APPENDIX E
PROCUREMENT MODEL CONSIDERATIONS

DIGITAL GUIDANCE SUITE:
AOTEAROA | NEW ZEALAND 2023

CONSTRUCTION SECTOR ACCORD

BIM BETTER BUILDING PROCESS. BUILDING BETTER PERFORMANCE.

New Zealand Institute of Building

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The information below sets out the alignment of the typical project lifecycle phases with the ISO 19650-2 BIM process and some of the typical procurement pathways that are used in the New Zealand construction sector.

1— DESIGN, BID, BUILD

In a traditional Design, Bid, Build (DBB) contract, the project owner (potentially supported by a client BIM advisor) defines information requirements before appointing one or more design consultants for a contract for the design phase to define project options, project designs, and architectural/engineering drawings, models, and other information. These contracts typically have limited involvement beyond practical completion.

Upon completion of the design, the client (potentially supported by a client BIM advisor) further defines information requirements before appointing a constructor for construction activities, including the creation of construction and handover-related information.

A traditional DBB structure allocates risks and liabilities in ways that can inhibit collaboration, model coordination, and issue resolution, and create challenges for the transfer of information between the parties, particularly between the design and construction stages.

The construction contracts are likely to include commissioning activities as well as handover through to operations and maintenance.

Consideration: It is common for a DBB to involve the design and construction stages overlapping; this can create a challenging environment for BIM where construction coordination needs to commence prior to the completion of design (whether base build or subsequent fit-out). It is recommended that when these scenarios occur, the approach be mapped out collaboratively by the client, the design team, the BIM manager, and the construction team to minimise the impact on the project.

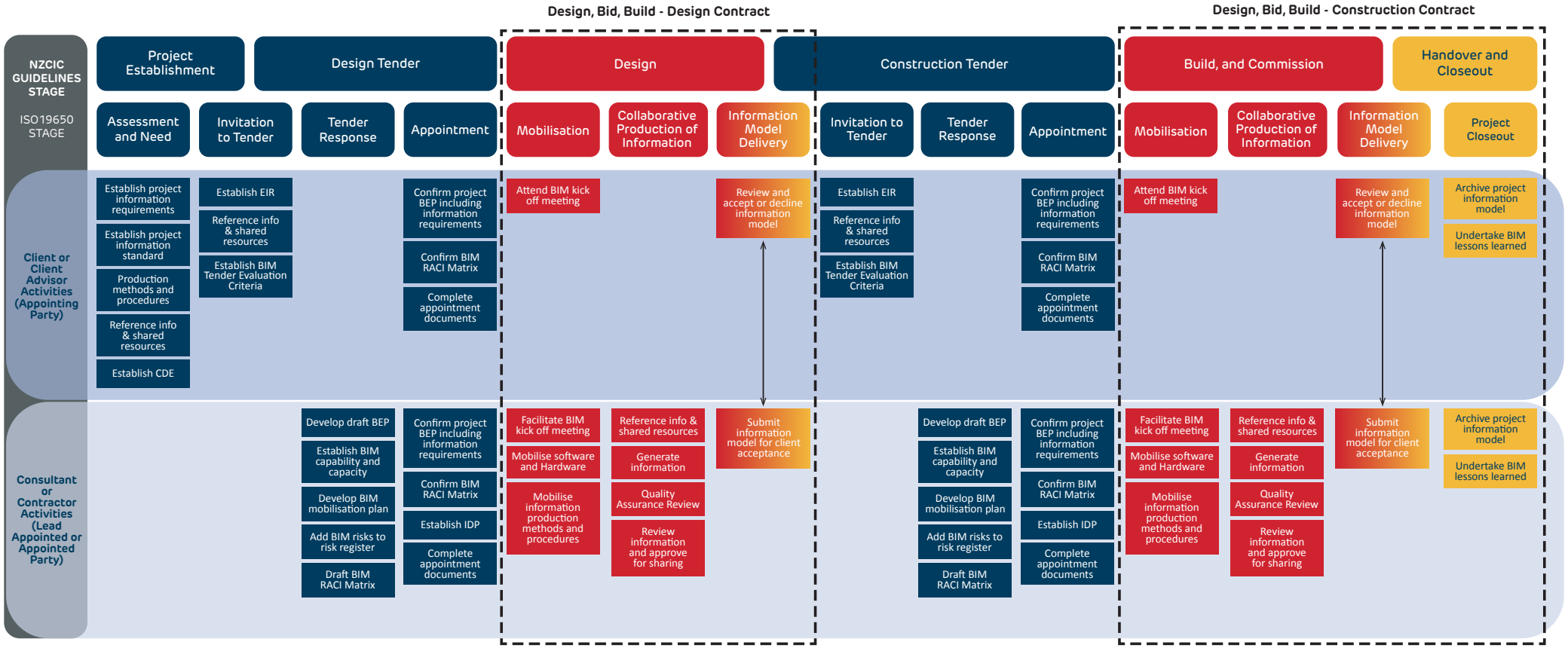
Early Contractor Involvement (ECI): ECI typically follows a two-stage approach. The first stage, tender information, should include an EIR, reference information, shared resources, and early design information (e.g. concept or preliminary design) including all relevant 3D models. The Pre-construction Services Agreement (PSA), which details the services required to be provided by the contractor during the second stage tender, should include BIM-related requirements.

Colour Key:

Establishing Requirements/Tender

Creating Information

Handing Over Information


Design, Bid, Build - Design Contract
Design, Bid, Build - Construction Contract
NZCIC GUIDELINES STAGE
ISO19650 STAGE
Project Establishment
Design Tender
Design
Construction Tender
Build, and Commission
Handover and Closeout
Assessment and Need
Invitation to Tender
Tender Response
Appointment
Mobilisation
Collaborative Production of Information
Information Model Delivery
Invitation to Tender
Tender Response
Appointment
Mobilisation
Collaborative Production of Information
Information Model Delivery
Project Closeout
Client or Client Advisor Activities (Appointing Party)
Establish project information requirements
Establish project information standard
Production methods and procedures
Reference info & shared resources
Establish CDE
Establish EIR
Reference info & shared resources
Establish BIM Tender Evaluation Criteria
Confirm project BEP including information requirements
Confirm BIM RACI Matrix
Complete appointment documents
Attend BIM kick off meeting
Review and accept or decline information model
Establish EIR
Reference info & shared resources
Establish BIM Tender Evaluation Criteria
Confirm project BEP including information requirements
Confirm BIM RACI Matrix
Complete appointment documents
Attend BIM kick off meeting
Review and accept or decline information model
Archive project information model
Undertake BIM lessons learned
Consultant or Contractor Activities (Lead Appointed or Appointed Party)
Develop draft BEP
Establish BIM capability and capacity
Develop BIM mobilisation plan
Add BIM risks to risk register
Draft BIM RACI Matrix
Confirm project BEP including information requirements
Confirm BIM RACI Matrix
Establish IDP
Complete appointment documents
Facilitate BIM kick off meeting
Mobilise software and Hardware
Mobilise information production methods and procedures
Reference info & shared resources
Generate information
Quality Assurance Review
Review information and approve for sharing
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2— DESIGN AND BUILD

A Design and Build (D&B) contract is typically used for commodity (well understood) architecture, engineering, and construction where early confirmation of cost and lower cost is desired by the project owner. It is important for the project owner to have detailed and exacting specifications, otherwise they will retain the risk of scope variations.

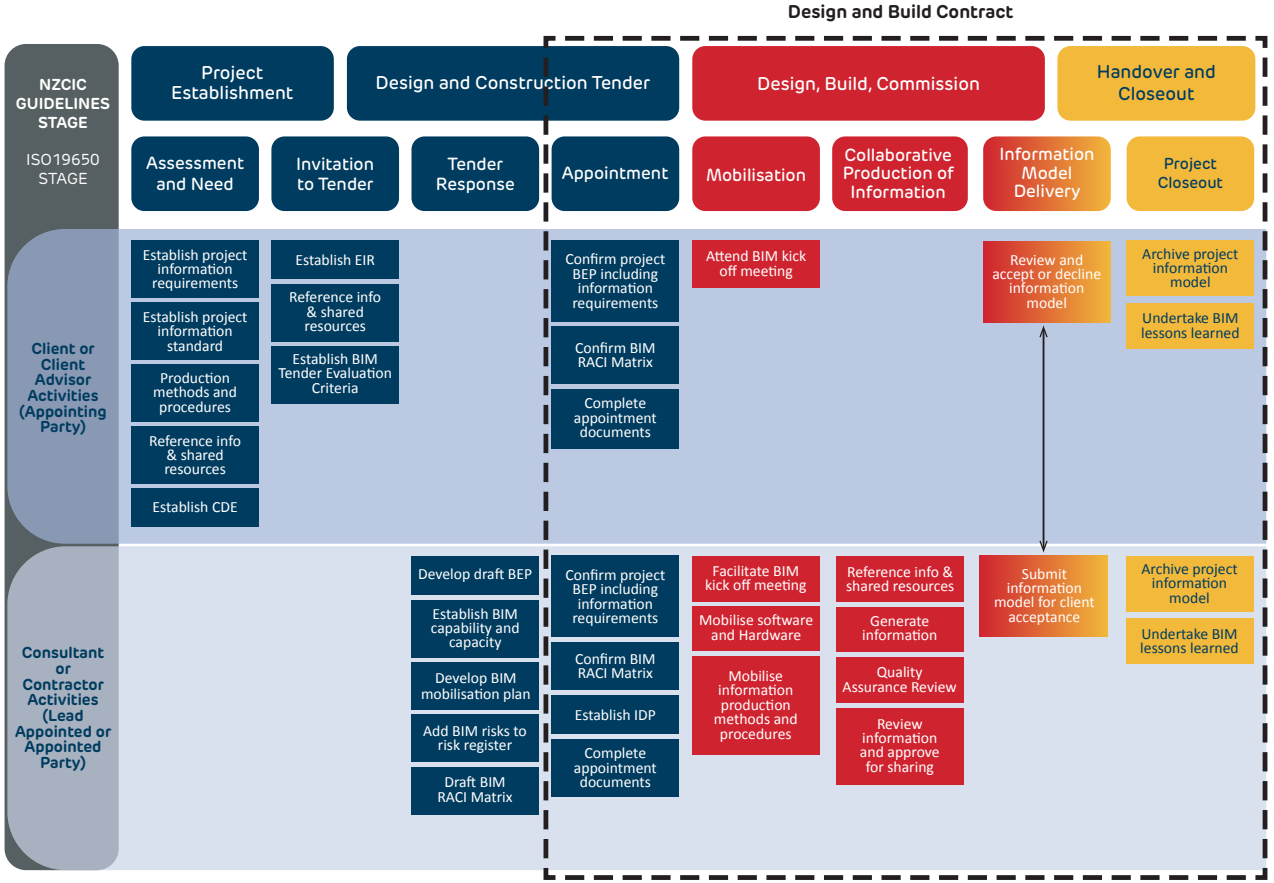
In a D&B contract, the project owner (potentially supported by a client BIM advisor) defines information requirements before appointing a 'constructor' to complete both the design- and construction-stage activities. This includes the creation of design, construction, and handover information.

Sometimes the project owner will use design consultants to prepare their requirements and specifications (e.g. a specimen or reference design, or tender specifications) and then 'novate' the consultants to the constructor to have a more seamless transfer of project 'knowledge' (as opposed to information).

A differentiating feature of a design and build structure is that the 'delivery team' is engaged by the 'constructor'. This encourages collaboration between the design consultants, the constructor, and the subcontractors. It can support transparency between parties, which can enhance the model-coordination and issue-resolution process and allows for a seamless transfer of information between all parties.

Most D&B contracts also include commissioning activities, as well as handover through to operations and maintenance.

Early Contractor Involvement (ECI): ECI typically follows a two-stage approach. The first stage, tender information, should include an EIR, reference information, shared resources, and early design information (e.g. concept or preliminary design) including all relevant 3D models. The Pre-construction Services Agreement (PSA), which details the services required to be provided by the contractor during the second stage tender, should include BIM-related requirements.


Design and Build Contract
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Generate information
Quality Assurance Review
Review information and approve for sharing
Submit information model for client acceptance
Archive project information model
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3— ALLIANCE

Alliances are typically used for large, complex projects or programmes where the output or outcome cannot be initially well defined. An alliance is a 'shared delivery model' inclusive of risks and rewards that encourages collaboration and high performance when solutions are not well defined.

In an alliance procurement model, a 'joint venture' is formed between the project owner and the design and construction alliance partners. This is likely to occur during the establishment phase of the lifecycle.

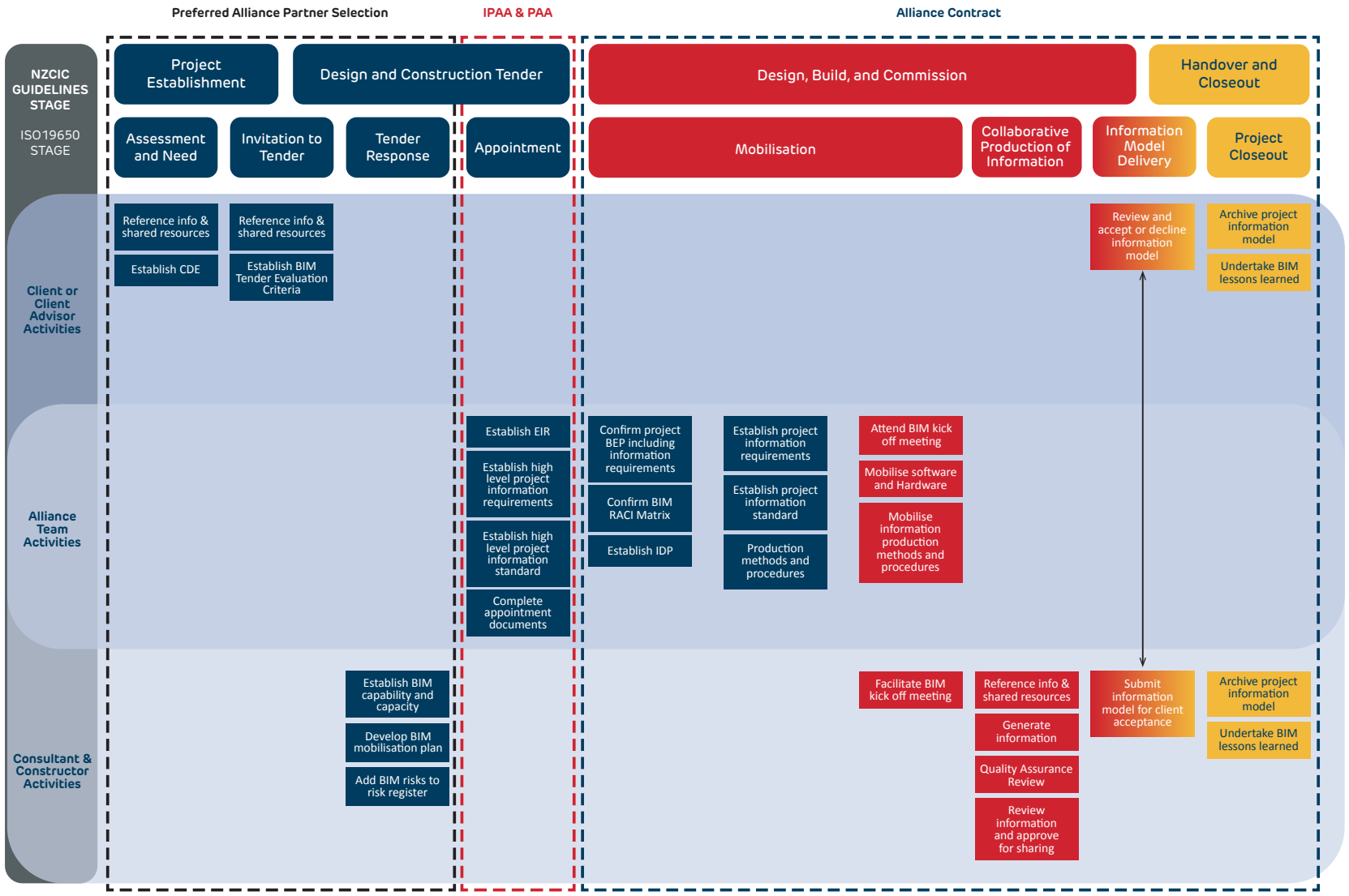
In this circumstance the 'alliance team', made up of client personnel and a consultant, a constructor, and potentially other stakeholder personnel, is created. Here, a soft delineation is created between the client and the delivery team, whereby typically parts of the client's personnel join the 'alliance team'. There is typically an Owner Interface Manager (OIM), who is responsible for representing the requirements of the owner in the 'alliance team'. They bring specification requirements and support owner reviews. The alliance partner's constituent companies form the 'delivery team'.

Alliance procurement is typically undertaken in two parts. In Part 1 the project owner goes to market to select their preferred alliance partners. The second part is the Interim Project Alliance Agreement (IPAA) stage, where the scope and fees are defined and agreed and a Project Alliance Agreement (PAA) is signed. Note that typically the IPAA is paid for by the project owner.

During the IPAA stage, the 'alliance team' will define the standards to use and the level of information that is required. Typically, this will not be stated in detail at the IPAA stage, but will be finalised during the mobilisation stage. Once agreed, the PAA documentation will be completed, and detailed information requirements will be defined during the mobilisation stage. In a typical design and construction alliance the 'delivery team' will complete both the design and construction stage activities. These include the creation of design, construction, and handover information.

A differentiating feature of an alliance structure is the way that risk is managed; it encourages collaboration, supports an enhanced model coordination and issue resolution process, and supports a more seamless transfer of information among the parties.

An alliance contract is likely to cover the project's establishment through to closeout and handover, and possibly the operations and maintenance phases of the lifecycle.


Preferred Alliance Partner Selection
IPAA & PAA
Alliance Contract
NZCIC GUIDELINES STAGE
ISO19650 STAGE
Project Establishment
Design and Construction Tender
Design, Build, and Commission
Handover and Closeout
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Undertake BIM lessons learned
Alliance Team Activities
Establish EIR
Establish high level project information requirements
Establish high level project information standard
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Establish project information standard
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Review information and approve for sharing
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NOVEMBER 2023

The New Zealand BIM handbook.

This document is one of a suite of documents forming the New Zealand BIM Handbook. You can download or view the remaining documents here:
http://www.biminnz.co.nz/nz-bim-handbook