

Master Specification Part PC-PL4

Constructability Assessments

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PC-PL4 Constructability Assessment

1 General

- a) This Master Specification Part sets out the requirements for constructability assessments including:
 - i) the constructability assessment requirements, as set out in section 2;
 - ii) the constructability workshop requirements, as set out in section 3; and
 - iii) the constructability comments and issues register and report requirements, as set out in section 4.
- b) The requirements of this Master Specification Part apply to the planning phase and pre-delivery phase of a Project as set out in the Contract Documents.

2 Constructability assessment

2.1 Objective of the constructability assessment

- a) As part of the constructability assessment, the Contractor must endeavour to optimise the construction process of the Project, the Works and Temporary Works.
- b) The Contractor must ensure that the constructability assessment identifies construction considerations as part of the planning phase, pre-delivery phase and delivery phase (as applicable).
- c) Outcomes of the constructability assessment must be used to assist in setting the design direction and ensure construction issues and constraints are considered in the Concept Design and Design Documentation development.

2.2 Scope of the constructability assessment

- a) The scope of a constructability assessment is limited to an assessment of the design material including drawings and supporting information.
- b) The scope of a constructability assessment does not include:
 - i) a review of the contract or any commercial arrangements;
 - ii) community and stakeholder consultation; or
 - iii) a review of the procurement approach.
- c) The Contractor must demonstrate within the constructability assessment the number of viable strategies to construct the Project, the Works and Temporary Works, as set out in the Contract Documents.
- d) The constructability assessment must include:
 - i) a WHS assessment, including probability and consequence, which considers the following as a minimum:
 - A. safety of workers during construction;
 - B. safety of road users and public during construction; and
 - C. safety of undertaking commissioning, operations and maintenance activities;
 - ii) consideration of the following:
 - A. Project context (location and background);

- B. the Project objectives and outcomes (client business requirements, as set out in the Contract Documents);
- C. lessons learned from previous projects; and
- D. environmental and sustainability issues;
- iii) construction optimisation and value engineering which as a minimum considers the following:
 - A. economies of scale;
 - B. stages and complexity;
 - C. number of work fronts;
 - D. procurement lead time and efficiencies; and
 - E. inclement weather risks and mitigation;
- iv) the need to maintain network operational performance which as a minimum considers the following:
 - A. temporary traffic management plans, including for marine, rail, road and pedestrian; and
 - B. Temporary Works required to manage temporary and construction traffic;
- v) a review of potential constraints on the delivery of the Project, the Works or Temporary Works, which as a minimum considers the following:
 - A. land acquisition;
 - B. Utility Services;
 - C. procurement of materials and goods; and
 - D. traffic, marine, railway and pedestrian requirements;
- vi) opportunities to minimise community and small business impact;
- vii) a review of the Project footprint, which as a minimum considers the following:
 - A. stockpiling and management of spoil;
 - B. site facilities and laydown requirements; and
 - C. land acquisition;
- viii) assessment and analysis of:
 - A. Project logistics, including remote projects;
 - B. Project schedule and milestones;
 - C. value management assessments and recommendations; and
 - D. the outcomes of constructability workshops in accordance with section 3; and
- ix) constructability planning in accordance with section 2.3.
- e) The constructability assessment must assess any opportunities to change the design or approach to optimise construction activities and increase value for money including:
 - i) reducing construction hazards and risk;
 - ii) construction efficiencies;
 - iii) reducing Project scope including avoiding Utility Service relocations and adopting the re-use of existing assets;

- iv) reducing Project scheduling risks, including inclement weather risks;
- v) challenging assumptions, Project risks and their severity, constraints, construction approaches and strategies; and
- vi) reducing the impact to small businesses and the community.

2.3 Constructability planning

- a) Constructability planning must be undertaken as part of the constructability assessment to identify and plan the construction activities and the resources required to successfully deliver the Project, the Works and Temporary Works.
- b) Constructability planning must incorporate:
 - i) an overall strategy to deliver the Project, the Works and Temporary Works;
 - ii) identification of major hazards and risks;
 - iii) principles to apply in design decisions and design development; and
 - iv) a review of Site investigations provided by the Principal to identify Site conditions and manage construction risks, including:
 - A. ground investigations, including contamination, pavement, geotechnical and hydrological investigations;
 - B. engineering survey;
 - C. heritage assessment, including Aboriginal and non-Aboriginal;
 - D. environmental investigations, including vegetation, noise, vibration, air and water quality; and
 - E. Utility Service information.

2.4 Competency

- a) The Contractor must ensure that constructability assessments are prepared by an entity listed as a supplier for the provision of constructability services within the Preferred Supply Arrangement Estimating, Scheduling, and Constructability companies register (https://dit.sa.gov.au/contractor_documents/prequalification).
- b) The Contractor must ensure that the entity undertaking the constructability assessments only provide services for appropriate and/or related service categories for which they have been appointed to the Preferred Supply Arrangement Estimating, Scheduling, and Constructability companies register and utilise only those personnel from their organisation that have been accepted for use under this arrangement.
- c) Alternatively, the constructability assessment may be undertaken by a supplier with an appropriate prequalification under the Roadworks and Bridgeworks (National Prequalification System) (https://dit.sa.gov.au/contractor_documents/prequalification) and utilising personnel experienced in the applicable service category.

3 Constructability workshops

3.1 General

- a) When specified in the Contract Documents, the Contractor must hold constructability workshops to assess constructability issues.
- b) Prior to the constructability workshop required by section 3.2a), all attendees must examine the current design documentation and attend a Site visit in accordance with section 3.3 to gain an understanding of the Project.

- c) The Contractor must develop a workshop agenda for each constructability workshop which must be developed based on a risk-based approach to identify hazards and risks to be managed and mitigated through the Project lifecycle.
- d) The Contractor must ensure that the constructability workshop focuses on the constructability and identification of issues or opportunities to be addressed within the Project documentation (which may include design documentation, risk registers, WHSMP and Contract Program).
- e) The Contractor must document the outcome of the constructability workshop in a constructability register and a report (see section 4) detailing the issues, recommendations and actions.

3.2 Workshop attendees

- a) The workshop attendees must be determined on a Project specific basis and be based on the specifics of the Project, the Works and the Temporary Works, and the stage in the Project lifecycle.
- b) The workshop must include Principal's representatives from:
 - i) Transport Planning (Project Manager – Planning);
 - ii) Transport Project Delivery (Project Manager – Delivery); and
 - iii) rail, marine and/or road operations (as applicable).
- c) Depending on the specifics of the Project, the Works and the Temporary Works, the constructability workshops may include additional attendees including:
 - i) technical services (e.g. road design, structures design, pavement design, environmental, etc.);
 - ii) procurement and contracting;
 - iii) community engagement;
 - iv) Utility Service Authority representatives; and
 - v) local council representatives.

3.3 Site visit

The Contractor must ensure that it and all its relevant personnel are familiar with the Site prior to constructability workshops, including visiting the Site to gain an understanding of the Site context and Project specific issues.

4 Constructability comments and issues register and report

The Contractor must document the outcomes of the constructability assessment and workshops in a constructability comments and issues register and constructability report in accordance with the requirements of this section 4.

4.1 Constructability comments and issues register

- a) The Contractor must document the constructability comments and issues identified through the constructability assessment at different stages of the Project lifecycle within a constructability comments and issues register.
- b) The Contractor must review and respond to the constructability comments and issues register with the Principal and the Principal's nominees.
- c) The Contractor must update the constructability comments and issues register throughout the Project lifecycle with the outcomes aligning with the Project documentation including:
 - i) design documentation;

- ii) project management documentation;
 - iii) project program; and
 - iv) risk register.
- d) The Contractor must issue the constructability comments and issues register with each submission of the constructability report as required by section 4.2.

4.2 Constructability report

- a) The Contractor must develop a constructability report which must be updated during the Project lifecycle required in the Contract Documents, commensurate with planning, design and delivery activities.
 - b) The constructability report must include:
 - i) a description of the constructability assessment undertaken and documents reviewed;
 - ii) outcomes of the constructability assessment;
 - iii) construction constraints and issues;
 - iv) principles to apply in design development;
 - v) construction risk and opportunities register; and
 - vi) recommendations to be incorporated within the design to optimise the construction of the Project, the Works and Temporary Works.
 - c) The level and detail of the constructability report must be commensurate with the Project size, scope and risk, it must not exclude any material Project issues.
 - d) The Contractor must electronically submit a draft version of the constructability report to the Principal via email or the Principal's nominated IMS. The Contractor must not to issue the final version of the constructability report to the Principal without the Principal's approval under PC-PL1 "Framework for Planning Studies". Where the Principal has provided the Contractor with comments or feedback regarding the draft constructability report, the Contractor must address all such comments and feedback in the final constructability report.
 - e) If the Contract Documents require the Contractor to perform design services with respect to the Project, in addition to undertaking the constructability assessment, then in addition to the requirements of PC-EDM1 "Design Management", the draft constructability report must be submitted as part of the Preliminary Design Documentation.
 - f) The final version of the constructability report accounting for all comments on the draft constructability report must be submitted electronically to the Principal via email or the Principal's nominated IMS for review and for approval as an 'Issued for Use' deliverable.
 - g) If the Contract Documents require the Contractor to perform design services with respect to the Project, in addition to undertaking the constructability assessment, then in addition to the requirements of PC-EDM1 "Design Management" the final constructability report must be submitted as part of the Final Design Documentation.
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