnel will have a complete picture of the safety management of the project and will be in a strong position to manage any residual risks.
Desirable Outcomes	<ul style="list-style-type: none"> The culture of safety translates into the operational stage of the facility.
Performance Measure	<ul style="list-style-type: none"> Evidence that the Project Risk Register has been updated to include information relevant to operations and maintenance of the facility.
Leadership	<ul style="list-style-type: none"> Client.

Principle 5 - Continuously Improve Safety Performance

Task 4.11	Undertake Collaborative Post-Project Review of Safety Performance
Action	A post-project review of safety performance will be carried out by all project stakeholders.
Description	This task is strongly linked to Task 4.2 above. Its aim is to provide feedback to all stakeholders - in an open and non-threatening way - about the lessons that can be learned from the project and how they can be applied in future projects. Both strengths and weaknesses should be considered and it is important that subcontractors be included - for reasons stated in Task 4.7 above. The review should be conducted honestly and frankly and should not hide any issues - using the premise that we learn by our mistakes.
Key Benefits	<ul style="list-style-type: none"> All stakeholders have a better understanding of their safety performance on the project, and are better able to use the lessons learned from their experiences in future projects.
Desirable Outcomes	<ul style="list-style-type: none"> Continuous improvement across the industry in safety performance.
Performance Measure	<ul style="list-style-type: none"> A record of the post-project review.
Leadership	<ul style="list-style-type: none"> Client, Designer and Constructor jointly.

Task 4.12	Capture and Record Lessons Learned for Future Projects
Action	The lessons learned from safety performance on the project will be separately recorded and distributed for the benefit of the industry.
Description	This action evolves directly from Task 4.11 above. The lessons learned from the post-project review in Task 4.11 need to be collated separately and made available for others to learn. This report could be posted on websites and distributed to others in the industry - perhaps with the assistance and cooperation of peak industrial bodies.

Key Benefits	<ul style="list-style-type: none"> All stakeholders have a better understanding of their safety performance on the project, and are better able to use the lessons learned from their experiences in future projects.
Desirable Outcomes	<ul style="list-style-type: none"> Continuous improvement across the industry in safety performance.
Performance Measure	<ul style="list-style-type: none"> A report on the safety lessons learned from the project.
Leadership	<ul style="list-style-type: none"> Client, Designer and Constructor jointly.

Principle 6 - Entrench Safety Practices

Task 4.13	Review Long Term Relationships with SMEs
Action	Major project stakeholders (Client, Designer and Constructor) will review their relationships with SMEs involved in the project with a view to seeing if these can be further strengthened.
Description	At the end of the construction stage, major project stakeholders could review the safety performance and cooperation of their SME subcontractors and consider ways in which these relationships could be strengthened for joint participation in future contracts. This is a time for frank discussion about safety management issues - what safety initiatives worked well and what didn't - and the effectiveness of the cooperation between the prime contractors and the subcontractors.
Key Benefits	<ul style="list-style-type: none"> Strengthens the safety culture between the various parties.
Desirable Outcomes	<ul style="list-style-type: none"> Long term relationships in the supply chain can be further enhanced and strengthened to continuously improve safety performance for future projects.
Performance Measure	<ul style="list-style-type: none"> A record of a meeting between prime contractors and subcontractors to review long term relationships.
Leadership	<ul style="list-style-type: none"> Client, Designer and Constructor jointly.

Task 4.14	Future Interface Between Prime Contractors and Subcontractors
Action	Following on from Task 4.13, prime contractors and subcontractors should consider their long term relationship for future project involvement.
Description	If a major stakeholder was satisfied with a subcontractor's safety performance, the relationship could be further strengthened through cooperation in future projects. If, on the other hand, a major stakeholder was not satisfied with a subcontractor's safety performance, discussions could centre on how improvements can be made for future work, or in the worst case, the relationship could be severed.
Key Benefits	<ul style="list-style-type: none"> Cooperation between major stakeholders and SMEs is strengthened to improve safety performance on future projects.
Desirable Outcomes	<ul style="list-style-type: none"> The ability of under-performing SMEs in safety management and systems is enhanced for the good of the industry.
Performance Measure	<ul style="list-style-type: none"> A record of discussion between prime contractors and subcontractors.
Leadership	<ul style="list-style-type: none"> Constructor.