

BUILDING INFORMATION MANAGEMENT IMPLEMENTATION PROCESS (PO42)



Government
of South Australia
Department for Infrastructure
and Transport

The Department of Infrastructure and Transport (DIT) Building Projects (BP) division's current position is to support the construction industry transition to a greater use of Digital Engineering and Building Information Management (BIM) by supporting the adoption of the Australian Standard AS ISO 19650: 1 and 2, the international standard for managing information over the whole life cycle of a built asset using building information modelling.

BIM APPLICATIONS

DIT BP will review each project using a BIM requirements criteria matrix, assessing the opportunities and value of using either Core BIM (3D BIM Modelling) or project specific Exchange Information Requirement (EIR) in consultation with client agencies, to meet project specific requirements.

As part of Infrastructure Delivery, DIT BP will set clear project specific BIM information requirements for each project based on the specific government agencies asset information requirements.

EXCHANGE INFORMATION REQUIREMENTS (EIR)

In accordance with AS ISO 19650:2, an EIR will be prepared for relevant DIT projects based on a NATSPEC EIR Template.

The DIT EIR is based on an amended NATSPEC EIR template, defining project and other client information requirements for a project delivered using BIM. The EIR forms part of the Lead Professional Services Contractor tender documents.

The EIR defines which models need to be produced at each project stage, together with the required level of detail and definition. BIM models are key deliverables, contributing to effective design decision making at key stages of the project.

The content of the EIR covers four areas:

- Project Detail: BIM project goals, objectives, and BIM applications.
- Commercial: BIM deliverables and information purposes.
- Management: BIM management processes to be adopted.
- Technical: Software platforms and definitions of levels of detail.

The EIR will include both the Project Information Requirements (PIR), Asset Information Requirements (AIR) for the project, Core BIM (3D Modelling) and Project Specific Building Information Management requirements.

CORE 3D BIM MODELLING REQUIREMENTS

Core BIM 3D modelling requirements included in the DIT Building Projects - BIM Requirements template represent current 'best practice' standard in 3D modelling of architectural, structural and building services. It utilises clash detection of all building elements, energy modelling for Building Code of Australia (BCA) Section J as well as other specific modelling uses and represents the baseline core 3D BIM requirements for all projects.

PROJECT SPECIFIC BIM INFORMATION MANAGEMENT AND 3D MODELLING REQUIREMENTS

Additional project specific information management and 3D Modelling requirements are included in the EIR, specifically relating to the project. These are likely to include more detailed 3D modelling of specialist areas and elements, advanced energy modelling, seismic modelling requirements, BIM information and schedules to meet DIT project completion requirements. This will provide an 'as constructed' Project Information Model (PIM) as the bases for an ongoing Asset information Model (AIM) for Facilities Management (FM) maintenance and strategic asset management purposes.

BIM TIER LEVEL CAPABILITIES

DIT Building Projects note that not all Delivery Teams are at the same level of BIM capability or maturity to meet the Building Information Management EIR requirements for AS ISO 19650: 1 and 2 compliances.

Therefore, for DIT Building Projects Capital Works projects the following BIM Capability Tier Levels have been identified as follows:

- BIM Tier 1 - Project value up to \$5 million (Small scale simple-conventional buildings where the value of BIM is clearly demonstrable.
- BIM Tier 2 - Project value between \$5 million to \$15 million (Medium - medium scale / complexity buildings)
- BIM Tier 3 - Project value between \$15 million to \$250 million (large scale, complex buildings)
- BIM Tier 4 - Project value in excess of \$250 million (very large scale, very complex buildings requiring specialist BIM applications)

For each BIM Tier, the Lead Professional Service Contractors (LPSC) and Discipline Professional Service Contractors (DPSC) will be required to meet the following BIM Capabilities requirements summaries in the following Table.

Summary of DIT Prequalification Level and Associated BIM Tier Capability Levels

LPSC/ DPSC	Description	Typical Project Value	DIT BIM Tier Level	ACIF BIM Capability Level	Description (based on ACIF BIM Knowledge and Skills Framework)
PSC Level 1	Simple - conventional buildings, small scale	Up to \$5 Million	1	1 to 2	Practical application with a basic level of competency and general knowledge of BIM, AS ISO 19650 and its fundamental meaning in a technical sense.
PSC Level 2	Medium - medium scale / complexity buildings	Up to \$15 Million	2	3	Practical knowledge and application proficient in knowledge of BIM, AS ISO 19650 requirements from organisations and project teams, with a demonstrated proficiency and application of Building Execution Plans (BEP), Common Data Environment (CDE), and delivery of Federated 3D Modelling applications.
PSC Level 3	Complex - large scale, complex buildings	Up to \$250 Million	3	4	Detailed knowledge/theory and application proficient in knowledge of BIM, AS ISO 19650 requirements from multiple organisations and project teams, with a demonstrated high proficiency and application of Building Execution Plans (BEP), Common Data Environment (CDE), and delivery of Federated 3D Modelling applications
	Complex - large scale, complex buildings	Excess of \$250 Million	4	5	Specialist /Authority level knowledge/theory and applications proficiency with a demonstrated expert understanding of BIM, AS ISO 19650 proficiency and use of BIM application in large scale very complex projects with multiple BIM teams, complex BEP, Common Data Environments and multiple complex Federated 3D Modelling and data information requirements.

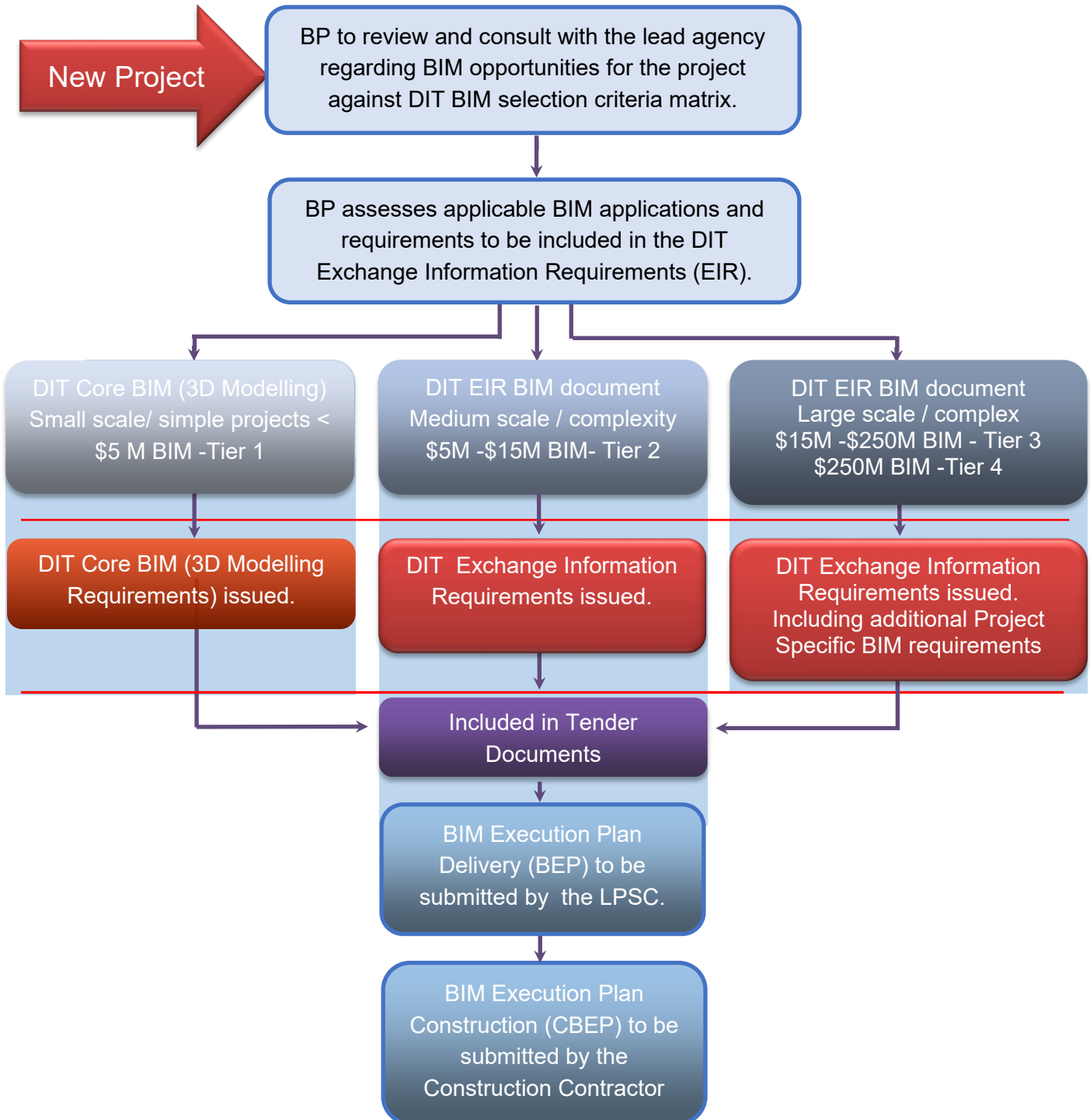
Note: Capability levels and descriptions are based on the Strategic Forum for the Australasian Building and Construction Industry (ACIF) BIM Knowledge and Skills Framework (Introduction and BIM Knowledge and Skills Framework excel spreadsheet descriptor).

Refer to DIT Building Projects Prequalification Application Guidelines- Appendix B: BIM Capability Framework for further details of the required BIM capabilities and requirements for each BIM Tier Level to be assessed as part of the DIT Prequalification application submission.

UPDATED BIM IMPLEMENTATION PROCESS

The following flow chart illustrates DIT Building Projects updated BIM implementation process in alignment with AS ISO 19650:1 and 2.

BIM Implementation Process flow chart



SUMMARY

Building Projects (BP) is keen to increase the participation of Building Information Management in accordance with the principles and concepts outlined in AS ISO 19560: 1 and 2 for DIT Building Projects Capital Works projects.

The DIT Building Projects EIR will include the previous Project Specific and Core BIM brief requirements for alignment with AS ISO 19650:1 and 2.

The Lead PSC will be required to submit for approval a Delivery Building Execution Plan (DBEP) for the design and documentation phases of the project which will form the basis for the Construction Building Execution Plan (CBEP) to be submitted by the General Building Contractor for construction.

Building Projects will continue to investigate the future direction of BIM applications and innovations and gather evidence base data through case studies and pilot projects.

It will continue to consult with all relevant parties, such as DIT Infrastructure, other government agencies and trade and professional bodies.

The above updates the BIM implementation process to align with AS ISO 19650:1 and 2. The guidenote will be reviewed and updated periodically to reflect the current progress in the adoption of BIM International standards and practice.

Contact

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SUPERVISING ARCHITECT

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REVISION	CHANGE DESCRIPTION	DATE	PREPARED	REVIEWED	APPROVED
1	Draft for Review	12/06/2024	Ralph Hems		
2	Updated	25/11/2024	Ralph Hems		
3	Updated Template	07/07/2026	Ralph Hems		