



Australian Government

Department of Jobs and Small Business
Office of the Federal Safety Commissioner

5

The completion stage

The model client: Promoting safe construction

Contents

Introduction	1
The completion stage	1
How to use this booklet	2
What is the completion stage?	3
Project OHS Process Map	4
Phase 9—Operation and maintenance	6
KMA A5 Record risk information	6
KMA D1 Evaluate project performance	7
KMA D2 Perform project completion review	9
KMA D3 Perform post-occupancy review	10
KMA D4 Perform final review of plant/equipment	11
KMA D5 Select safe maintenance providers	12
Stage review	13
Conclusion	13
APPENDIX	14
Document D1.1 Completion review procedure	15
Document D1.2 Completion review report template	18
Document D2.1 Completion inspection prompt sheet	23
Document D3.1 Post-occupancy review (POR) procedure	26
Document D3.2 Post-occupancy questionnaire	28
Document D3.3 Post-occupancy review (POR) report template	33
Document D4.1 Plant/safety systems handover procedure	34
Document D4.2 Plant/safety systems risk review checklist	36
Document D5.1 Selection criteria for maintenance/cleaning service providers	42
Completion stage review template	45

Introduction

The completion of a project should not signal the end of any further actions. It is at this stage that the agency can truly understand the path that the project has taken and the impact that OHS has had, and will continue to have, on the facility.

There are three distinct actions the client agency should carry out. These will ensure OHS continues for the whole life of the facility. Further, they capture the post completion evaluations for the improved planning of future projects. These are:

- Post Construction Review
- Post Occupancy Review
- Operations and Maintenance

As the clients of construction projects, Australian Government agencies are ideally placed to drive OHS into the projects they procure. The Model Client Framework is designed to provide Australian Government agencies with guidance and resources to help them manage OHS in construction projects.

The completion stage

This booklet, The completion stage, is the final in a series of five booklets explaining what it means to be a model client. The first booklet, The Model Client Framework, provided a project process map establishing key management actions (KMAs) for promoting OHS throughout the lifecycle of a construction project, from the planning stage to completion. Booklet two set out KMAs for the model client during the planning stage of a construction project and booklet three described the KMAs to be undertaken during the design and procurement stage. Booklet four explained the actions of a model client during the construction stage of a project.

The complete series is:

1. The Model Client Framework
2. The planning stage
3. The design and procurement stage
4. The construction stage
5. The completion stage

While this series of booklets has been prepared specifically for the Australian Government as a client of construction services, the principles and materials prepared and contained in each of these booklets are equally applicable to any client of these services.

How to use this booklet

This booklet provides a description of what happens in the completion stage of a project and sets out the KMAs that a model client could implement during this stage of a construction project.

The project OHS process map shown in Figure 1 identifies the operation and maintenance of the facility as Phase 9 of the project, under which a number of KMAs are to be undertaken as described below.

The KMAs are documented using a standard tabular layout as explained in booklet one. Each KMA is identified by a number and a descriptor. The terminology used in defining each KMA is as follows:

- **Action** describes what has to be done
- **Phases** indicate the development phases during which the action has to be taken
- **Description** provides a short narrative of the rationale of the action covering aspects such as who is responsible, its importance and some suggested strategies for consideration
- **Key benefits** provide the reasons why the action is effective
- **Desirable outcomes** describe the behavioural and procedural changes resulting from the implementation of the action
- **Performance measure** describes the outputs that can be measured and recorded as evidence that the action has been successfully implemented
- **Documents** outline the suggested approach to assist in the effective implementation of the KMA.

Documents relevant to each KMA are numbered for easy reference and can be found in the appendix to this booklet.



What is the completion stage?

The completion stage is achieved after the finalisation of construction when the facility is handed over to the client. It is the stage reached when, depending on the type of facility, plant and equipment is commissioned, occupancy is arranged and the facility is put into service for its intended use. It is usually the stage when the contractor has completed all contractual obligations and the client has issued certification acknowledging completion of the works. Sometimes, the contractor may still have an obligation to maintain the facility for a fixed period of time after practical completion under defects liability requirements.

Sometimes a project may be completed in stages, whereby handover of the facility is undertaken in discrete stages. For example, a road project may be undertaken in stages so that some sections are opened to traffic while others are still under construction.

The safe operation of the facility will have been considered in all the earlier stages of the project: the planning stage, the design and procurement stage and the construction stage. These considerations include maintenance, servicing, cleaning, and facilities management. Typical OHS issues include access for internal and external maintenance and cleaning, the type of floor surfaces, elimination of manual handling, storage areas, fire evacuation, disabled access and security systems.

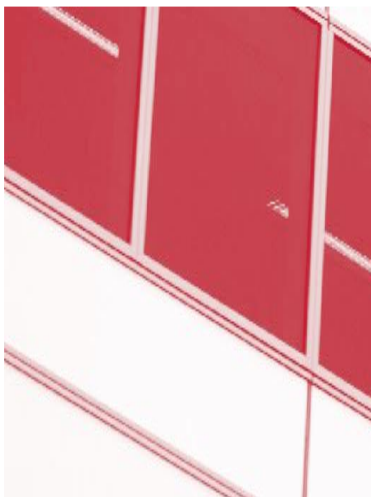
The completion stage does not mean the end of any further actions relating to OHS. It enables a total review to be undertaken of OHS issues during the whole lifecycle of the project—right back to the planning stage—to see if there are any lessons that can be learnt which could be fed into safety management processes for future projects.

As Figure 1 shows, the completion stage consists of only one phase. This is:

- **Phase 9—Operation and Maintenance**

The Model Client Framework suggests a number of KMAs for this phase. By the end of the construction stage, a model client would have implemented all of the KMAs described in this booklet.

A stage review is conducted to ensure that this has occurred before considering that the building and construction project is completed.



Project OHS Process Map

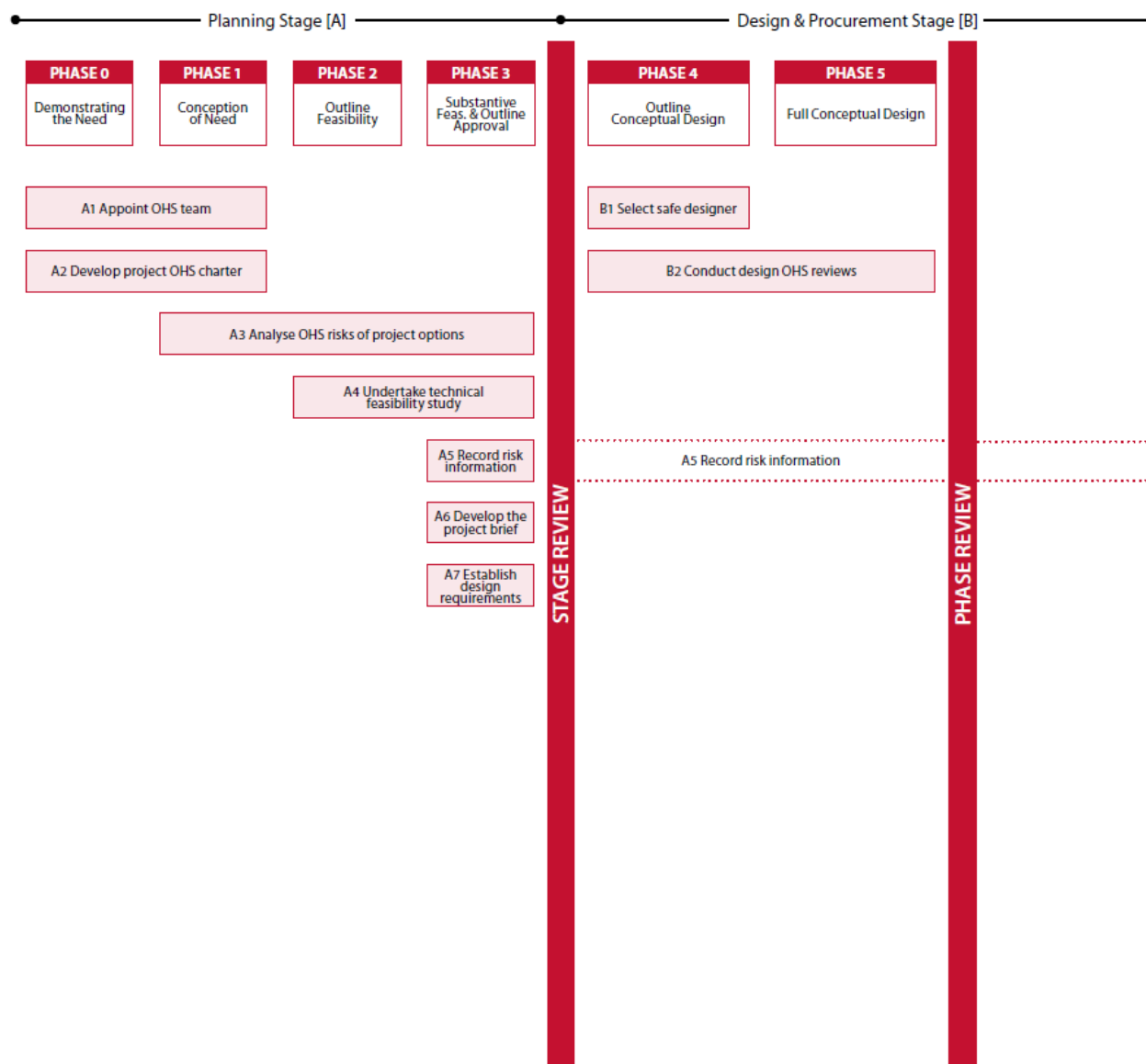


Figure 1: Project OHS map
Adapted from **A Generic Guide to the Design and Construction Process Protocol** (Kagioglou et al., 1998)
[www.processprotocol.com]

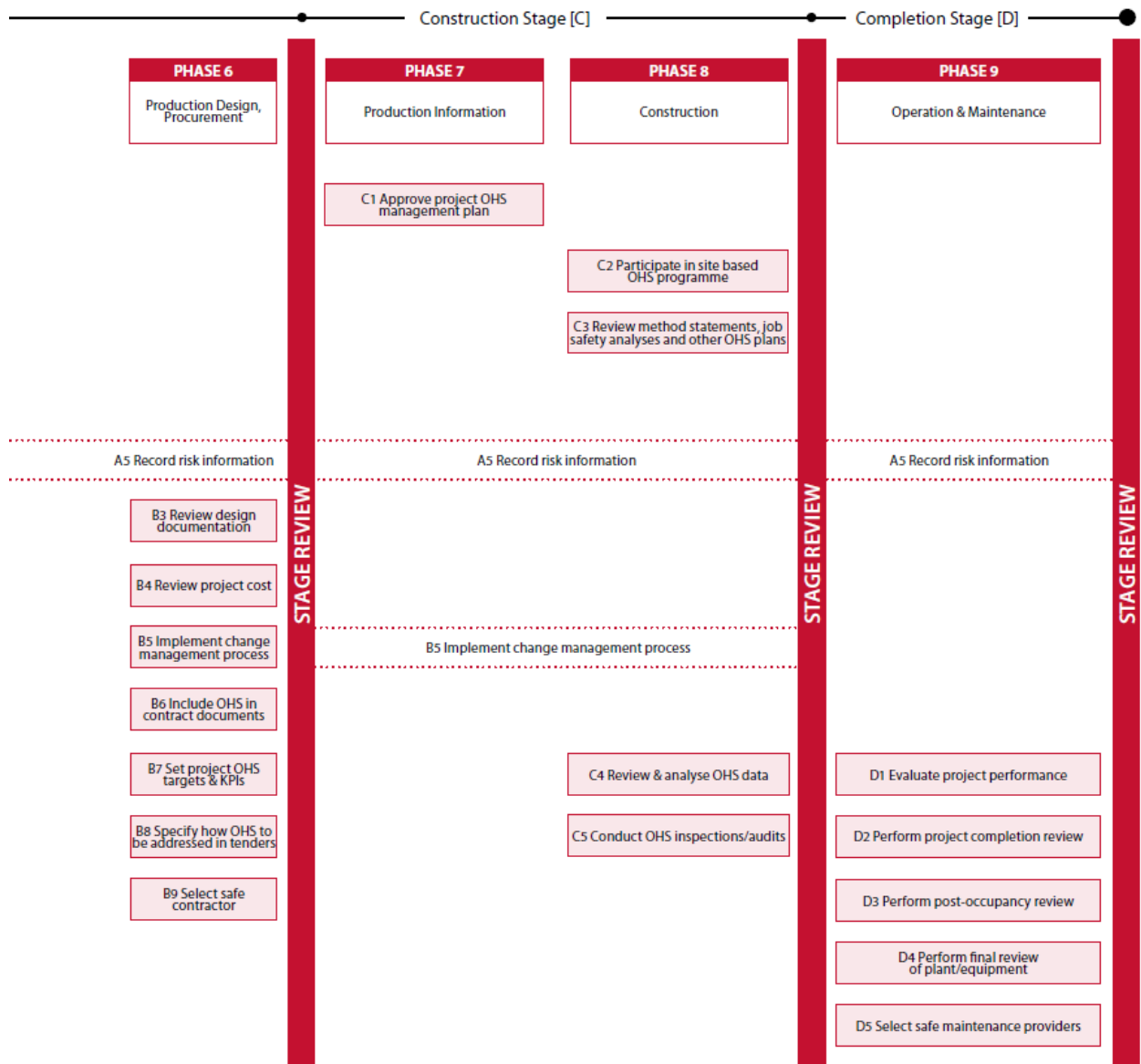


Figure 1 (continued): Project OHS map

Adapted from **A Generic Guide to the Design and Construction Process Protocol** (Kagioglou et al., 1998)
[www.processprotocol.com]

Phase 9—Operation and maintenance

‘What can we learn?’

The facility is handed over to the client as planned. The post-project review should identify any areas that need to be considered more carefully in future projects. The emphasis should be in creating a learning environment for everybody involved. As built designs are documented and finalised information is recorded for future use.

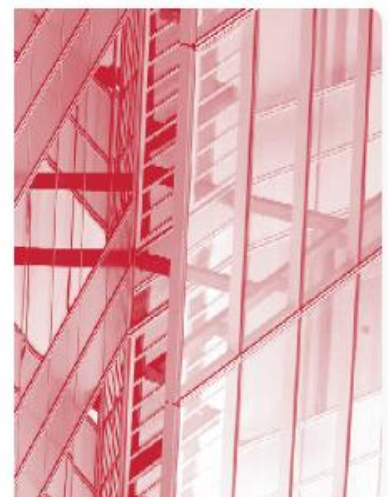
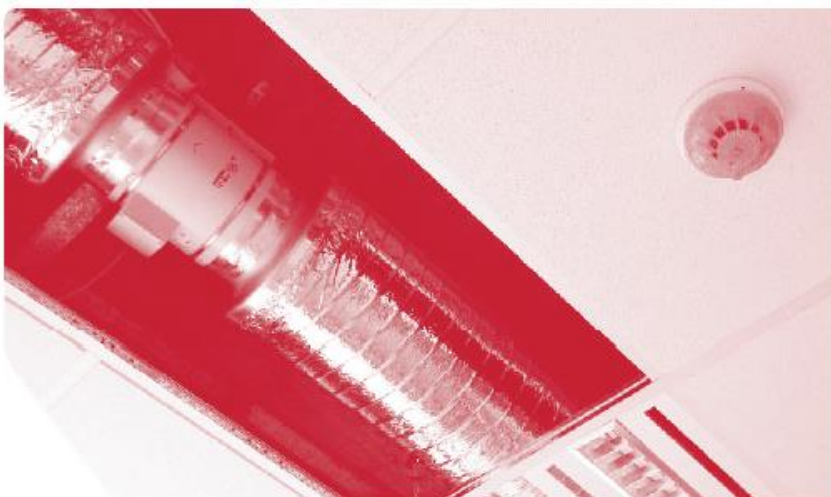
Kagioglou et al. (1998)

There are five distinct KMAs that a model client agency should undertake during the completion stage. These will ensure OHS continues for the whole life of the facility. Further, they capture post-completion evaluations for the improved planning of future projects. These KMAs are:

- KMA D1—evaluate project performance
- KMA D2—perform project completion review
- KMA D3—perform post-occupancy review
- KMA D4—perform final review of plant/equipment
- KMA D5—select safe maintenance providers.

KMA A5 Record risk information

The recording of risk information was instigated in the planning stage of the project. This required the development and maintenance of a risk register containing a record of all OHS issues identified through all stages of the project. The project risk register is an important communication tool in which OHS risk information is captured and communicated to different stakeholders who are engaged in the project over its lifecycle. An analysis of this historical record of OHS issues during the course of the project will reveal lessons that can be learnt and fed into OHS management processes for future projects. It is important that this risk record continue throughout the project.



KMA D1 Evaluate project performance

The evaluation of project performance and recording of OHS lessons is critical for ensuring that OHS improvements can be incorporated into future projects. Upon completion, the effectiveness of OHS management activities undertaken throughout the life of the project is evaluated in a team-based project completion review. This review is a retrospective analysis of project participants' experiences and OHS outcomes. It is a mechanism for capturing valuable information to 'feed forward' and inform OHS improvements in future projects.

KMA D1	Evaluate project performance
Action	Evaluate the risks captured in the risk register and the overall OHS performance of the project (from the project database), ensuring that the project team's experiences are captured.
Phases	<ul style="list-style-type: none"> Phase 9—Operation and maintenance.
Description	<p>The project completion review should be a team exercise, involving the agency's OHS team, designers, contractors and subcontractors. Questions that should be posed include:</p> <ul style="list-style-type: none"> How effective were OHS management processes throughout the project lifecycle? What worked and what did not? How could OHS processes and outcomes be improved in future projects? <p>In the course of the project completion review, it is useful to compare the outcomes of design OHS risk assessments with OHS problems experienced during the construction phase. This provides valuable information about the efficiency of the design OHS review process.</p> <p>During the post-project review, accident/incident/near miss and other OHS data collected during the project should also be analysed.</p> <p>The OHS performance of each project participant should be evaluated as well as the quality of communication and cooperation about OHS between all parties.</p>
Key benefits	<ul style="list-style-type: none"> The project completion review provides a basis for the continuous improvement of OHS performance.
Desirable outcomes	<ul style="list-style-type: none"> Comprehensive project completion review report, highlighting both positive and negative aspects of the project's OHS processes and performance. The identification of areas in which improvements could be made to future construction projects. Feedback and learning for all project team members and their respective organisations Recording of lessons learnt in a way that enables the easy retrieval of relevant information and facilitates the sharing of information between government agencies.
Performance measure	<ul style="list-style-type: none"> Project completion review report completed in a reasonable period after project completion. Results recorded in an appropriate repository. Project completion review reports circulated to all project participants to enable them to improve their OHS management processes and OHS performance in future construction projects.

Documents	<ul style="list-style-type: none">▪ D1.1 Project completion review procedure▪ D1.2 Completion review report template
------------------	---

KMA D2 Perform project completion review

Project completion reviews assist in improving planning and decision making processes for future projects and enable model clients to measure the effectiveness of their implemented OHS processes. Reviews should make a clear distinction of issues that arise between the various lifecycle stages of the project.

To identify any trends, the analysis should be compared and benchmarked against other construction projects undertaken by the agency. This will assist in identifying any common OHS problems and provides the basis for information sharing and organisational learning. Any identified OHS deficiencies and associated recommendations may be used to develop further tools and guidelines for use in future projects.

KMA D2	Evaluate Project completion review
Action	Undertake a safety review of the building to identify any hazards requiring rectification prior to occupation.
Phases	<ul style="list-style-type: none"> Phase 9—Operation and maintenance.
Description	<p>Before users occupy a building, a review of the completed structure should be undertaken against the specifications. Installation of any finishes completed earlier in the project should be inspected to ensure integrity has been maintained. Receipt of a Certificate of Occupancy is not confirmation that the building does not contain any safety hazards and should not be the sole confirmation of a successful post-construction review.</p> <p>In addition to reviewing the completed building, the opportunity to identify safety issues that did not present themselves at the design or construction stages can be captured. A robust risk management approach should be applied to this post-occupancy review. Any risks identified should be subject to rigorous assessment and strategies developed to reduce these risks as much as possible. Residual risks should be recorded in the project risk register and requirements for ongoing monitoring or further review should be documented.</p>
Key benefits	<ul style="list-style-type: none"> Pro-active OHS risk mitigation strategy
Desirable outcomes	<ul style="list-style-type: none"> Gathering of information with the aim of providing a facility with minimal safety hazards to the end users prior to occupation. Sharing the outcomes of the hazard identification with other government agencies via a common database.
Performance measure	<ul style="list-style-type: none"> All the identified safety hazards are recorded in the project risk register (refer to document A5.2 in booklet two). The risk register must be continually monitored and maintained. An assessment of the building is to be conducted prior to hand-over of the building to the agency.
Documents	<ul style="list-style-type: none"> D2.1 Completion inspection prompt sheet

KMA D3 Perform post-occupancy review

Post-occupancy evaluation is undertaken to determine whether the OHS objectives of the project were achieved and whether the design adequately considered the end user. The review should consist of a careful and systematic evaluation of the performance of the facility and should take into consideration usability, satisfaction, fit for purpose and financial feasibility.

The post-occupancy evaluation should consider how the facility is intended to work in its capacity to provide a social and safe environment for the end users. Outcomes from these types of reviews can not only provide valuable feedback in 'lessons learnt' and future improvements in the lifecycle planning and construction of a facility, but can also provide benchmarks based on end-users' expectations. All of this information is invaluable for ensuring that the agency can begin to clearly convey their expectations of the final product at the design stage.

KMA D3	Perform post-occupancy review
Action	Undertake a safety review of the building to identify any hazards requiring rectification prior to occupation.
Phases	<ul style="list-style-type: none"> Phase 9—Operation and maintenance.
Description	<p>Before users occupy a building, a review of the completed structure should be undertaken against the specifications. Installation of any finishes completed earlier in the project should be inspected to ensure integrity has been maintained. Receipt of a Certificate of Occupancy is not confirmation that the building does not contain any safety hazards and should not be the sole confirmation of a successful post-construction review.</p> <p>In addition to reviewing the completed building, the opportunity to identify safety issues that did not present themselves at the design or construction stages can be captured. A robust risk management approach should be applied to this post-occupancy review. Any risks identified should be subject to rigorous assessment and strategies developed to reduce these risks as much as possible. Residual risks should be recorded in the project risk register and requirements for ongoing monitoring or further review should be documented.</p>
Key benefits	<ul style="list-style-type: none"> Information obtained from end users can provide valuable information for future projects.
Desirable outcomes	<ul style="list-style-type: none"> Gathering of information with the aim of continuous improvement of the final product. Exchange outcomes of hazard identification with other government agencies via a common database. Integrate findings at design stage to alleviate repeat hazards.
Performance measure	<ul style="list-style-type: none"> A review should be conducted no earlier than 3 months after occupation, but no later than 12 months. This will allow users to become familiar with the building. Newly identified risks should be recorded in the risk register.
Documents	<ul style="list-style-type: none"> D3.1 Post-occupancy review procedure D3.2 Post-occupancy questionnaire D3.3 Post-occupancy review report template

KMA D4 Perform final review of plant/equipment

In some circumstances registration of plant/equipment is required. These requirements vary between states/territories and need to be complied with.

KMA D4	Perform final review of plant/equipment
Action	The agency has a responsibility to ensure that the plant is not put into active service until it is deemed safe for use. Once the plant is installed all relevant health and safety information regarding the plant/ equipment is to be provided to the agency. The agency is to obtain all certificates, standard operating procedures and any other relevant information required for safe use of plant and equipment.
Phases	<ul style="list-style-type: none"> Phase 9—Operation and maintenance.
Description	<p>The location must be suitable for the type of plant/equipment, with sufficient clear space for the plant to be operated, maintained and repaired safely.</p> <p>The agency 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 employed. All health and safety information is to be provided to anyone involved in commissioning and installing plant, testing, inspection and maintenance of plant, de-commissioning, dismantling and disposal of plant.</p> <p>The agency must ensure that plant which is subject to design, or item registration, is not used unless it has the appropriate registration.</p>
Key benefits	<ul style="list-style-type: none"> There are clear and decisive instructions for those working on or near plant and equipment. This allows for a safe and consistent approach to the way in which the work is carried out.
Desirable outcomes	<ul style="list-style-type: none"> No health and safety concerns when accessing, servicing or dismantling the plant and equipment installed.
Performance measure	<ul style="list-style-type: none"> Identification and registration of all required plant/equipment as per the requirements of the applicable state/territory legislation Instructions on the safe use/maintenance of all plant and equipment installed
Documents	<ul style="list-style-type: none"> D4.1 Plant/safety systems handover procedure D4.2 Plant/safety systems risk review checklist



KMA D5 Select safe maintenance providers

Responsibility for OHS continues well after the completion of the facility. By following the design processes established in booklet three, a safer and more efficient maintenance and operation regime should result. Designers should take into consideration risks associated with plant and structure as well as the shortcomings of those using/accessing the structure and associated components.

In addition to the safe design process, processes for those conducting the maintenance on the building and plant need to be considered. The agency needs to be sure that those conducting works on the completed building have the necessary expertise and capabilities to perform the required functions in a safe manner.

KMA D5	Select safe maintenance providers
Action	The agency should adopt a preferred provider scheme, in which only those maintenance and service providers able to display competence and commitment to OHS are selected.
Phases	<ul style="list-style-type: none">Phase 9—Operation and maintenance.
Description	<p>All plant must be inspected, maintained and cleaned following a set of procedures provided by the agency. Any development of further instructions by maintenance providers should be reviewed by the agency before implementation.</p> <p>The agency must ensure that maintenance is conducted by a competent person who has access to any necessary health and safety information, including any instructions from the designer or manufacturer. Any plant or equipment found to be unsafe should be withdrawn from use.</p>
Key benefits	<ul style="list-style-type: none">Maintenance contractors competent in OHS will be selected.Client expectations for the management of OHS risk in maintenance operations will be communicated to contractors.
Desirable outcomes	<ul style="list-style-type: none">The OHS risk will be competently managed during maintenance operations.
Performance measure	<ul style="list-style-type: none">Selection decisions based on OHS competence/performance
Documents	<ul style="list-style-type: none">D5.1 Selection criteria for maintenance/cleaning service providers



Stage review

The client should undertake a stage review to review, confirm and approve all major decisions taken during the completion stage of the project. KMAs and their performance measures should be reviewed to ensure that the requirements of the Model Client Framework have been met.

A suggested completion review template is in the appendix of this booklet.

Conclusion

Completion is the last stage of the model client process. Once all the completion stage KMAs have been implemented, a government agency will have demonstrated a strong commitment to OHS in a construction project.

By following all the initiatives contained in the five model client booklets, Australian Government agencies can show strong OHS leadership and promote the development of a culture of OHS in the procurement and management of construction projects. At the end of the completion stage, project OHS performance can be carefully evaluated and lessons learnt to improve the implementation of the Model Client Framework in future construction projects.



APPENDIX: Supporting documents

The following documents are available from the OFSC website at fsc.gov.au.

Document D1.1 Completion review procedure	15
Document D1.2 Completion review report template.....	18
Document D2.1 Completion inspection prompt sheet.....	23
Document D3.1 Post-occupancy review (POR) procedure	26
Document D3.2 Post-occupancy questionnaire	28
Document D3.3 Post-occupancy review (POR) report template	33
Document D4.1 Plant/safety systems handover procedure.....	34
Document D4.2 Plant/safety systems risk review checklist	36
Document D5.1 Selection criteria for maintenance/cleaning service providers.....	42
Completion stage review template	45

Document D1.1 Completion review procedure

Review of OHS processes and performance on completion of a construction project permits a government agency to continuously improve its OHS management activities. The purpose of the completion review is to analyse OHS performance in the project, consolidate the project team's experiences and capture ideas for the improvement of OHS in future construction projects. The following questions should be explored in the completion review.

- How effective were OHS management processes throughout the project lifecycle?
- What worked and what didn't?
- How could OHS processes and outcomes be improved in future projects?

The completion review should address four major areas of OHS performance:

- project OHS efficiency (that is, how seamless were OHS processes, especially relating to the transfer of OHS information between project stages?)
- project OHS effectiveness (that is, how well did OHS processes work in the project?)
- project OHS impacts (that is, how did the project perform in OHS? Were KPIs and targets met?)
- OHS lessons learnt (what could be done better to enhance OHS outcomes in future projects?)

The completion review will, in general, focus on eight elements (outlined below). It is important to recognise that the scope and required documentation for the completion review may vary from project to project, depending on the project type and complexity. The following should only be used as a guide to the review and the eight elements are not in order of importance.

Agency staff participating in the completion review (referred to as the completion review team) should, as a minimum, include:

- one representative from the project OHS team
- an agency staff member involved in developing the contract documentation
- a senior management representative, able to make decisions and delegate actions.

Key stakeholders such as designers and construction contractors should also be included in the completion review.

Scope of completion review

Each of the eight review elements described below should be considered.

1. Project OHS team

- Assess whether the staffing levels were appropriate to ensure OHS was properly managed in the project.
- Determine if appropriate OHS skills were available and/or whether OHS training needs were clearly identified and adequate training provided to project personnel.
- Assess whether the project OHS team possessed an appropriate mix of skills and sought input from representatives of all key function areas (for example design, construction, maintenance) to provide effective oversight of OHS through the lifecycle of the construction project.
- Identify any issues that affected or hindered the agency's OHS activities during the project or impacted on the procurement of safe design and construction practices throughout the construction project.

2. Project resources and schedule

- Evaluate the extent to which project resourcing decisions (including the project schedule) impacted OHS at the planning, design and procurement, construction and completion stages.
- The review should consider whether project OHS requirements were comprehensively identified (were important, reasonably foreseeable issues missed at the planning, design and procurement stages?), the cost of implementing OHS requirements and impacts of the project schedule.
- The completion review team should then evaluate the effectiveness of OHS resourcing decisions and the impact of these decisions on project OHS performance.
- Where possible, performance should be compared to that of comparable construction projects.

3. OHS contract structure

- Assess whether the OHS requirements stipulated in the various contracts (for example with designers, construction contractors etc) incorporated all relevant OHS aspects of the work, whether the agency's OHS goals were well defined and clearly communicated in briefing documents and whether contract documents represented a reasonable allocation of OHS responsibility.
- Assess whether the OHS requirements specified in contract documents adequately reflected the project OHS goals and risk profile of the construction project. Were contracts appropriately structured to meet project OHS goals, given the level of risk?
- The completion review team should compare the OHS requirements against other agency projects to ensure consistency.

4. Risk management

- Review the approach used to identify project OHS risks and assess the adequacy of this approach.
- Assess whether OHS risks have been assessed based on the probability and consequence of occurrence, and have been properly classified as high, medium or low.
- Assess whether appropriate risk mitigation actions were incorporated into the different stages of the project and check whether all stakeholders involved in the planning, design and procurement, construction and completion stages of the project contributed to the risk management process.
- Determine if communication of OHS risk was adequately undertaken during the lifecycle of the construction project, in particular at the interface between project stages.

5. Communication and consultation

- Determine whether OHS information was disseminated effectively throughout the lifecycle of the project, in particular when different organisations or stakeholders were involved.
- The completion review team should consider the effectiveness of the transfer of knowledge and information between the various stakeholders involved in the project. This should involve knowledge and information transfer from contractors/consultants to the agency, as well as from the agency to contractors/consultants. Reference to the transfer of risk information via the project risk register may need to be included.

6. Design review

- Evaluate the adequacy of design OHS reviews, including the level of detail provided in drawings and specifications, and assess whether the outcomes were consistent with the overall project OHS goals.
- Assess whether all structures, systems and components incorporated in the design were assessed for OHS risk implications.
- Appraise the suitability of changes made at the outline and full conceptual design phases.

- Consider whether emergent OHS issues identified in the construction and completion phases could have been reasonably foreseen, eliminated and/or reduced during the design stage.
- Further analysis of the number of OHS design issues identified during the construction and completion stages should be undertaken and consideration given to the effectiveness of processes to manage design changes during these stages so as to eliminate or reduce OHS risks.

7. KPIs and targets

- Assess whether the project OHS KPIs/targets and performance measures were well-defined, resulted in the early diagnosis of OHS problems during the construction project and enabled positive OHS changes.
- The completion review team should also assess whether the OHS KPIs/targets and measures and reporting requirements stipulated in contracts with consultants and contractors were adhered to and provided a good basis for monitoring project OHS performance.
- Evaluate the level of compliance with the reporting requirements for OHS and determine whether the report submission schedule provided sufficient information for the timely resolution of potential OHS issues problems.
- The completion review team should include in this analysis any KPIs/targets set for the agency as well as those of consultants/contractors.

8. Project performance

- Review construction contractors' performances against the project OHS charter and project OHS management plan.
- Assess whether the way the project was managed is consistent with the OHS requirements of the agency and has resulted in the safe and successful execution of the project.
- Consideration of project performance should also cross reference other review elements such as risk management, incidents, communication and consultation and targets and KPIs.

Required documentation

In general, the following documents may need to be referenced:

- designers' contracts
- construction contractors' contracts
- results of and responses to project design OHS reviews
- design documentation
- risk management plans
- project risk register
- copies of agency, consultant and contractor OHS reports
- change management forms.

Other associated material may be requested by the review team to ensure a complete and accurate review is performed.

Document D1.2 Completion review report template

A detailed completion review of the construction project captures information about the efficacy with which OHS management actions were implemented during the project. This can inform the procurement of similar construction projects and support organisational learning and improvement. It is useful to compare the outcomes of design OHS risk assessments with OHS problems experienced during the construction phase. This provides valuable information about the effectiveness of the design OHS review process. During the completion review, accident/incident/near miss and other OHS data collected during the project should also be analysed. The OHS performance of each project participant should be evaluated as well as the quality of communication and cooperation with regard to OHS at the interface between project participants.

This template provides a sample of information indicating an appropriate level of detail for inclusion.

Project details:

Date of review:

Agency OHS review team members

- 1.
- 2.
- 3.
- 4.

Positive outcomes

EXAMPLE

Review element	What worked well — Outcome	Was this an agency requirement? Yes/No	If No, what action will be taken	Include in action plan? Yes/No
OHS project team	An OHS project team was established by the agency. Once a design consultant was selected, they were invited to join the OHS team. While there was no formal requirement for construction contractors to be involved, the principal contractor also joined the OHS Team upon engagement. The Principal Contractor provided valuable information about OHS risks throughout the life of the project, including information that prompted design changes.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<ul style="list-style-type: none"> Include formal provisions in contract documents requiring construction contractors and maintenance personnel to take an active role in the OHS project team. In OHS costing tender documentation, include a requirement for successful tenderer to allocate adequate resources to participation in the OHS project team throughout project. 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Project resources and schedule	The construction contract clearly stipulated the OHS requirements and expectations. Each construction contractor allocated appropriate resources and finances to ensure that OHS requirements were fulfilled and tenders reflected this commitment.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<ul style="list-style-type: none"> No further action required 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Project contract structure		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
Risk management		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
Communication and consultation		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
Design review		<input type="checkbox"/> Yes		<input type="checkbox"/> Yes

Review element	What worked well — Outcome	Was this an agency requirement? Yes/No	If No, what action will be taken	Include in action plan? Yes/No
		<input type="checkbox"/> No		<input type="checkbox"/> No
OHS KPIs and targets		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
Project performance		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No

Suggested improvements for future projects

EXAMPLE

Review element	What could be improved — Outcome	Was this an agency requirement? Yes/No	What action will be taken	Include in Action Plan Yes/No
OHS project team		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
Project resources and schedule		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
Project contract structure		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No

Review element	What could be improved — Outcome	Was this an agency requirement? Yes/No	What action will be taken	Include in Action Plan Yes/No
Risk management	A number of changes were made to the design of work processes during the construction stage. Some contractors did not use the agency's change management process when such changes were made, resulting in the fact that people whose safety could have been impacted were not informed of these changes.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<ul style="list-style-type: none"> All selected contractors will be provided with an induction explaining the agency's change management process. Penalties will be included in the contract for non-conformance with the agency's change management process. 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Communication and consultation		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
Design review		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
OHS KPIs and targets		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
Project performance		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No

Project completion review action plan

Any recommendations to be implemented following the project completion review should be recorded in a completion review action plan to enable the easy retrieval of relevant information and tracking of actions recommended.

EXAMPLE

Action plan	Responsibility	Date of completion
Update contractor induction to include details on change management procedure, including how to use the forms and what to do.	Henry Blighe	Outstanding as of 2/8/12
Include penalties in the contract for non-conformance to this change management procedure.	Jenny High	15/7/12
Include penalties in the contract for non-conformance to this change management procedure.	Jenny High	21/7/12
In OHS costing tender documentation, include a requirement for successful tenderer to allocate adequate resources to participate in OHS project team throughout project.	Jenny High	21/7/12

Sign off

Date:

Signatures of agency OHS review team members:

- 1.
- 2.
- 3.
- 4.

Agency Manager/Director

Name:

Signature:

Date:

Document D2.1 Completion inspection prompt sheet

Before users occupy/use a building or facility, the agency should undertake a review of the completed structure against the specifications. Installation of any finishes completed earlier in the project should be inspected to ensure integrity has been maintained and that all previously identified OHS risks have been addressed appropriately. In addition to reviewing the completed building/facility, the opportunity to identify OHS risks that did not present themselves at the planning, design and procurement or construction stages can be assessed and managed. The following table contains prompts to assist agency staff in the identification of possible OHS hazards/risks apparent at the completion stage.

Any risks that are identified should be recorded in the risk register (see document A5.2, booklet two), and monitored for completion using the risk treatment plan (see document A5.3, booklet two).

Hazardous chemicals/ dangerous goods

- pesticides
- fuel storage
- cleaning products
- dangerous goods
- air pollution/water/waste water
- labelling
- storage

Slips, trips, clearance

- electrical cables
- uneven ground/finishes
- cable covers
- use of amusement equipment
- flooring design
- poor lighting
- steps/floor level changes
- different flooring surfaces
- access/egress
- hidden hazards
- edge protection
- head clearance
- tight spaces

Fire safety

- evacuation plans
- fires — fire effects
- dangerous goods storage
- obstructing fire equipment
- inappropriate fire fighting equipment
- security of fire prevention equipment
- flammable goods

Plant

- training
- certification
- emergency management
- personal protective equipment
- supervision
- maintenance
- isolation/segregation — people
- hand tools
- plant registration, for example lifts, escalator

Construction

- all works complete and as per specification

Plant/equipment

- layout
- signage
- security
- fit for purpose
- appropriateness of signage
- access to plant
- exclusion zones
- PPE requirements
- emergency shutdown
- access/egress
- lighting
- storage
- waste

Security

- site access
- building access
- vandalism
- alcoves
- lighting

Accessibility

- emergency vehicles
- emergency evacuation points

Vehicle safety

- site layout
- parking
- vehicle/people segregation
- speed
- signage
- accessibility during emergency management
- loading operations — docks and people

Electrical safety

- power supply — no spiking, lack of continuity
- overloading systems
- power tools
- underground services
- generators
- earthing
- unauthorised access
- lighting
- lack of power boards
- weather
- protection of leads
- cables/height/pathways
- location in relation to other equipment

Accessibility

- lifts
- ramps
- parking
- pedestrian movement
- signage
- disability
- egress

Ergonomics

- manual handling
- over reaching
- twisting
- lighting
- excess weight and height access
- bending over
- functionality

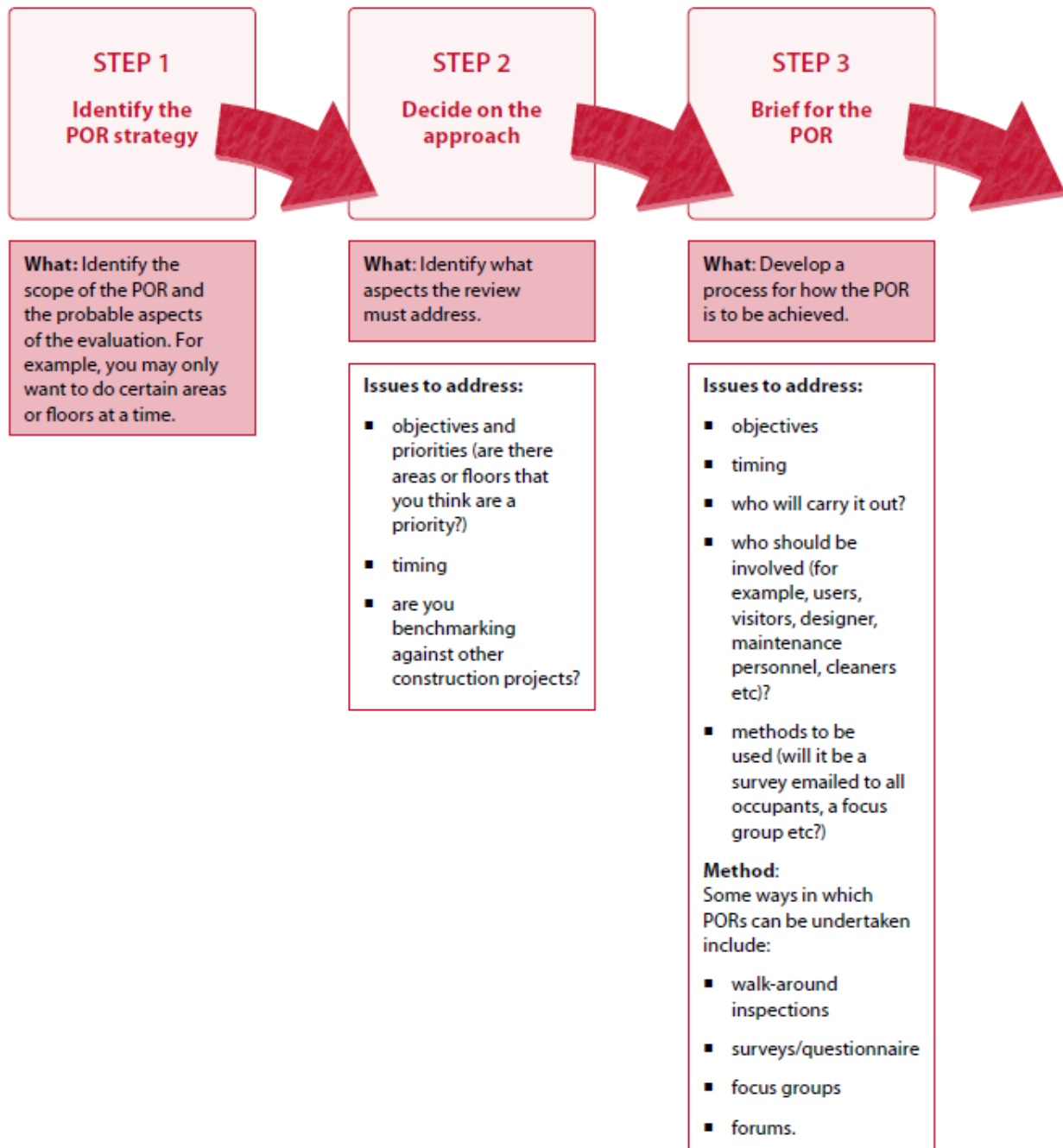
Maintenance

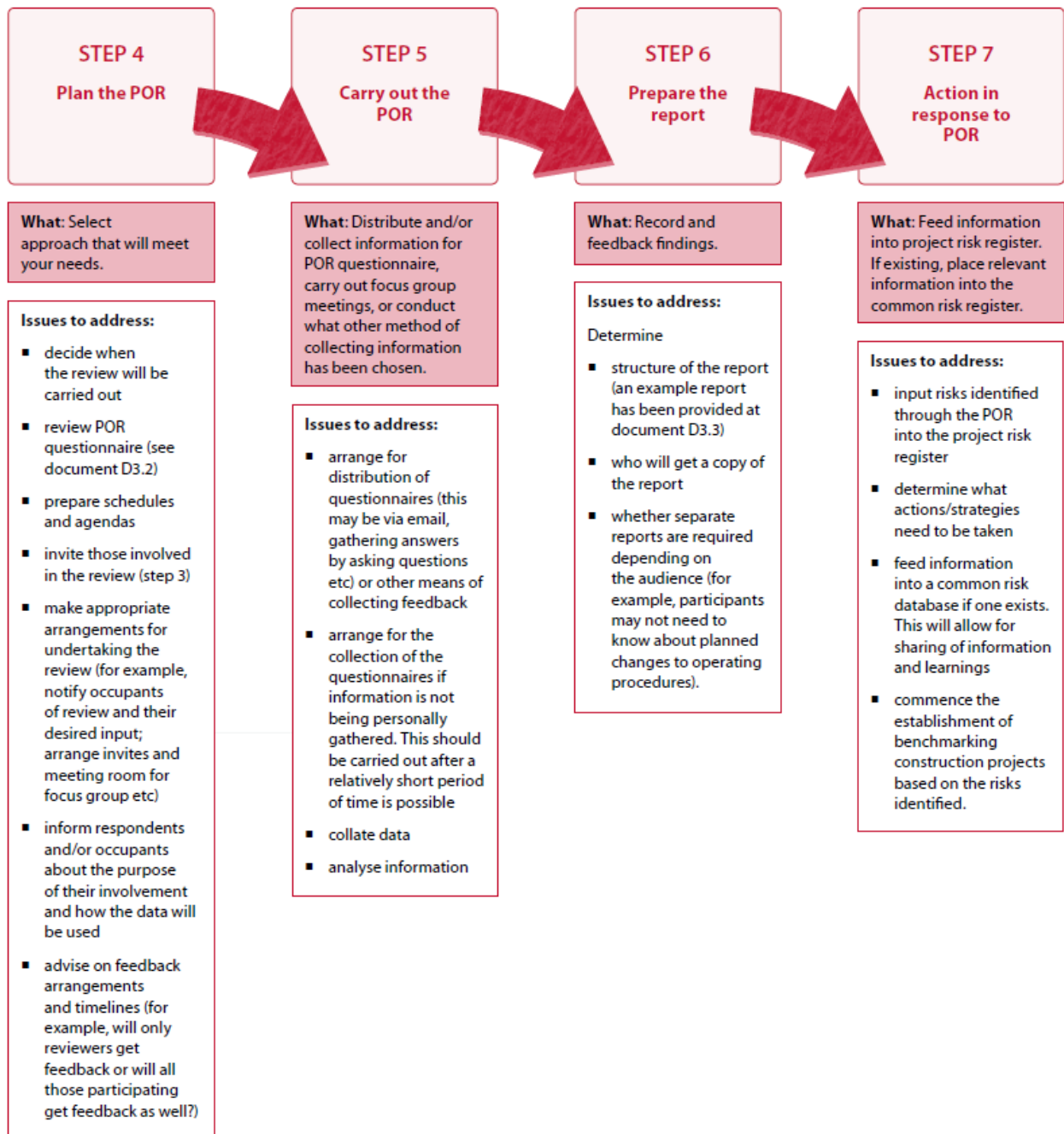
- materials nominated
- access
- lighting
- vibration
- lifting
- plant registration
- slips and trips
- discharges including temperature
- noise
- frequency of maintenance
- operational requirements, for example air intake
- storage facilities
- working at heights
- access to all services/systems requiring ongoing maintenance
- type of materials use appropriate

Others

Document D3.1 Post-occupancy review (POR) procedure

In the post occupancy review (POR), the emphasis is on learning from the 'hands on' experience of those using the building or facility. A POR allows the agency to understand whether the OHS expectations of actual users of the building/facility have been met and how they feel the building performs from an OHS perspective. A POR provides the opportunity for the agency to learn about how the building supports agency personnel and operations. The diagram below shows a step by step procedure for conducting a POR.





Document D3.2 Post-occupancy questionnaire

A post-occupancy questionnaire is a tool for gathering 'customer' feedback. It is designed to capture OHS information from the occupants or users of a building or facility. Regardless of status, building/facility location, size or type of space, this is the opportunity to get the broadest feedback from internal (that is, agency) and external (for example, public) 'customers' about work areas, common/public spaces and the building/facility in general.

It should be noted that there are various techniques in conducting post occupancy reviews, one of which is a post occupancy questionnaire. Step 3 of document D3.1 recommends an agency determine what type of review will be conducted, for a particular project. The following information is suggested content but it may not be applicable in all circumstances. Project-specific particulars might need to be added as appropriate.

- Construction project name
- Construction project location
- Construction project team information
- Building/facility description and operation
- Construction project scope
- Building/facility occupants
- Interviewee details (occupant/maintenance/visitor)

Site and Surroundings

Post-occupancy review: Areas for questioning	Example
Pedestrians Access	<ul style="list-style-type: none"> Is it easy to walk into and around the building? Is the front entrance of the building easy to identify and access? Are footpaths/pavements designed and maintained for safety? Do pedestrian services include adequate footpaths with designated crosswalks, curb cuts, and appropriate slopes?
Vehicles Access	<ul style="list-style-type: none"> Can you get into and out of the building without negative interaction from vehicles, transport, bicycles, etc? Are pedestrian and vehicular traffic separate, except in designated crosswalks? Is there a location that allows safe drop-off/pick-up?
Parking Access	<ul style="list-style-type: none"> Is it easy to manoeuvre your car into the parking bays? Is entry/exit of the parking area easy to navigate around? Is there adequate visitor parking?
Road layout Access	<ul style="list-style-type: none"> Can you negotiate the internal roads without any major issues? Is entry and exit into the property easy? Is there adequate signage to indicate locations and entry/exit points?
Drainage	<ul style="list-style-type: none"> Does the stormwater pool or create rivers when it rains?
How the building impacts with surroundings	<ul style="list-style-type: none"> Do you have to cross a busy road unaided?
Security (External lighting)	<ul style="list-style-type: none"> Is there adequate external lighting to the building during non daylight hours?
Security (Access)	<ul style="list-style-type: none"> Is access restricted during normal daytime operations? Are there provisions to restrict access after nominated business hours? Are these adequate?
Any other hazards not identified	<ul style="list-style-type: none"> Have any OHS hazards not been identified? If so what?

Maintenance

Post-occupancy review: Areas for questioning	Example
Plant Access	<ul style="list-style-type: none"> Are you able to gain easy access to all plant and equipment?
Servicing Access	<ul style="list-style-type: none"> Is there enough room to conduct standard servicing of plant/equipment? Is there enough room to undertake major works on plant/equipment? Are servicing records kept up to date?
Layout Access	<ul style="list-style-type: none"> Does the layout of the plant/equipment pose any hazards?

Post-occupancy review: Areas for questioning	Example
Information transfer about building/plant	<ul style="list-style-type: none"> Was information about all known risks provided? Was information about the safety requirements associated with the maintenance and/or working near plant/equipment provided?
Suitability of plant/materials chosen	<ul style="list-style-type: none"> In your opinion, has suitable or fit for purpose plant been chosen?
Lifespan of plant/materials	<ul style="list-style-type: none"> Does the type of materials selected mean that a more intensive maintenance program is required?
Ventilation	<ul style="list-style-type: none"> Is there adequate ventilation in the work areas when you are undertaking maintenance duties? Has adequate ventilation been provided to accommodate for the plant/equipment installed?
Lighting	<ul style="list-style-type: none"> Is the lighting provided sufficient to perform maintenance tasks?
Storage	<ul style="list-style-type: none"> Is there adequate storage provide for spare equipment/supplies? Do the storage facilities provided require you to stretch or bend over?
Waste disposal	<ul style="list-style-type: none"> Are there facilities to dispose of general waste materials? Can dangerous/hazardous waste be disposed of?
Any hazards not identified	<ul style="list-style-type: none"> Have any OHS hazards not been identified? If so what?

The building/facility (general)

Post-occupancy review: Areas for questioning	Example
Dimensions of areas	<ul style="list-style-type: none"> Are administrative areas in appropriate locations and their size suitable for their usage?
Circulation	<ul style="list-style-type: none"> Is movement around the building able to be accomplished with ease?
Access throughout building (Vertical/horizontal)	<ul style="list-style-type: none"> Is the building able to be navigated easily? Is it easy to find the lift/stairs/escalators?
Access throughout building (Blind spots)	<ul style="list-style-type: none"> Does the Building have any "blind spots" that are difficult to monitor? Does the Building have good sight lines in corridors and public spaces?
Access throughout building (Delivery of goods)	<ul style="list-style-type: none"> Has the building got facilities provisions to allow the safe handling of the delivery of goods?
Heating/cooling	<ul style="list-style-type: none"> Does the building have any areas that are noticeably cooler or warmer than other areas?
Noise	<ul style="list-style-type: none"> Rooms are adequately sound isolated?

Post-occupancy review: Areas for questioning	Example
Lighting (Natural light)	<ul style="list-style-type: none"> Is lighting sufficient for tasks?
Lighting (Artificial light)	<ul style="list-style-type: none"> Are light switches conveniently located?
Emergency management (Means of escape)	<ul style="list-style-type: none"> Is there adequate signage installed throughout the building that advises occupants how to exit the building?
Emergency management (Evacuation points)	<ul style="list-style-type: none"> Are the evacuation points easily accessible?
Emergency management (Alarm system)	<ul style="list-style-type: none"> Is the alarm system easily identifiable when activated?
Emergency management (Fire equipment)	<ul style="list-style-type: none"> Can you access the fire equipment easily?
Building surfaces/fabrics (External finish (including roof, walls and windows))	<ul style="list-style-type: none"> Are the use of colour and texture appropriate?
Building interior (Walls)	<ul style="list-style-type: none"> Are the wall finishes appropriate for the use of the building? Are there any sharp edges/finishes to the walls?
Building interior (Doors)	<ul style="list-style-type: none"> Do the doors impede on pedestrian traffic?
Building interior (Furnishings/fittings)	<ul style="list-style-type: none"> Are the furnishings and fittings supplied suitable for the use intended?
Building interior (Floors (including work areas and common areas))	<ul style="list-style-type: none"> Are the floor/wall finishes appropriate for the use of the building? Are floor coverings appropriate to the room's/area's intended use?
Storage	<ul style="list-style-type: none"> Is the storage provided appropriate for the intended use and sufficient in size and layout?
Amenities	<ul style="list-style-type: none"> Is the number and size of restrooms adequate throughout the building?
Any hazards not identified	<ul style="list-style-type: none"> Have any OHS hazards not been identified? If so what?

Work area

Post-occupancy review: Areas for questioning	Example
Work station	<ul style="list-style-type: none"> Do you feel your immediate work provides you with enough space to perform your work safely?
Orientation	<ul style="list-style-type: none"> How does the design of the building relate to the orientation to sun path and prevailing wind? Does this create uncomfortable situations while in the work place?
Noise	<ul style="list-style-type: none"> Is there segregation of quiet and noisy areas? Do the spaces within work areas create an 'echo'? Is there excessive externally generated noise?
Lighting	<ul style="list-style-type: none"> Is there adequate lighting within the building? Does the lighting provided to your work area hinder your ability to work? Is the light provided in your work area glare free?

Post-occupancy review: Areas for questioning	Example
Use	<ul style="list-style-type: none"> ▪ How flexible is the building in accommodating user needs?
Heating/cooling	<ul style="list-style-type: none"> ▪ How well has the heating system in the building performed? ▪ Are you happy with the overall comfort of the building environment?
Ventilation	<ul style="list-style-type: none"> ▪ How is the building meant to be ventilated?
Colour	<ul style="list-style-type: none"> ▪ Do you feel that the colours create a feeling of warmth and comfort?
Storage	<ul style="list-style-type: none"> ▪ Is there adequate personal storage provided to prevent belongings being left around and creating trip hazards? ▪ Is there adequate storage facilities provided for work related supplies and systems?
Movement	<ul style="list-style-type: none"> ▪ Are there areas that allow persons to 'assemble' or move to one side at potential bottlenecks?
Any hazards not identified	<ul style="list-style-type: none"> ▪ Can you give examples of things which can hinder effective working? ▪ Can you give examples of things which usually work well?

Document D3.3 Post-occupancy review (POR) report template

A POR is a way of providing feedback about the performance of completed buildings/facilities to the planning and design and procurement stages of future construction projects. The information from a POR can be used for informing future projects, either about the process of project delivery or the technical performance of the building/facility.

Short-term benefits of POR:

- supports identification of and finding solutions to problems in buildings
- facilitates timely response to user needs/concerns
- enables improvement of OHS performance based on 'in-use' feedback
- improves understanding of the OHS implication for buildings/facilities of changes, for example budget cuts or use of space
- can inform future construction project decision making.

Medium-term benefits of POR:

- optimises built-in capacity for building/facility adaptation to organisational change and growth
- helps when finding new uses for existing buildings/facilities
- increases accountability for building/facility performance by designers.

Longer term benefits of POR:

- enables long-term improvements in building/facility performance
- contributes to improvement in design quality
- enables more strategic management of built assets.

Below is an example of a report. The information in it would be the result of the feedback gathered from the questionnaire (see document D3.2).

Area	Strengths	Weaknesses	Action
Meeting Room	Quality and abundance of natural light	Chairs and seating do not meet ergonomic requirements	Undertake OHS risk assessment to determine extent of risk
First floor offices	Clear emergency signage	Inadequate ventilation design and lack of solar shading leading to overheating.	Review ventilation design and assess the need for solar shading
Foyer	Open space, clear signage	Slippery floor surface: slip/trip hazard, especially when wet	Obtain quotation for non-slip coverings.

Document D4.1 Plant/safety systems handover procedure

What is plant?

Plant is defined as any machinery, equipment or appliance. It includes things such as computers, scaffolding, lifts and escalators, tractors, hand trolleys, cranes, commercial fishing nets, arc welding gear, electric drills and pressure equipment such as air receivers and boilers.

What is a safety system?

For the purposes of this document a safety system (or an essential safety measure) is a system provided for the safety of people in a building or place of public entertainment.

The method of plant handover should be recorded, from the initial checking and testing to the takeover by the client. The OHS requirements for plant to be installed in the building/facility should have been identified during the design OHS reviews (see document B2.3 in booklet three).

At the completion stage, a model client should ensure that all commissioning certificates, operating instructions and maintenance instructions for installed plant are obtained. A checklist of items to be considered has been developed. Sometimes, plant and safety systems are commissioned in phases. Records clearly identifying items of plant and its respective location should be maintained to keep track of which items have and which have not been accepted.

The following are examples of some of the issues to be considered in the handover of plant/safety systems:

Plant and Safety Systems Handover: Have the following been obtained?	Yes / No
Details covering the extent of the commissioning, that is, is it all plant or is it only certain areas?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Copies of any statutory documents, for example certificate of occupancy/final certificate from the relevant building surveyor	<input type="checkbox"/> Yes <input type="checkbox"/> No
Essential safety measures report from the building surveyor	<input type="checkbox"/> Yes <input type="checkbox"/> No
Ensuring that all plant/building safety systems installed have been issued with a commissioning certificate	<input type="checkbox"/> Yes <input type="checkbox"/> No
Ensuring that any plant/building safety systems that require registration have been identified and issued with current certificates	<input type="checkbox"/> Yes <input type="checkbox"/> No
Test certification displayed on equipment as required by regulation	<input type="checkbox"/> Yes <input type="checkbox"/> No
Confirmation that plant/building safety systems have been installed as per the drawings and specifications, and that all OHS requirements have been adhered to; and if any changes have been made, details of alternative arrangements (including OHS aspects) are to be provided to the agency for review before final signoff	<input type="checkbox"/> Yes <input type="checkbox"/> No
Details of spare parts lists as recommended by vendor	<input type="checkbox"/> Yes <input type="checkbox"/> No
Taking receipt of plant spare parts and supplies	<input type="checkbox"/> Yes <input type="checkbox"/> No
Operating procedures for safe use of plant, including any special OHS requirements when working on or around plant, for example the need to wear hearing protection and warning devices	<input type="checkbox"/> Yes <input type="checkbox"/> No
Maintenance details on all plant — while some plant operating manuals may have maintenance details included, there may be other plant in which this information is not included	<input type="checkbox"/> Yes <input type="checkbox"/> No
Maintenance contractors nominated maintenance point of contact for preventive and breakdown maintenance during defects liability period	<input type="checkbox"/> Yes <input type="checkbox"/> No
Warranty details	<input type="checkbox"/> Yes <input type="checkbox"/> No
Details of the training to be provided by the contractor to agency staff on any plant and building systems	<input type="checkbox"/> Yes <input type="checkbox"/> No
Log/maintenance books for all plant and services	<input type="checkbox"/> Yes <input type="checkbox"/> No
Keys/codes to all equipment	<input type="checkbox"/> Yes <input type="checkbox"/> No
Emergency shutdown procedures	<input type="checkbox"/> Yes <input type="checkbox"/> No

Plant and Safety Systems Handover: Have the following been obtained?	Yes / No
Any applicable materials safety data sheets	<input type="checkbox"/> Yes <input type="checkbox"/> No
A copy of a risk assessment undertaken prior to commissioning of plant and safety systems (see document 4.2)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Clear identification of any residual risks. These should be forwarded on to the occupants, facilities manager and building owner, if any of these stakeholders differ from the agency	<input type="checkbox"/> Yes <input type="checkbox"/> No
Ensuring final clean up, completion of painting and insulation work or other items have been completed.	<input type="checkbox"/> Yes <input type="checkbox"/> No

Document D4.2 Plant/safety systems risk review checklist

Although every effort should have been made to ensure appropriate plant was selected and that the design of plant installations and services took OHS into consideration, OHS issues may still arise during the commissioning stage of a construction project. For example, unforeseen OHS issues can arise as a result of:

- modifications made due to technological improvements, experience from other construction projects, changes in personnel, availability of plant/supply etc
- access to plant: not all work is completed when plant is to be commissioned and one part of the building may be available for occupation while another part of the building is still undergoing works
- there may be parts of the project that can only be detailed at a late stage.

Plant can be hazardous. An OHS risk assessment should therefore be undertaken to ensure that the plant is safely installed and ready for operation. The table below provides guidance on the issues that should be considered before commissioning plant. Issues identified should be subject to a risk assessment and recorded in the project risk register.

Hazard - Entanglement	Yes/No	If yes, what action needs to be taken to make it safe?
Can anyone's: <ul style="list-style-type: none"> ▪ hair, clothing, gloves, tie, jewellery, cleaning brushes, rags or other materials become entangled with moving parts of the plant, or materials in motion? 		

Hazard - Crushing	Yes/No	If yes, what action needs to be taken to make it safe?
Can anyone be crushed due to: <ul style="list-style-type: none"> ▪ material falling off the plant? ▪ uncontrolled or unexpected movement of the plant or its load? ▪ lack of capacity for the plant to be slowed, stopped or immobilised? ▪ the plant tipping or rolling over? ▪ parts of the plant collapsing? ▪ coming in contact with moving parts of the plant during testing, inspection, use, maintenance, cleaning or repair? ▪ being thrown off or under the plant? ▪ being trapped between the plant and materials, fixed structures or ongoing construction works? ▪ other factors? 		

Hazard - Cut, stabbed or punctured	Yes/No	If yes, what action needs to be taken to make it safe?
Can anyone be cut, stabbed or punctured due to: <ul style="list-style-type: none"> ▪ coming into contact with sharp or flying objects? 		

Hazard - Cut, stabbed or punctured	Yes/No	If yes, what action needs to be taken to make it safe?
<ul style="list-style-type: none"> coming into contact with moving parts of the plant during testing, inspection, operation, maintenance, cleaning or repair of the plant? negative interaction with ongoing construction works in the area? work pieces being ejected? the mobility of the plant? uncontrolled or unexpected movement of the plant? other factors? 		

Hazard - Shearing	Yes/No	If yes, what action needs to be taken to make it safe?
<p>Can anyone's body parts be:</p> <ul style="list-style-type: none"> sheared between two or more parts of the plant, or between a part of the plant and a work piece, structure or construction works? 		

Hazard - Friction	Yes/No	If yes, what action needs to be taken to make it safe?
<p>Can anyone be burnt, gain abrasions etc due to:</p> <ul style="list-style-type: none"> contact with moving parts or surfaces of the plant, or material handled by the plant? 		

Hazard - High pressure fluid	Yes/No	If yes, what action needs to be taken to make it safe?
<p>Can anyone come into contact with:</p> <ul style="list-style-type: none"> fluids under high pressure in normal use, in the instance of plant failure? 		

Hazard - Striking	Yes/No	If yes, what action needs to be taken to make it safe?
<p>Can anyone be struck by moving objects due to:</p> <ul style="list-style-type: none"> uncontrolled or unexpected movement of the plant or material handled by the plant? work pieces being ejected? mobility of the plant? other factors? 		

Hazard - Electrical	Yes/No	If yes, what action needs to be taken to make it safe?
<p>Can anyone be injured by electrical shock or burnt due to:</p> <ul style="list-style-type: none"> the plant contacting live electrical conductors? plant working close to electrical conductors? overload of electrical circuits? damage to electrical leads and plugs? the machine being operated in a wet or dusty 		

Hazard - Electrical	Yes/No	If yes, what action needs to be taken to make it safe?
<ul style="list-style-type: none"> environment? no Residual Current Devices being used? other factors? 		

Hazard - Explosion	Yes/No	If yes, what action needs to be taken to make it safe?
Can anyone be injured by explosion of: <ul style="list-style-type: none"> gases, vapours, liquids, dusts or other substances triggered by the operation of the plant or by nearby operations? 		

Hazard - Slipping, tripping and falling	Yes/No	If yes, what action needs to be taken to make it safe?
Can anyone using the plant, or located in the vicinity of the plant, slip, trip or fall due to: <ul style="list-style-type: none"> uneven or slippery work surfaces? poor housekeeping? obstacles being placed in the vicinity of the plant? other factors? 		

Hazard - Falls	Yes/No	If yes, what action needs to be taken to make it safe?
Can anyone fall from a height due to: <ul style="list-style-type: none"> lack of a proper work platform? lack of proper stairs or ladders? lack of guardrails or other suitable edge protection? unprotected holes, penetrations or gaps? poor floor or walking surfaces, such as a lack of a slip-resistant surface? steep walking surfaces? Insufficient or inappropriate supporting structure? other factors? 		

Hazard - High temperature or fire	Yes/No	If yes, what action needs to be taken to make it safe?
Can anyone: <ul style="list-style-type: none"> come into contact with objects at high temperature? be injured by fire? access fire protection equipment required for the area? 		

Hazard - Temperature (thermal comfort)	Yes/No	If yes, what action needs to be taken to make it safe?
<p>Can anyone suffer ill-health due to:</p> <ul style="list-style-type: none"> ■ exposure to high or low temperatures from plant? 		

Hazard - Suffocation	Yes/No	If yes, what action needs to be taken to make it safe?
Can anyone be suffocated due to: <ul style="list-style-type: none"> ▪ lack of oxygen, or atmospheric contamination due to plant operations or plant/services location? 		

Hazard - Ergonomics	Yes/No	If yes, what action needs to be taken to make it safe?
Can anyone be injured due to: <ul style="list-style-type: none"> ▪ repetitive body movements? ▪ constrained body posture or the need for excessive effort? ▪ design deficiency causing physical or personal stress? ▪ inadequate or poorly placed lighting? ▪ lack of consideration given to human error or human behaviour? ▪ mismatch of the plant with human traits and natural limitations? ▪ other factors? 		

Hazard - Access/egress	Yes/No	If yes, what action needs to be taken to make it safe?
Can anyone be injured in any way because: <ul style="list-style-type: none"> ▪ there is insufficient room to move around the machine when it is in operation? ▪ there is insufficient room to move around the machine when commissioning, maintenance, repairs or decommissioning occur? ▪ access available to all essential services? ▪ any other reasons? 		

Hazard - Other hazards	Yes/No	If yes, what action needs to be taken to make it safe?
Can anyone be injured or suffer ill-health from exposure to: <ul style="list-style-type: none"> ▪ chemicals? ▪ toxic gases or vapours? ▪ fumes? ▪ dust? ▪ noise? ▪ vibration? ▪ radiation? ▪ other factors? 		

Date:	
Item of plant being reviewed:	
Location:	
Manufacturer's details:	
Names of risk assessment team:	Name: Signature: Name: Signature: Name: Signature: Name: Signature:
List of risks identified that need to be entered into the project risk register:	

Document D5.1 Selection criteria for maintenance/cleaning service providers

Australian Government agencies acting as model clients should establish and communicate expectations of high OHS standards in the maintenance of their facilities. Model clients can have a significant impact on OHS in maintenance operations by:

- selecting safety competent and conscious maintenance contractors
- setting OHS performance goals and objectives for maintenance contracts
- closely monitoring the OHS aspects of maintenance operations
- holding the maintenance contractors accountable for their OHS performance.

Contractor details
Company/business name: Contact person: Position: Phone: Mobile: Fax: Email: Date: Brief description of contract:

Insurance requirements

Insurance requirement	Not required	Required	Sighted	Suitable coverage	Expiry date	Policy Number
Workers compensation						
Professional indemnity						
Public Liability						

Contractor OHS management system — assessment criteria

OHS policy	Viewed and accepted? Yes/No	Comments
<ul style="list-style-type: none"> Maintenance contractor has an OHS policy. Does it reflect the agency's own OHS commitment? 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Responsibilities for OHS are evident. 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Company's safety management system is adequate. The contractor's OHS management system must be evaluated prior to the contract being awarded. 	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Project-specific requirements	Viewed and accepted? Yes/No/NA	Comments
<ul style="list-style-type: none"> A list of equipment to be included in the maintenance program has been developed. This list could be used effectively to help establish the maintenance history program and to determine the necessary parts required to maintain equipment. 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<ul style="list-style-type: none"> Contractor is aware of the characteristics, such as use, location and other issues specific to the building, plant and systems. 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<ul style="list-style-type: none"> Contractor has adequate resources dedicated to the effective implementation of the contract requirements and expectations. 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<ul style="list-style-type: none"> Arrangements for safety communication and consultation between maintenance contractor, the agency and the building's occupants are adequate. 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<ul style="list-style-type: none"> A system for assessing maintenance status is developed and adequate. The purpose of maintenance goals is to improve plant and systems performance in improving maintenance performance and measuring maintenance effectiveness. 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<ul style="list-style-type: none"> A program for planned major activities is developed. This should reflect the OHS KPIs and targets set by the agency. 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

Company performance	Viewed and accepted? Yes/No/NA	Comments
<ul style="list-style-type: none"> Accident figures have been provided for the past three years indicating total employees, fatalities and reportable accidents. These are acceptable to the agency. 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<ul style="list-style-type: none"> Details of any prosecutions, enforcement or improvement notices for breaches of health and safety legislation over the past three years have been submitted. 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

Hazard management	Viewed and accepted? Yes/No	Comments
<ul style="list-style-type: none"> Procedure is evident for hazard Identification and risk assessment. 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Procedure is evident for site safety management planning. 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Procedure is evident for safe work procedures. 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Maintenance contractor has acknowledged inherent OHS risks passed on by agency. 	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Training and competency	Yes/No	Comments
<ul style="list-style-type: none"> Contractor has displayed knowledge and experience of plant and systems applicable to the contract. 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Procedure is evident for site induction (applicable to the contractors' employees). 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Procedure is evident for ensuring employees have licences and certifications required by legislation. 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Company-provided personal protective equipment (PPE) and training on proper use is relevant to plant and systems. 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Procedure is evident for specific OHS training needs. 	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Subcontractor management	Yes/No/NA	Comments
<ul style="list-style-type: none"> Criteria are evident for selection of subcontractors based on OHS processes and performance. 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<ul style="list-style-type: none"> Procedure is evident for subcontractor site induction. 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<ul style="list-style-type: none"> Procedure is evident for ensuring subcontractor and subcontractor employees have licences and certifications required by legislation. 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

Evaluation

Contractor meets criteria: ☐ Yes ☐ No

Contractor advised of information required to meet criteria: ☐ Yes ☐ No

Evaluation completed by:

Name:

Position:

Date:

Acknowledged and agreed:

Name:

Manager/Director

Date:

Completion stage review template

This stage review template can be used to verify that the completion stage KMAs have been implemented before the final 'signing off' for the project. Where appropriate, outstanding actions in relation to the KMAs can be recorded and implemented prior to 'sign off.'

Completion stage review

D1 Evaluate project performance	Assessment	Actions
<ul style="list-style-type: none"> completion review report completed within a reasonable period after project completion recorded results in an appropriate repository completion review reports circulated to all project participants to enable them to improve their OHS management processes and OHS performance in future construction projects 		
D2 Perform project completion review	Assessment	Actions
<ul style="list-style-type: none"> record of all the identified safety hazards in the project risk register (refer to document A5.2 in booklet 2) — the risk register is to be continually monitored and maintained an assessment of the building is to be conducted prior to hand over of the building to the agency 		
D3 Perform post-occupancy review	Assessment	Actions
<ul style="list-style-type: none"> a review should be conducted no earlier than 3 months after occupation, but no later than 12 months — this will allow users to become familiar with the building recording of newly identified risks in the risk register 		
D4 Perform final review of plant/equipment	Assessment	Actions
<ul style="list-style-type: none"> identification and registration of all required plant/equipment as per the requirements of the applicable state/territory legislation instructions on the safe use/maintenance of all plant and equipment installed 		
D5 Select safe maintenance providers	Assessment	Actions
<ul style="list-style-type: none"> selection decisions based on OHS competence/performance 		

Further information

This booklet is the fifth in a series about clients promoting safe construction. Further information about the Model Client Framework is available from the Office of the Federal Safety Commissioner.

FSC Assist Line: 1800 652 500

Internet: www.fsc.gov.au

Email: ofsc@jobs.gov.au

ISBN (set) 978-0-642-32687-4 (print)
978-0-642-32693-5 (online)
ISBN 978-0-642-32675-1 (print)
978-0-642-32681-2 (online)

© Commonwealth of Australia 2008

This work is copyright. You may download, display, print and reproduce this material in unaltered form only (retaining this notice) for your personal, non-commercial use or use in your organisation. Apart from any use as permitted under the *Copyright Act 1968*, all other rights are reserved.

The Australian Government, its employees, officers and agents do not accept any liability of the results of any action taken in reliance upon, based on or in connection with this document. To the extent legally possible, the Australian Government, its employees, officers and agents, disclaim all liability arising by reason of any breach of any duty in tort (including negligence and negligent misstatement) or as a result of any errors and omissions contained in this document.

Acknowledgements

The authors would like to acknowledge that the project process map is based upon *A Generic Guide to the Design and Construction Process Protocol* developed by Kagioglou et al. (1998), The University of Salford, UK. Boxed and shaded descriptions of project phases are quoted directly from this Protocol. The Office of the Federal Safety Commissioner would like to thank Dr Helen Lingard, Dr Nick Blismas, Ms Tracy Cooke and Mr David Jellie from the School of Property, Construction and Project Management, RMIT University, who contributed to the development of this resource.