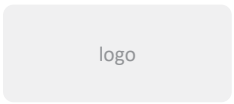
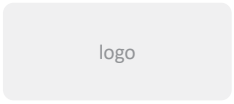
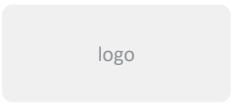
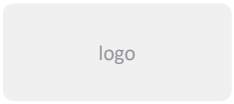
POST-APPOINTMENT
BIM EXECUTION PLAN (BEP)
FOR
CONSTRUCTION and AS-BUILT

Prepared by









Document Revision Tracking

Issue Date	Notes
2025-08-25	First Issuance

Contents

1. BIM Execution Plan Overview

To successfully implement Building Information Modeling (BIM) on this project, the project team has developed this detailed BIM Project Execution Plan. The BIM Project Execution Plan defines uses for BIM on the project (e.g. BIM coordination, and drawing production), along with a detailed design of the process for executing BIM throughout the project life-cycle.

This document is prepared by to define BIM uses & deliverables, BIM implementation protocol, BIM standards, BIM management and procedure as the Construction (and As-built) Stage BIM Project Execution Plan (BEP). The purpose of this document is to plan and manage BIM implementation to ensure an effective project information sharing and a collaborative design coordination among the Lead Contractor, design consultants and project stakeholders.

This document will be submitted with the agreement from Appointing Party / Client prior to adoption to use.

This document will be continuously updated as the project evolves during project life-cycle, to reflect the appropriate BIM progress and accommodate the project needs. Such updates to this BEP will be made with agreement from and appointed BIM Manager.

This document shall be developed with references from Design Stage BEP, if available, transferred from the

This BEP shall be subject to be reviewed and checked quarterly or as requested by the BIM Auditor and / or the Client.

1.1 Guidelines and Standards)

BIM Standards	Publication	Date of Publication
Annex To Appendix E, Pre-Contract BIM Execution Plan Template	MTR	03/2022
MTR Naming Standard, Revision March 2022	MTR	09/2022

PAS 1192-6:2018 Specification for collaborative sharing and use of structured Health and Safety information using BIM	International Organization for Standardization (ISO)	02/2018
BD Guidelines for Using Building Information Modelling in GBP Submissions (2019)	Buildings Department (BD)	2019
HK SAR Development Bureau DEVB TC(W) No. 02/2021 Adoption of Building Information Modelling for Capital Works Projects in Hong Kong (December 2021)	Development Bureau (DEVB)	09/2021
CIC BIM Guide for using BIM in generation of MEP digital drawings for statutory submissions	Construction Industry Council (CIC)	2021
CIC BIM Standards General 2021	Construction Industry Council (CIC)	Version 2.1 - 2021
CIC BIM Standards Architecture and Structural Engineering	Construction Industry Council (CIC)	Version 2.1 - 2021
CIC BIM Standards for Mechanical, Electrical and Plumbing	Construction Industry Council (CIC)	Version 2 - 2021
CIC BIM Standards for Underground Utilities	Construction Industry Council (CIC)	Version 2 - 2021
CIC Production of BIM Object Guide - General Requirements	Construction Industry Council (CIC)	2021
CIC BIM Standards for Preparation of Statutory Plan Submissions	Construction Industry Council (CIC)	Vision 1.1 2021
Statutory Submission	Buildings Department (BD), Water Authority (WSD) & Construction Industry Council (CIC)	2022

ISO 19650-2:2018 Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) — Information management using building information modelling — Part 2: Delivery phase of the assets	International Organization for Standardization (ISO)	12/2018
ISO 19650-3:2020 Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) - Information management using building information modelling - Part 3: Operational phase of the assets.	International Organization for Standardization (ISO)	06/2020
BS 1192-4:2014 Collaborative production of information. Fulfilling employer's information exchange requirements using COBie. Code of practice.	International Organization for Standardization (ISO)	09/2014
ISO 19650-5:2020 Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) — Information management using building information modelling — Part 5: Security-minded approach to information management	International Organization for Standardization (ISO)	06/2020
Information Protocol to support BS EN ISO 19650-2 the delivery phase of assets Edition 2 September 2020 (UK BIM Framework and CIC).	Centre for Digital Built Britain (CDBB)	06/2020

2. Project Information

2.1. Project Description

Project Name

2.2. Project Detail

Employer

Client

MTR Contract No

MTR Contract No

Submitted By

By

Date
2025/08/28

3. Project Information Functions

The following BIM software platforms will be used across the project team for all submissions.

No	Function / form	Originating application	Version
1.	Information Model Submissions	Autodesk Navisworks Manage / original authoring platform	2022
2.	Design authoring of buildings and other vertical facilities	Autodesk Revit (Architecture, Structure, MEP)	2022
3.	Design authoring of civil and other linear facilities	Autodesk Civil 3D	2022
4.	Alignment design	N/S	N/S
5.	Federation, coordination and design review	Autodesk Navisworks Manage / Autodesk Construction Cloud (Formerly known as BIM 360)	2022
6.	Construction planning, sequencing and simulation	Synchro	2022
7.	Presentation of 4D animations, videos, analyses, etc.	Synchro	2022
8.	Drawings	Autodesk Revit	2022
9.	Drawings	Autodesk Civil 3D	2022
10.	Clash Analysis reports	Autodesk Navisworks Manage	2022
11.	Schedules, Tables	N/S	Latest version
12.	Document production	MS Office (Word, PowerPoint, Excel, etc.)	Latest version
13.	Document reviewing and commenting	MS Office (Word, PowerPoint, Excel, etc.)	Latest version
14.	Images	.jpg, .png	Latest version

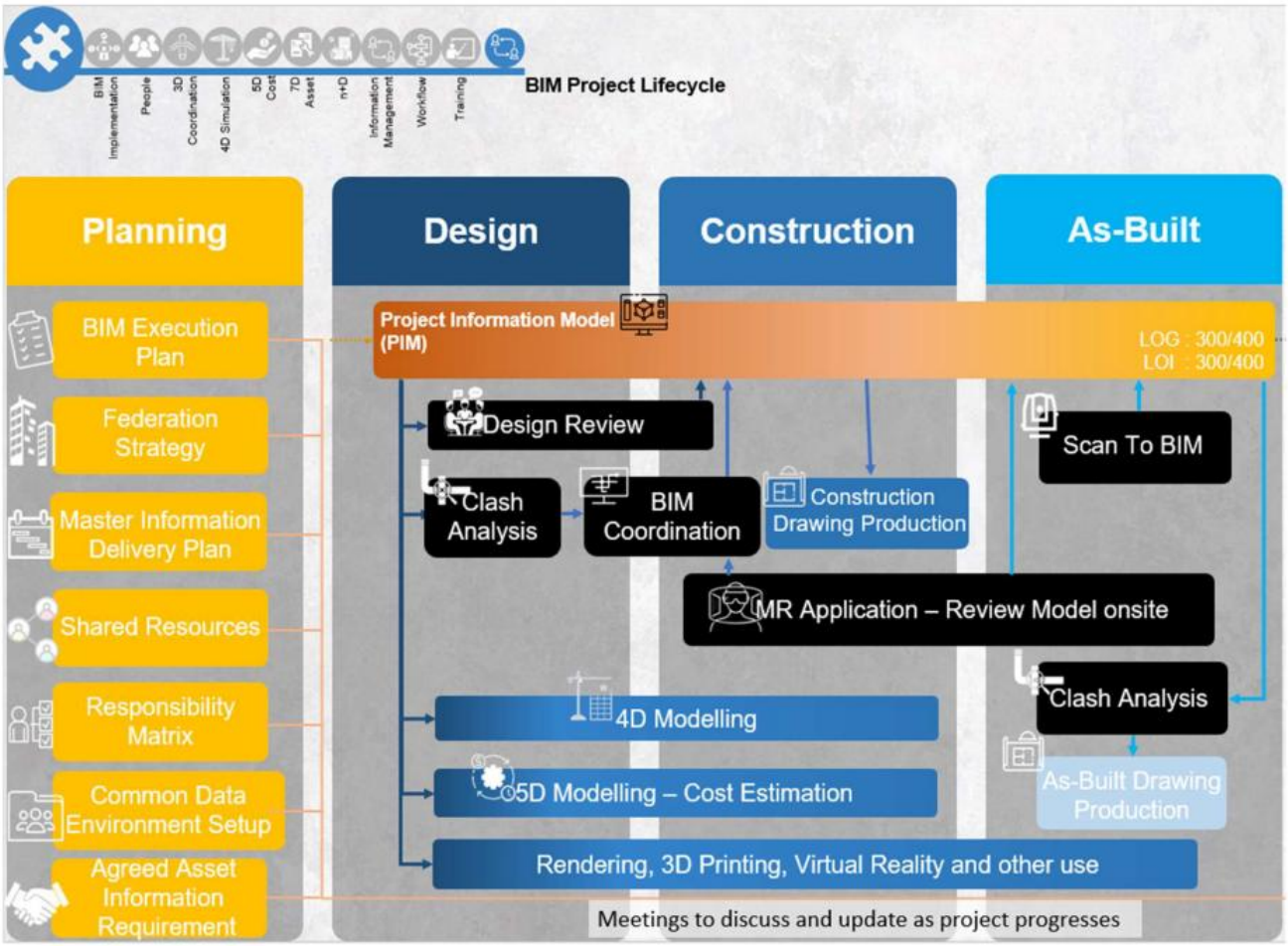
4. Information Delivery Strategy

To ensure that the information modelling workflow defined under section table below,Client's Common Data Environment is compliant, at all times, with the requirements of C11286, checks will be made by the BIM team of on the timeliness of information model uploads, adherence to the LOD standards set out in this document and the completion of DOC requirements by all of the BIM-related supply chain on the project. Checklists will be developed to assess such compliance and

criteria established to identify potential non-compliancy. KPIs may also be developed to allow early identification of weak links in the supply chain where non-compliancy is a risk. Any non-compliancy will trigger immediate remedial action by the Tyfron Solutions.

The following checks as shown belo will be performed to assure adherence to the

quality of the BIM models are checked and comply with BIM standards and procedures.



Validation Checklist

Level of Check	Action	Software	Checked
Issue for Coordination	BIM Checklist sign off by discipline coordinator	Autodesk Model Review, manual checks	☐

BIM Checklist

Item	Checked
CAD standard check (compliance with agreed CAD standards)	☐
Models at the correct Origin and Orientation of project base point	☐
Models must be at 1:1 Scale, that is, no dimensions changed without changing the underlying model geometry	☐
2D linework must be aligned to its associated 3D surface at correct orientation, elevation and origin	☐

There must be no duplicate objects	☐
There shall be no 'custom' objects, that is, objects created by the user that are not approved or part of the Originators and/or Project library	☐
Models must be stand-alone project files with all linked data bound or removed	☐
All 'hidden', 'scrap', 'temporary' or redundant objects / geometry / linework must be deleted	☐
All author created views, sheet layout data (title blocks, annotation etc) and templates must be removed with the exception of the "model title view"	☐
All data not authored by the originator must be removed (e.g. shared grid file linked into architectural model)	☐
Model integrity must be correct (e.g. columns meet beams and slabs - no gaps)	☐
All objects must have the extended properties completed against the required Level of Detail	☐
All object properties must be spelt and formatted correctly and consistently	☐
All model files must have the correct filename and metadata	☐
Check that the model is using the current shared parameters, and keynotes files	☐

Checks	Definitions	Responsible Parties	Methodologies	Frequency
LOD-G Proposed	Ensure the geometry of the object elements are modelled to the proposed	BIM Coordinators	Visual check of 3% of modelled objects	Bi-Monthly
		BIM Project Manager	Visual check of 5% of modelled objects	Before the major submission stage of the deliverables

LOD-I Proposed	Ensure the attributes of the object elements are created/entered to the proposed format and contents	BIM Coordinators	Visual check of 3% of modelled objects using exported table	Bi-Monthly
		BIM Project Manager	Visual check of 5% of modelled objects using exported table	Before the major submission stage of the deliverables
Geometrical accuracy and engineering standard compliance	Ensure the objects are modelled to the exact size, location and orientation according to the LoD-G proposed.	BIM Coordinators	Overlay of design drawings, and random annotation of XYZ positions.	Bi-Monthly
		BIM Coordinators	Random check on design dimension and engineering requirements	Before the major submission stage of the deliverables

Naming Convention	Ensure the file name, non-system object names follow the proposed standard	BIM Coordinators	Visual Check	Monthly
File format	Ensure the BIM models are created with the proposed file format and version	BIM Coordinators	Random file checks	Monthly
Modelling Methodologies	Ensure the BIM objects are created with the proposed modelling methodologies	BIM Coordinators	Visual check of 3% of modelled objects	Bi-Monthly
		BIM Project Manager	Visual check of 5% of modelled objects using exported table	Before the major submission stage of the deliverables
Project Basepoints	Ensure the reference point of each model comply	BIM Project Manager	Visual check of project basepoints	First week after the model file is created

Data Security

ISO 19650-5:2020 standard, General Conditions of Employment and CDE workflows shall be followed.

Individuals from the Contractor's team and their supply chain participating in the project will have to sign a company-level Non-Disclosure Agreement to ensure they will not make available any confidential and/or sensitive information to individuals that are not involved in the project.

All BIM-related documents shall be uploaded to the Client's and Contractor's CDE for sharing among all parties involved in the project during construction stage. Documents on the CDE shall be backed-up at a maximum interval of bi-weekly, unless otherwise stated. Access to CDE will be granted to individuals according to their CDE accounts registered with professional email addresses. Access is granted to each individual to only the areas on the CDE that are required to facilitate their work scope.

To avoid any possible data corruption or data misuse, the adopted CDE platform, ACC (Formerly known as BIM 360) will provide adequate data security and regular file backup. ACC cannot be accessed without cloud-based usernames and passwords, and prior email invitation from the BIM team leader i.e., the administrator of the CDE platform, will be required.

Members invited to ACC will have access to folders where user access rights are allocated by the administrator. All files on ACC will be stored in the cloud servers hosted by the service provider Amazon Web Services, which are located at a secured data centre protected from unauthorized access and environmental hazards.

The Contractor shall ensure that the computers used for accessing the CDE meet the minimum-security requirements of the Client as below, unless otherwise directed by the Project Manager:

(a) All applicable security patches are installed and up to date

(b) Antivirus software is running with up to date virus signature.

The Contractor proposes a workflow to monitor Information Security Risks (ISR) as follows:

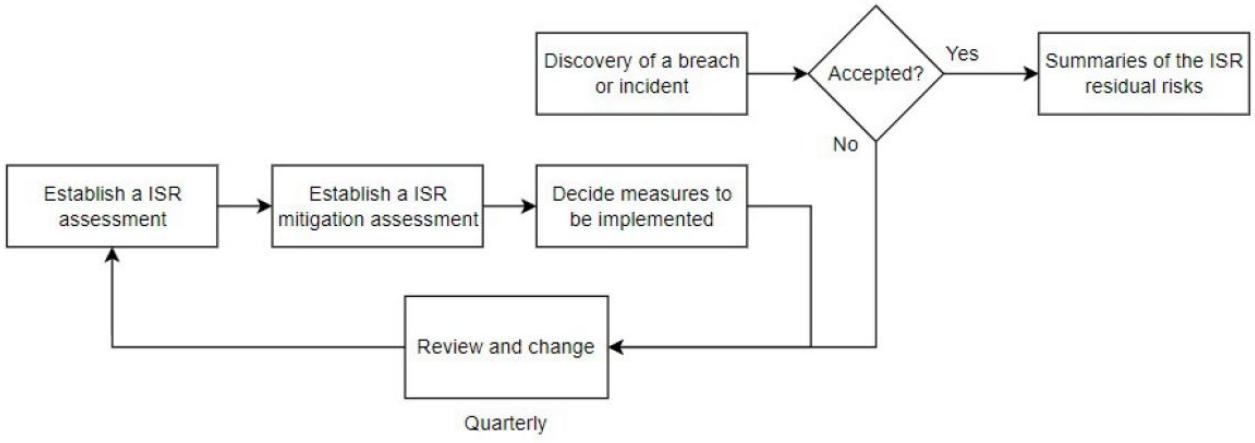


Figure 1 – Workflow of Information Security Risks

5. BIM Use, Goals & Deliverables

*Grey colour indicate BIM uses not in use in this contract.

The Information Model will be utilised for the following Uses in the different Project Phase as follows:

	Information Model Use	Construction	Testing & commissioning	Project close-out
1	Design Authoring	Y		
2	Design Review	Y		
3	Project Deliverables (incl. Drawings)	Y	Y	
4	Existing Conditions Model	Y	Y	
5	Sustainability Evaluation	Y	Y	Y
6	Site Analysis			
7	Space Programming			
8	Cost Estimation (5D Model)	Y		
9	Spatial Coordination (3D)	Y		
10	Engineering Analysis	Y		
11	Facility Energy Analysis	Y		
12	Building Code Validation			
13	Phase Planning (4D Model)	Y		
14	Digital Fabrication	Y		
15	Site Utilisation Planning	Y		
16	3D Control and Planning	Y		
17	3D Construction Coordination	Y		
18	Construction System Design	Y		

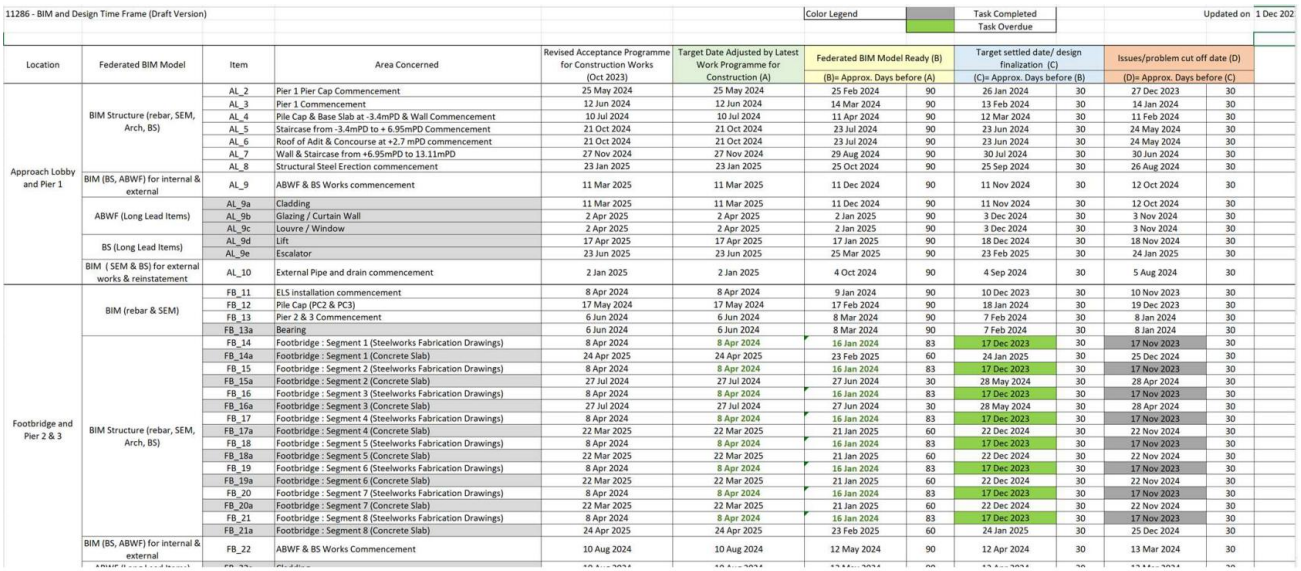
19	Construction Quality Management	Y		
20	As-Built Model	Y	Y	Y
21	Maintenance Scheduling	Y	Y	Y
22	Project Systems Analysis		Y	Y
23	Space Management and Tracking		Y	Y
24	Asset Information Model	Y	Y	Y
25	Sales and Marketing	Y	Y	Y
26	Heritage Information Modelling		Y	Y

Y = BIM shall be used to generate Contract data for the highlighted function.
. *Grey colour indicate BIM uses not in use for the contractor

Project Deliverables

Project Deliverable Items	Checked by	Reference
BIM Project Execution Plan		GS/001/A3/G18.2.1 e.
BIM Progress Report		GS/001/A3/G9.4.1
Construction Stage BIM Model		GS/001/A3/G18.2.1 f.
Clash Report		GS/001/A3/G18.2.1 g.
Federated Models		GS/001/A3/G18.2.1 y.
As-built BIM Model		GS/001/A3/G18.2.1 b.
4D Phase Planning Model		GS/001/A3/G18.6.38-39
Digital Fabrication		GS/001/A3/G18.6.44-46
CSD/SEM Drawings		GS/001/A3/G18.2.1 v.
Shop Drawing (if any)		GS/001/A3/G18.2.1 v.

Coordination Schedule



11286 - BIM and Design Time Frame (Draft Version)

Color Legend: Task Completed / Task Overdue

Updated on 1 Dec 202

Location	Federated BIM Model	Item	Area Concerned	Revised Acceptance Programme for Construction Works (Oct 2023)	Target Date Adjusted by Latest Work Programme for Construction (A)	Federated BIM Model Ready (B) (B)= Approx. Days before (A)		Target settled date/ design finalization (C) (C)= Approx. Days before (B)		Issues/problem cut off date (D) (D)= Approx. Days before (C)	
Approach Lobby and Pier 1	BIM Structure (rebar, SEM, Arch, BS)	AL_2	Pier 1 Pier Cap Commencement	25 May 2024	25 May 2024	25 Feb 2024	90	26 Jan 2024	30	27 Dec 2023	30
		AL_3	Pier 1 Commencement	12 Jun 2024	12 Jun 2024	14 Mar 2024	90	13 Feb 2024	30	14 Jan 2024	30
		AL_4	Pile Cap & Base Slab at -3.4mPD & Wall Commencement	10 Jul 2024	10 Jul 2024	11 Apr 2024	90	12 Mar 2024	30	11 Feb 2024	30
		AL_5	Staircase from -3.4mPD to + 6.95mPD Commencement	21 Oct 2024	21 Oct 2024	23 Jul 2024	90	23 Jun 2024	30	24 May 2024	30
		AL_6	Roof of Adit & Concourse at +2.7 mPD commencement	21 Oct 2024	21 Oct 2024	23 Jul 2024	90	23 Jun 2024	30	24 May 2024	30
		AL_7	Wall & Staircase from +6.95mPD to 13.11mPD	27 Nov 2024	27 Nov 2024	29 Aug 2024	90	30 Jul 2024	30	30 Jun 2024	30
		AL_8	Structural Steel Erection commencement	23 Jan 2025	23 Jan 2025	25 Oct 2024	90	25 Sep 2024	30	26 Aug 2024	30
	BIM (BS, ABWF) for internal & external	AL_9	ABWF & BS Works commencement	11 Mar 2025	11 Mar 2025	11 Dec 2024	90	11 Nov 2024	30	12 Oct 2024	30
	ABWF (Long Lead Items)	AL_9a	Cladding	11 Mar 2025	11 Mar 2025	11 Dec 2024	90	11 Nov 2024	30	12 Oct 2024	30
		AL_9b	Glazing / Curtain Wall	2 Apr 2025	2 Apr 2025	2 Jan 2025	90	3 Dec 2024	30	3 Nov 2024	30
		AL_9c	Louvre / Window	2 Apr 2025	2 Apr 2025	2 Jan 2025	90	3 Dec 2024	30	3 Nov 2024	30
	BS (Long Lead Items)	AL_9d	Lift	17 Apr 2025	17 Apr 2025	17 Jan 2025	90	18 Dec 2024	30	18 Nov 2024	30
		AL_9e	Escalator	23 Jun 2025	23 Jun 2025	25 Mar 2025	90	23 Feb 2025	30	24 Jan 2025	30
	BIM (SEM & BS) for external works & reinstatement	AL_10	External Pipe and drain commencement	2 Jan 2025	2 Jan 2025	4 Oct 2024	90	4 Sep 2024	30	5 Aug 2024	30
Footbridge and Pier 2 & 3	BIM (rebar & SEM)	FB_11	ELS installation commencement	8 Apr 2024	8 Apr 2024	9 Jan 2024	90	10 Dec 2023	30	10 Nov 2023	30
		FB_12	Pile Cap (PC2 & PC3)	17 May 2024	17 May 2024	17 Feb 2024	90	18 Jan 2024	30	19 Dec 2023	30
		FB_13	Pier 2 & 3 Commencement	6 Jun 2024	6 Jun 2024	8 Mar 2024	90	7 Feb 2024	30	8 Jan 2024	30
		FB_13a	Bearing	6 Jun 2024	6 Jun 2024	8 Mar 2024	90	7 Feb 2024	30	8 Jan 2024	30
	BIM Structure (rebar, SEM, Arch, BS)	FB_14	Footbridge : Segment 1 (Steelworks Fabrication Drawings)	8 Apr 2024	8 Apr 2024	16 Jan 2024	83	17 Dec 2023	30	17 Nov 2023	30
		FB_14a	Footbridge : Segment 1 (Concrete Slab)	24 Apr 2025	24 Apr 2025	23 Feb 2025	60	24 Jan 2025	30	25 Dec 2024	30
		FB_15	Footbridge : Segment 2 (Steelworks Fabrication Drawings)	8 Apr 2024	8 Apr 2024	16 Jan 2024	83	17 Dec 2023	30	17 Nov 2023	30
		FB_15a	Footbridge : Segment 2 (Concrete Slab)	27 Jul 2024	27 Jul 2024	27 Jun 2024	30	28 May 2024	30	28 Apr 2024	30
		FB_16	Footbridge : Segment 3 (Steelworks Fabrication Drawings)	8 Apr 2024	8 Apr 2024	16 Jan 2024	83	17 Dec 2023	30	17 Nov 2023	30
		FB_16a	Footbridge : Segment 3 (Concrete Slab)	27 Jul 2024	27 Jul 2024	27 Jun 2024	30	28 May 2024	30	28 Apr 2024	30
		FB_17	Footbridge : Segment 4 (Steelworks Fabrication Drawings)	8 Apr 2024	8 Apr 2024	16 Jan 2024	83	17 Dec 2023	30	17 Nov 2023	30
		FB_17a	Footbridge : Segment 4 (Concrete Slab)	22 Mar 2025	22 Mar 2025	21 Jan 2025	60	22 Dec 2024	30	22 Nov 2024	30
		FB_18	Footbridge : Segment 5 (Steelworks Fabrication Drawings)	8 Apr 2024	8 Apr 2024	16 Jan 2024	83	17 Dec 2023	30	17 Nov 2023	30
		FB_18a	Footbridge : Segment 5 (Concrete Slab)	22 Mar 2025	22 Mar 2025	21 Jan 2025	60	22 Dec 2024	30	22 Nov 2024	30
		FB_19	Footbridge : Segment 6 (Steelworks Fabrication Drawings)	8 Apr 2024	8 Apr 2024	16 Jan 2024	83	17 Dec 2023	30	17 Nov 2023	30
		FB_19a	Footbridge : Segment 6 (Concrete Slab)	22 Mar 2025	22 Mar 2025	21 Jan 2025	60	22 Dec 2024	30	22 Nov 2024	30
		FB_20	Footbridge : Segment 7 (Steelworks Fabrication Drawings)	8 Apr 2024	8 Apr 2024	16 Jan 2024	83	17 Dec 2023	30	17 Nov 2023	30
		FB_20a	Footbridge : Segment 7 (Concrete Slab)	22 Mar 2025	22 Mar 2025	21 Jan 2025	60	22 Dec 2024	30	22 Nov 2024	30
		FB_21	Footbridge : Segment 8 (Steelworks Fabrication Drawings)	8 Apr 2024	8 Apr 2024	16 Jan 2024	83	17 Dec 2023	30	17 Nov 2023	30
		FB_21a	Footbridge : Segment 8 (Concrete Slab)	24 Apr 2025	24 Apr 2025	23 Feb 2025	60	24 Jan 2025	30	25 Dec 2024	30
	BIM (BS, ABWF) for internal & external	FB_22	ABWF & BS Works Commencement	10 Aug 2024	10 Aug 2024	12 May 2024	90	12 Apr 2024	30	13 Mar 2024	30

6. Project Information Production Methods and Procedures

Design Authoring

Design authoring is a process of developing project information model(s) in accordance with conforming design, the Contractor's design, the scope, and level of information needed for the design elements. The process is summarised as follows:

- Identification of model(s) required for all disciplines
- Identification of content for model creation
- Development of initial model based on conforming design
- Development of project information model from initial model based on detailed

Contractor's design and design development through design review including clash analysis and design change(s) (if applicable)

Modelling Strategy

Scope of Work: Define the scope of work for the project, including the level of detail required for the BIM model, the required deliverables, and the project timeline.

BIM Software and Standards: Select the appropriate BIM software for the project and establish standard procedures for modelling, coordination, and data exchange.

Model Elements: Define the model elements to be included in the BIM model, including the level of detail, accuracy, and completeness required for each element.

Model Coordination and Collaboration: Establish protocols for model coordination and collaboration between all stakeholders, including architects, engineers, contractors, and

subcontractors. This includes defining communication channels, modelling responsibilities, and required meetings.

Quality Control and Assurance: Establish procedures for regular quality control and assurance checks to ensure the BIM model meets the required standards and specifications. This includes defining review processes, identifying responsible parties, and establishing corrective action plans.

Deliverables: Define the required BIM model deliverables, including construction documents, schedules, cost estimates, and other relevant documentation. Establish procedures for reviewing and finalizing these deliverables.

Training and Support: Provide training and support to all stakeholders on the BIM software and modelling procedures. This includes defining training requirements, identifying responsible parties, and establishing training schedules.

Model Federation Management

Description	Discipline	File name
SUW- **SUW-** **SUW-APPROACH LOBBY AT CONCOURSE LEVEL**		
SUW-**ARCHITECTURE**-PYC	ARC	11286-W-SUW-PYC-ARC-001
SUW-**STRUCTURE**-OAP	STR	11286-W-SUW-OAP-STR-001
SUW-**REBAR**-PYC	STR	11286-W-SUW-PYC-STR-020 11286-W-SUW-PYC-STR-021 11286-W-SUW-PYC-STR-022
SUW-**FACADE**-PYC	FAC	11286-W-SUW-PYC-FAC-001
SUW-**SITE**-PYC	CIV	11286-W-SUW-PYC-SIT-001
SUW-**TEMPORARY WORKS**-PYC (e.g., HOARDING)	CIV	11286-W-SUW-PYC-TMP-001
SUW-**EXCAVATION & LATERAL SUPPORT**-PYC	CIV	11286-W-SUW-PYC-ELS-001

SUW-**EXISTING UNDERGROUND UTILITIES**-PYC	UUT	11286-W-UUX-PYC-UUT-001
SUW-**DESIGN UNDERGROUND UTILITIES**-OAP	UUT	11286-W-UUT-PYC-DRN-001
SUW-**DRAINAGE SREVICE**-PYC	MEP	11286-C-SUW-PYC-MEP-001
SUW-**PLUMBING SERVICES**-PYC	MEP	11286-C-SUW-PYC-MEP-001
SUW-**DESGIN FOR MANUFCATURE ASSEMBLY** -PYC	DfMA	11286-C-SUW-PYC-MEP-001
SUW-**FIRE SERVICES**-PYC	MEP	11286-C-SUW-PYC-MEP-003
SUW-**ENVIRONMENTAL CONTROL SYSTEM**-PYC	MEP	11286-C-SUW-PYC-MEP-003
SUW-**ELECTRICAL SERVICES**-PYC	MEP	11286-C-SUW-PYC-MEP-004
SUW-**STRUCTURAL ELECTRICAL AND MECHANICAL**-PYC	MEP	11286-C-SUW-PYC-MEP-004
SUW-**EXTERNAL WORKS**-PYC	MEP	11286-C-SUW-PYC-MEP-004
SUW-**COMMUNICATION SYSTEM**-PYC	COM	11286-C-SUW-PYC-COM-001
SUW-**LIFT & ESCALATORS**-PYC	LIF	11286-C-SUW-PYC-LIF-001
SUW-**MAIN CONTROL SYSTEM**-PYC	MCS	11286-C-SUW-PYC-MCS-001
SUW-EXISTING STATION AT SUW CONCOURSE LEVEL		
SUW EXT-**EXISTING SYSTEM**-PYC	MEP	11286-C-SUW-PYC-MEP-002

Division of the information models based on volumes, zones and areas shall be additional levels of model breakdown beyond those stated in section 5.1.2 Model Federation Management of this BEP.

Table 5-3– Model Federation Strategy

Discipline	PYC (Full name: Paul Y)	OAP (Full name: ARUP)	Workset
ARC	11286-W-SUW-PYC-ARC-001 (TBA)	11286-W-SUW-OAP-ARC-001(Baselined)	PYC - CLA - Cladding PYC - GLA - Glazing / CWL - Curtain Wall PYC - LOU - Louvres PYC - CEI - Ceilings PYC - RLS - Railings PYC - GRA - Signage
FAC	11286-W-SUW-PYC-FAC-001 (TBA)	11286-W-SUW-OAP-FAC-001(Baselined)	PYC - FAC - Façade
STR	N/A (Non-applicable)	11286-W-SUW-OAP-STR-001 (Action by OAP)	PYC - SFR - Link Bridge PYC - STL - Steel OAP - SFR - Link Bridge OAP - SCO - Concrete OAP - FND - Foundations OAP - STL - Steel
STR	11286-W-SUW-PYC-STR-020 (Action by Xensetech)	11286-W-SUW-OAP-STR-002 (Baselined)	PYC - REB - Pier 1
STR	11286-W-SUW-PYC-STR-021 (Action by Xensetech)		PYC - REB - Pier 2-3
STR	11286-W-SUW-PYC-STR-022 (Action by Xensetech)		PYC - REB - Pier 4
CIV	N/A (Non-applicable)	11286-W-SUW-TMP-SIT-001 (Baselined)	OAP - TMP - Temporary Works
CIV	N/A (Non-applicable)	11286-W-SUW-OAP-ELS-001 (Baselined) 11286-W-SUW-OAP-ELS-002 (Baselined)	OAP - ELS - Excavation & Lateral Support
UUT	11286-W-UUX-PYC-UUT-001 (Action by Xensetech)	11286-W-UUP-OAP-DRN-001 (Action by OAP)	PYC - UUP - Design Underground Utilities OAP - UUP - Design Underground Utilities OAP - UUX - Existing Underground Utilities
MEP	11286-W-SUW-PYC-MEP-001 (Action by REC)	11286-W-SUW-OAP-MEP-001 (Baselined)	PYC - DRN - Building Services - Drainage Services PYC - PLU - Building Services - Plumbing Services PYC - DfMA - Design for Manufacture and Assembly
MEP	11286-W-SUW-PYC-MEP-003 (Action by REC)		PYC - ECS - Building Services - Environmental Control System PYC - FSS - Building Services - Fire Services
MEP	11286-W-SUW-PYC-MEP-004 (Action by REC)		PYC - ELE - Building Services - Electrical Services PYC - SEM - Structural Electrical and Mechanical PYC - C24 - External Works
COM	11286-W-SUW-PYC-COM-001 (Action by REC)		PYC - COM - E&M Systemwide - Communication System
LIF	11286-W-SUW-PYC-LIF-001 (Action by TBA)		PYC - LIF - E&M Systemwide - Lifts & Escalators
MEP	11286-W-SUW-PYC-MEP-002 (Action by REC)	11286-W-SUW-OAP-MEP-002	PYC - EXG - Existing Systems
MCS	11286-W-SUW-PYC-MCS-001 (Action by REC)	N/A (Non-applicable)	PYC - MCS - E&M Systemwide - Main Control System

The contractor has collaborated with the Design Consultant to establish a coordinated model workset and model federation separation in our project's modelling process. This BIM Model federation strategy has been implemented to facilitate multi-disciplinary collaboration throughout the project lifecycle.

Table 5-4 - Naming Convention for Information Container					
Example File Name: 11286-W-SUW-PYC-ARC-001.rvt					
Field	**Code & Description**				**Format**
Contract	11286				5 digitals
Stage	W	= Construction	Z	= As built	1 digital
Location Code					3 digitals
Originator					3 digitals
Subject Code	ARC	= Architecture	STR	= Structural	3 digitals
	CIV	= Civil	SIT	= Civil - Site	
	LAN	= Architecture - Landscape			
	UUT	= Civil - Underground utilities			
	GEO	= Civil - Geotechnical			
	TMP	= Temporary works			
Unique Number	001	= New design			3-6 digitals
	002	= Existing			

Once the Federated Model (with LOD 300) is ready for coordination, it will be handed over to the fabricators to input further detailing for design intent. After completion of model detailing, the fabricator will provide BIM Team with the IFC format, such as ABWF model, STR & CIV model, to be integrated into a new Federated Model (with LOD 400).

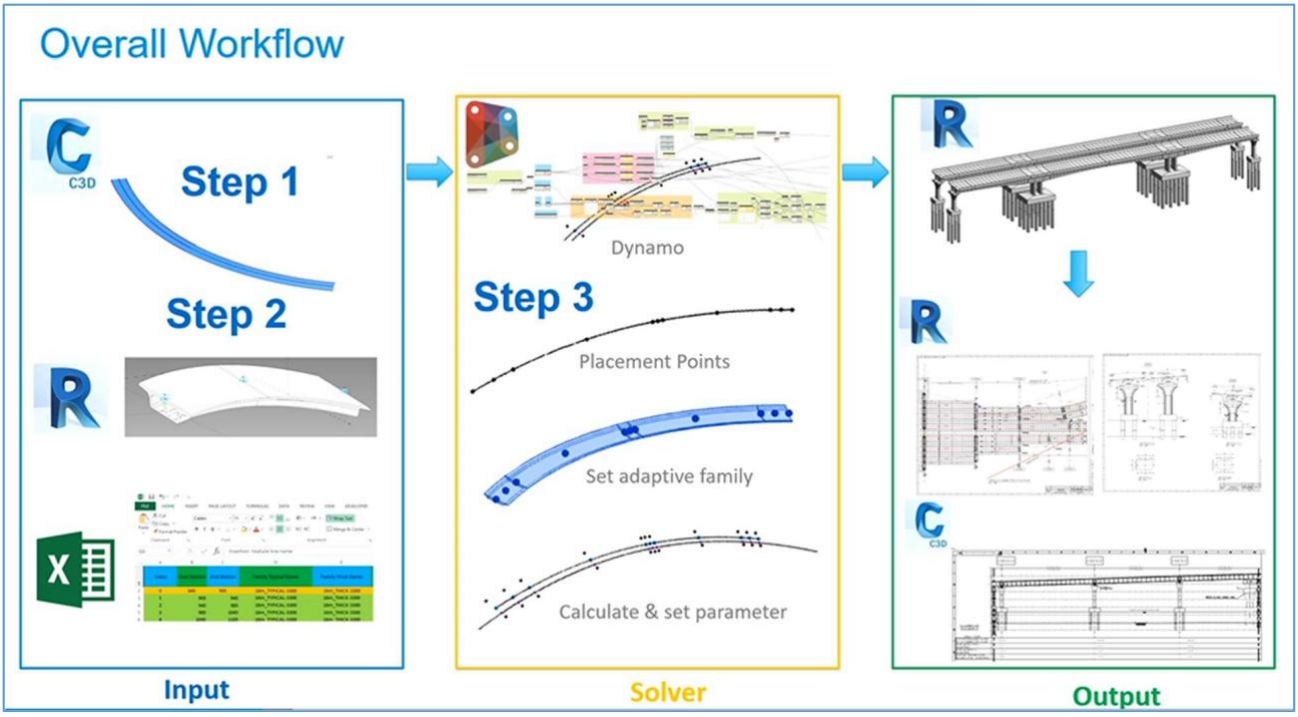
Naming Convention for Information Container refer to “NAMING STANDARD – March 2023”

5.1.3 **Volumes, Zones and Areas**

Information containers shall be separated into different volumes, zones and areas. The level of breakdown will be subject to the size of the combined information containers in each location / zone / area to avoid ineffective handling due to over-sized model. The optimal size of each subdivision information containers would be approximately 400MB ~ 800MB which is manageable by most computers of 8GB ~ 16GB RAM.

5.1.4 **Linear Structure Modelling approach**

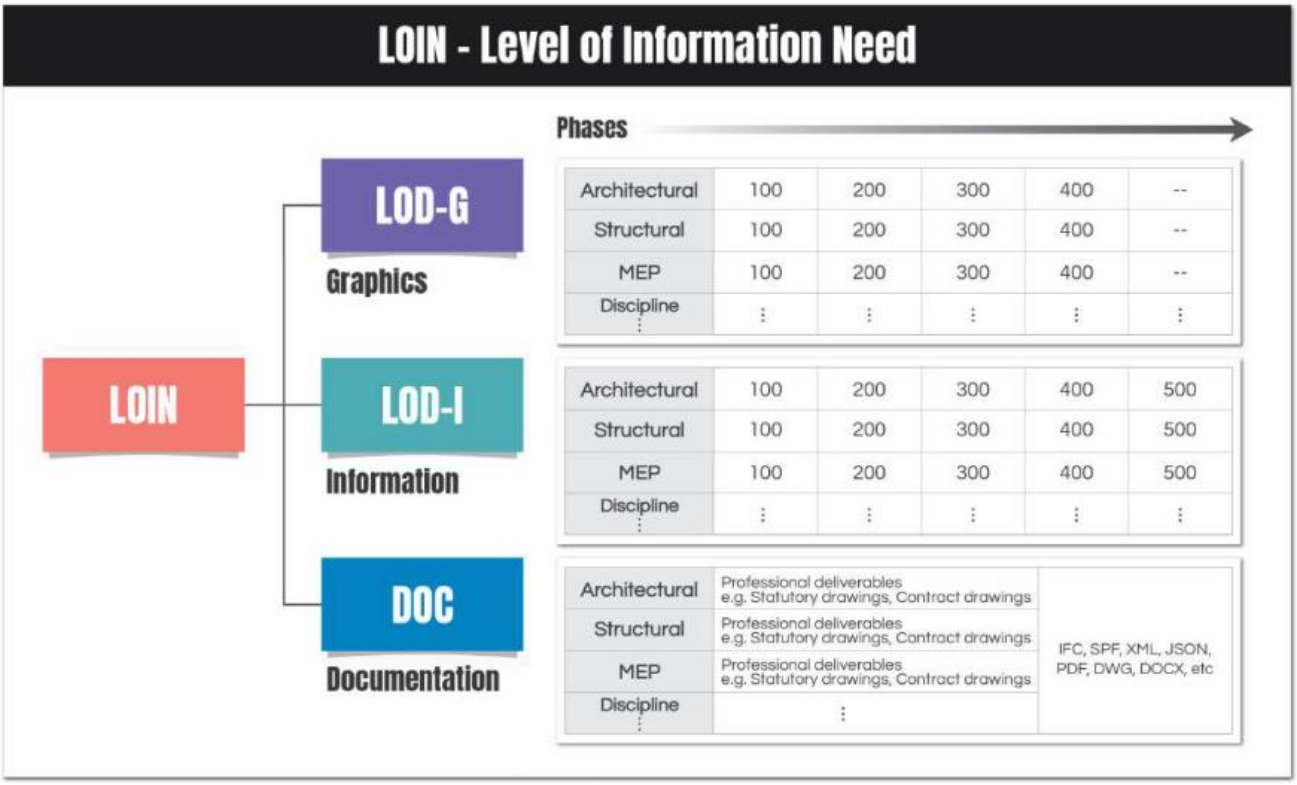
The modelling of linear structures shall be semi-automated by aligning Autodesk Revit and AutoCAD Civil 3D using Dynamo. The brief workflow is illustrated below:



7. Project Information Standards

Level of Information Need

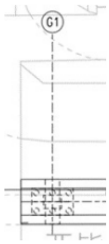
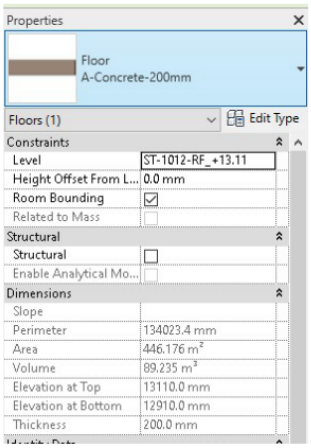
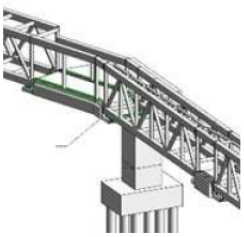
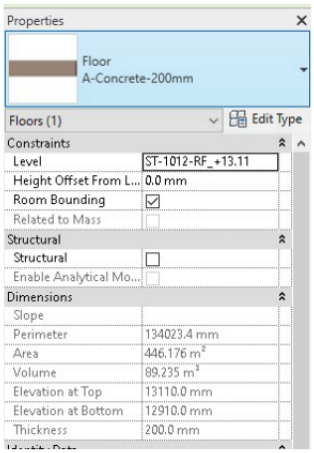
Level of Information Need (LOIN) responsibility matrix is to provide the right level of detail to meet the deliverable requirements for submission. The LOD as shown below is a guideline for the development of the BIM models that will be synchronised in the drawing generation and BIM model coordination for review. The figure 4-1 shows definition of LOIN including Level of Graphics (LOD-G), Level of Information (LOD-I) and Level of Documentation (DOC)



Level of Graphics (LOD-G) Definitions - The level of graphics shall display the correct size and shape from the model elements. Example would be the anchor piles will be modelled at the correct diameter pile size and location.

Level of Information (LOD-I) Definitions - The level of information shall display the correct size and shape from the model elements. Additional information can be added to the model elements to identify the model and to support in the coordination and lifecycle of the project. Adding additional information not required or will not being used should be avoided. Having too much information not being used can slow the performance of the model file which can cause delay which should be removed.

Level of Documentation (DOC) Definitions - There will be no documentation required for design stage which operation and manual documents will be provided at as built stage.

LOD	Description	Phase	LOD-G	LOD-I
100	Mass models will be developed which parameters for area, height, volume, location and orientation clearances, cost per square meter are defined.	Investigation		Revit 
200	Generic model elements are modelled for approximate size, shape, location and orientation.			
200	Generic model elements are modelled for approximate size, shape, location and orientation when the design cannot meet LOD 300.	Detailed Design		Revit 
300	Model elements are modelled by discipline or systems which is accurately correct with size, shape, location and orientation. Non graphical information can be added to the model elements.			

400	Model elements are modelled by discipline or systems which is accurately correct with size, shape, location and orientation. Non graphical information can be added to the model elements. Additional model elements will be added that will provide information for elements built for construction, example will be manufactures parts used for construction and shop drawings from the BIM model required for fabrication and assembly during construction.	Construction, As-built (Graphics)		
500		As-built (Information)		

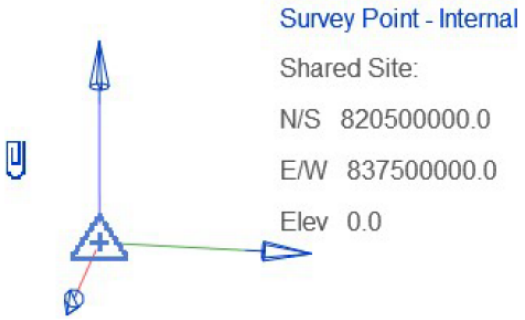
Project Coordinates and units

The origin or base point and orientation of the project shall be based on the project location and its reference to the Hong Kong 1980 Grid (HK1980 Grid) and Hong Kong Principal Datum (HKPD). All BIM models shall be coordinated to the project base point, BIM models not coordinated will not be accepted. This will be checked in Navisworks Manage by the BIM Project Manager to ensure the models are coordinated. The BIM Project Manager will notify the BIM coordinators if the model is required to be corrected to the coordinates specified below. This will ensure the models can be geo referenced to any software for the project.

Coordinates	Original Point / Orientation
Easting	837634.028 m
Northing	820725.885 m
Elevation	0 mPD
Rotation angle of the project North to true North	336.516 degrees East

Figure 4-2 - Project Base Point in Revit

Figure 4-3 Survey Point - Internal in Revit



The Contractor proposes below table of Units

Description	Units	Precision	Example
Length (Civil)	metre	3 decimals	30.150m
Length (All other disciplines)	millimetre	No decimal	24mm
Angle and Slope	Decimal degrees	4 decimals	15.3500°
Area	Square metre	3 decimals	45.350m^2
Volume	Cubic metre	3 decimals	68.500m^3
Coordinates system	Easting coordinates in metres	6 digits with 3 decimals	837634.028m
Coordinates system	Northing coordinates in metres	6 digits with 3 decimals	820725.885m

Naming Formats

The naming for the BIM Models are referenced with accordance with the MTR naming standards as detailed in the table below.

The Contractor proposes naming conventions of BIM models as follows:

Table 4-3 MTR Naming Standard

1 FILE NAMING

Field No.	1		2		3		4		5		6
Field Description	CONTRACT	-	STAGE	-	LOCATION	-	ORIGINATOR	-	SUBJECT	-	NUMBER
Field Values	01234	-	K	-	000	-	MTR	-	A10	-	000001
		-	S	-	ZZZ	-	GOV	-	A11	-	000002
			B		*etc*		*etc*		A12		000003
			P						A13		000101
			T						A14		000102
			C						A15		000201
			W						*etc*		000301
			Z								*etc*

identifier – description / originator / subject

unique number

f

Example: 11286-W-SUW-PYC-STR-001

Table 4-4 File Naming Codes (Example)

Description	Code
1. Contract	11286
2. Stage	
Sketch	K
Statutory Submission	B
Reference Design / Detailed Design / Pre-Tender	P
Tender Drawings	T
Construction Drawing	W
As-built Drawing	Z
3. Location	
4. Originator	
5. Subject	
Architecture (Information Model)	ARC
Civil (Information Model)	CIV
Structural (Information Model)	STR
MEP (Information Model)	MEP
BIM Execution Plan (Doc)	120

Remark: Refer to MTR Naming Standard in Associated Documents

4.3.2 The naming for the Assets are referenced with accordance with the MTR naming

Equipment ID

Field No.	1		2		3		4		5		6		7		8
Station Equipment															
Field Desc.	LINE	-	TRACK*	-	STATION	-	SYSTEM	-	EQUIPMENT	-	LEVEL*	-	ROOM*	-	NUMBER
	TCL	-	DT	-	ZZZ	-	ADP	-	ADPL	-	PFL	-	XXX	-	001
Trackside															
Field Desc.	LINE	-	TRACK	-	STATION	-	STATION	-	SYSTEM	-		-			NUMBER
	TCL	-	DT	-	ZZZ	-	TCE	-	TEF	-					001

*optional

Example: TCL-DT-TSY-LAK-PLREJ-82

Table 4-5 Trackside Equipment Naming Codes (Example)

Description	Code
1. Line	
2. Track	
Nothing	NIL
3. Location	
New site plan	A11
Proposed Utilities	UUP
Site setup and ELS, temp. works	000
4. System	
Building Services –Building Management System	BMS
Building Services –Drainage Services	DRN
Building Services –Environmental Control System	ECS
Building Services -Electrical Services	ELE
Building Services -Environmental	ENV
Building Services –Fire Services	FSS
Building Services –Plumbing Services	PLU

Remark: Refer to Naming Standard in Associated Documents

The naming for the Revit files are referenced with accordance with the naming standards as detailed in the table below.

3 REVIT NAMING

Field No.	1		2		3
Field Description	ORIGINATOR	_	CATEGORY/TYPE	_	DESCRIPTION
Examples:					
Revit Family		_	LIF	_	landingdoor-BOH-A
Parametric Definition		_	Dyn4Revit	_	equipment2excel
Levels		_	FFL	_	absolute
Views		_	elevation	_	east
Schedules		_	framing	_	concourse-steel
Basic Walls		_	wall	_	lbwext-PLA50-RCC100-PLA25
Stacked Walls		_	wall	_	ext-PLA-RCC150-GLS150
Curtain Walls		_	wall	_	P1500x500-M50x150

Example: PYC-LIF-landingfoor-BOM-A

The naming for the Civil files/object are referenced with accordance with the naming standards as detailed in the table below.

4 CIVIL NAMING

4.1 Alignment File naming

Field No.	1		2		3		4		5
Field Description	CONTRACT	-	ORIGINATOR	-	STAGE	-	PROJECT	-	REVISION
Examples:									
ALG file	01234	-		-	P	-	WIL	-	01
ALG file	01234	-		-	P	-	WIL	-	01

Example: 11286- P-WIL-01

4.2 Alignment object naming

Field No.	1		2		3		4
Field Description	ORIGINATOR	-	SYSTEM	-	DESCRIPTION	-	PURPOSE
Examples:							
Alignment Object 1		-	PWY	-	UP_01_V01	-	20
Alignment Object 2			PWY		UP01_V03		20
Alignment Object 3			PWY		XADM01_V03		20

Example: PWY- UP 01 V01-20

Remark: Refer to Naming Standard in Associated Documents

4.3.5 The naming for the Object and Parameter are referenced with accordance with the naming standards as detailed in the table below.

5.4 Object file naming

5.4.1 Object file naming fields

Field No.	1		2		3		4
Field Description	ORIGINATOR	-	SYSTEM	-	DESCRIPTION	-	PURPOSE
Examples:							
Object 1		-	AFC	-	GateArray	-	30
Object 2		-	BP	-	Baseplate	-	20
Object 3	OAP	-	POW	-	PLC_Panel	-	20
Object 4	WSP	-	SIG	-	TracksideBeacon	-	30
Object 5		-	POW	-	SF6_GasLeakageAlarmPanel	-	20
Object 6	OAP	-	PWY	-	DTM_kowtkt01	-	20

Example: AFC- GateArray-30

Description	Code
1. Originator	
2. System	
Building Services –Building Management System	BMS
Building Services –Drainage Services	DRN
Building Services –Environmental Control System	ECS
Building Services -Electrical Services	ELE
Building Services -Environmental	ENV
Building Services –Fire Services	FSS
Building Services –Plumbing Services	PLU
3. Description	
110V_EquipmentSpecificTextDescription	110V with Equipment Specific Text Description
APG_FixedPanel	Automatic Platform Gate - Fixed Panel
4. Purpose	
10	Placeholder
20	Detailed
30	Manufacturer
40	Operations
50	Presentation

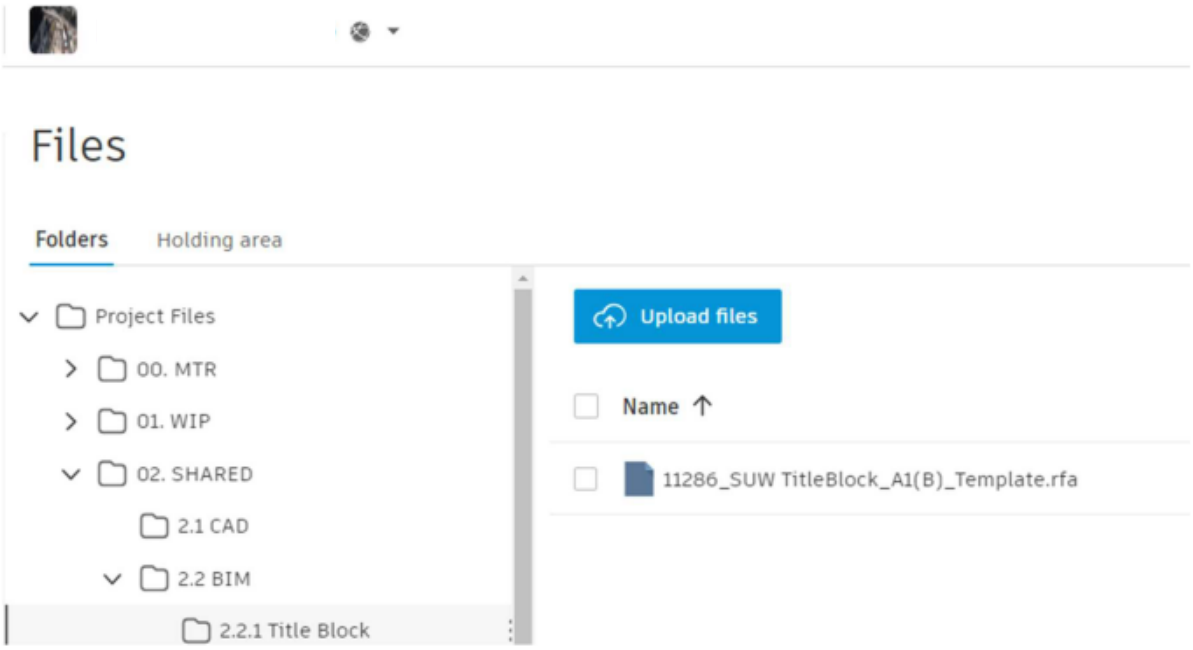
Remark: Refer to Naming Standard in Associated Documents

4.4 Digital objects

Digital objects (e.g. Revit families, Civil3D objects) are among the fundamental components of any Information Model. They contain 3D and 2D Information as well as non-graphical Attributes of real-life elements used in design. As such digital objects form an important part of Project Deliverables and is prepared by the Contractor according to the following requirements:

1. The Contractor creates digital objects by using Client's respective BIM Object Templates.
2. Please refer to Contractor's CDE for BIM Object Templates as follow path:

Figure 4-4 BIM Object Templates for drawing production – CDE Path "02. SHARE ➔ 2.2 BIM ➔ 2.2.1 Title Block"



3. The Contractor creates digital objects are parametric as fat as necessary and practicable.
4. The Contractor creates digital objects assigned to related family categories and classification.
5. English shall be used in developing digital objects.

4.5 Asset Information Requirements

4.5.1 Asset Classification

All assets within the project must be classified according to a standardized system, such as the Uniclass 2015 classification system, to ensure consistency and accuracy in the management and maintenance of assets.

4.5.2 Asset IDGGGG

Each asset must be assigned a unique identifier, such as an Asset ID, that can be used to track and manage the asset throughout its lifecycle.

4.5.3 Equipment Number

All equipment within the project must be assigned an equipment number or other unique identifier, to enable tracking and maintenance of equipment throughout its lifecycle.

4.5.4 Data Structure

Asset information must be structured in a consistent and standardized format, to enable efficient management and maintenance of assets. The format must be agreed upon by all project stakeholders and documented in the BIM Execution Plan.

4.5.5 Data Delivery

All asset information must be delivered in a specified format, such as a CSV file or Excel spreadsheet which can be compatible with the project's BIM software and asset management system.

4.5.6 Validation and Integration

Asset information must be validated and integrated into the project's BIM model or asset management system, using appropriate tools (e.g. COBie) and processes to verify and validate built items with point cloud data in synchrony with the progress of construction.

4.5.7 Review and Update

The asset information must be reviewed and updated throughout the project lifecycle, to ensure that it remains accurate and up-to-date. It must be included processes for reviewing and updating asset information, as well as identifying and resolving any discrepancies or issues that arise.

4.5.8 Asset Information Management Workflow (From PIM to AIM)

1) The main contractor provides a spreadsheet to the sub-contractor with a list of required asset information, including asset classification, asset ID, equipment number, and any other relevant data fields. Parameter naming referenced with accordance with the naming standards as "Section 4.3 Naming Formats"

Specific Structured Information Requirements

The following is to be read in conjunction with the GS and PS for Information Modelling.

param_name_concat	id_param	param_general_description
MTR-ASSET-1_1_ID_EquipNo	P0012	Asset-ID-EquipmentNo
MTR-ASSET-1_2_ID_EquipDescription	P0013	Asset_ID_(Description)
MTR-ASSET-1_3_ID_ParentEquipNo	P0014	Asset_ID_(Parent_Equipment_No)
MTR-ASSET-1_4_ID_ParentEquipDescription	P0015	Asset_ID_(Parent_Equipment_Description)
MTR-ASSET-2_1_EquipClass	P0016	Asset_Classification_(Equipment_Class_Description)
MTR-ASSET-2_2_EquipHeirarchy	P0017	Asset_Classification_(Equipment_Hierarchy)
MTR-ASSET-3_1_OEM_Manufacturer	P0018	OEM_info_(Manufacturer)
MTR-ASSET-3_2_OEM_Model	P0019	OEM_info_(Model)
MTR-ASSET-3_3_OEM_SerialNo	P0020	OEM_info_(Serial_No)
MTR-ASSET-4_1_Quantity	P0021	Quantity
MTR-ASSET-4_2_UoM	P0022	Unit of Measure
MTR-ASSET-5_1_LocLineServed	P0023	Location_(Line_Served)
MTR-ASSET-5_2_LocDirection	P0024	Location_(Direction)
MTR-ASSET-5_3_LocFrom	P0025	Location_(From_Location)
MTR-ASSET-5_4_LocTo	P0026	Location_(To_Location)
MTR-ASSET-5_5_LocChainageFrom	P0027	Location_(Chainage_From)
MTR-ASSET-5_6_LocChainageTo	P0028	Location_(Chainage_To)
MTR-ASSET-6_1_LC_PlacedInService	P0029	Life_Cycle_(Date_Placed_in_Service)
MTR-ASSET-6_2_LC_HandoverDate	P0030	Life_Cycle_(Handover_Date)
MTR-ASSET-7_1_MaintContractNo	P0031	Maintenance_Contract_No
MTR-ASSET-7_2_MaintContractor	P0032	Maintenance_Contractor
MTR-ASSET-7_3_WarrantyFrom	P0033	Warranty_from
MTR-ASSET-7_4_WarrantyTo	P0034	Warranty_to
MTR-ASSET-8_1_FAR_No	P0035	Fixed Asset Register Number

Figure 8 – Example of Spreadsheet with required asset information

2) The sub-contractor inputs the required asset information into spreadsheet, using the format and structure that in compliance with Specific Structured Information Requirements.

3) The sub-contractor provides the required asset information to the main contractor in a specified format, such as a CSV file or Excel spreadsheet.

4) The main contractor reviews the information provided by the sub-contractor to ensure fulfilling the project's information requirements and the data is accurate and complete.

5) The main contractor integrates the information provided by the sub-contractor into the project's BIM model or asset management system, using the appropriate tools (e.g. Revit) and processes to ensure that the data consistency and accuracy.

6) If any issues or discrepancies are identified during the validation or integration process, the main contractor communicates with the sub-contractor to resolve them and make sure that the information is correctly input.

7) Finally, the main contractor reviews and updates the information throughout the project lifecycle and complete Asset Information Management (AIM) Workflow.

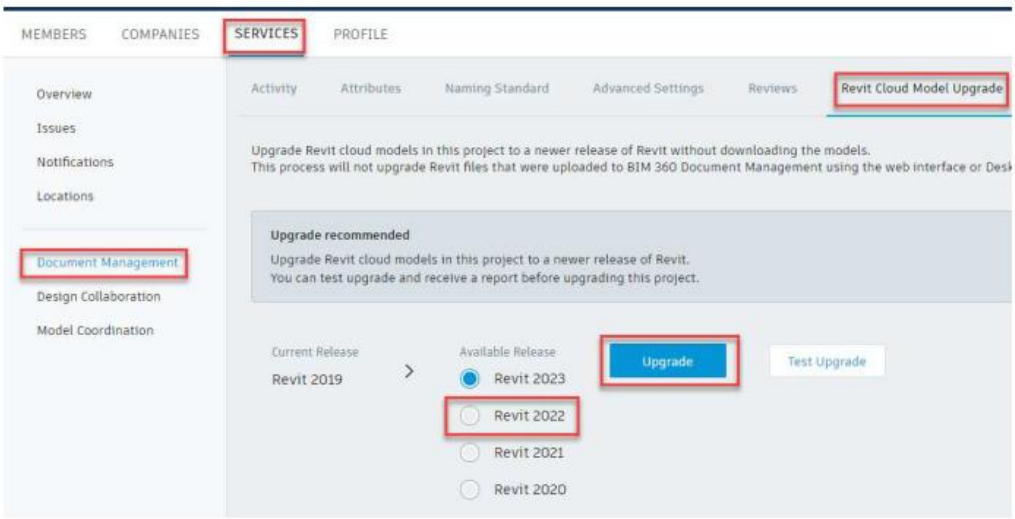
8. Software, Hardware, IT Infrastructure and Training

Software Platforms

The following BIM software platforms will be used across the project team for all deliverables:

The models will be converted to 2022 version once all models have been established. The upgrade to 2022 will be done in ACC (Formerly known as BIM 360) Revit Cloud Model Upgrade.

Figure 6-1 ACC Document Management - Revit Cloud Model Upgrade



The following BIM software platforms will be used across the project team for all submissions.

No	Function / form	Originating application	Version
1.	Information Model Submissions	Autodesk Navisworks Manage / original authoring platform	2022
2.	Design authoring of buildings and other vertical facilities	Autodesk Revit (Architecture, Structure, MEP)	2022
3.	Design authoring of civil and other linear facilities	Autodesk Civil 3D	2022
4.	Alignment design	N/S	N/S
5.	Federation, coordination and design review	Autodesk Navisworks Manage / Autodesk Construction Cloud (Formerly known as BIM 360)	2022
6.	Construction planning, sequencing and simulation	Synchro	2022
7.	Presentation of 4D animations, videos, analyses, etc.	Synchro	2022
8.	Drawings	Autodesk Revit	2022
9.	Drawings	Autodesk Civil 3D	2022
10.	Clash Analysis reports	Autodesk Navisworks Manage	2022
11.	Schedules, Tables	N/S	Latest version
12.	Document production	MS Office (Word, PowerPoint, Excel, etc.)	Latest version
13.	Document reviewing and commenting	MS Office (Word, PowerPoint, Excel, etc.)	Latest version
14.	Images	.jpg, .png	Latest version

Submission File Formats

Project deliverables will be submitted in the following file formats:

Table 6-2 Submission file Formats

Function	File Format	Notes
Native Model File	.rvt .dwg	Primary design development
Information and Coordination Model File	.nwc .nwd	Design review
Model Federation	.nwf .nwd	Design review
Clash Report	.nwf .nwd .pdf .xls	Navisworks Manage
Schedules, Tables	.xls .xml	Wherever possible generated directly from the native model
Drawings	.dwg .pdf	2D representations generated directly from the native model. (PDF only in specific justified cases)
Reports	.pdf	From native doc, xlsx using data from PIM
Images	.jpg .png	
Construction Planning, Sequencing and Simulation	.nwd .sp	Graphical (3D) and 4D design information
4D Simulations, Animations, Videos	.mpg .avi	Or other agreed and approved format

Information Modelling Capability Assessments and Training

The project BIM Manager and discipline BIM coordinators shall ensure the modelling capability for the team have the skills to deliver in BIM. The team should have experience from previous BIM projects or the understanding of using Revit, ACC (Formerly known as BIM 360) and Navisworks Manage.

The Contractor, sub-contractor, BIM sub-consultant will complete the Supply Chain Capability Summary (SCCS) forms based on assessments of their project delivery team's capability to manage and produce BIM-related information and availability of information technology (IT) to demonstrate their capacity of meeting the requirements of the **MTRC** scope.

Training Methodology

BIM training, which will be provided by qualified project staff, in the following areas is proposed to enhance the project team's capabilities in BIM utilization:

- BIM fundamentals
- BIM project implementation
- CDE and Data management
- Hands-on software training in model navigation, 4D simulation, clash analysis, generation of schedules and tables, drawing production etc.

Training will be scheduled in conjunction with the programme so that staff development in BIM processes is maintained throughout the critical parts of the project. Workstations with necessary software installed will be provided by the Contractor to the training attendees for software training, which can be carried out via video conference or at the training venue set up by the Contractor to meet the needs of the project team.

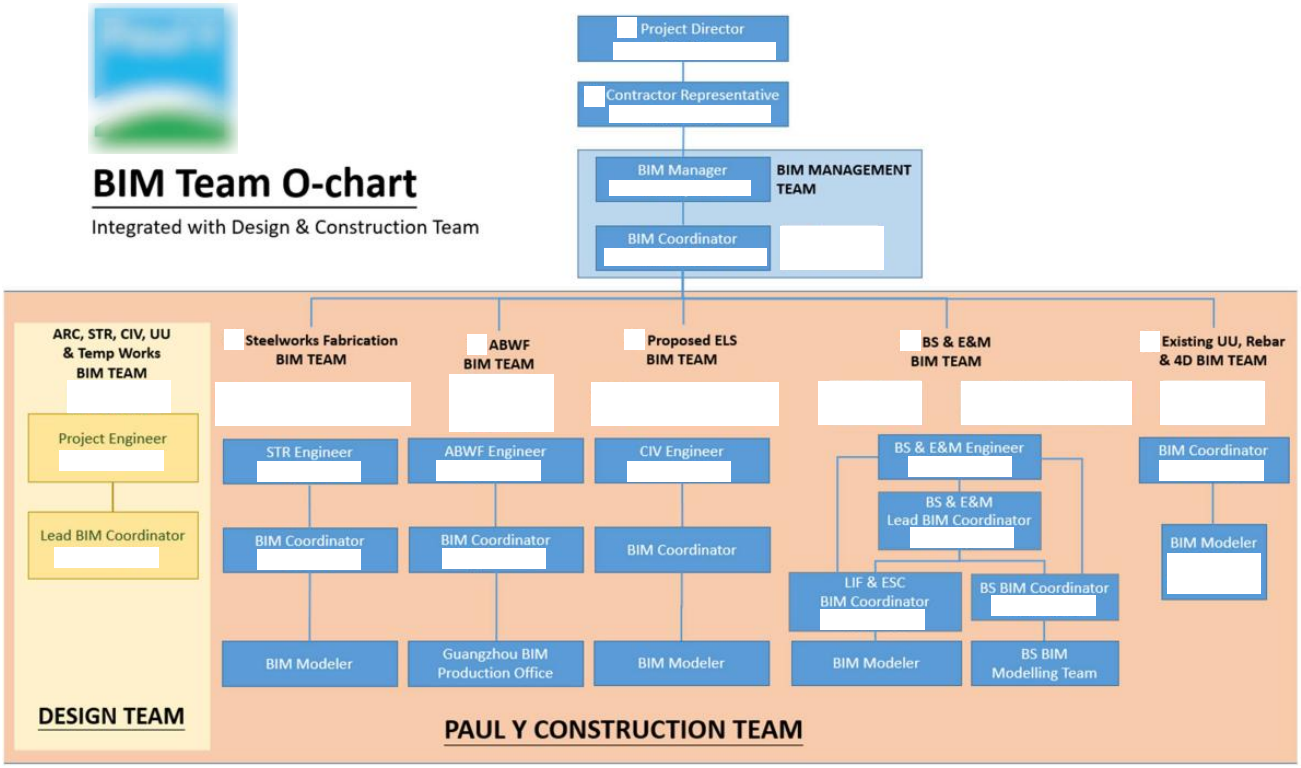
Training / workshop	Description	Trainer	Audience	Frequency
Training of design review software	Participates will learn how to navigate, sectioning and measure the models	Contractor BIM Coordinator (MCBC)	Project team	Upon contract commencement and hold bi-monthly to support newcomer of the projects
Training of CDE platform (BIM Viewer)	Participates will learn how to review documents, mark up and make comments on the drawings	Contractor BIM Coordinator (MCBC)	Project team	Upon contract commencement and hold bi-monthly to support newcomer of the projects
Training of CDE platform (Document Management)	Participates will learn the standard, rules and naming convention of information container, the workflow of information exchange and submit and approval	Contractor BIM Manager (MCBM)	Document controller	Upon contract commencement and hold bi-monthly to support newcomer of the projects
Training of 4D simulation software	Participates will learn how to review 4D models	Contractor BIM Coordinator (MCBC)	Programme planner	Upon contract commencement

The BIM Project Manager shall have a BIM Kick-off meeting to brief the team of the setup of the BIM project. Training shall be provided for team members that need support in areas they do not have the skill level to deliver in BIM. The training will be recorded on Teams which the training will be on the project training. On the project training will ensure the training is specific to meet MTR BIM requirements and submission.

Training/ Workshop	Description	Trainer	Audience	Frequency
BIM Kick-off Meeting	Briefing on the setup of the BIM project and MTR standards and requirements	Project BIM Manager	Members from each discipline	Start of the project
Teams BIM Training	Troubleshooting training in providing solutions and workflows to deliver BIM	Project BIM Manager	Discipline teams	Upon request

9. BIM Team Resources, Competency and Training

3.3 Organisation Chart



3.4 Organisational Roles and Responsibilities

The organisational team roles are:

Table 3-1 Organisational Roles and Responsibilities

Role & Trade		Organisation	Responsibilities
Client		MTR Corporation	Scope of Service, EIR, CDE
Main Contractor		Paul Y.	Lead Construction, Overall Project Delivery Management
Design Team	Architecture	ARUP	Arch and Structural design models shall be authored by ARUP.
	Structure & Civil		
	Underground Utilities		
	Temporary Works		
BIM Management		XenseTech	Overall BIM Management of both Design Team & Construction Team for MTR Existing SUW Concourse to Footbridge.
	STR - Steelworks Fabrication	KPa	Modeling based on Steelworks Fabrication design details drawings.
Construction Task Teams	ABWF - Cladding	TBA	
	ABWF - Glazing / Curtain Wall	TBA	
	ABWF - Louvres / Windows	TBA	
	ABWF - Ceiling	TBA	
	ABWF - Metal Work	TBA	
	ABWF - Signage	TBA	
	ABWF - Façade	TBA	
	Rebar Modelling	XenseTech	Modeling based on rebar design details drawings.
	Temp Works	TBA	
	Proposed ELS	Mannings	Modeling based on Proposed ELS design details drawings.
	Existing Underground Utilities Modelling	XenseTech	Modeling based on UU record drawings, UU survey reports, trial pits.

	E&M - Building Services	REC	Environmental Control System, Drainage Services, Plumbing Services, Electrical Services, Fire Services, Lift & Escalator, Communications System, SEM, CBWD modeling
	E&M - COM System	REC	COM Equipment (e.g. CCTVs / Speakers) modeling
	E&M - Main Control System	REC	Main Control System Equipment modeling
	E&M – Lift & Escalator	TKE	Lifts, Escalators & Moving Walkways
	4D Modelling	XenseTech	4D Initial Modeling based on Accepted Programme. 4D Progress Modeling based on Monthly Programme Update.

3.5 Information Management Roles and Responsibilities

3.5.1 The information management team roles are:

Table 3-2 Information management Roles and Responsibilities

Table of Information Management Roles and Responsibility		
Discipline	**Role**	**Responsibility**
Client	Project Information Manager (PjIM)	• Manage and monitor the compliance of data structure, collaborative working environment and deliverables submitted by the Contractor against the BEP.
Client	Project Information Engineer	• Assist the PjIM in reviewing Information models and assisting with the management of CDE workflows.
Main Contractor	Contractor's Project Manager (CPM)	• Lead and drive the BIM adoption among construction team • Manage and monitor the BIM implementation, to ensure BIM can achieve client's value.
Main Contractor	Contractor's BIM Manager (CBM)	Strategy • Develop BIM quality assurance/quality control framework. • Consolidate and propose BIM hardware and software provisions, and propose digital technologies suitable for 11286. Establish BIM staffing requirements and BIM modelling

Table of Information Management Roles and Responsibility		
Discipline	**Role**	**Responsibility**
		strategy / protocol. • Resolve BIM implementation issues. • Establish soft landing strategies for information model handover, operation training and project close out. Management • Assess the BIM resources requirements, organize and coordinate the resources of the BIM team for the project. • Monitor, manage and report the time, cost, and quality performance of BIM implementation in the project. • Manage federated models verify versions and quality. Implementation • Work with the project teams to develop and implement BIM technologies, BIM Execution Plans, workflows and processes, enforcement, and quality audits. • Lead the BIM implementation in the projects to meet the objectives of the projects. • Oversee the quality and timely delivery of the BIM deliverables in the projects, maintain a clear and up-to-date register, and ensure and sign off the quality of the deliverables. • Lead BIM-related coordination workshops and monthly progress meetings and maintain records of attendance and decisions made. • Lead the BIM teams to ensure that the execution of BIM in projects complies with the relevant BIM standards and project specifications and requirements. • Help DDC to successful implement the BIM strategy. Training • Lead the BIM training in the project and assess and certify the project team competence prior to allowing them to carry the relevant items of BIM work.
Main Contractor	Contractor's BIM Coordinator (CBC)	Implementation • Supervise the work of BIM modelers in BIM implementation • Supervise the production and revision of BIM models and maintain the BIM dataset for various BIM Uses/applications in accordance with the relevant BIM Execution Plan, BIM standards and project specifications. • Oversee the project schedule, quality, and manpower arrangement for the project.

Table of Information Management Roles and Responsibility		
Discipline	**Role**	**Responsibility**
		• Coordinate and assist in BIM implementation and ensure all project BIM deliverables comply with the relevant BIM standards and project specifications and requirements. • Assist the BIM Manager in BIM-related reporting or meetings. Coordination • Assist and support the BIM Manager in BIM collaboration and coordination with the Employer, consultants, contractor, subcontractors, suppliers, and others in construction team to meet the objectives of the project. • Communicate and coordinate with different external project stakeholders in the various disciplines, including architects, engineers, surveyors, and the operation team to maximize the utilization of BIM. Training • Provide training at project and team level. • Prepare training materials, videos, user manual, etc.
Main Contractor	BIM Modeler	Implementation • Author/Create, modify, and maintain BIM models, BIM objects and BIM datasets to meet the relevant BIM standards, BIM uses/applications, project specifications and the requirements provided by the design and/or construction professionals. • Attend and assist the professionals in the relevant disciplines in their work in BIM project coordination meetings. • Produce project drawings/plans and schedules from BIM models for approvals or statutory submissions. • Provide support to the BIM manager(s), BIM coordinator(s) and design and/or construction professional(s) in BIM implementation in projects.
Main Contractor	MEP Engineer, Civil Engineer, Building Engineer	• Review BIM models and provide necessary information for BIM uses. • Coordinate clash and issue found in 3D coordination, clash detection and issue management. • Utilize information model for engineering calculation, design quality, buildability and operation performance review.

Table of Information Management Roles and Responsibility		
Discipline	**Role**	**Responsibility**
Main Contractor	Quantity Surveyor (QS)	• Review BIM models and provide necessary information for BIM uses. • Extract the quantities from the model
Main Contractor	Safety officer (SO)	• Review BIM models and provide necessary information for BIM uses. • Review 4D information and Construction Sequence Simulations for risks assessment to eliminate hazards / mitigate risks, improving safety performance.
Main Contractor	Surveying Team (SY) & Environmental Office (EO) & Quality Management Team (QM)	• Digital Survey Team provide 3D scans point clouds / mesh models, photogrammetry models, coordinates and alignment. • Review BIM models and provide necessary information for BIM uses.
Design Teams, Subcontractors	Task Information Managers	Strategy • Production of design outputs related to a discipline specific, package based or time-based task • Produce Task Information Delivery Plan (TIDP). Management • Direct corresponding Task Teams compliance with BIM standards and methods. Implementation • Execute TIDP to ensure timely delivery of the BIM deliverables for coordination • Align the production of task Information using agreed systems • Authoring the production of task Information is suitable within common data environment (CDE). • Issue approved information within the common data environment Training • Provide training at task team level. Prepare training materials, videos, user manual, etc.
Design Teams, Subcontractors	BIM Authors	Implementation • Author/Create, modify, and maintain BIM models, BIM objects and BIM datasets to meet the relevant BIM standards, BIM

Table of Information Management Roles and Responsibility		
Discipline	**Role**	**Responsibility**
		uses/applications, project specifications and the requirements provided by the design and/or construction professionals. • Attend and assist the professionals in the relevant disciplines in their work in BIM project coordination meetings. • Produce project drawings/plans and schedules from BIM models for approvals or statutory submissions. Provide support to the BIM manager(s), BIM coordinator(s) and design and/or construction professional(s) in BIM implementation in projects. .

Project Team Chart

Please refer to" 1.7.3 Submission of Contractor's Organisation Chart and Schedule of Personnel" - 11286-W-SUW-PYC-970-000010.pdf (V1) from Client's CDE.

10. Quality Assurance

Table 5.24-1 BIM Quality Control Checklist

Definition	Responsible Party	Software Program	Frequency	Checked
Single Discipline Check	Discipline	Model/Drawing reviews	Issue to Shared, published data	☐
Inter Disciplinary Check	All Disciplines	Model/Drawing reviews	Published data	☐

Table 5.24-2 BIM Model Validation Checklist

Level of Check	Action	Software	Checked
Issue for Coordination	BIM Checklist sign off by discipline coordinator	Autodesk Model Review, manual checks	☐

Table 5.24-3 BIM Checklist

Item	Checked
CAD standard check (compliance with agreed CAD standards)	☐
Models at the correct Origin and Orientation of project base point	☐
Models must be at 1:1 Scale, that is, no dimensions changed without changing the underlying model geometry	☐
2D linework must be aligned to its associated 3D surface at correct orientation, elevation and origin	☐

There must be no duplicate objects	☐
There shall be no 'custom' objects, that is, objects created by the user that are not approved or part of the Originators and/or Project library	☐
Models must be stand-alone project files with all linked data bound or removed	☐
All 'hidden', 'scrap', 'temporary' or redundant objects / geometry / linework must be deleted	☐
All author created views, sheet layout data (title blocks, annotation etc) and templates must be removed with the exception of the "model title view"	☐
All data not authored by the originator must be removed (e.g. shared grid file linked into architectural model)	☐
Model integrity must be correct (e.g. columns meet beams and slabs - no gaps)	☐
All objects must have the extended properties completed against the required Level of Detail	☐
All object properties must be spelt and formatted correctly and consistently	☐
All model files must have the correct filename and metadata	☐
Check that the model is using the current shared parameters, and keynotes files	☐

Checks	Definitions	Responsible Parties	Methodologies	Frequency
LOD-G Proposed	Ensure the geometry of the object elements are modelled to the proposed	BIM Coordinators	Visual check of 3% of modelled objects	Bi-Monthly
		BIM Project Manager	Visual check of 5% of modelled objects	Before the major submission stage of the deliverables
LOD-I Proposed	Ensure the attributes of the object elements are created/entered to the proposed format and contents	BIM Coordinators	Visual check of 3% of modelled objects using exported table	Bi-Monthly
		BIM Project Manager	Visual check of 5% of modelled objects using exported table	Before the major submission stage of the deliverables
Geometrical accuracy and engineering standard compliance	Ensure the objects are modelled to the exact size, location and orientation according to the LoD-G proposed.	BIM Coordinators	Overlay of design drawings, and random annotation of XYZ positions.	Bi-Monthly
		BIM Coordinators	Random check on design dimension and engineering requirements	Before the major submission stage of the deliverables

Naming Convention	Ensure the file name, non-system object names follow the proposed standard	BIM Coordinators	Visual Check	Monthly
File format	Ensure the BIM models are created with the proposed file format and version	BIM Coordinators	Random file checks	Monthly
Modelling Methodologies	Ensure the BIM objects are created with the proposed modelling methodologies	BIM Coordinators	Visual check of 3% of modelled objects	Bi-Monthly
		BIM Project Manager	Visual check of 5% of modelled objects using exported table	Before the major submission stage of the deliverables
Project Basepoints	Ensure the reference point of each model comply	BIM Project Manager	Visual check of project basepoints	First week after the model file is created

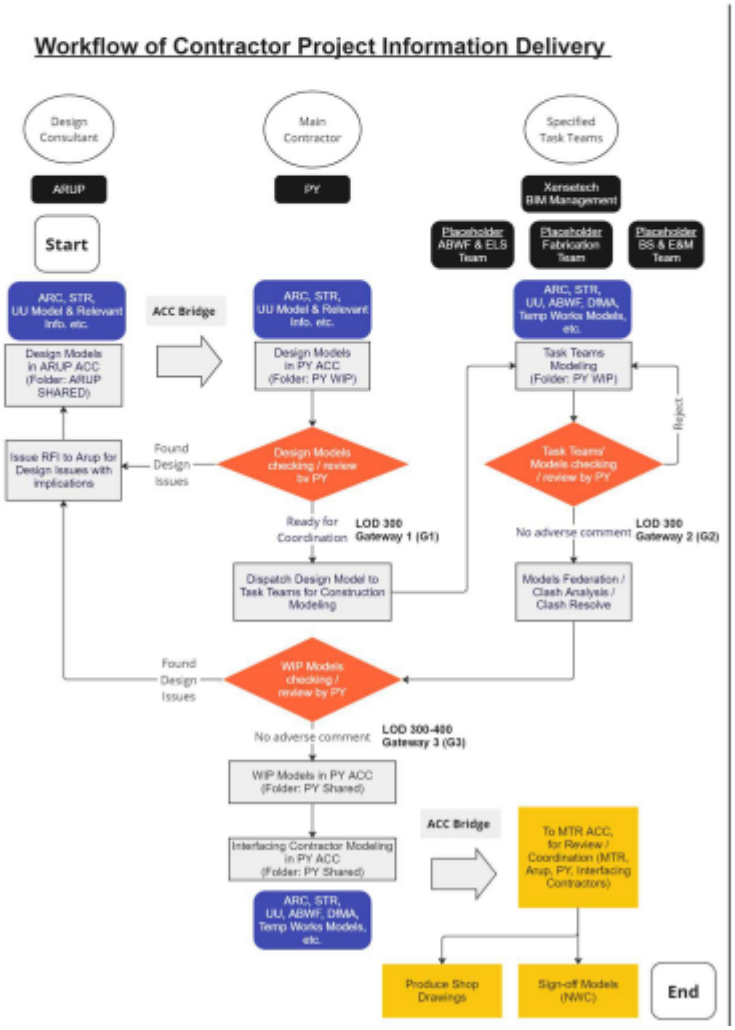
3.7 Client's Common Data Environment

3.7.1 All production and handover Information, including both graphical and non-graphical model Data, are managed through the Client's CDE. The Client's CDE acts as the central storage of Project Information, allowing the latest up to date Information Shared with the whole Project Team and all other Project stakeholders and used by Project Team members in a collaborative decision-making process. The Client establishes and maintains the Client's CDE in line with BS EN ISO 19650-2:2018.

3.7.2 The Project Manager arranges for the Contractor to have reasonable access to the information in the CDE Solution and Workflow as provided. The Contractor follows the digital project review process directed by the Project Manager and is responsible for training its staff accordingly.

3.7.3 The Contractor proposes the Information workflow and user access within Client's CDE as follows:

Figure 3 3 Workflow of Common Data Environment (CDE)



The Contractor shall submit all deliverables which is for review, authorize or accept into Client Shared. A workflow shall be initiated from Client shared to Client Published. The Contractor has view access in Client Published to be informed for any approved information.

3.7.4 "ACC Bridge" Function

The Bridge function start from a single CDE to other single CDE by bridge process, whenever the folder is updated and then the linked folder/s will be updated together. The automatic does not include selected files, any subfolders, or files inside subfolders.

Figure 3-4 Example of Bridge Function – From CDE 1 to CDE 2

3.8 Contractor's Common Data Environment

3.8.1 The Contractors CDE will be hosted in ACC (Formerly Known as BIM 360) platform. All discipline shall be working in the CDE for collaboration and to receive the latest models shared.

3.8.2 **01-WIP** folder shall be the native file folder location for all disciplines to develop the models and drawings

3.8.3 **02-Shared** folder shall be the native files, copied out for sharing for other disciplines to consume and link to their native models.

3.8.4 **03-Publish** folder shall be the files shared for review and coordination.

3.8.5 **04-Archive** folder shall be proactive archiving for current, inactive or superseded Information.

The Contractor provides, own and manage the contractor's CDE in line with BS EN ISO 19650-2:2018.

All deliverables shall be started in Contractor WIP. Client has upload access in the folder to issue information to Contractor if any. After the information is ready for coordination, task team leader shall upgrade the information from Contractor WIP to Contractor Shared. Client has view download and upload access in Contractor Shared to make advance comments into the information if any. While the information is ready for submission, contractor's project manager or the presentative shall submit the information into Client Shared. For those history of information shall be coped into Contractor Archive, client has view access into the folder during project period for audit trial.

The Contractor proposes the Information workflow and user access within Contractor's CDE as follows:

Figure 3-5 Workflow of Common Data Environment (CDE)

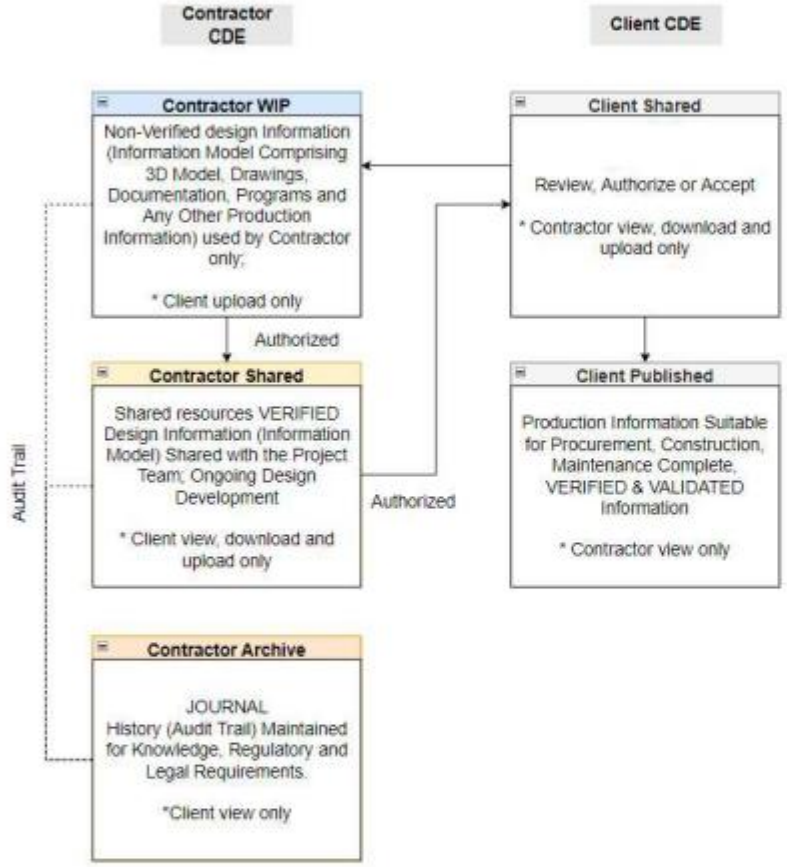
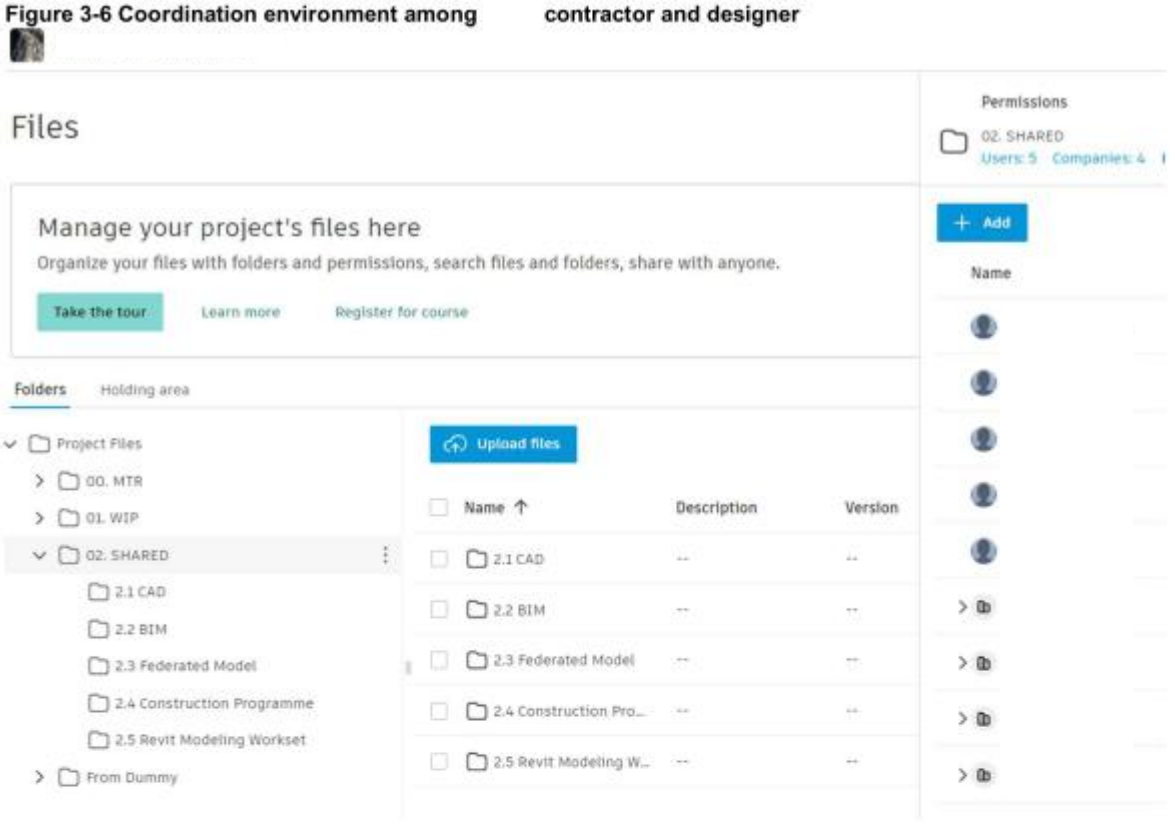


Figure 3-6 Coordination environment among contractor and designer



To avoid dutiplate information may be produced by the above workflow and make information management become effective, naming convention of metadata shall be proposed. The Contractor propose the metadata according to ISO19650-2:2018 as follows:

Table 1 – Table of Metadata for Information Container		
For all information container in CDE		
Metadata	**Example**	**Remarks**
File name	Name	Refer to (4.3 Naming Format)
Version	V1	Automated generated by ACC
Mark-up	Y/N	Automated generated by ACC
Issue	Y/N	Automated generated by ACC
Last updated	Apr 26, 2022 11:06 AM	Automated generated by ACC
Updated by	Johnny Tam	Automated generated by ACC
Status Code	S1	Refer to table of status code

A standardized status code shall be adopted to differentiate information container. The status code shall be assigned by task team leader. Different status code represents the purpose or intention of the information container.

Table 2 – Table of status code		
Code	**Description**	**Revision**
Work in progress (WIP)		

S0	Initial status	Preliminary revision and version
Shared (non-contractual)		
S1	Suitable for coordination	Preliminary revision
S2	Suitable for information	Preliminary revision
S3	Suitable for review and comment	Preliminary revision
S4	Suitable for stage approval	Preliminary revision
S5	Withdrawn*	N/A
S6	Suitable for PIM authorization	Preliminary revision
S7	Suitable for AIM authorization	Preliminary revision
Published (contractual)		
A1, An, etc.	Authorized and accepted	Contractual revision
B1, Bn, etc.	Partial sign-off (with comments)	Preliminary revision
Published (for AIM acceptance)		
CR	As constructed record document	Contractual revision

Table 3 – Table of application of status code	
S0	Assigned by task teams to identify information containers as Work in Progress and not yet suitable to be Shared outside the task team.
S1	Assigned by task teams to limit the information container's use to coordination activities only by its recipients. Information containers assigned this status should only be used to qstand or advance their own deliverables in a coordinated manner. It is likely to be assigned to a geometrical information container, but it is important to understand that S1 can be assigned to any information container.
S2	Assigned by task teams to limit the information container`s use for any specific activity by its recipients. This status denotes that the author is providing it for information only to help others in certain situations. For example, reference information provided by the appointing party such as a dilapidations report would be given this status code. Another example would be an email file containing site photos.
S3	Assigned by task teams to limit the information container`s use to commenting and review activities only by its recipients. Information containers assigned this status should only be used to review their contents against the information requirements or to provide feedback on their development. For example, an outline proposal to solve a technical design problem during Concept stage.
S4	Assigned by task teams to limit the information container`s use to stage approval activities only by its recipients. The outcome of the review following this status should be the acceptance of the information container that it meets stage requirements.
S5	This status code is not used in the National Annex
S6	Assigned by task teams to limit the information container`s use to the lead appointed party's authorization of the project information model (see ISO 19650-2 clauses 5.7.1 and 5.7.2). The information should not be used for contractual purposes, for example, construction until the project information model that it forms part of has been authorized by the lead appointed party and accepted by the appointing party. If the project information model is rejected but the information container itself does not require amendment its status will remain at S6 until the project information model is

	authorized. If the project information model is rejected and the information container requires amendment, then it is assigned the S0 status until it can be shared again. Note that a project information model could be a single information container, or it could be multiple information containers depending on the exchange information requirements.
S7	Assigned by task teams to limit the information container`s use to authorization activities for Stage 6 (Handover) only by its recipients. The outcome of this status should be the authorization of the information model that it meets the requirements for handover to facilities and asset management teams.
A1, An, etc.	Assigned by task teams to represent the Stage the authorized and accepted information container relates to in accordance with the task information delivery plan. For example A1 would represent an authorized and accepted information container generated in Stage 1, A2 would represent Stage 2 and so on
CR	Assigned by task teams to represent an information container that has been authorized and accepted and was previously assigned an S7 status.

11. Handover Procedures

Handover Review Strategy

To ensure that all Project Close-out Checklist items are completed prior to handover to the end-user, the following review strategy will be implemented:

Before Project Close-out (At least 1-Month): A review of the Project Close-out Checklist items will be submitted to ensure that all items are on track for completion. Any items that require additional attention will be identified and addressed promptly.

Before Project Close-out (At least 3-Months): A more comprehensive review of the Project Close-out Checklist items will be submitted to ensure that all items are progressing as planned. Any items that are falling behind schedule will be identified, and corrective action will be taken to bring them back on track.

Appendix A – Master Information Delivery Plan (MIDP)

	DELIVERABLE PRODUCTION SCHEDULE			Constructor's Submission Schedule											
		Contract No:		PYCs Representative:											
Information details (unstructured and structured information)															
ID (ID of project stage, group of deliverables, deliverable or information container (IC), i.e. file)	NAME (of project stage, group of deliverables, deliverable or information container (IC) / file)	STRUCTURE OF INFORMATION (structured - can be interpreted by a machine unstructured - must be interpreted by a human)	CLASSIFICATION CODE (Uniclass 2015)	FORM (form of presenting information based on Uniclass 2015)	FORMAT (file format)	DESCRIPTION (plain language)	CONTENT COMMENTS (specific requirements for the contents)	Target Submission Date PYC to MTR	Target Submission Date To STA	Target Approval Date	REFERENCE (template or other reference to be used to prepare information)	TARGET SUBMISSION MILESTONE (weeks after appointment starting date)	APPROVAL MILESTONE (weeks after submission milestone)	SUBMITTING PARTY CODE (Contractor / Subcontractor)	Programme ID
GD. 1.1	Safety & Health														
D.1.1.1	Submission of Site Personnel Uniform Design	Unstructured	PM 60 70 95	FI 80	.pdf	Management Plan									
D.1.1.2	Submission of Uniform Changing Facilities	Unstructured	PM_60_70_95	FI_80	.pdf	Management Plan									
D.1.1.3	Submission of Safety and Health Management Plan	Unstructured	PM_60_70_17	FI_80	.pdf	Management Plan									
D.1.1.4	Submission of Emergency Action Plan	Unstructured	PM 80 50 30	FI 80	.pdf	Management Plan									
D.1.1.5	Submission of Air Quality Management Plan (AQMP)	Unstructured	PM 60 70 95	FI 80	.pdf	Management Plan									
D.1.1.6	Submission of Health & Safety Plan	Unstructured	PM 60 70 17	FI 80	.pdf	Management Plan		10-Jul-23		3-Aug-23					11286-MVP-01820
D.1.1.7	Welfare and Hygiene Plan	Unstructured	PM_60_70_17	FI_80	.pdf	Management Plan									
D.1.1.8	Submission of Emergency Plan for Plant Collapse	Unstructured	PM_80_50_30	FI_80	.pdf	Management Plan									
D.1.1.9	Submission of Emergency Plan for Ground Settlement and Collapse	Unstructured	PM 80 50 30	FI 80	.pdf	Management Plan									
D.1.1.10	Submission of Crisis Management Plan	Unstructured	PM 60 70 17	FI 80	.pdf	Management Plan									
D.1.1.11	Report for Drill in relation to fire occur at Temporary Site Office	Unstructured	PM 60 70 17	FI 80	.pdf	Management Plan									
GD. 1.2	Quality														
D.1.2.1	Submission of Quality Plan	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.2	Submission of Contractor's Submission Schedule	Unstructured	PM 40 60 08	FI 80	.pdf	Management Plan									
D.1.2.3	Submission of Survey Quality Plan	Unstructured	PM_10_20_69	FI_80	.pdf	Management Plan									
D.1.2.4	Submission of proposed action plans for CQA 11286 01	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.5	Action completion record for Contractor Quality Audit (CQA 11286 01)	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.6	Submission of Internal Audit Report (PSA01)	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.7	Submission of Subcontractor Surveillance Audit Report (SSA01)	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.8	Submission of Corporate Surveillance Audit Report (CSA01)	Unstructured	PM_10_20_69	FI_80	.pdf	Management Plan									
GD. 1.3	System Assurance														
D.1.3.1	System Assurance Plan	Unstructured	PM 40 50 03	FI 80	.pdf	Management Plan		13-Jul-23		7-Aug-23					11286-MVP-01950
D.1.3.2	Submission of Minutes of System Assurance Review Meeting No. 1	Unstructured	PM_40_50_03	FI_80	.pdf	Management Plan									
D.1.3.3															
D.1.3.4															
GD. 1.4	Risk														
D.1.4.1	Submission of Risk Management Plan, Risk Standard and Procedures	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan		19-Jun-23		7-Aug-23					11286-MVP-01330
D.1.4.2	Submission of Risk Management Plan (Rev 01)	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan									
D.1.4.3	Minute of Project Delivery Risk Workshop No. 1	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan		19-Jun-23		7-Aug-23					11286-MVP-01570
D.1.4.4	Monthly Risk Progress Report Aug 2023	Unstructured	PM_60_60_75	FI_80	.pdf	Management Plan									
D.1.4.5	Monthly Risk Progress Report Sep 2023	Unstructured	PM_60_60_75	FI_80	.pdf	Management Plan		19-Jun-23		7-Aug-23					11286-MVP-01330
D.1.4.6	Monthly Risk Progress Report Oct 2023	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan									
D.1.4.7	Minutes of Project Delivery Risk Workshop No. 2	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan		19-Jun-23		7-Aug-23					11286-MVP-01570
D.1.4.8	Minutes of Project Delivery Risk Workshop No. 3	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan									
D.1.4.8	Minutes of Project Delivery Risk Works No. 4	Unstructured	PM_60_60_75	FI_80	.pdf	Management Plan									
GD. 1.5	Human Factor														
D.1.5.1	Nomination of Contractor's Labour Officer	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan									
D.1.5.2	Submission of Site Transportation Vehicles (with drivers)	Unstructured	PM_60_60_75	FI_80	.pdf	Management Plan									
GD. 1.6	Environmental														
D.1.6.1	Submission of Environmental Management Plan	Unstructured	PM_60_10_75	FI_80_60	.pdf	Management Plan		10-Aug-23		3-Aug-23					11286-MVP-01290
D.1.6.2	Submission of Contract Specific Environmental Monitoring and Audit (EM&A) Manual	Unstructured	PM_30_30_26	FI_80_60	.pdf	Management Plan		13-Jul-23		7-Aug-23					11286-MVP-01640
D.1.6.3	Submission of Noise Management Plan	Unstructured	PM 60 10 75	FI 80 60	.pdf	Management Plan		10-Jul-23		3-Aug-23					11286-MVP-01270
D.1.6.4	Tree Risk Assessment of One Affected Tree Bombax ceiba inside The Works Area of Pedestrian Link Connecting Pak Tai Street and S	Unstructured	PM 60 10 75	FI 80 60	.pdf	Management Plan									
D.1.6.5	Monthly EM&A Report No. 101	Unstructured	PM 60 10 75	FI 80 60	.pdf	Management Plan									
D.1.6.6	Monthly EM&A Report No. 102	Unstructured	PM_60_10_75	FI_80_60	.pdf	Management Plan									
D.1.6.7	Construction Noise Permit (GW-RE1128-23)	Unstructured	PM_60_10_75	FI_80_60	.pdf	Management Plan									
D.1.6.8	Monthly EM&A Report No. 103	Unstructured	PM 60 10 75	FI 80 60	.pdf	Management Plan									
D.1.6.9															
D.1.6.10															
GD. 1.7	Resources														
D.1.7.1	Submission of Contractor's Organisation Chart	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.2	Nomination of Staff	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.3		Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.4	Nomination of Safety Personnel (Safety Manager)	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.5	Nomination of Safety Personnel (Safety Officer)	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.6	Nomination of Safety Personnel (Site Nurse)	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.7	Nomination of Public Relations Officer	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.8	Nomination of Quality Manager	Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.9	Nomination of Temporary Works Coordinator	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.10	Nomination of CPUU	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.11	Proposed driver's qualification and experience	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.12	Nomination of Planner	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.13	Nomination of Planning and Programming Manager	Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.14	Nomination of T4	Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.15	Nomination of Human Factor Specialist	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.16	Nomination of Risk Manager	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.17	Nomination of System Assurance Manager	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.18	Nomination of CPUU (Poon Kong Sang and Ng Tong Chiu Henry)	Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.19	Nomination of Survey Assistants (Lee Tze King)	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.20	Nomination of DCSMS Team Leader and team members	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.21	Nomination of Independent Consultant for Condition Survey	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.22	Nomination of ICE/RSE & RGE)	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.23	Nomination of Environmental Team (ET) and ET Leader (Mandy To)	Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.24	Nomination of Assistant Construction Manager	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.25	Nomination of Survey Manager	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.26	Nomination of Survey In-charge	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									

	DELIVERABLE PRODUCTION SCHEDULE			Constructor's Submission Schedule											
		Contract No:		PYCs Representative:											
Information details (unstructured and structured information)															
ID (ID of project stage, group of deliverables, deliverable or information container (IC), i.e. file)	NAME (of project stage, group of deliverables, deliverable or information container (IC) / file)	STRUCTURE OF INFORMATION (structured - can be interpreted by a machine unstructured - must be interpreted by a human)	CLASSIFICATION CODE (Uniclass 2015)	FORM (form of presenting information based on Uniclass 2015)	FORMAT (file format)	DESCRIPTION (plain language)	CONTENT COMMENTS (specific requirements for the contents)	Target Submission Date PYC to MTR	Target Submission Date To STA	Target Approval Date	REFERENCE (template or other reference to be used to prepare information)	TARGET SUBMISSION MILESTONE (weeks after appointment starting date)	APPROVAL MILESTONE (weeks after submission milestone)	SUBMITTING PARTY CODE (Contractor / Subcontractor)	Programme ID
GD. 1.1	Safety & Health														
D.1.1.1	Submission of Site Personnel Uniform Design	Unstructured	PM 60 70 95	FI 80	.pdf	Management Plan									
D.1.1.2	Submission of Uniform Changing Facilities	Unstructured	PM_60_70_95	FI_80	.pdf	Management Plan									
D.1.1.3	Submission of Safety and Health Management Plan	Unstructured	PM_60_70_17	FI_80	.pdf	Management Plan									
D.1.1.4	Submission of Emergency Action Plan	Unstructured	PM 80 50 30	FI 80	.pdf	Management Plan									
D.1.1.5	Submission of Air Quality Management Plan (AQMP)	Unstructured	PM 60 70 95	FI 80	.pdf	Management Plan									
D.1.1.6	Submission of Health & Safety Plan	Unstructured	PM 60 70 17	FI 80	.pdf	Management Plan		10-Jul-23		3-Aug-23					11286-MVP-01820
D.1.1.7	Welfare and Hygiene Plan	Unstructured	PM_60_70_17	FI_80	.pdf	Management Plan									
D.1.1.8	Submission of Emergency Plan for Plant Collapse	Unstructured	PM_80_50_30	FI_80	.pdf	Management Plan									
D.1.1.9	Submission of Emergency Plan for Ground Settlement and Collapse	Unstructured	PM 80 50 30	FI 80	.pdf	Management Plan									
D.1.1.10	Submission of Crisis Management Plan	Unstructured	PM 60 70 17	FI 80	.pdf	Management Plan									
D.1.1.11	Report for Drill in relation to fire occur at Temporary Site Office	Unstructured	PM 60 70 17	FI 80	.pdf	Management Plan									
GD. 1.2	Quality														
D.1.2.1	Submission of Quality Plan	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.2	Submission of Contractor's Submission Schedule	Unstructured	PM 40 60 08	FI 80	.pdf	Management Plan									
D.1.2.3	Submission of Survey Quality Plan	Unstructured	PM_10_20_69	FI_80	.pdf	Management Plan									
D.1.2.4	Submission of proposed action plans for CQA 11286 01	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.5	Action completion record for Contractor Quality Audit (CQA 11286 01)	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.6	Submission of Internal Audit Report (PSA01)	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.7	Submission of Subcontractor Surveillance Audit Report (SSA01)	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.8	Submission of Corporate Surveillance Audit Report (CSA01)	Unstructured	PM_10_20_69	FI_80	.pdf	Management Plan									
GD. 1.3	System Assurance														
D.1.3.1	System Assurance Plan	Unstructured	PM 40 50 03	FI 80	.pdf	Management Plan		13-Jul-23		7-Aug-23					11286-MVP-01950
D.1.3.2	Submission of Minutes of System Assurance Review Meeting No. 1	Unstructured	PM_40_50_03	FI_80	.pdf	Management Plan									
D.1.3.3															
D.1.3.4															
GD. 1.4	Risk														
D.1.4.1	Submission of Risk Management Plan, Risk Standard and Procedures	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan		19-Jun-23		7-Aug-23					11286-MVP-01330
D.1.4.2	Submission of Risk Management Plan (Rev 01)	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan									
D.1.4.3	Minute of Project Delivery Risk Workshop No. 1	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan		19-Jun-23		7-Aug-23					11286-MVP-01570
D.1.4.4	Monthly Risk Progress Report Aug 2023	Unstructured	PM_60_60_75	FI_80	.pdf	Management Plan									
D.1.4.5	Monthly Risk Progress Report Sep 2023	Unstructured	PM_60_60_75	FI_80	.pdf	Management Plan		19-Jun-23		7-Aug-23					11286-MVP-01330
D.1.4.6	Monthly Risk Progress Report Oct 2023	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan									
D.1.4.7	Minutes of Project Delivery Risk Workshop No. 2	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan		19-Jun-23		7-Aug-23					11286-MVP-01570
D.1.4.8	Minutes of Project Delivery Risk Workshop No. 3	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan									
D.1.4.8	Minutes of Project Delivery Risk Works No. 4	Unstructured	PM_60_60_75	FI_80	.pdf	Management Plan									
GD. 1.5	Human Factor														
D.1.5.1	Nomination of Contractor's Labour Officer	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan									
D.1.5.2	Submission of Site Transportation Vehicles (with drivers)	Unstructured	PM_60_60_75	FI_80	.pdf	Management Plan									
GD. 1.6	Environmental														
D.1.6.1	Submission of Environmental Management Plan	Unstructured	PM_60_10_75	FI_80_60	.pdf	Management Plan		10-Aug-23		3-Aug-23					11286-MVP-01290
D.1.6.2	Submission of Contract Specific Environmental Monitoring and Audit (EM&A) Manual	Unstructured	PM_30_30_26	FI_80_60	.pdf	Management Plan		13-Jul-23		7-Aug-23					11286-MVP-01640
D.1.6.3	Submission of Noise Management Plan	Unstructured	PM 60 10 75	FI 80 60	.pdf	Management Plan		10-Jul-23		3-Aug-23					11286-MVP-01270
D.1.6.4	Tree Risk Assessment of One Affected Tree Bombax ceiba inside The Works Area of Pedestrian Link Connecting Pak Tai Street and S	Unstructured	PM 60 10 75	FI 80 60	.pdf	Management Plan									
D.1.6.5	Monthly EM&A Report No. 101	Unstructured	PM 60 10 75	FI 80 60	.pdf	Management Plan									
D.1.6.6	Monthly EM&A Report No. 102	Unstructured	PM_60_10_75	FI_80_60	.pdf	Management Plan									
D.1.6.7	Construction Noise Permit (GW-RE1128-23)	Unstructured	PM_60_10_75	FI_80_60	.pdf	Management Plan									
D.1.6.8	Monthly EM&A Report No. 103	Unstructured	PM 60 10 75	FI 80 60	.pdf	Management Plan									
D.1.6.9															
D.1.6.10															
GD. 1.7	Resources														
D.1.7.1	Submission of Contractor's Organisation Chart	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.2	Nomination of Staff	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.3		Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.4	Nomination of Safety Personnel (Safety Manager)	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.5	Nomination of Safety Personnel (Safety Officer)	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.6	Nomination of Safety Personnel (Site Nurse)	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.7	Nomination of Public Relations Officer	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.8	Nomination of Quality Manager	Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.9	Nomination of Temporary Works Coordinator	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.10	Nomination of CPUU	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.11	Proposed driver's qualification and experience	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.12	Nomination of Planner	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.13	Nomination of Planning and Programming Manager	Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.14	Nomination of T4	Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.15	Nomination of Human Factor Specialist	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.16	Nomination of Risk Manager	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.17	Nomination of System Assurance Manager	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.18	Nomination of CPUU (Poon Kong Sang and Ng Tong Chiu Henry)	Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.19	Nomination of Survey Assistants (Lee Tze King)	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.20	Nomination of DCSMS Team Leader and team members	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.21	Nomination of Independent Consultant for Condition Survey	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.22	Nomination of ICE/RSE & RGE)	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.23	Nomination of Environmental Team (ET) and ET Leader (Mandy To)	Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.24	Nomination of Assistant Construction Manager	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.25	Nomination of Survey Manager	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.26	Nomination of Survey In-charge	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									

Appendix B –Task Information Delivery Plan (TIDP)

	DELIVERABLE PRODUCTION SCHEDULE			Constructor's Submission Schedule											
		Contract No:		PYCs Representative:											
Information details (unstructured and structured information)															
ID (ID of project stage, group of deliverables, deliverable or information container (IC), i.e. file)	NAME (of project stage, group of deliverables, deliverable or information container (IC) / file)	STRUCTURE OF INFORMATION (structured - can be interpreted by a machine unstructured - must be interpreted by a human)	CLASSIFICATION CODE (Uniclass 2015)	FORM (form of presenting information based on Uniclass 2015)	FORMAT (file format)	DESCRIPTION (plain language)	CONTENT COMMENTS (specific requirements for the contents)	Target Submission Date PYC to MTR	Target Submission Date To STA	Target Approval Date	REFERENCE (template or other reference to be used to prepare information)	TARGET SUBMISSION MILESTONE (weeks after appointment starting date)	APPROVAL MILESTONE (weeks after submission milestone)	SUBMITTING PARTY CODE (Contractor / Subcontractor)	Programme ID
GD. 1.1	Safety & Health														
D.1.1.1	Submission of Site Personnel Uniform Design	Unstructured	PM 60 70 95	FI 80	.pdf	Management Plan									
D.1.1.2	Submission of Uniform Changing Facilities	Unstructured	PM_60_70_95	FI_80	.pdf	Management Plan									
D.1.1.3	Submission of Safety and Health Management Plan	Unstructured	PM_60_70_17	FI_80	.pdf	Management Plan									
D.1.1.4	Submission of Emergency Action Plan	Unstructured	PM 80 50 30	FI 80	.pdf	Management Plan									
D.1.1.5	Submission of Air Quality Management Plan (AQMP)	Unstructured	PM 60 70 95	FI 80	.pdf	Management Plan									
D.1.1.6	Submission of Health & Safety Plan	Unstructured	PM 60 70 17	FI 80	.pdf	Management Plan		10-Jul-23		3-Aug-23					11286-#MP-01820
D.1.1.7	Welfare and Hygiene Plan	Unstructured	PM_60_70_17	FI_80	.pdf	Management Plan									
D.1.1.8	Submission of Emergency Plan for Plant Collapse	Unstructured	PM_80_50_30	FI_80	.pdf	Management Plan									
D.1.1.9	Submission of Emergency Plan for Ground Settlement and Collapse	Unstructured	PM 80 50 30	FI 80	.pdf	Management Plan									
D.1.1.10	Submission of Crisis Management Plan	Unstructured	PM 60 70 17	FI 80	.pdf	Management Plan									
D.1.1.11	Report for Drill in relation to fire occur at Temporary Site Office	Unstructured	PM 60 70 17	FI 80	.pdf	Management Plan									
GD. 1.2	Quality														
D.1.2.1	Submission of Quality Plan	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.2	Submission of Contractor's Submission Schedule	Unstructured	PM 40 60 08	FI 80	.pdf	Management Plan									
D.1.2.3	Submission of Survey Quality Plan	Unstructured	PM_10_20_69	FI_80	.pdf	Management Plan									
D.1.2.4	Submission of proposed action plans for CQA 11286 01	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.5	Action completion record for Contractor Quality Audit (CQA 11286 01)	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.6	Submission of Internal Audit Report (PSA01)	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.7	Submission of Subcontractor Surveillance Audit Report (SSA01)	Unstructured	PM 10 20 69	FI 80	.pdf	Management Plan									
D.1.2.8	Submission of Corporate Surveillance Audit Report (CSA01)	Unstructured	PM_10_20_69	FI_80	.pdf	Management Plan									
GD. 1.3	System Assurance														
D.1.3.1	System Assurance Plan	Unstructured	PM 40 50 03	FI 80	.pdf	Management Plan		15-Jul-23		7-Aug-23					11286-#MP-01950
D.1.3.2	Submission of Minutes of System Assurance Review Meeting No. 1	Unstructured	PM_40_50_03	FI_80	.pdf	Management Plan									
D.1.3.3															
D.1.3.4															
GD. 1.4	Risk														
D.1.4.1	Submission of Risk Management Plan, Risk Standard and Procedures	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan		19-Jun-23		7-Aug-23					11286-#MP-01330
D.1.4.2	Submission of Risk Management Plan (Rev 01)	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan									
D.1.4.3	Minute of Project Delivery Risk Workshop No. 1	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan		19-Jun-23		7-Aug-23					11286-#MP-01570
D.1.4.4	Monthly Risk Progress Report Aug 2023	Unstructured	PM_60_60_75	FI_80	.pdf	Management Plan									
D.1.4.5	Monthly Risk Progress Report Sep 2023	Unstructured	PM_60_60_75	FI_80	.pdf	Management Plan		19-Jun-23		7-Aug-23					11286-#MP-01330
D.1.4.6	Monthly Risk Progress Report Oct 2023	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan									
D.1.4.7	Minutes of Project Delivery Risk Workshop No. 2	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan		19-Jun-23		7-Aug-23					11286-#MP-01570
D.1.4.8	Minutes of Project Delivery Risk Workshop No. 3	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan									
D.1.4.8	Minutes of Project Delivery Risk Works No. 4	Unstructured	PM_60_60_75	FI_80	.pdf	Management Plan									
GD. 1.5	Human Factor														
D.1.5.1	Nomination of Contractor's Labour Officer	Unstructured	PM 60 60 75	FI 80	.pdf	Management Plan									
D.1.5.2	Submission of Site Transportation Vehicles (with drivers)	Unstructured	PM_60_60_75	FI_80	.pdf	Management Plan									
GD. 1.6	Environmental														
D.1.6.1	Submission of Environmental Management Plan	Unstructured	PM_60_10_75	FI_80_60	.pdf	Management Plan		10-Aug-23		3-Aug-23					11286-#MP-01290
D.1.6.2	Submission of Contract Specific Environmental Monitoring and Audit (EM&A) Manual	Unstructured	PM_30_30_26	FI_80_60	.pdf	Management Plan		13-Jul-23		7-Aug-23					11286-#MP-01640
D.1.6.3	Submission of Noise Management Plan	Unstructured	PM 60 10 75	FI 80 60	.pdf	Management Plan		10-Jul-23		3-Aug-23					11286-#MP-01270
D.1.6.4	Tree Risk Assessment of One Affected Tree Bombax ceiba inside The Works Area of Pedestrian Link Connecting Pak Tai Street and S	Unstructured	PM 60 10 75	FI 80 60	.pdf	Management Plan									
D.1.6.5	Monthly EM&A Report No. 101	Unstructured	PM 60 10 75	FI 80 60	.pdf	Management Plan									
D.1.6.6	Monthly EM&A Report No. 102	Unstructured	PM_60_10_75	FI_80_60	.pdf	Management Plan									
D.1.6.7	Construction Noise Permit (GW-RE1128-23)	Unstructured	PM_60_10_75	FI_80_60	.pdf	Management Plan									
D.1.6.8	Monthly EM&A Report No. 103	Unstructured	PM 60 10 75	FI 80 60	.pdf	Management Plan									
D.1.6.9															
D.1.6.10															
GD. 1.7	Resources														
D.1.7.1	Submission of Contractor's Organisation Chart	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.2	Nomination of Staff	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.3		Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.4	Nomination of Safety Personnel (Safety Manager)	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.5	Nomination of Safety Personnel (Safety Officer)	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.6	Nomination of Safety Personnel (Site Nurse)	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.7	Nomination of Public Relations Officer	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.8	Nomination of Quality Manager	Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.9	Nomination of Temporary Works Coordinator	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.10	Nomination of CPUU	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.11	Proposed driver's qualification and experience	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.12	Nomination of Planner	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.13	Nomination of Planning and Programming Manager	Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.14	Nomination of T4	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.15	Nomination of Human Factor Specialist	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.16	Nomination of Risk Manager	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.17	Nomination of System Assurance Manager	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.18	Nomination of CPUU(Poon Kong Sang and Ng Tong Chiu Henry)	Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.19	Nomination of Survey Assistants (Lee Tze King)	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.20	Nomination of DCSMS Team Leader and team members	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.21	Nomination of Independent Consultant for Condition Survey	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.22	Nomination of ICE/RSE & RGEI	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.23	Nomination of Environmental Team (ET) and ET Leader (Mandy To)	Unstructured	PM_60_20_55	FI_90_30	.pdf	Nomination of System Assurance Manager									
D.1.7.24	Nomination of Assistant Construction Manager	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.25	Nomination of Survey Manager	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									
D.1.7.26	Nomination of Survey In-charge	Unstructured	PM 60 20 55	FI 90 30	.pdf	Nomination of System Assurance Manager									

GD. 1.12	Monitoring														
D.1.12.1	Submission of Digital Construction Site Management System Implementation Plan	Unstructured	PM_30_20_24 : Digital Construction Site	FI_90_85 : Survey (SU)	PDF	Report	Survey of existing utilities	7-Jul-23							11286-#MP-01930
GD. 1.13	Method Statement														
D.1.13.1	Submission of Method Statement	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method									
D.1.13.2	Method Statement for Instrumentation Installation and Monitoring	Unstructured	PM_60_20_22	FI_80_50	.pdf	Construction Method									
D.1.13.3	Method Statement for Condition Survey	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method									
D.1.13.4	Method Statement for Trial Pit and Trench Excavation	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method									
D.1.13.5	Method Statement for General Site Clearance	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method									
D.1.13.6	Master Plan of Method Statement (Rev.0)	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method									
D.1.13.7	Submission of Sub-contract Management Plan	Unstructured	PM_60_20_22	FI_80_50	.pdf	Construction Method									11286-#MP-01610
D.1.13.8	Method Statement for Hoarding Relocation works	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method									
D.1.13.9	Method Statement for Flood Prevention and Mitigation	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method		15-Jul-23		9-Aug-23					11286-#MP-01730
D.1.13.10	Method Statement for GI and Predrilling Works	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method									
D.1.13.11	Method Statement for Removal of Underground Obstruction	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method		4-Jul-23		4-Jul-23					11286-#MP-01710
D.1.13.12	Updated ITP for Method Statement for Removal of Underground Obstruction	Unstructured	PM_60_20_22	FI_80_50	.pdf	Construction Method		31-Aug-23		25-Sep-23					11286-#MP-01750
D.1.13.13	Drill Rig Information (by LAM)	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method		15-Aug-23		13-Oct-23					11286-DES-02650
D.1.13.14	Method Statement for Installation of Standpipe and Piezometer	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method		27-Jun-23		7-Jul-23					11286-DES-02700
D.1.13.15	Submission of Method Statement for Erection of PM's Office and Contractor's Office	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method		10-Jul-23		13-Oct-23					11286-DES-02750
D.1.13.16	Method Statement for Pre-grouting Works	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method									
D.1.13.17	Task Specific Work Procedure for Trial Pit & Trench excavation and removal of underground obstruction	Unstructured	PM_60_20_22	FI_80_50	.pdf	Construction Method									
D.1.13.18	Supplementary Pre-grouting Layout and Depth of Approach Lobby for Method Statement for Pre-grouting Works	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method									
D.1.13.19	Procedures for Crane Assemble for Bored Piling Works	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method									
D.1.13.20	Method Statement of Bored Pile Works	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method									
D.1.13.21	Task Specific Work Procedure for CCTV Inspection for Existing Drains	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method									11286-#MP-01610
D.1.13.22	Method Statement for Construction of Covered Walkway at Pak Tai Street	Unstructured	PM_60_20_22	FI_80_50	.pdf	Construction Method									
D.1.13.23	Method Statement for Ultrasonic Echo Sounder Test	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method		15-Jul-23		9-Aug-23					11286-#MP-01730
D.1.13.24	Method Statement for Sonic Logging Test	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method									
D.1.13.25	Method Statement for Pipe Pile Works	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method		4-Jul-23		4-Jul-23					11286-#MP-01710
D.1.13.26	Task Specific Work Procedure for Construction of Shelter for Car Park for PM's Office and Contractor's Office	Unstructured	PM 60 20 22	FI 80 50	.pdf	Construction Method		31-Aug-23		25-Sep-23					11286-#MP-01750
D.1.13.27	Method Statement for Temporary Road Lighting Installation	Unstructured	PM_60_20_22	FI_80_50	.pdf	Construction Method		15-Aug-23		13-Oct-23					11286-DES-02650
GD. 1.14	Material & Testing														
D.1.14.1	Material Submission of Bentonite Cement Grout Mix	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission		6-Sep-23							11286-PRC-03800
D.1.14.2	Material Supply	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.3	Material Testing	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.4	Materials Test Report	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.5	Submission of reinforcement supplier - SW	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03660
D.1.14.6	Submission of reinforcement supplier - VSC	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									11286-PRC-03660
D.1.14.7	Submission of reinforcement supplier - WMS	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									11286-PRC-03660
D.1.14.8	Submission of reinforcement supplier - QSHK	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03660
D.1.14.9	Proposing Laboratory ETS for Point Load Test	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.10	Mill and Test Certificates of A252 and A393 Steel Mesh	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.11	Submission of concrete supplier- HKC	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									11286-PRC-03690
D.1.14.12	30 20D+PFA (CAT.B) & (Cat C) concrete	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									
D.1.14.13	Submission of proposed (HOKLAS) testing Laboratory	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.14	Material Submission of Runfeng & Star Bentonite Grout	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03800
D.1.14.15	Material Submission of Feng Jiang & Star Bentonite Grout	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03800
D.1.14.16	Submission of proposed Castco Testing Centre Ltd	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission		6-Sep-23							11286-PRC-03800
D.1.14.17	Submission of proposed testing Laboratory - The Lab (Asia) Ltd	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									
D.1.14.18	Submission of proposed testing Laboratory - ETS-Testconsult Ltd	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.19	Material Submission of 20-20D(Cat C), 45-20D and 60-20D(CAT.B) concrete, and 45 MPa Cement Grout	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.20	Material Submission of Sodium Bentonite (Enviroplug) for Installation of Standpipe and Piezometer	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03660
D.1.14.21	Material Submission of Casagrande Piezometer for Installation of Standpipe and Piezometer	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									11286-PRC-03660
D.1.14.22	Material Submission of Cement Bentonite Grout for Installation of Standpipe and Piezometer	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03660
D.1.14.23	Proposed Laboratory for non-destructive testing laboratory for welding test for Temporary Site Office	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03660
D.1.14.24	Material Submission for Precast Concrete Pipe	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.25	Material Submission for Type A and Type B bedding	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.26	Mill certificates and Delivery Notes of Structural Steel for PM and Contractor Offices	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									11286-PRC-03690
D.1.14.27	Preliminary test report for GCO Probe Test for Temporary Site Offices at 11286.W1 site	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									
D.1.14.28	Submission of Proposed Testing Laboratory - Stanger Asia Limited	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.29	Submission of Proposed Testing Laboratory - Astar NDT Consultant Limited	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03800
D.1.14.30	Mill Certificates of 1st batch of Rebar (R0001)	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03800
D.1.14.31	Submission of Point Load Test Report for Predrill Works at PC1-4	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission		6-Sep-23							11286-PRC-03800
D.1.14.32	Material Submission for Temporary Street Lighting	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									
D.1.14.33	Submission of Inspection Authority Profile and declaration letter for the testing lab for Construction of Covered Walkway at Pak Tai	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.34	Material Submission for sonic tube & Reserved tube	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.35	Material Submission for Concrete Cover	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03660
D.1.14.36	Plant Trial report of 45 20 125mm slump concrete(45BFS2C404) of HK concrete Tsing Yi plant	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									11286-PRC-03660
D.1.14.37	Plant Trial report of 45 20 200mm slump TREMIE concrete(45CFS2C401) of HK concrete Tsing Yi plant	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									11286-PRC-03660
D.1.14.38	Submission of Preliminary Welding Procedures Specification (pWPS) and Proposed Inspection Authority for Welding Procedures & V	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03660
D.1.14.39	Submission of proposed welding procedure for Construction of Covered Walkway at Pak Tai Street	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.40	Specialist Contractors (Structural Steel) - KPa Engineering Limited	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.41	Proposed supplier for pipe pile casing	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									11286-PRC-03690
D.1.14.42	Material Submission of Hilti HST3 wedge anchor	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									
D.1.14.43	Submission of Proposed laboratory for NDT (K&N) for Pipe pile and Socketed-H pile works	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.44	Material Submission for Fixing Wire	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03800
D.1.14.45	Material Submission of structural steel for PTS cover walkway	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03800
D.1.14.46	Material Submission of rebar for PTS cover walkway	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission		6-Sep-23							11286-PRC-03800
D.1.14.47	Specialist Contractors (Hot Dip Galvanizing) – Yau Sang Galvanizing (Hot-Dip) Co., Ltd. (Main)	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									
D.1.14.48	Specialist Contractors (Hot Dip Galvanizing) – Zinc Shine Hot Dip Galvanizing Company Limited (Backup)	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.49	Proposed Fabrication Yard of P-Link Steelworks – China Sino Steelwork (Hui Zhou) Co., Ltd. (Main)	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.50	Proposed Fabrication Yard of P-Link Steelworks – Zhonaji Steel Structure Co., Ltd. (Backup)	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03660
D.1.14.51	Proposed Fabrication Yard of P-Link Steelworks – Heyuan Huafu Heavy Industries Co., Ltd. (Backup)	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									11286-PRC-03660
D.1.14.52	Submission of Proposed Castco Testing Centre Ltd. for U-Bolt Testing	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									11286-PRC-03660
D.1.14.53	Supplier of Steelworks Constituent Products and Components of P-Link-Guangzhou BaoSteel Southern Trade Co., Ltd	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03660
D.1.14.54	Submission of Concrete Cover Samples for Bored Pile Works	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.55	Submission of Bar Bending Schedule for Bored Pile PC2BP3	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.56	Supplier of Steelworks Constituent Products and Components of P-Link – HK HuangShangYou Steel Industrial Limited	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									11286-PRC-03690
D.1.14.57	Supplier of Steelworks Constituent Products and Components of P-Link – Laiwu Fangyuan Metal Products Co Ltd	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									
D.1.14.58	Submission of Welding Procedure and Welder Certificate for Bored Pile Works	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									
D.1.14.59	Material Submission for U-Bolt	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03800
D.1.14.60	Proposed fire protection material Juten SteelMaster 1200-WF	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03800
D.1.14.61	Inspection Authority and Testing Consultant (Structural Steelworks) – Prova Inspection & Testing Co., (H.K.) Ltd	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									
D.1.14.62	Inspection Authority and Testing Consultant (Structural Steelworks) – The Lab (Asia) Ltd	Unstructured	PM_60_10_65	FI_90_87	.pdf	Material Submission									
D.1.14.63	Inspection Authority and Testing Consultant (Structural Steelworks) – South China Inspection & Testing Ltd	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03800
D.1.14.64	Shear Studs for Steelworks of P-Link	Unstructured	PM 60 10 65	FI 90 87	.pdf	Material Submission									11286-PRC-03800
GD. 1.15	Shop Drawing														
D.1.15.1															
D.1.15.2															
GD. 1.16	Information Management														
D.1.16.1	BIM Execution Plan Submission	Unstructured	PM 40 60 08	FI 80	.pdf, .doc	Management Plan	Submitted	7-Aug-23							
D.1.16.2	BIM Clash Report (discrepancies, inconsistences and missing information or details of Client's 1st version of contract Information M	Unstructured	PM 40 60 08	FI 80	.pdf, .doc	Management Plan	Submitted								
D.1.16.3	BIM Clash Analysis Report (Monthly Update - Nov 2023)	Unstructured	PM_40_60_08	FI_80	.pdf, .doc	Management Plan	Submitted								
D.1.16.4	Deliverable Production Schedule	Unstructured	PM_40_60_08	FI_80	.pdf, .xlsx	Management Plan	Submitted	22-Dec-23							
D.1.16.5															

Appendix C – LOD Matrix

3.5.2 High Responsibility Matrix are:

Table 3-5 High Responsibility matrix of 26 BIM uses (except no.6, 7 and 12, 25).

Legend of Responsibility matrix			
Responsible	**Action**	**Contribute**	**Informed**
R	A	C	I
Person who is responsible completing the task	Person who is taking actions on the task(s)	Person who will be communicated with regarding the decision-making process and specific tasks	Person who will be updated on decisions and actions during the project

Level 1 Responsibility matrix											
No	BIM Use	Client	MCPM	MCBM	MCBC	Eng.	QS	SO	SY	EO	QM
1	Design Authoring	I	I	R	A	C					
2	Design Review	C	I	R	A	I					
3	Project Deliverables (incl. Drawings)	I	I	R	A	C					
4	Existing Conditions Model	I	I	R	A	I			C		
5	Sustainability Evaluation	I	I	R	A					C	
6	Site Analysis										
7	Space Programming	I	C	R	A	C		C			
8	Cost Estimation (5D Model)	I	I	R	A		C				
9	Spatial Coordination (3D)	I	I	R	A	C					
10	Engineering Analysis	C	I	R	A						
11	Facility Energy Analysis	C	I	R	A						
12	Building Code Validation										
13	Phase Planning (4D Model)	I	C	R	A	C		C			
14	Digital Fabrication	I	I	R	A	C					
15	Site Utilisation Planning	I	C	R	A	C		C			
16	3D Control and Planning	I	I	R	A	I			C		
17	3D Construction Coordination	I	I	R	A	C					
18	Construction System Design	I	I	R	A	C		C			
19	Construction Quality Management	I	I	R	A	I					C
20	As-Built Model	I	I	R	A	I	I	I	C	I	I
21	Maintenance Scheduling	I	I	R	A	C					
22	Project Systems Analysis	C	I	R	A						
23	Space Management and Tracking	C	I	R	A						
24	Asset Information Model	C	I	R	A	C	I	I	C	I	I
25	Sales and Marketing										
26	Heritage Information Modelling	C	I	R	A						

Appendix D – Clash Detection Matrix

Project name

Updated on 21/12/2023

No.	Disciplines	Abbreviation	1				2				3	4	5	6	7	8	9	10	11	12	13	14	15
			ARC 1	ARC 2	ARC 3	ARC 4	STR 1	STR 2	STR 3	STR 4	ECS	FSS	PLU	DRN	ELE	SIG	LIG	DfMA	MCS	COM	LIF	UUX	UUP
1	Architecture Model	ARC 1		1	0	19	3	0	4	1	0	2	0	0	0			0		0			
		ARC 2			112	130	1	8		44		0	0	0	0			0		0			
		ARC 3				31	2	1		24	0	0	0	0	0			0		0		0	
		ARC 4					5	23		71	8	34	4	49	96			0		0		4	
2	Structure Model	STR 1						1		2	0	3	0	16	0			0					
		STR 2							0	12		0		0									
		STR 3																0		0		0	
		STR 4									3	25	1	34	20			0		0		19	
3	Environmental Control System Model	ECS									19	1	0	0	0								
4	Fire Services Model	FSS										4	0	0	3								
5	Plumbing Services Model	PLU											4	0	0							2	
6	Drainage Services Model	DRN												4	0					0		23	
7	Electrical Services Model	ELE													11					1		11	
8	Road Sign, Traffic Sign	SIG																		0			
9	Street Light, Street Cable	LIG																		0			
10	Design for Manufacture and Assembly	DfMA																0		0			
11	Main Control System	MCS																		0			
12	Communication System	COM																		0			
13	Lifts	LIF																					
14	Existing Underground Utilities	UUX																					12
15	Proposed Underground Utilities	UUP																					

Appendix G – Model File List

Discipline	PYC (Full name: Paul Y)	OAP (Full name: ARUP)	Workset
ARC	11286-W-SUW-PYC-ARC-001 (TBA)	11286-W-SUW-OAP-ARC-001(Baselined)	PYC - CLA - Cladding PYC - GLA - Glazing / CWL - Curtain Wall PYC - LOU - Louvres PYC - CEI - Ceilings PYC - RLS - Railings PYC - GRA - Signage
FAC	11286-W-SUW-PYC-FAC-001 (TBA)	11286-W-SUW-OAP-FAC-001(Baselined)	PYC - FAC - Façade
STR	N/A (Non-applicable)	11286-W-SUW-OAP-STR-001 (Action by OAP)	PYC - SFR - Link Bridge PYC - STL - Steel OAP - SFR - Link Bridge OAP - SCO - Concrete OAP - FND - Foundations OAP - STL - Steel
STR	11286-W-SUW-PYC-STR-020 (Action by Xensetech)	11286-W-SUW-OAP-STR-002 (Baselined)	PYC - REB - Pier 1
STR	11286-W-SUW-PYC-STR-021 (Action by Xensetech)		PYC - REB - Pier 2-3
STR	11286-W-SUW-PYC-STR-022 (Action by Xensetech)		PYC - REB - Pier 4
CIV	N/A (Non-applicable)	11286-W-SUW-TMP-SIT-001 (Baselined)	OAP - TMP - Temporary Works
CIV	N/A (Non-applicable)	11286-W-SUW-OAP-ELS-001 (Baselined) 11286-W-SUW-OAP-ELS-002 (Baselined)	OAP - ELS - Excavation & Lateral Support
UUT	11286-W-UUX-PYC-UUT-001 (Action by Xensetech)	11286-W-UUP-OAP-DRN-001 (Action by OAP)	PYC - UUP - Design Underground Utilities OAP - UUP - Design Underground Utilities OAP - UUX - Existing Underground Utilities
MEP	11286-W-SUW-PYC-MEP-001 (Action by REC)	11286-W-SUW-OAP-MEP-001 (Baselined)	PYC - DRN - Building Services - Drainage Services PYC - PLU - Building Services - Plumbing Services PYC - DfMA - Design for Manufacture and Assembly
MEP	11286-W-SUW-PYC-MEP-003 (Action by REC)		PYC - ECS - Building Services - Environmental Control System PYC - FSS - Building Services - Fire Services
MEP	11286-W-SUW-PYC-MEP-004 (Action by REC)		PYC - ELE - Building Services - Electrical Services PYC - SEM - Structural Electrical and Mechanical PYC - C24 - External Works
COM	11286-W-SUW-PYC-COM-001 (Action by REC)		PYC - COM - E&M Systemwide - Communication System
LIF	11286-W-SUW-PYC-LIF-001 (Action by TBA)		PYC - LIF - E&M Systemwide - Lifts & Escalators
MEP	11286-W-SUW-PYC-MEP-002 (Action by REC)	11286-W-SUW-OAP-MEP-002	PYC - EXG - Existing Systems
MCS	11286-W-SUW-PYC-MCS-001 (Action by REC)	N/A (Non-applicable)	PYC - MCS - E&M Systemwide - Main Control System

Appendix H – Model Compliance Check Template

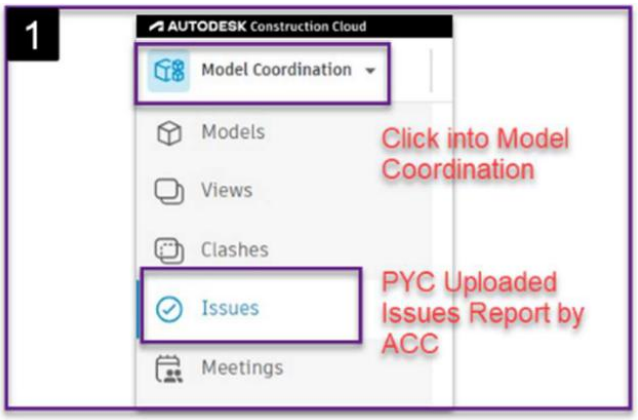
5.2 Design Review

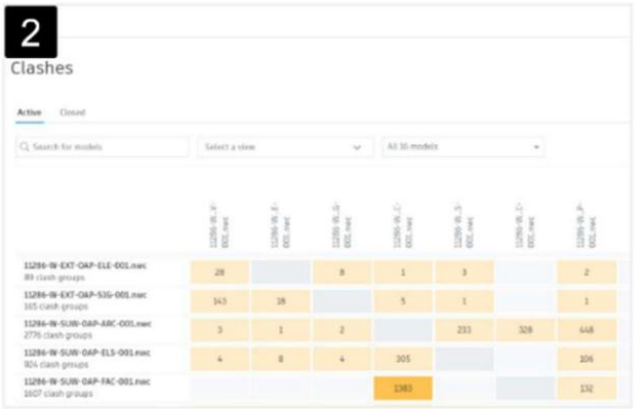
Design review will be carried out by visual checking and clash detection by software. Clash detection will be performed in the federated model using Navisworks to check design coordination in terms of spatial allowance and interference between disciplines. Clash results will be analysed, recorded, and reported in the format of clash reports and will be reviewed by the corresponding responsible designer(s).

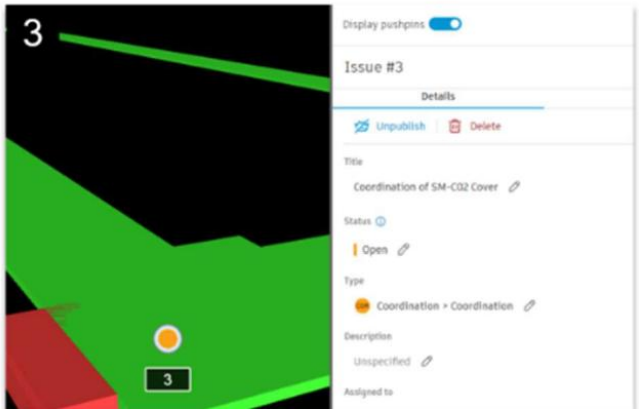
In general, the federated model of Shared individual models will be used for coordination and design review. The federated Shared model will be viewed in design review meetings using Navisworks. These models, along with the associated clash detection results and any recorded coordination issues will be made available on the Client's CDE. All design issues found will be recorded and distributed to all parties that are relevant to their resolution. To facilitate the distribution and tracking of the progress of the design issues, software platforms based on the use of BIM Collaboration – Autodesk Construction Cloud (ACC).

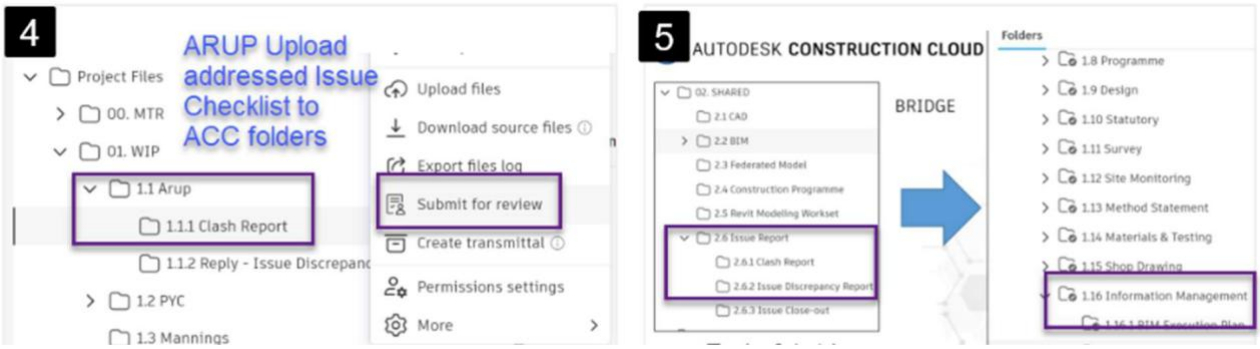
Linear structure modelling approach will be applied to the construction of the SUW Station.The modelling shall start from the placement of objects according to the alignment of the project, setting up the rules and parameters of the trade and preparing a library of the linear structural objects.

For the bridge model, a linear chainage reference will be created to which bridge elements will be set out, in accordance with the design. Depending on the complexity, the bridge elements may be modelled in increasing LOD until LOD-G reaches 300/400 and LOD-I reaches 500. Dynamic envelopes, that may be required for spatial reservation for installation or maintenance reasons, will be incorporated into the model as volumes, at the appropriate time, for design coordination.









The above is presented the flowchart of reporting Issue when issues found, including 5 steps:

Step 1: The Contractor is responsible for notifying issues found to the Design Consultant in the Autodesk Construction Cloud (ACC) system.

Step 2: The result of Clash Detection Matrix is performed using Navisworks and BIM Collaboration Function in ACC.

Step 3: The Design Consultant addresses and resolves the identified issues and provides a response to the Contractor.

Step 4: The Contractor submits for reviews and checks the provided resolution until the workflow is deemed complete.

~END ~