Template for BIM Execution Plan

Version 0.2 October 2019

The Project BIM Execution Plan (BEP) is a detailed plan that defines how the project will be executed, monitored and organised with regard to BIM.

The intent of the BIM Execution Plan is to provide an outline that will ensure all parties involved are clearly aware of the opportunities and responsibilities associated with projects that implement BIM.

The plan defines why we you are using BIM on the project. It sets goals, objectives and people's responsibilities and outlines how the process will be executed through the project's life cycle.

The BIM Execution Plan should be considered a living document and can be developed and refined throughout the project's life

cycle to ensure the project remains on schedule and meets the briefed requirements.

This BIM Execution Plan (BEP) template can be used as a framework for the development of a BEP for your specific construction project/s.

It should be used in conjunction with the BIM Execution Plan example provided

The BIM Execution Plan should be developed with reference to the New Zealand BIM Handbook.

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INDENTIFY BIM GOALS AND USES	DESIGN BIM PROJECT EXECUTION PROCESS	DEVELOP INFORMATION EXCHANGES	DEFINE SUPPORTING INFRASTRUCTURE FOR BIM IMPLEMENTATION

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PREPARED BY:	COMPANY:	DATE:
Name	Name	

Revision record

REVISION:	DATE:	REVIEWER:	COMMENTS:

Project information

PROJECT NAME:

PROJECT OWNER:

PROJECT ADDRESS/LOCATION:

BRIEF PROJECT DESCRIPTION:

CONTRACT TYPE/DELIVERY METHOD:

CONTRACTOR ENGAGEMENT – INDICATIVE DATE:

HAS A PROJECT BIM BRIEF BEEN COMPLETED?

Project schedule

Fill in the table below with any major project milestones which occur during the project life cycle.

PROJECT PHASE/MILESTONE:	ESTIMATED START DATE:	ESTIMATED COMPLETION DATE:
PROJECT ESTABLISHMENT		
CONCEPT DESIGN		
PRELIMINARY DESIGN		
DEVELOPED DESIGN		
DETAILED DESIGN		
PROCUREMENT		
CONSTRUCTION		
HANDOVER		
OPERATION		

Key project contacts

List all the known key stakeholders who will be involved in BIM on this project.

ROLE:	DISCIPLINE:	COMPANY NAME:	CONTACT NAME:	CONTACT DETAILS:
CLIENT REPRESENTATIVE	N/A			
PROJECT MANAGER	N/A			
QUANTITY SURVEYOR	N/A			
BIM MANAGER(S)	N/A			
LEAD CONSULTANT				
DESIGN BIM COORDINATORS				
DISCIPLINE LEADS				
OTHER PROJECT ROLES				

Roles and Responsibilities

Project BIM Manager

The Project BIM Manager's responsibility is to facilitate the BIM Use goals of the project; this ma
include, but is not limited to:

(a) Developing the BEP to meet the BIM Use goals of the project;

(b) Workshop the BEP with Project Participants;

(c) Facilitate the use of the BEP by all Project Participants;

(d) Audit the models received from Project Participants;

(e) Communicating issues back to Project Participants;

(f) Facilitate Data transfer;

(g) Coordination validation of Federated Models;

(h) Clash detection, clash resolution, prepare clash reports and circulate;

(i) Chair design model management and coordination meetings.

Trade BIM Managers

Each Project Participant must appoint a BIM Manager to form the BIM collaboration team; the
responsibilities of this representative include, but are not limited to:

(a) Developing the BEP to meet the BIM Use goals of the project;

(b) Facilitate the use of the BEP within their organisation;

(c) Participating in design review and model coordination sessions;

(d) Communicating issues back to the Project Participant;

(e) Management, monitoring and maintenance of Model files;

(f) Validating the Levels of Development and detail for the model at each project stage;

(g) Validating Model content during each stage;

(h) Validating naming/numbering/references;

(i) Implement internal coordination and clash detection procedures as part of the normal
Modelling process;

(j) Communicating issues back to Project Participant; and

(k) Model transfer and versioning.

Quantity Surveyor BIM Manager (TBC)

The QS BIM Manager responsibilities include but are not limited to:

(a) Verification that models are fit for purpose for quantity take off (QTO);

(b) Verification of QTO data for Cost Planning; (c) Attendance of BIM meetings;

(d) Communication of issues back to the Project Participants;

(e) Reporting of model/design progress to their organisation;

(f) Organisation management of digital information for QS use.

Project goals

List client goals and expectations for the project. This table will assist to define BIM Uses required for the project in alignment with the project goals. This information could be extracted from the Project BIM Brief and any associated documents, if one has been completed.

PRIORITY:	GOAL DESCRIPTION – VALUE ADDED OBJECTIVES:	BIM USES:
(high/med/low)		

BIM Use responsible parties

The purpose of this table is to identify who are the responsible parties for BIM on the project. For example:

Design								Construction		Operation	
Task			MEA					Contractors BIM Tasks		FM BIM Tasks	
Existing Conditions Modelling	☑	CV	L	A				Existing Conditions Modelling	☒	Existing Conditions Modelling	☒
Design Authoring	☑	A	S	MEP	F	L	CV	Site Utilization Planning	☑	Maintenance Scheduling	☒
Design Reviews	☑	A	S	MEP	F	L	CV	Construction System Design	☒	Asset Management*	☑
3D Design Coordination	☑	A	S	MEP	F	L	CV	3D Coordination	☑	Space Management / Tracking	☒
Structural Analysis	☒							Digital Fabrication	☒	Disaster Planning	☒
Lighting and Energy Analysis	☒							3D Control and Planning	☒	Record Modelling (As Built)	☑
Mechanical Analysis	☒							Record Modelling	☑		
Sustainability (Greenstar) Evaluation	☑	A	MEP	F				Construction Programming (4D Modelling)	☑		
Building Code and Health/Safety Review (manual check only)	☑	A	S	MEP	F	L	CV	Cost Estimation (5D Modelling)	☑		
Phase Planning (4D Modelling)	☒										
Cost Estimation (5D Modelling)	☑	QS									

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Christchurch City Council required BIM uses for the project

"The project must produce *a federated BIM model that is an accurate digital representation (digital twin) of the physical, functional and asset data characteristics to be used at each stage in the project lifecycle from design through to practical completion. During and after handover, that As Built digital twin will form a reliable base of information for CCC's decisions across the assets lifecycle from handover through to operations / maintenance and disposal*".

RESPONSIBLE PARTIES: **COMMENTS:**

Project team additional BIM Uses for the project

The project team may agree additional BIM Uses that will benefit them. Use the table below to record this information.

BIM USE:	RESPONSIBLE PARTIES:	COMMENTS:

Information management & exchange

Information exchange

Identify the responsible parties, design authoring software and version to be used with the associated BIM Uses, along with the collaboration file format that the team will use in order to exchange models.

BIM USE:	RESPONSIBLE PARTIES:	SOFTWARE:	VERSION:	INTENDED COLLABORATION FILE FORMAT:

Specify a file naming convention for exchanged models, what data sharing platform these files will be saved to and any additional information that may be required.

DISCIPLINE:	FILE NAME:	INTENDED COLLABORATION/DATA SHARING PLATFORM:	ADDITIONAL INFORMATION:

Schedule of information exchange

INFORMATION EXCHANGE:	DISCIPLINE:	FREQUENCY:	DAY/ DATE:

SAP Integration

Christchurch City Council requires a minimum level of design software integration with their existing SAP systems. The key building services, architectural and structural model elements and parameters to facilitate the data input and output for the required SAP integration is described in Section XXX below.

Measurement and coordinate systems

Identify project spatial location (real world co-ordinate and level system).

PROJECT DATUM:		
HEIGHT DATUM:		
PROJECT LOCATION:	EASTING	NORTHING
MODEL POSITIONING:	DEGREES	

Model standards

As a minimum, each discipline in the project team should model industry proven, best practice methodology, as well as comply with their in-house standards and protocols. However, the client may have specific modelling and documentation requirements and standards which need to be adhered to as part of the BIM deliverables. These should be specified below. For example:

Type	Document
Modelling Standards	CCC Autodesk Revit / BIM Standards for External Consultants
Modelling Standards	ANZ Revit Standard Version 3.0
Modelling Standards	(Company/In-house) Autodesk Revit Guidelines
5D Modelling Guidelines	CostX Digital Drawing File Optimization; AECOM Model Content Plan
BIM Guidelines	PAS 1192-2:2013 Specification for Information Management
Meta-data Requirements	WMT-CCC Revit to SAP Guidelines
Documentation Standards	CCC Autodesk Revit / BIM Standards for External Consultants
Documentation Deliverables	NZCIC Guidelines
Collaboration Platform	PO-08-CARE-REF-0001 Viewpoint and Document Control Manual
Project CDE Platform	Appendix B

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Model structure

Describe and produce a simple diagram to show how the model is separated, e.g., by building, by floors, by zone, by model size, by areas, and/or discipline. For example

Model Description Document (MDD)

Each modelling team should include a Model Description Document (MDD) or similar agreed document that includes crucial information for each model it publishes. The document should describe the contents of the model, any major revisions/changes and explain its purpose and limitations.

For example

MODEL ELEMENT AUTHOR LEGEND	ARC	STR	MEC	ELE	PLU							
	FIR	LAN	CIV	CON	SUB							
PROJECT PHASE	CONCEPT DESIGN		PRELIMINARY DESIGN		DEVELOPED DESIGN		DETAILED DESIGN		CONSTRUCTION		OBSERVATIONS	
MODEL ELEMENTS	MEA	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA	LOD	Notes
Fencing	LAN	100	LAN	200	LAN	300	LAN	300	CON	300	CON	300	
Landscaping (Hardscape)	LAN	100	LAN	200	LAN	300	LAN	300	CON	300	CON	300	
Landscaping (Softscape)	LAN	-	LAN	-	LAN	100	LAN	200	CON	200	CON	200	
SUBSTRUCTURE													
Foundations	ARC	100	STR	200	STR	300	STR	300	CON	300	CON	MAB	
Reinforcing	-	-	-	-	-	-	-	-	-	-	CON	MAB	
Retaining Wall	ARC	100	STR	200	STR	300	STR	300	CON	300	CON	300	
Subsoil Drainage and Infrastructure	CIV	100	CIV	200	CIV	200	CIV	300	CON	300	CON	MAB	
STRUCTURE													
Floors	ARC	100	STR	200	STR	300	STR	300	CON	300	CON	VAB	
Steel Beams	ARC	100	STR	200	STR	300	STR	300	SUB	350	SUB	VAB	
Concrete Beams	ARC	100	STR	200	STR	300	STR	300	SUB	300	SUB	VAB	
Shaft Openings	ARC	100	STR	200	STR	300	STR	300	CON	300	CON	VAB	
Wall Openings – load bearing	ARC	100	STR	200	STR	300	STR	300	CON	300	CON	VAB	

Permission and acce

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The following document management issues should be considered/resolved and a procedure defined for each: permissions/access, file locations, FTP site location(s), file transfer protocol, file/folder maintenance, etc.

Collaboration

Collaboration strategy

Describe how the project team will collaborate. Include items such as the Common Data Environment CDE for managing project information, communication methods, transfer, and record storage, etc.

Discuss if training is required across the project team in the chosen collaboration software and protocols.

PROJECT BASED CDE:

Schedule of meetings

MEETING TYPE:	FACILITATOR:	PROJECT STAGE:	REQUIRED ATTENDEES:	REQUIRED TECHNOLOGY:	FREQUENCY:	LOCATION:
BIM REQUIREMENTS KICK-OFF						
BIM EXECUTION PLAN DEMONSTRATION						
DESIGN COORDINATION						
CONSTRUCTION OVER-THE-SHOULDER PROGRESS REVIEWS						
ANY OTHER BIM MEETINGS						

Project deliverables

In this section, list the BIM deliverables for the project and the format in which the information will be delivered.

BIM USE:	FROM:	TO:	APPROXIMATE DUE DATE/ STAGE:	FORMAT:	COMMENTS:

Quality control checks

The following checks should be performed to assure quality within models and information, to eliminate errors and achieve desired project outcomes. These checks are intended to be carried out internally by the BIM Coordinator.

CHECK:	DEFINITION:	RESPONSIBLE PARTIES:	PROJECT STAGE:	FREQUENCY:
Visual check	See that there are no unintended model components and the design intent has been followed			
Interference check	Detect problems in the disciplines model where two components are clashing including soft and hard			
Model integrity checks	Ensure integrity of the model aligns with BIM Uses and client's BIM specific modelling and documentation requirements and standards, as set out in Model Standards			
Design review	Review that the ongoing development of the model is aligned with the client objectives.			
Authoring software warnings				

Note: These processes don't replace picking up the phone and talking to each other.

Reference documents & standards

The following documents are listed for reference.

GENERIC TITLE:	APPLICABLE REFERENCE DOCUMENT/NOTES:	VERSION: