Who We Are

BIMS Group has been at the forefront of BIM adoption since its inception in 1984 and has extensive experience with its successful application on major projects in the Middle East and Hong Kong.

The services offered are based on internationally recognized standards such as PAS 1192:2013 and the newest international BIM standard ISO 19650. BIM execution and delivery takes place utilizing advanced and widely accepted software tools such as the Autodesk range of BIM tools,
Rhino, and third party add-ons such as Enscape, Synchro and Fuzor .

Providing these services allows our clients to comply with their project require-ments without having to expand their in-house resources, while at the same time increasing efficiency on projects which translates to a saving on both time and cost.

Our team of experienced resources have worked in Australia, Middle East, Europe and Asia with a combined experience of over 50 years and have managedprojects in all sectors of the construction industry. We understand the challenges of the construction industry and the regional influences, and are well in position to adapt our advanced solutions to suit.

www.bimsgroup.com

BIMS GROUP LIMITED

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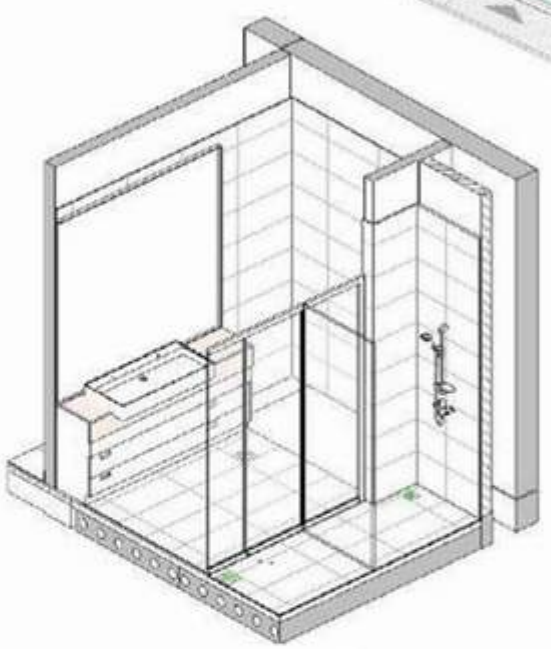

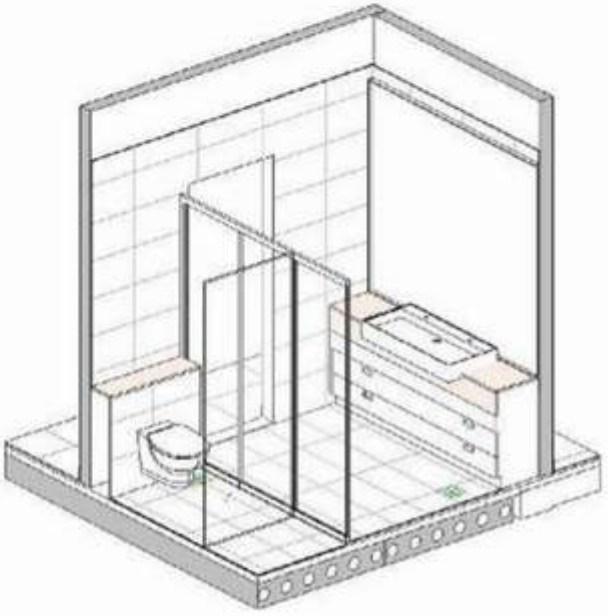

Engineering Design Review

BIMS Group provides design review solutions for architects, engineers, and contractors for structural, architectural and facade packages. These solutions incorporate both 2D and 3D information where conventional 2D packages are converted to data rich 3D BIM models using Autodesk Revit and Autodesk Navisworks.

Review and coordination are done using 3D models, and issues where present are highlighted, and solutions proposed. All this is done in close cooperation with the Client and other stakeholders on the project using BIM coordination meetings either off-site or on-site.

Fully coordinated BIM models are then used to generate drawing sets where the drawings are generated from the BIM models and not from Autodesk AutoCAD. The Client at the end of this review exercise gets IFC models (Issued for Construction) and drawings at LOD 300 with an option to further develop the models to LOD400.

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Building Information Modelling

Building Information Modeling (BIM) forms the core of all the services that BIMS Group offers its clients. BIM services can be provided as part of a consultancy package or as implementation on live projects as part of the clients team. Clients can also outsource their BIM requirements to BIMS Group who are capable of executing complete projects.

The BIM services provided by BIMS Group cover structural, architectural and facade disciplines and range from feasibility studies for transitioning organizations to BIM usage to providing on-site support on live projects as part of the client steam.

BIM services offered by BIMS Group include:

- Writing BIM documentation such as BIM Execution Plans
- BIM project setup including creation of project templates and families
- Structural, Architectural and Facade modeling
- Multi-discipline coordination of BIM models and generating clash reports
- Generating drawing sets out of 3D Revit models

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REGISTERED COMPANIES IN THE PHILIPPINES, HONG KONG, AUSTRALIA, UAE, AND SEYCHELLES.

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CONSTRUCTION SEQUENCING

BIMS Group Limited provides 4D Construction Sequencing solutions for clients, engineers and contractors. 4D Construction Sequencing allows for theconnection of planning programs to 3D Revit models subsequently providing a graphical dis-play of the project build sequence on projects.

BIMS Group Limited uses various specialised add-ins such as Synchro and Fuzor for 4D Construction Sequencing along with Autodesk Revit and Autodesk Navis-works. The specialised add-ins provide an extensive array of functionality for 4D Construction Sequencing and allow for simultaneous display of planned versus actual build sequences. The resulting animations can be recorded in high resolution render quality video which can be a useful tool for managementanalysis.

4D Construction Sequencing can be used in both pre-contract and post-contract scenarios, and is an excellent reporting tool for management compared to complex planning programs and spreadsheets.

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Contract, Planning & Claims Management

BIMS Group offers specialised services in preparing and negotiating claims and final accounts on behalf of contractors and sub-contractors engaged on construction and engineering projects.

These services can be provided on a part-time or visiting basis or fulltime depending on the demands of the project.

- Project Leadership
- Risk & Value Management
- Design Design Management
- Project Management & Construction Supervision
- Planning Scheduling
- Expert Witness
- Project Control Specialist
- Peer Review of Contract EOT Entitlement

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High Resolution Rendering & Animation

BIMS Group uses the models it develops to also provide high resolution renders and animations.

We are also able to provide VR ready files for various VR devices such as Oculus Rift and HTC Vive.

Rendered images provide a realistic image of the design intent and can be used in project documentation and presentations.

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BIMS GROUP
PROJECT

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Perth, WESTERN AUSTRALIA

PHILIPPINES

BIMS ARCHITECTURAL ENGINEERING SERVICES

E-Mail: info@bimsgroup.com

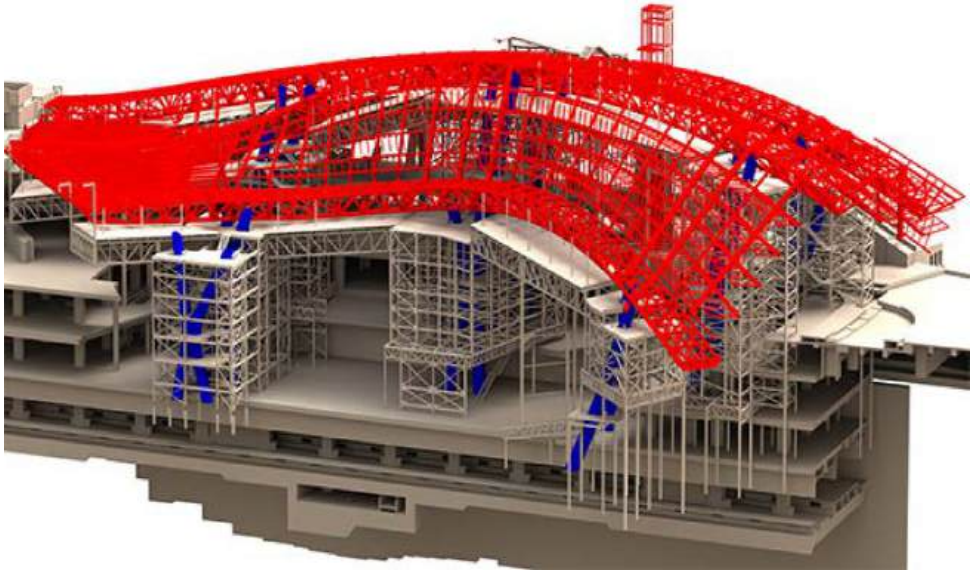
Bulacan, PHILIPPINES

Ocean Park

Geographic Location:	Hong Kong
Services Rendered:	Forensic Delay Analysis
Software Tools Used:	Primavera P6, Tekla Structures, AutoCAD
Project Description:	Ocean Park expansion is an amusement park that offers roller coaster rides, shows, tours and attractions. BIMS Group was involved in the forensic delay analysis adopting 3D technologies to demonstrate the contractor's entitlements for successful settlement.

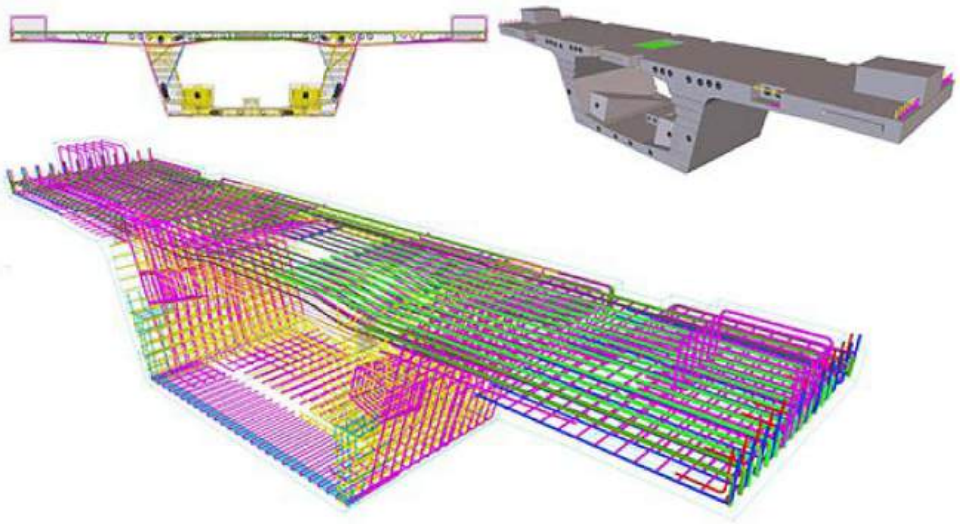
West Kowloon Terminus

Geographic Location:	Hong Kong
Services Rendered:	3D Modelling for temporary and permanent works.
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	The project comprises of a new railway construction on the Guangzhou-Shenzen-Hong Kong Express Rail Link (XRL) in Hong Kong. BIMS Group was involved in the preparation of 3D models in Tekla Structures for steel and concrete as well as shop drawings for the temporary and permanent works.



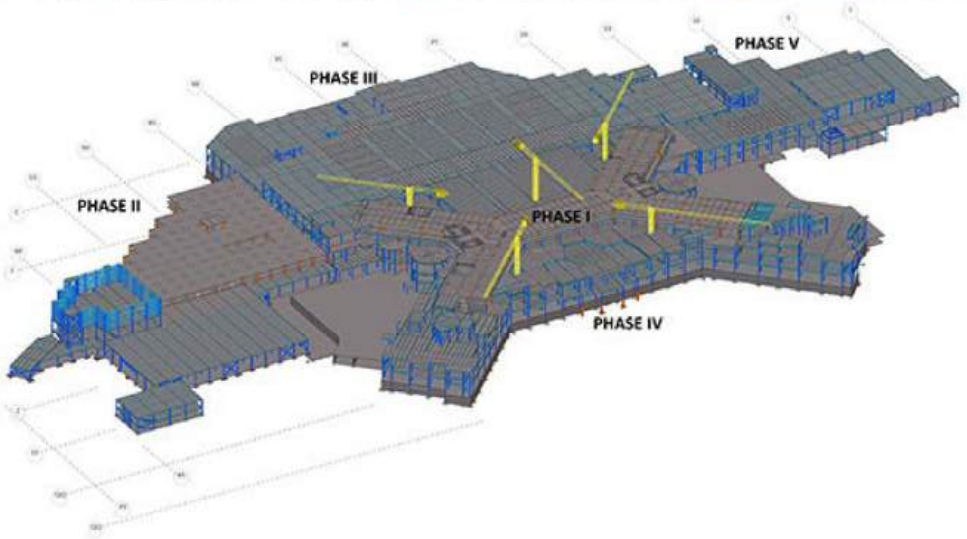
South Island Viaduct - Precast Segments

Geographic Location:	Hong Kong
Services Rendered:	Fabrication drawings for South Island Viaduct
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	South Island Line East Project Contract 903 is a medium capacity railway covering approximately 7 km from Admiralty Station to South Horizons in Ap Lei Chau. BIMS Group was involved in the production of shop drawings for the manufacturing of the precast segments.



Wynn Palace - Macau

Geographic Location:	Hong Kong
Services Rendered:	Forensic Delay Analysis
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	Wynn Palace is a luxury integrated resort comprising of 1,706 rooms and gaming space. BIMS Group was involved in the forensic delay analysis adopting 3D technologies to demonstrate the contractor's entitlement for a successful settlement.

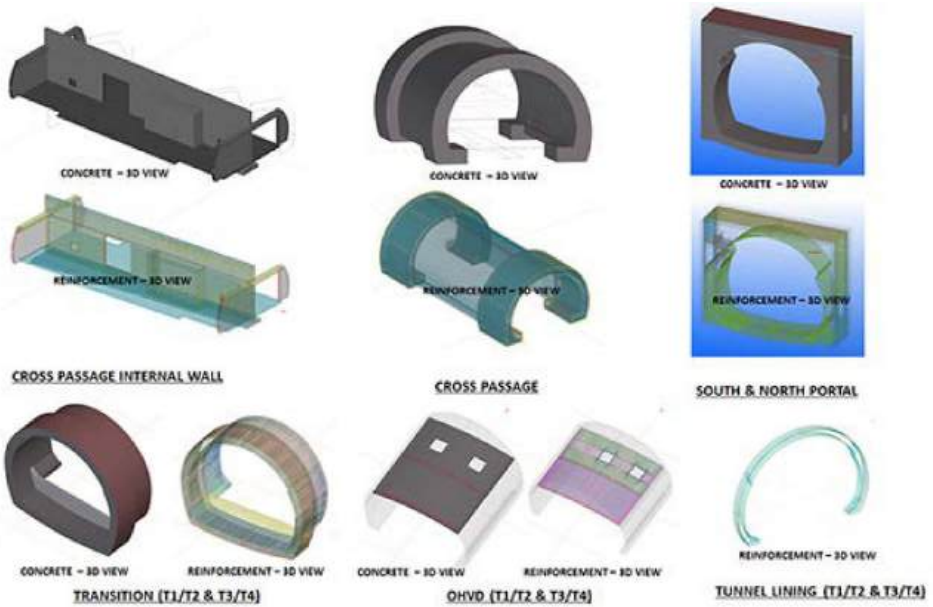


Tseung Kwan O - Lamtin Tunnel

Geographic Location:	Hong Kong
Services Rendered:	Quantification of major items
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	The Tseung Kwan O - Lamtin Tunnel project involved the construction of a 4.2 km long two-lane dual carriageway in Hong Kong, which also integrated a 2.2 km long tunnel. BIMS Group was engaged to carry out a detailed review of the major items on the project using advanced 3D technologies.

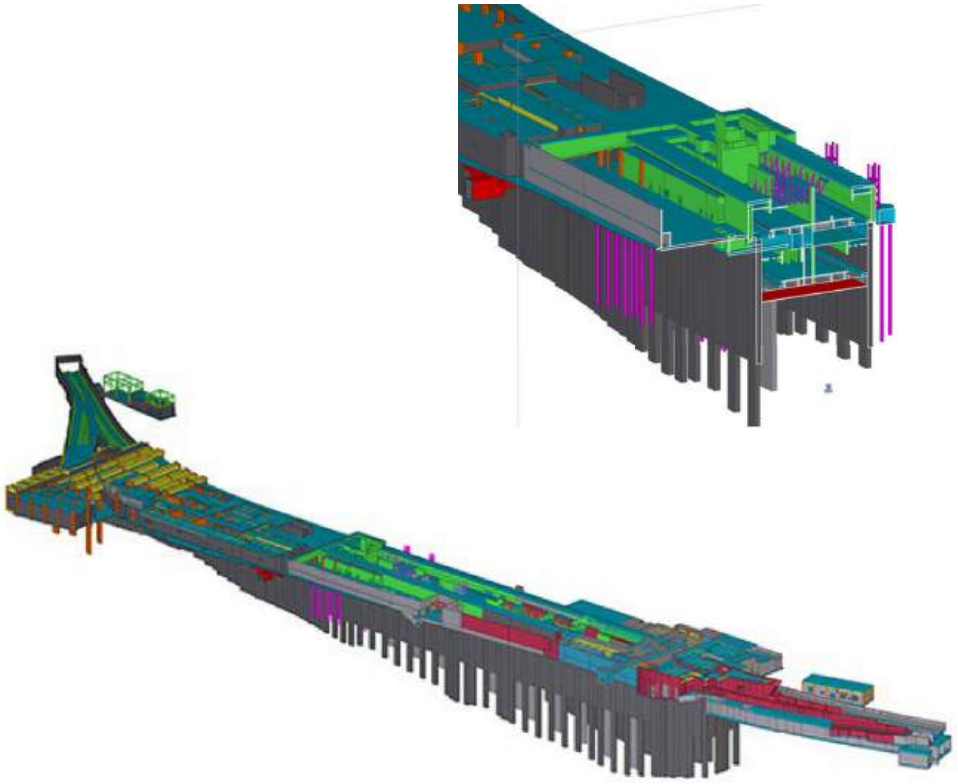
Liantang/Heung Yuen Wai Tunnel

Geographic Location:	Hong Kong
Services Rendered:	Quantification of major items
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	Heung Yuen Wai Tunnel comprises of 5.5 km of viaducts and at-grade roads. BIMS Group was engaged to carry-out a detailed review of the major quantities such as concrete and steel using advanced 3D technologies and tools.



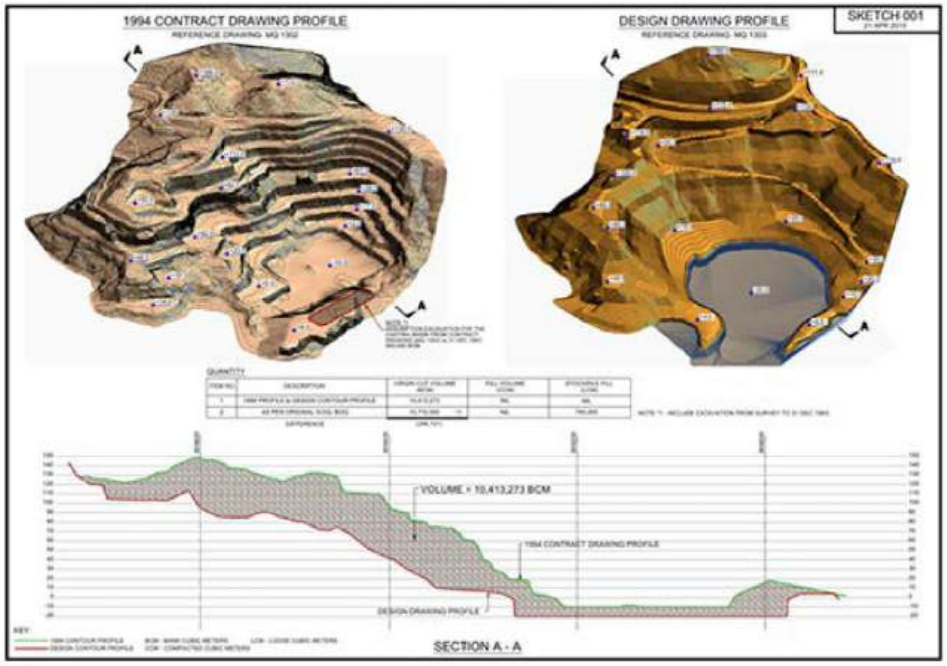
Hung Hom Station Tunnel

Geographic Location:	Hong Kong
Services Rendered:	Tender & As-Built Quantification
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	Hung Hom Station Tunnel involved the construction of the running tunnel connecting the existing Eastern Rail Line to the Hung Hom Station and another future connection, having a total length of approximately 1 km. BIMS Group was engaged in the initial tender quantification of quantities that led to Leightons to be a successful contractor for the project. BIMS Group was also involved in the final as-built validation of the project delivery.



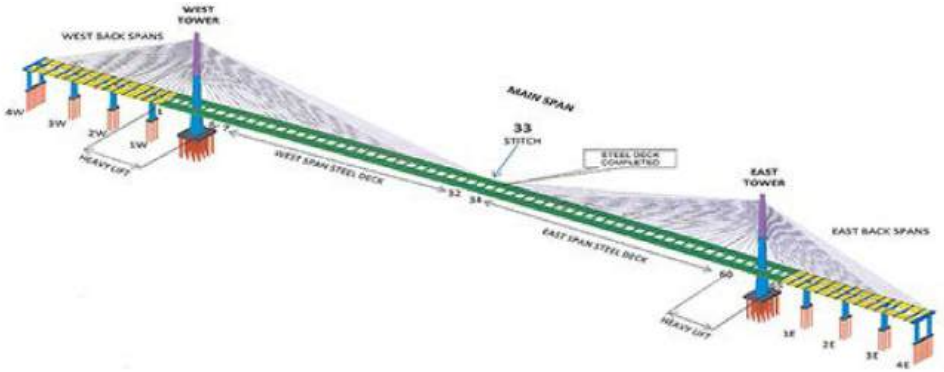
Shek O Quarry

Geographic Location:	Hong Kong
Services Rendered:	Forensic Delay Analysis
Software Tools Used:	AutoCAD Civil 3D, AutoCAD
Project Description:	Shek O Quarry Rahabilitation Achievement is located on the south eastern part of Hong Kong. BIMS Group was engaged in the forensic delay analysis for LAD that led to a successful settlement for the Hong Kong Government. The project was executed using a combination of Primavera P6 planning software and AutoCAD Civil 3D a civil engineering design tool.



Stonecutters Bridge

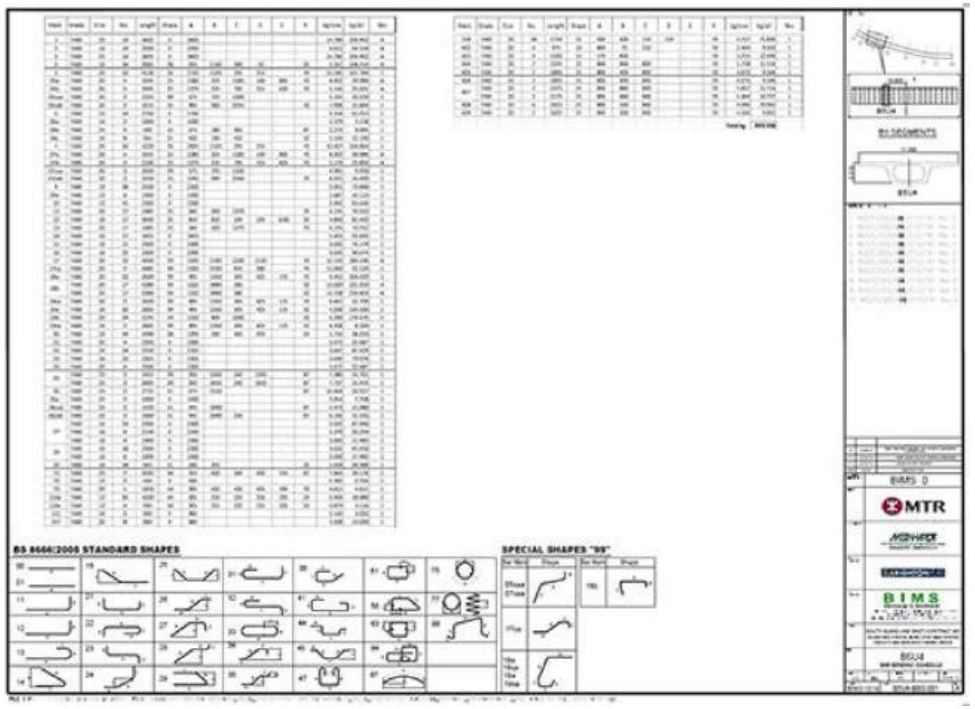
Geographic Location:	Hong Kong
Services Rendered:	Forensic Delay Analysis
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	Stonecutters Bridge is a high level cable stayed bridge spanning the Rambler Channel in Hong Kong. BIMS Group was engaged in the forensic delay analysis for LAD that led to a successful settlement for the Government using advanced 3D software tools and planning software.



Kai Tak Cruise Terminal Building

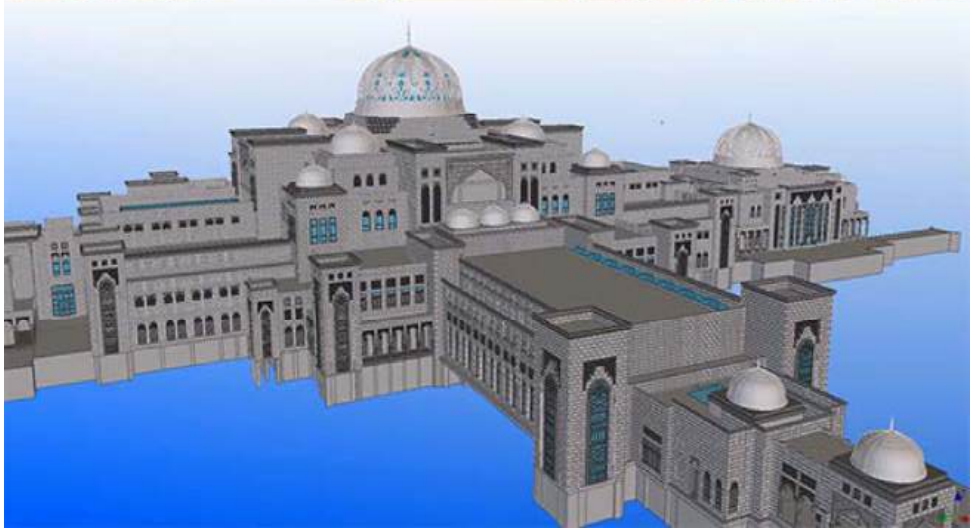
Geographic Location:	Hong Kong
Services Rendered:	Reinforcement Detailing
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	Kai Tak Cruise Terminal Building in Hong Kong comprises of two berths and a terminal building. The terminal is located at the south-eastern end of the former Kai Tak Airport runway.

BIMS Group was engaged in the production of detailed reinforcement drawings and quantification of the project using Tekla Structures. The quantified steel reinforcement for the project was approximately 6,000 metric tonnes.



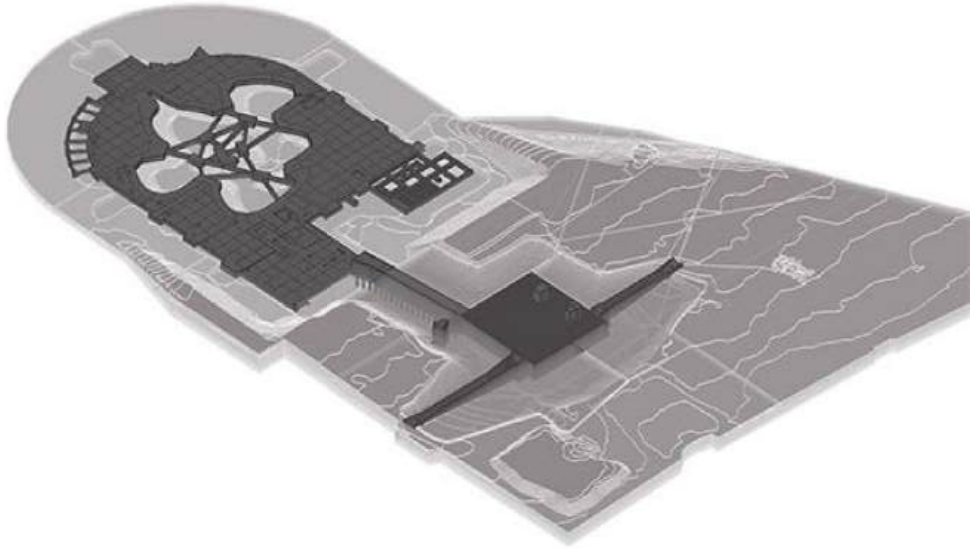
Presidential Palace

Geographic Location:	Abu Dhabi, United Arab Emirates
Services Rendered:	Pre-Contract 3D Modelling, Program Setup and monitoring for the construction stage of the project
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	The Presidential Palace project is UAE Government project which has been constructed in Abu Dhabi, UAE. Murray & Roberts Contractors engaged BIMS Group to provide pre-contract support for developing detailed 3D models, establish construction programs for the construction stage of the project and provide support for the tender submission.



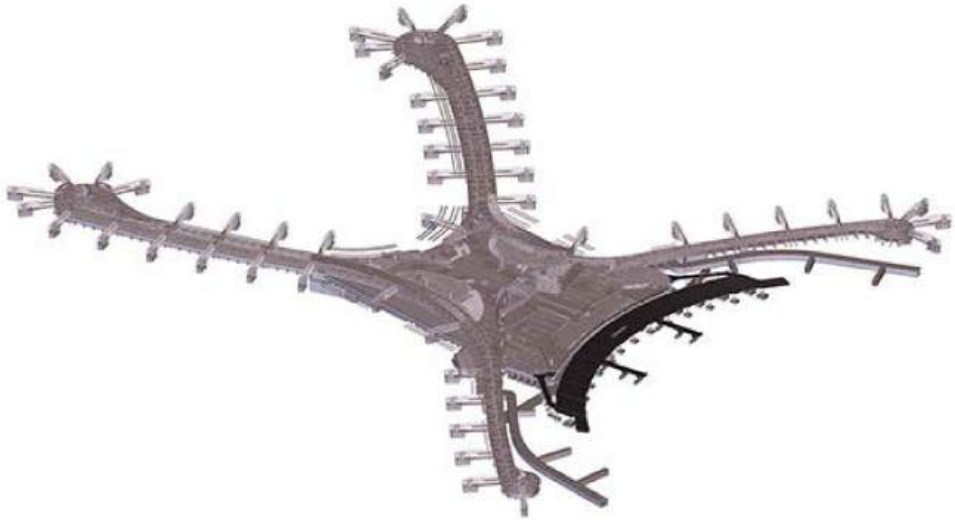
Zayed National Museum

Geographic Location:	Abu Dhabi, United Arab Emirates
Services Rendered:	3D Modelling, Progress Monitoring and Production of Site Documentation
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	The Zayed National Museum is one of three museums being developed by Abu Dhabi on Saadiyat Island the other two being the Louvre and the Guggenheim Museum. Murray & Roberts Contractors employed BIMS Group as a specialist consultant to provide 3D BIM modelling support both during the pre and post contract stages,



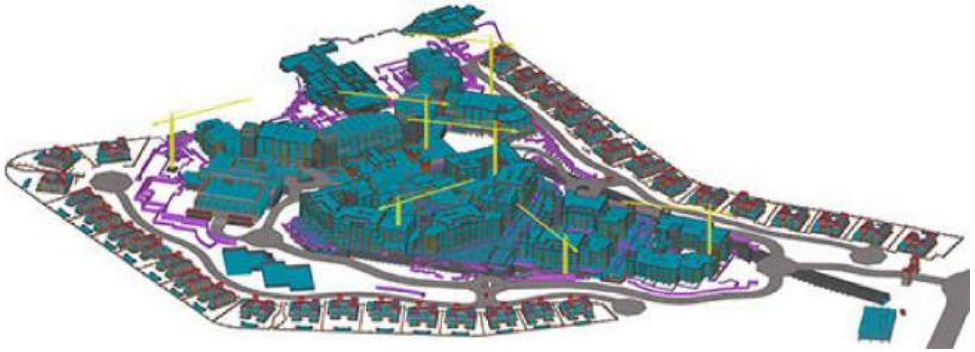
Midfield Terminal Building

Geographic Location:	Abu Dhabi, United Arab Emirates
Services Rendered:	Pre- and Post Contract BIM support
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	BIMS Group was engaged by Murray & Roberts Contractors on the new Abu Dhabi Airport a major project development for the UAE Government.
	BIMS Group provided 3D modelling services, construction sequencing, and construction logistics models during the pre-contract stage.
	Due to the extensive knowledge of the project available within BIMS Group support has also been provided to the supply chain during the construction stage.



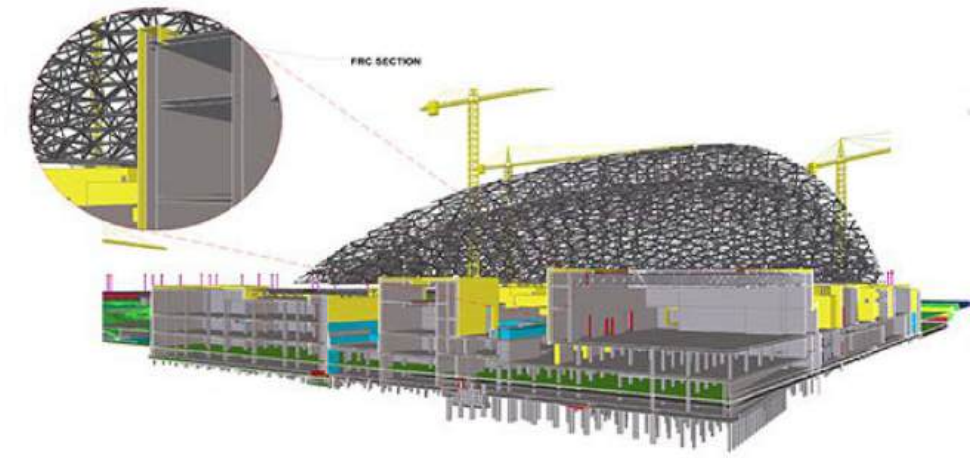
St. Regis Hotel & Resort

Geographic Location:	Abu Dhabi, United Arab Emirates
Services Rendered:	3D Modelling, Construction Progress Monitoring and production of Construction Documents
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	The St. Regis Hotel & Resort is a major development on Saadiyat Island in Abu Dhabi, and comprises of a luxury hotel along with high end serviced apartments. Murray & Roberts Contractors employed BIMS Group for the production of pre- and post contract construction models in order to execute on-site progress monitoring and management. This project was one of the first projects in the UAE to use mobile tablet based BIM progress monitoring and resolution of snags.



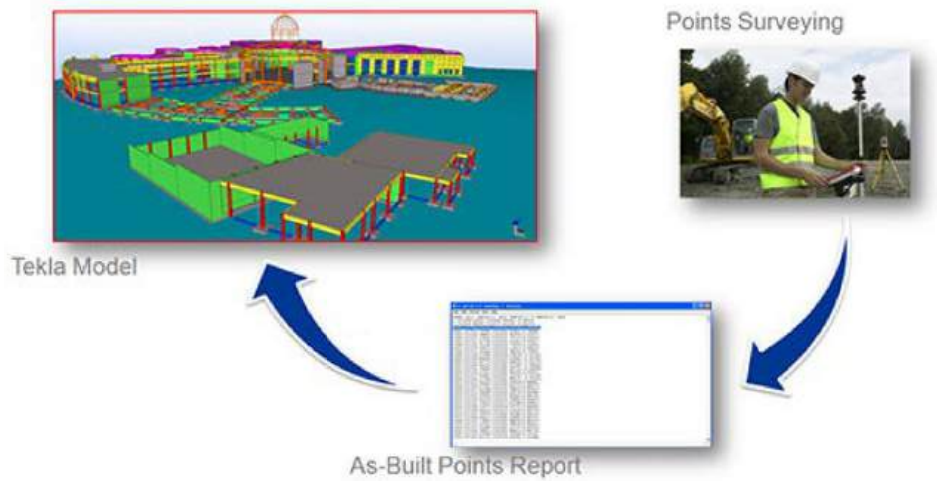
Louvre Museum

Geographic Location:	Abu Dhabi, United Arab Emirates
Services Rendered:	Pre Contract 3D Modelling
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	The Louvre Museum has been built in collaboration between the UAE Government and the Louvre Museum in France, and Murray and Roberts Contractors was involved in the pre Contract stage upto Tender Submission.
	BIMS Group was engaged by Murray & Roberts to setup 3D models for the project in order to carry out BOQ validation and production of tender documentation out of the 3D models.



Paris Sorbonne University

Geographic Location:	Abu Dhabi, United Arab Emirates
Services Rendered:	3D Modelling, Progress Monitoring and Construction Documents
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	The Sorbonne University was built by Murray & Roberts Contractors in Abu Dhabi, UAE. The university has been setup in collaboration with the Sorbonne University in France.
	BIMS Group were instrumental in implementing BIM on the project and providing advanced workflows such as BIM to Field and mobile based progress monitoring.



Zayed University

Geographic Location:	Abu Dhabi, United Arab Emirates
Services Rendered:	3D Modelling, Progress Monitoring and Construction Documents
Software Tools Used:	Tekla Structures, AutoCAD
Project Description:	The Zayed University in Abu Dhabi, UAE is an iconic structure, and is one of the few iconic projects constructed by Murray & Roberts Contractors a major South African international contractor in the Middle East. BIMS Group offered consultancy services to Murray & Roberts and was instrumental in establishing BIM in the UAE as a major engineering process.

BIMS GROUP
DELAY ANALYSIS TECHNIQUE

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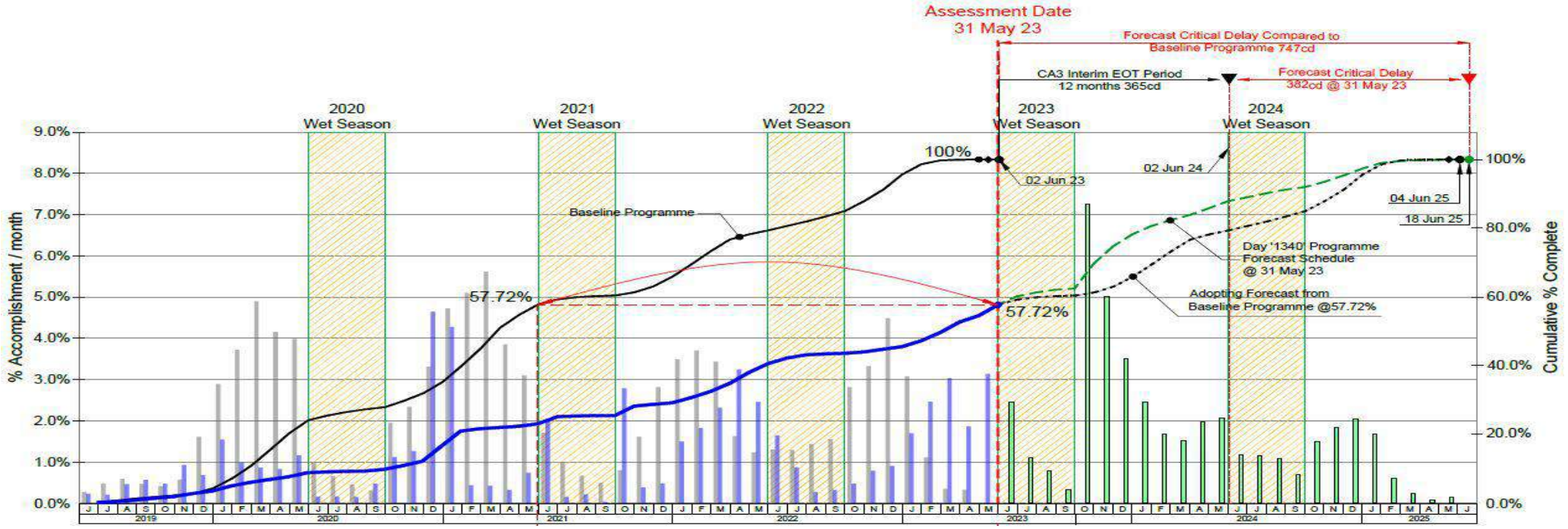
PROJECT TITTLE : Yangon-Mandalay Railway Improvement Project Phase-1 CP101
SUBJECT : **MONTHLY PROGRESS STATUS SUMMARY REPORT**
PERIOD ENDING : 02-June-2023

APPENDIX A

Section Name	Particular	Contract Completion Date	Interim EoT (Based on CA3)	Revised Time for Completion (Based on CA3)	Current Forecast Early Completion Date	Current Remaining Forecast Delay after CA3 (in Days)	Current Total Delay against Original Contract (in Days)	Overall Construction Progress (Based on Duration)		
								Previous	This Month	Current
1.1	Pazundaung (Excl.) / Ywatagyi (Incl.)	02-Jun-23	12 Months	02-Jun-24	18-Jun-25	(382)	(747)	13.09%	3.07%	16.16%
1.2	Ywatagyi (Excl.) / Tongyi (Incl.)	02-Nov-21	30 Months	02-Jun-24	26-Mar-24	67	(876)	77.73%	3.10%	80.83%
1.3	Tongyi (Excl.) / Bago (Incl.)	02-Sep-21	33 Months	02-Jun-24	26-Feb-24	96	(908)	81.45%	2.78%	84.23%
	Bridge No. 50 Completion	02-Jun-23	12 Months	02-Jun-24	22-Nov-23	192	(174)	81.82%	8.19%	90.01%
	Bridge No. 58 Completion	02-Jun-23	12 Months	02-Jun-24	05-Dec-23	179	(187)	83.16%	7.62%	90.78%
	Bridge No. 32 Completion	02-Jun-23	12 Months	02-Jun-24	23-Jul-24	(52)	(418)	42.50%	4.02%	46.52%
	Bridge No. 33 Completion	02-Jun-23	12 Months	02-Jun-24	24-May-24	8	(358)	44.90%	5.50%	50.40%
OVERALL CONSTRUCTION PROGRESS		**02-Jun-23**	**12 Months**	**02-Jun-24**	**18-Jun-25**	**(382)**	**(747)**	**54.59%**	**3.13%**	**57.72%**

NOTE:
1. Revised Time for Completion in accordance with Contract: CP/101/MR(ML)/2018 dated 29 April 2022
2. The Data Date is 02-June-23
3. Additional future impact for Covid -19 pandemic, State of Emergency and other unforeseen circumstances and variations are not included
4. Progress is based on Day 1340 Updated Baseline Programme

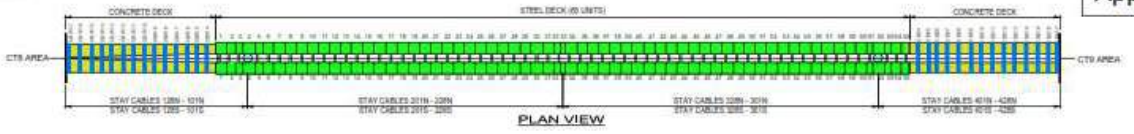


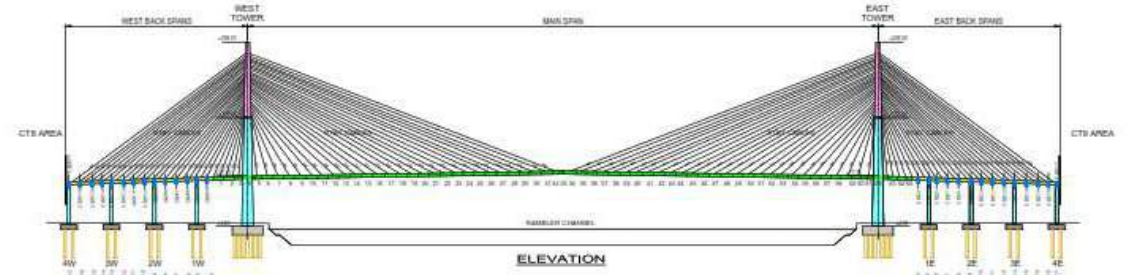
Contract No. HY/2002/26 - STONECUTTERS BRIDGE

TIME LOCATION CHART

BACKSPAN CRITICAL DELAY ASSESSMENT

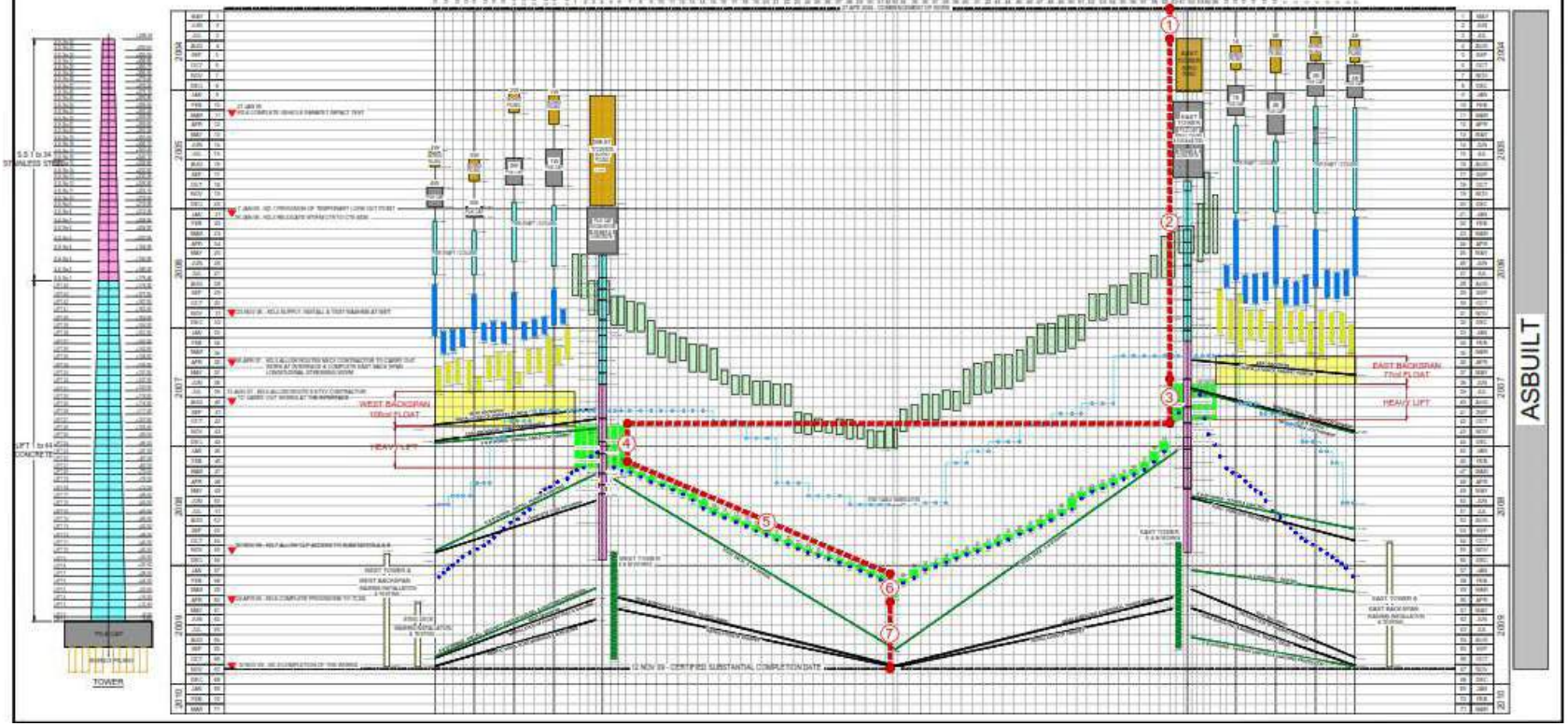
Appendix 20.4





KEY:

- BORED PILE
- PILE CAP
- WEST & EAST TOWER
- PIER SHAFT / COLUMN
- PIER HEAD
- REINFORCED CONCRETE DECK
- STEEL SEGMENTS FABRICATION
- STEEL SEGMENTS INSTALLATION
- WASHING INSTALLATION
- STAY CABLE FABRICATION
- STAY CABLES INSTALLATION
- CRASH BARRIERS & PARAPET
- SURFACING, ROAD MARKINGS, TRAFFIC SIGN & LIGHTING
- MEP WORKS
- TCSS PROVISION
- CRITICAL PATH

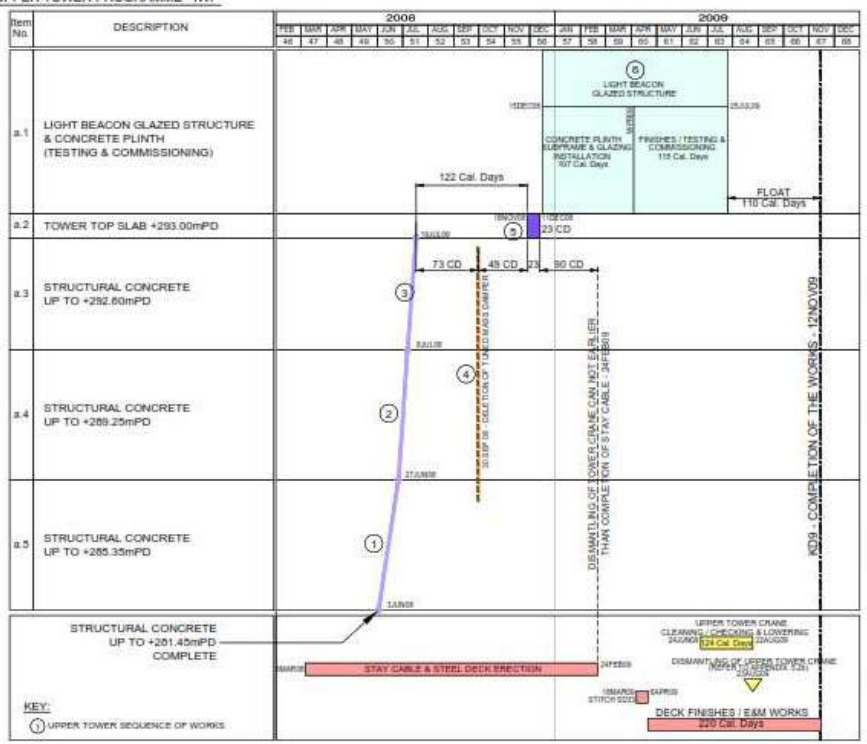


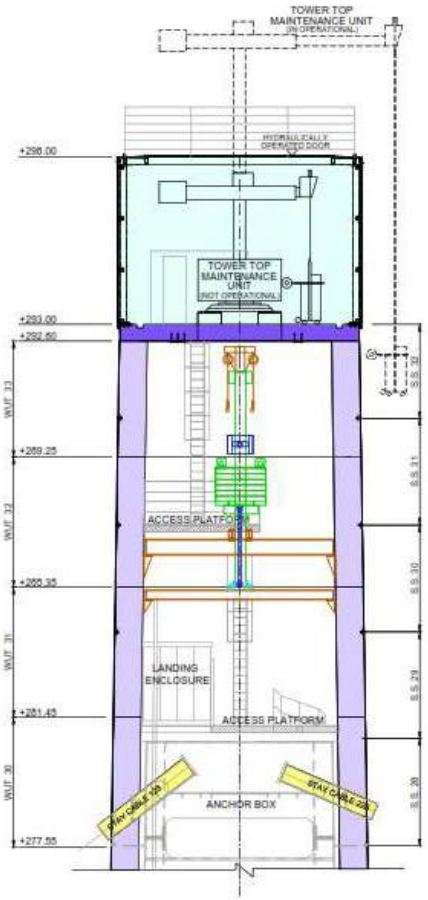
Contract No. HY/2002/26 - STONECUTTERS BRIDGE

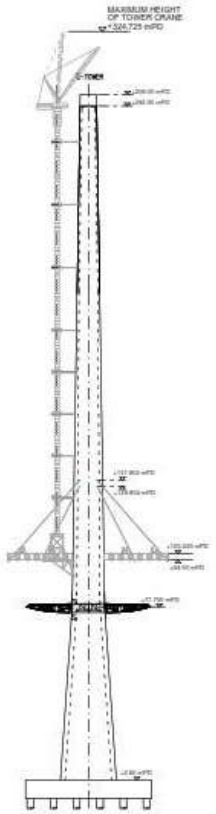
WEST TOWER - TUNED MASS DAMPER PROGRAMME ASSESSMENT

Appendix 20.10b

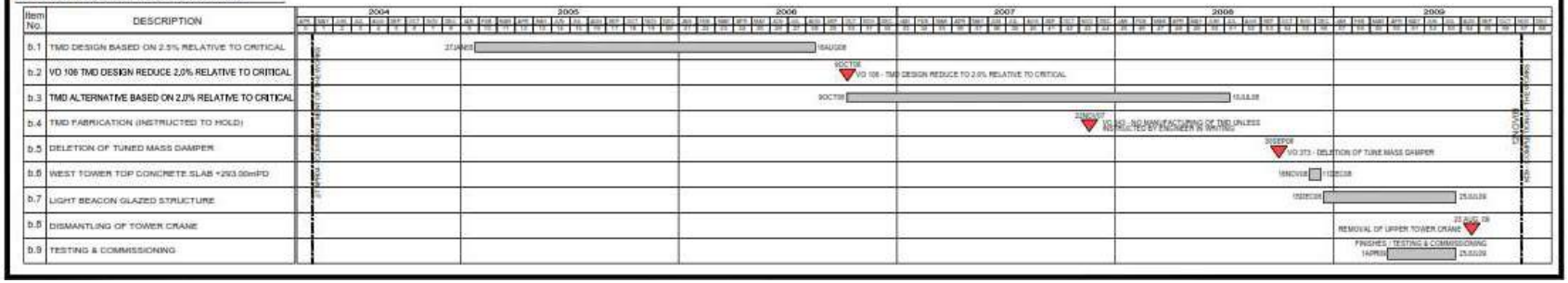
A. UPPER TOWER PROGRAMME - IWP







B. TUNED MASS DAMPER PROGRAMME

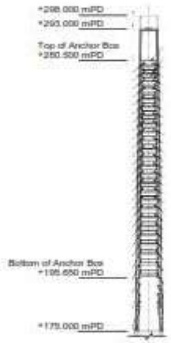


Contract No. HY/2002/26 - STONECUTTERS BRIDGE

EAST TOWER CRANEAGE UTILIZATION - IWP v ACTUAL

5.1b Upper East Tower Crane

APPENDIX 5.1b



ERECTION OF UPPER TOWER CRANE INPROGRESS

JAN 2007

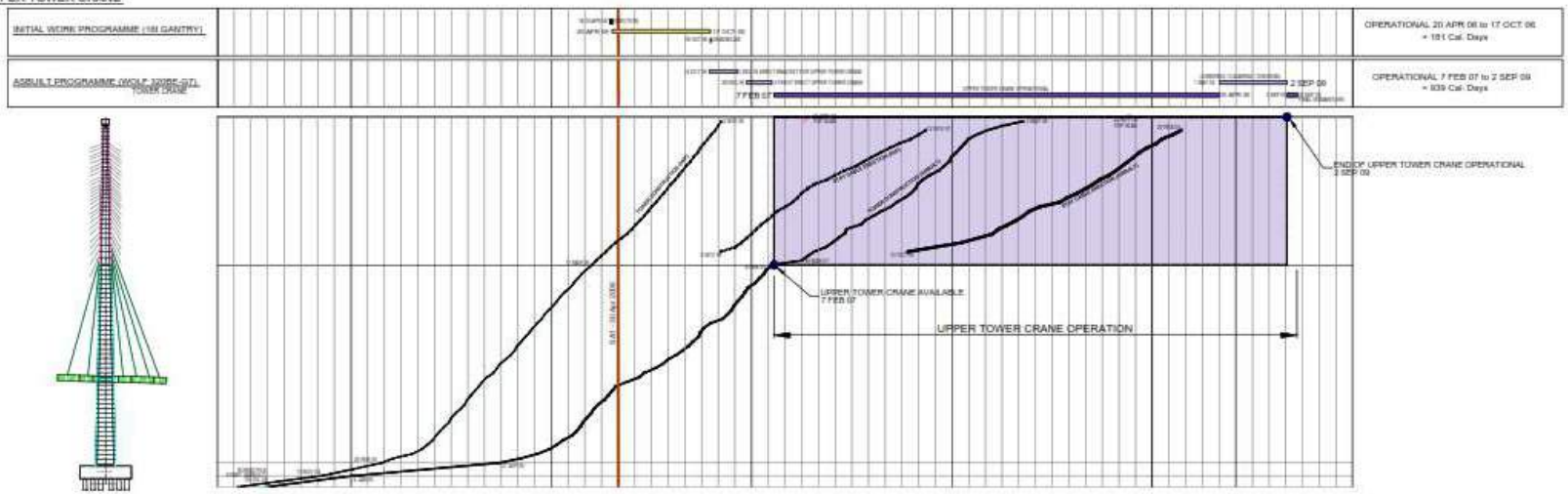
UPPER TOWER CRANE OPERATIONAL

DEC 2007

DISMANTLING OF UPPER TOWER CRANE INPROGRESS

SEP 2009

(b) UPPER TOWER CRANE



KEY:

- INITIAL WORK PROGRAMME (IWP)
- ASBUILT
- OPERATION ZONE & DURATION OF CRAWLER CRANE
- OPERATION ZONE & DURATION OF LOWER TOWER CRANE

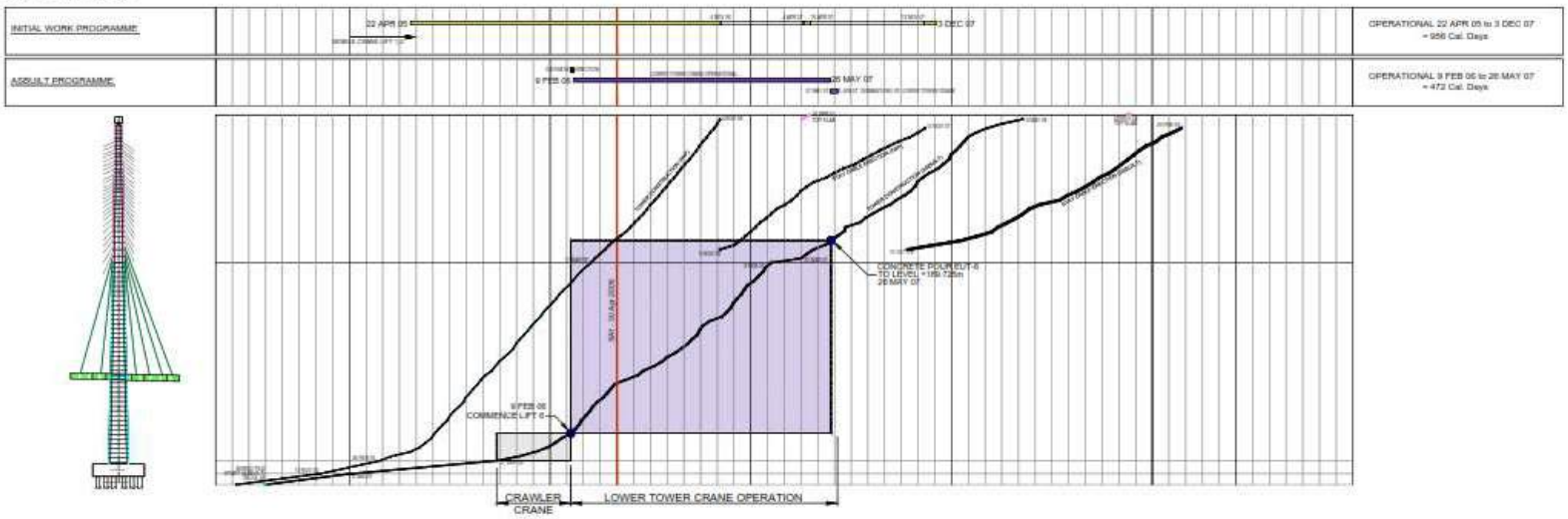
Contract No. HY/2002/26 - STONECUTTERS BRIDGE

EAST TOWER CRANEAGE UTILIZATION - IWP v ACTUAL

5.1a Lower East Tower Crane

APPENDIX 5.1a

(a) LOWER TOWER CRANE

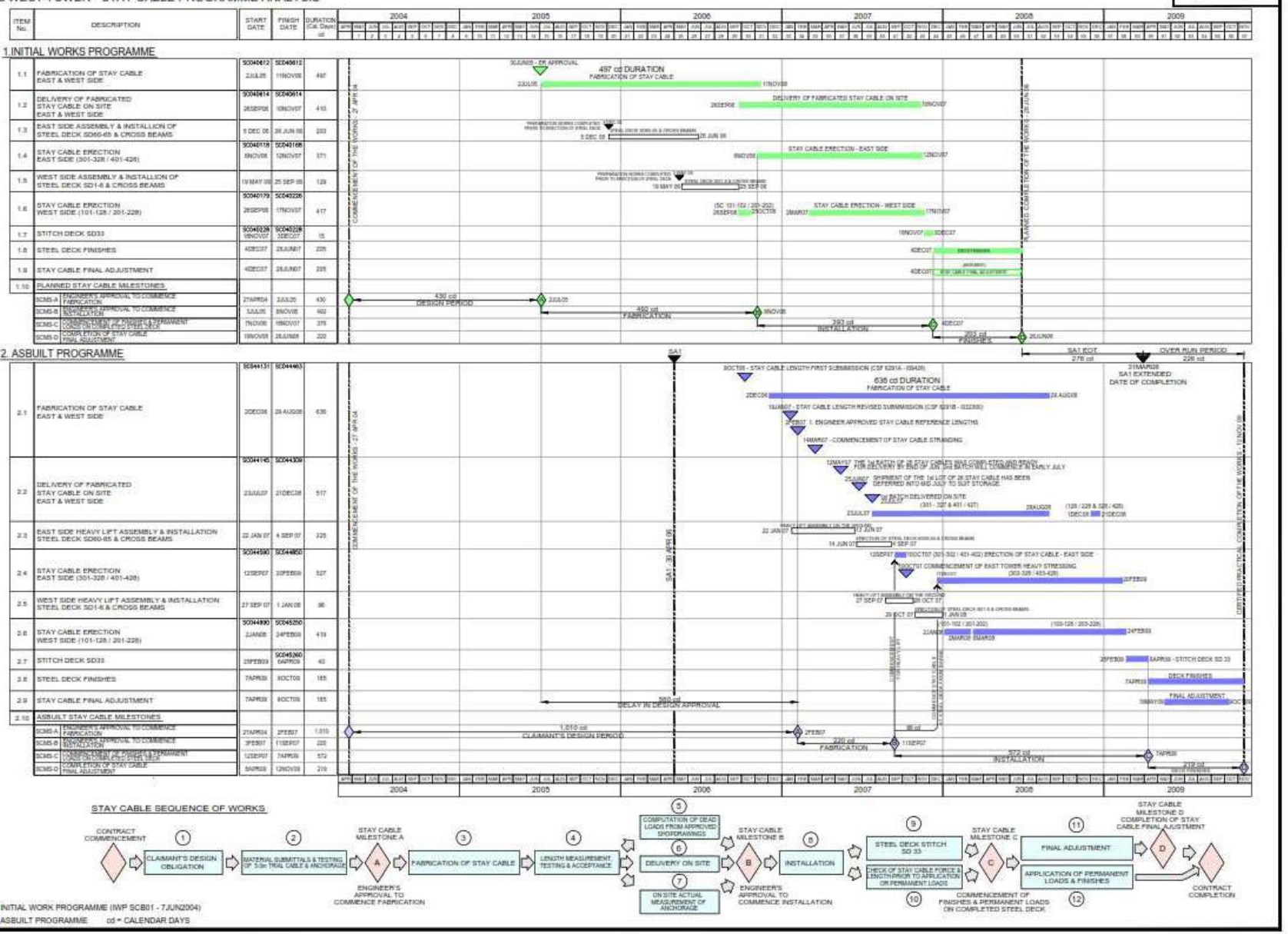


KEY:

- INITIAL WORK PROGRAMME (IWP)
- ASBUILT
- OPERATION ZONE & DURATION OF CRAWLER CRANE
- OPERATION ZONE & DURATION OF LOWER TOWER CRANE

Contract No. HY/2002/06 - STONECUTTERS BRIDGE

EAST & WEST TOWER - STAY CABLE PROGRAMME ANALYSIS



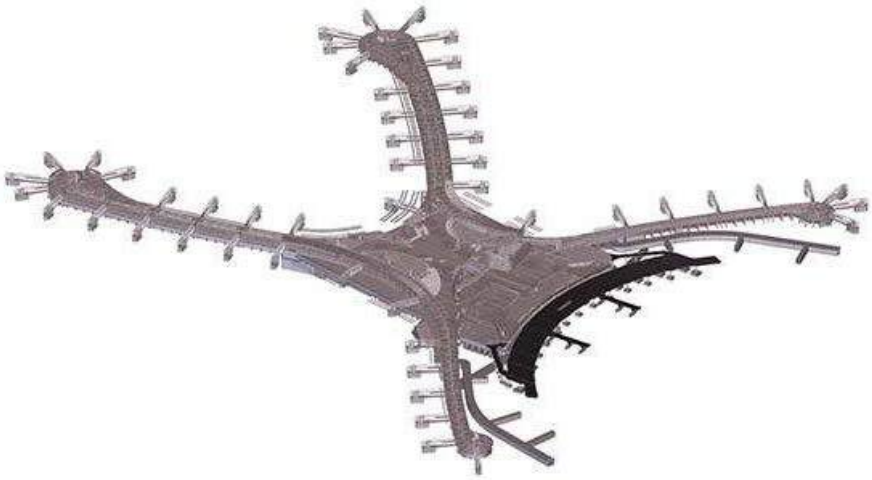
Midfield Terminal Building

Geographic Location: Services	Abu Dhabi, United Arab Emirates Pre- and Post
Rendered:	Contract BIM support Tekla
Software Tools Used: Project Description:	Structures, AutoCAD

BIMS Group was engaged by Murray & Roberts Contractors on the new Abu Dhabi Airport a major project development for the UAE Government.

BIMS Group provided 3D modelling services, construction sequencing, and construction logistics models during the pre-contract stage.

Due to the extensive knowledge of the project available within BIMS Group support has also been provided to the supply chain during the construction stage.

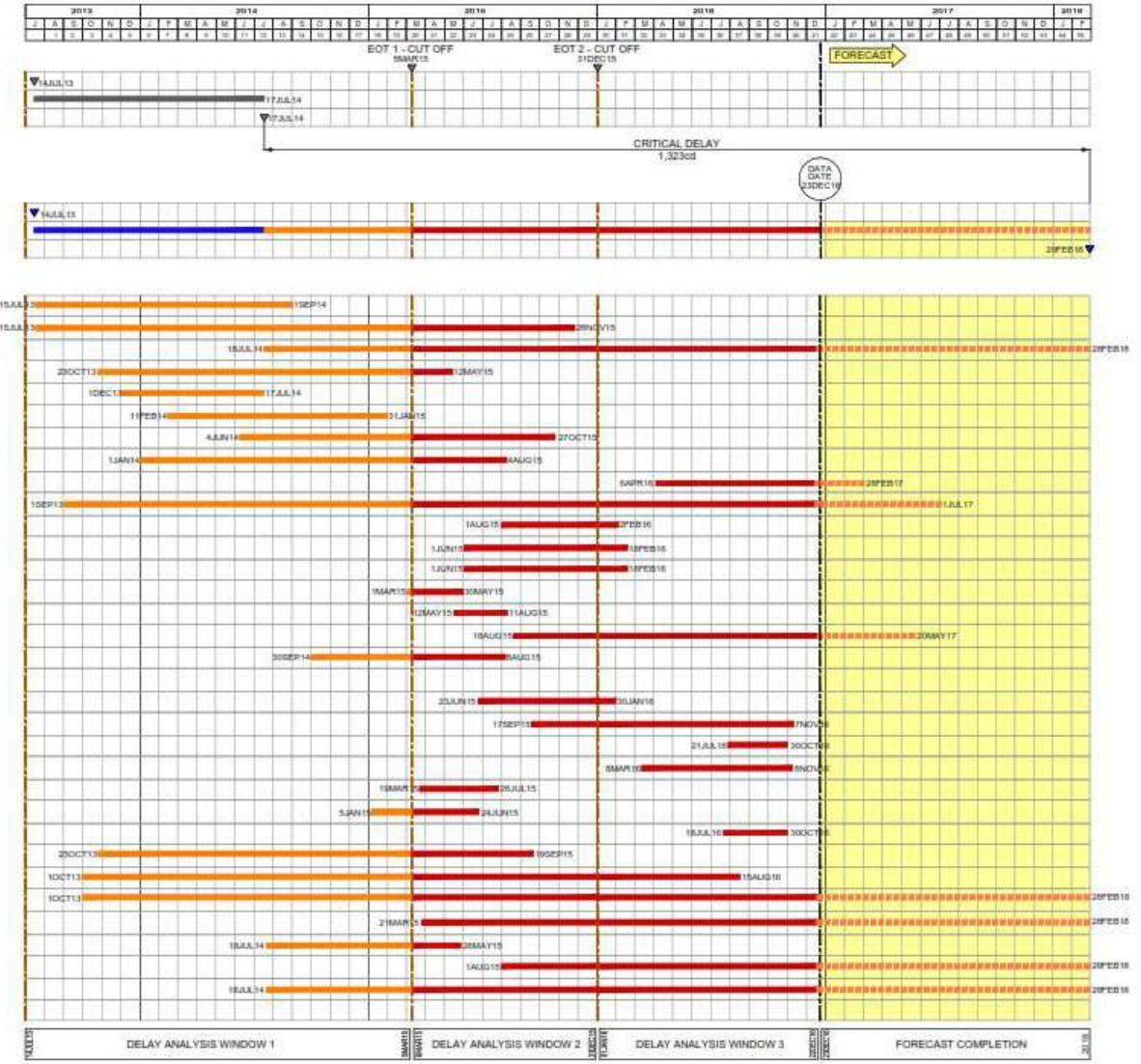


ABU DHABI INTERNATIONAL AIRPORT - MEDFIELD TERMINAL BUILDING

Summary of Delaying Event

Appendix C
Sheet 1 of 3

ITEM	DESCRIPTION	Start Date	Finish Date	Duration Cal.Days (Approximate)
1. PLANNED PROGRAMME				
1.1	Project Commencement	14JUL13		
1.2	Contract Period (304 Working Days)	14JUL13	17JUL14	369
1.3	Contract Completion		17JUL14	
2. ACTUAL PROGRAMME				
2.1	Project Commencement	14JUL13		
2.2	Forecast Contract Period	14JUL13	28FEB18	1,691
2.3	Forecast Contract Completion		28FEB18	
3. KEY DELAYING EVENTS				
3.1	EVENT 1 - DAS & ILSS - EPS Bearing Pads	15JUL13	15SEP14	434
3.2	EVENT 2 - T-Section - POT Bearings	15JUL13	28NOV15	867
3.3	EVENT 3 - DAS - GRC Blast Requirements	16JUL14	28FEB18	1,322
3.4	EVENT 4 - T-Section - Work Progress Delay	23OCT13	12MAY15	567
3.5	EVENT 5 - ILSS Column Design / Construction Delays	10DEC13	17JUL14	220
3.6	EVENT 6 - DAS Column Design / Construction Delays	11FEB14	31JAN15	355
3.7	EVENT 7 - DAS I-Girder and PC Slabs - Production Delays	4JUN14	27OCT15	511
3.8	Event 8 - T-Section - Design Change & Variation	1JAN14	4AUG15	581
3.9	EVENT 9 - T-Section - Additional GRC Works at Void Area	6APR16	28FEB17	327
3.10	EVENT 10 - Footbridge Design / Construction Changes & Delay	10SEP13	1JUL17	1,400
3.11	EVENT 11 - DAS Embedment & Associated Thickening Changes	1AUG15	2FEB16	186
3.12	EVENT 12 - DAS - Re-design of Firefighting System	1JUN15	18FEB16	263
3.13	EVENT 13 - DAS & ILSS - Steel Link Bridge - Design Change	1JUN15	18FEB16	263
3.14	EVENT 14 - DAS Finish Level Change	1MAR15	30MAY15	91
3.15	EVENT 15 - DAS - 4 Edge Piers - Revised Geometry	12MAY15	10AUG15	91
3.16	EVENT 16 - ILSS & T-Section - GRC Design Load Change	18AUG15	20MAY17	642
3.17	EVENT 17 - T-Section - GRC Scallops - Design Change	30SEP14	5AUG15	313
3.18	EVENT 18 - PCB - Revised Load & Geometry Change	COST CLAIM		
3.19	EVENT 19 - DAS Lower Slab & Bracing - Blast Requirement	23JUN15	30JAN16	222
3.20	EVENT 20 - PCB - Suspension of Work	17SEP15	7NOV16	416
3.21	EVENT 21 - CPFB Gantry Bridge Access Requirements	21JUL16	30OCT16	102
3.22	EVENT 22 - PCB - Redesign of Expansion Joint	6MAR16	9NOV16	248
3.23	EVENT 23 - Acceleration Works	19MAR15	26JUL15	130
3.24	EVENT 24 - ILSS - Additional Diaphragms	5JAN15	24JUN15	171
3.25	EVENT 25 - CPFB - Segment 01 - Design Change	18JUL16	30OCT16	105
3.26	EVENT 26 - Miscellaneous Issues	23OCT13	19SEP15	697
3.27	EVENT 27 - Provision of Drainage	10CT13	15AUG16	1,050
3.28	EVENT 28 - Wrongful Back charges	10CT13	28FEB18	1,612
3.29	EVENT 29 - E. Construct Claims	21MAR15	28FEB18	1,076
3.30	EVENT 30 - T-Section Variation Works	16JUL14	28MAY15	313
3.31	EVENT 31 - Financial Hardship / Interest	1AUG15	28FEB18	943
3.32	EVENT 32 - Management of Change	16JUL14	28FEB18	1,322



ABU DHABI INTERNATIONAL AIRPORT - MIDFIELD TERMINAL BUILDING

BASELINE TIME LOCATION PROGRAMME

(Rev. 2 - 12 OCT 2014)

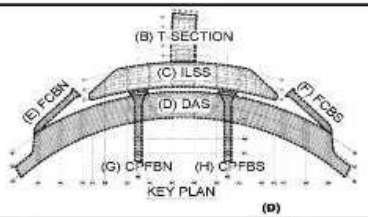


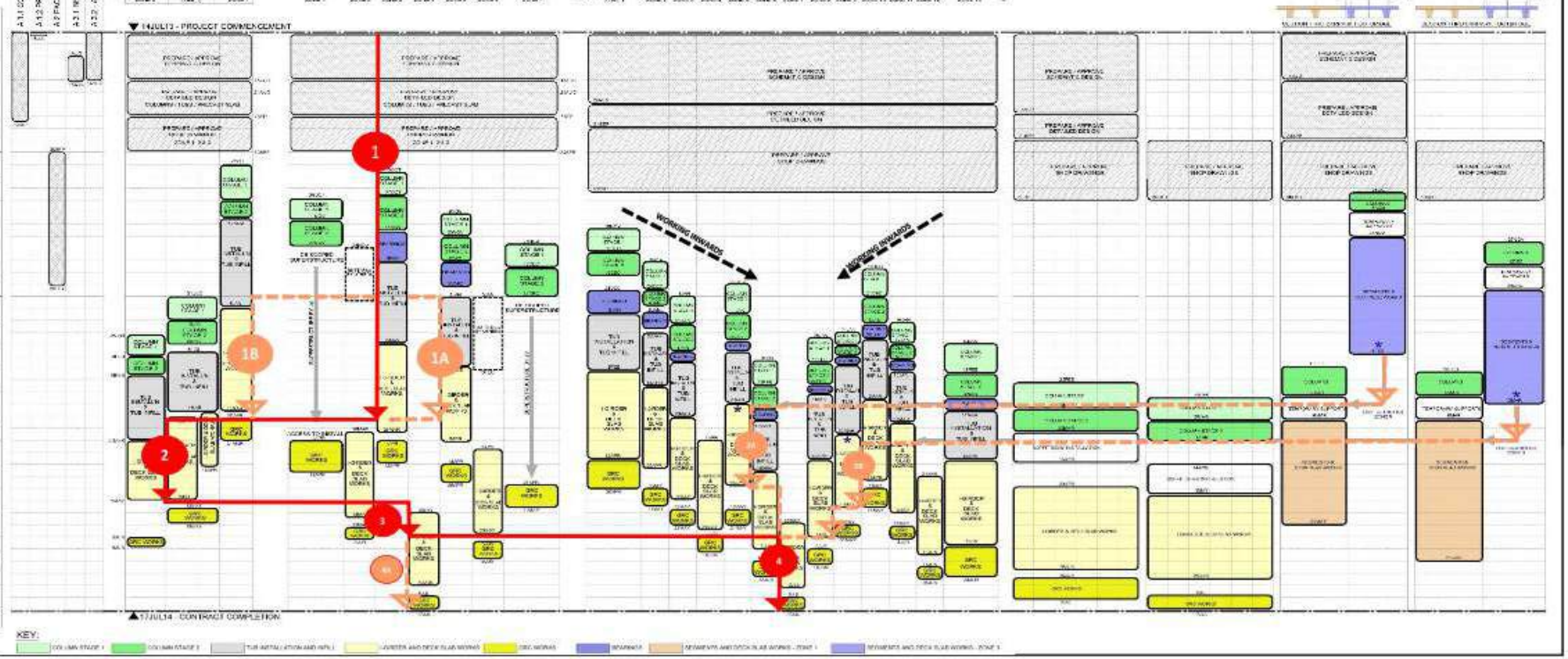
CHART 3

ANNOTATED BASELINE PROGRAMME WITH CRITICAL PATH

Critical Path

Sub-Critical Path

(A) PRELIMINARIES & GENERAL REQUIREMENTS	(B) T-SECTION	(C) ILSS INTERNAL LONG SPAN STRUCTURE	(D) DAS DEPARTURE ACCESS STRUCTURE	(E) FCBN FIRST CLASS BRIDGE - NORTH	(F) FCBS FIRST CLASS BRIDGE - SOUTH	(G) CPFBN CARPARK FOOTBRIDGE - NORTH	(H) CPFBS CARPARK FOOTBRIDGE - SOUTH



WRITE UP FORMAT

EVENT 1 – DAS & ILSS - EPS BEARING PADS

1.1 Basis of EOT and Cost Claim

1 Summary of Sub-Claim

1.1.1.1 In accordance with Appendix E, Clause 4.2.67 of the LOA Agreement, (see Appendix S, page 000019), GPCC was obliged to include within its scope the required bearings for all the bridges.

1.1.1.2 GPCC considered the use of seismic bearings that would accommodate the precast design. The use of special "Friction-Pendulum" bearings was excluded as per item 7 of GPCC offer letter QP-13016R6 date 4 July 2013 (see Appendix 1.4, page 000005 and Appendix T, page 000005) stating;

2 Basis of the Claim

1.1.2.1 Upon award of the Contract, our designer, E-Construct proceeded with the design of the precast bridges. During our meeting with TCAV and the bearing supplier "Alga" on 4 August 2013, E-Construct confirmed that they shall calculate the bearing loads to determine if we shall adopt "friction pendulum" bearing pad or mechanical pad (with spring) as proposed in the last workshop (see Appendix 1.4, page 000012)

1.1.2.2 On 15 September 2013, GPCC formally received the bearing design drawings that noted the bearing geometry and rotation in two directions to be confirmed (see Appendix 1.4, pages 000013 to 000016).

1.1.2.3 On 19 October 2013, GPCC received a quotation for the Friction Pendulum bearings that were assumed 16 times more expensive than GPCC budget (see Appendix 1.4, page 000017).

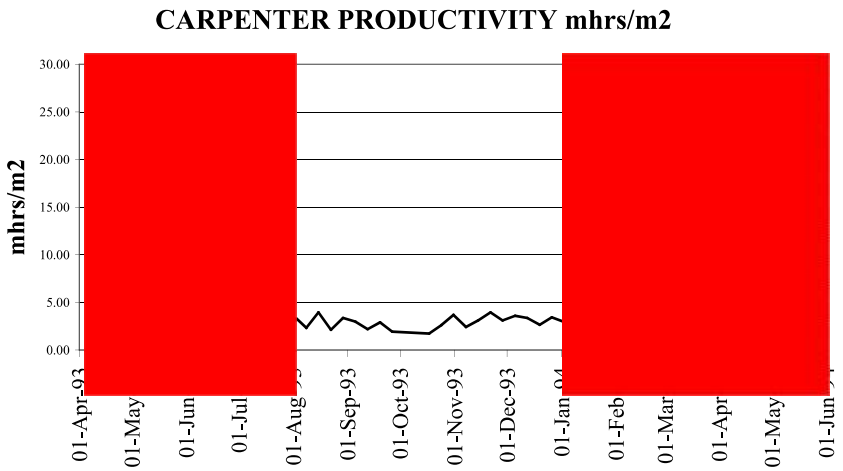
3 Time, Cost and Additional Effect of the Claim

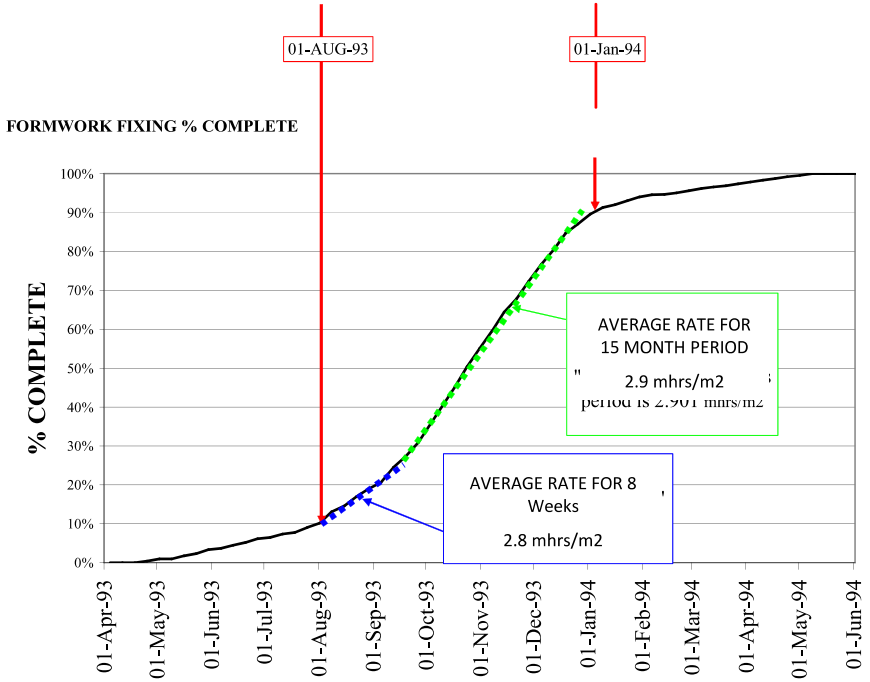
1.1.3.1 Delay in the design and supply of the bearings severely impacted the procurement and necessitated the installation of temporary bearings.

1.1.3.2 Additionally, the construction of the column for Stage 2 construction was severely delayed and impacted the project.

1.1.3.3 We have prepared a Summary Programme and Fragmented Programme as Appendix 1.2 and 1.3 respectively. The total consequence of the issue affected the project by 279 calendar days.

Measured Mile Productivity Delay Assessment





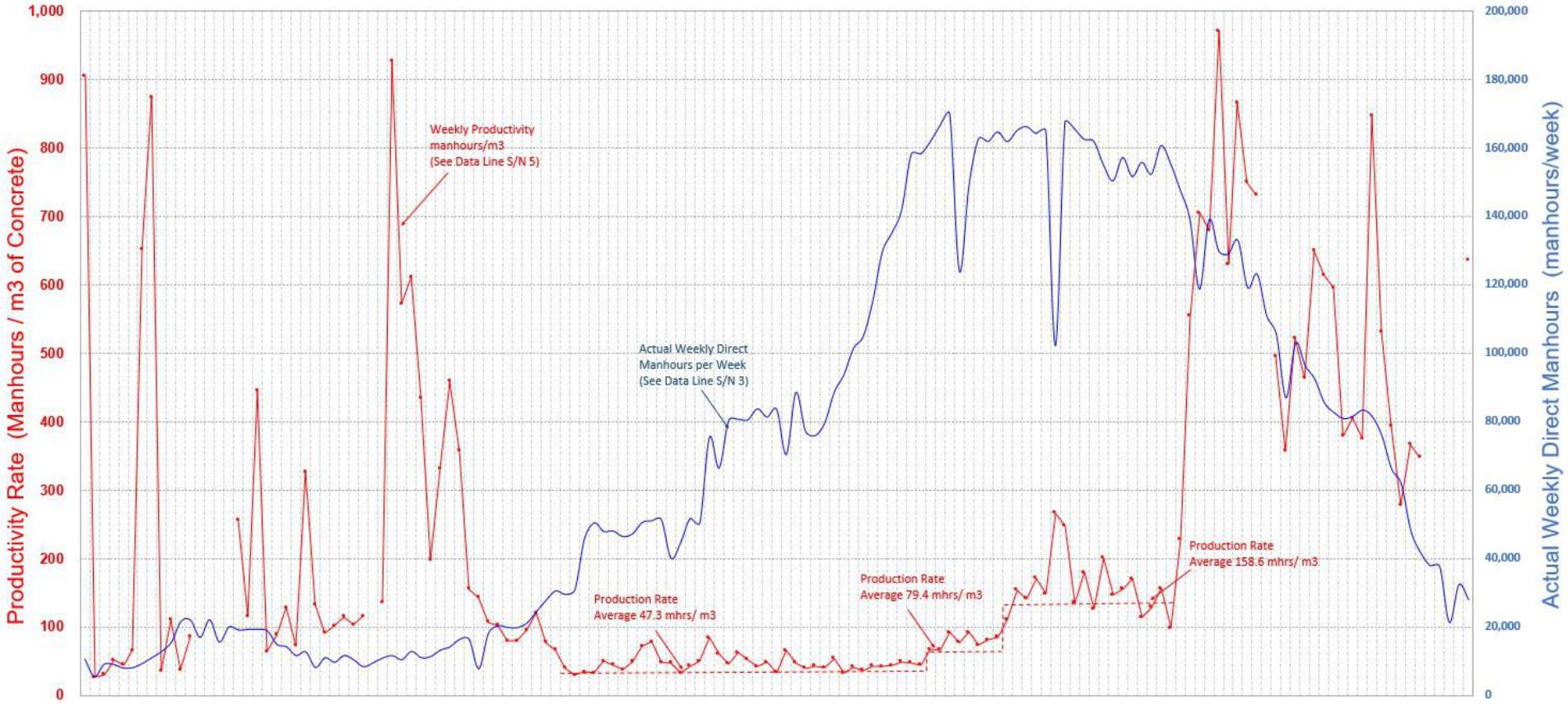
MEASURED MILE

Tsing Ma Bridge Construction

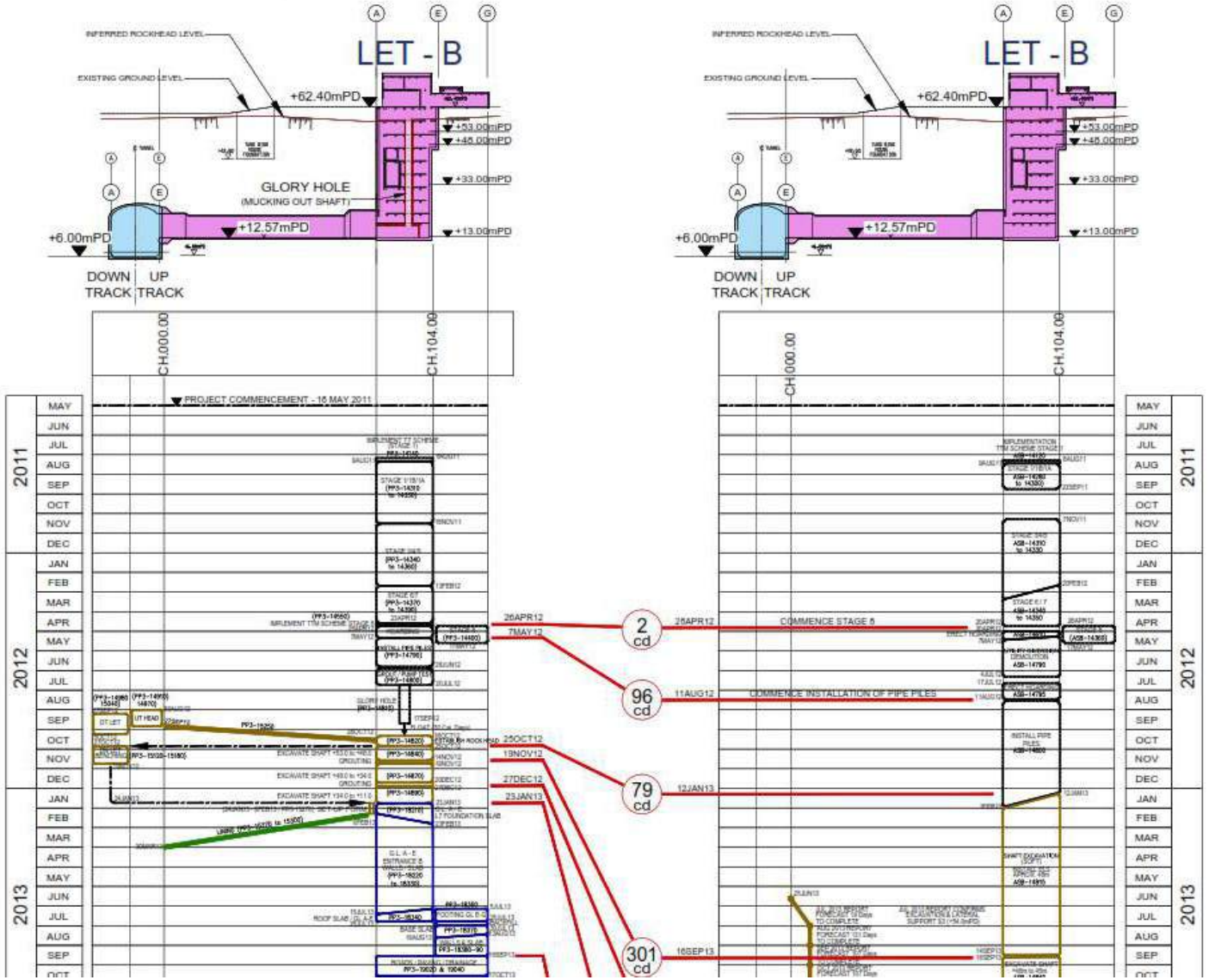
35,000 m2 of Formwork Fixing

Advantages
a) Measures Disruption
b) Acceleration Claims
c) Establishes Performance

Measured Mile Productivity Delay Assessment



BASELINE vs ASBUILT PROGRAMME



Baseline Productivity Delay Assessment

Baseline Productivity Delay Assessment

- Adopted the As-Planned compared to the Asbuilt Programme together with a more rigorous analysis assessing the delays at intervals during the construction of each building (i.e. time window/time slice analysis).

- Delay assessment methodology considers the actual progress over increments at a particular point in time. It recognizes any re-sequencing/modifications of the construction logic due to the effects of the delaying events.

- Analysis is based on the contemporaneous records (i.e daily diaries and progress reports) to access which party was responsible for the delay at the precise point during the construction.

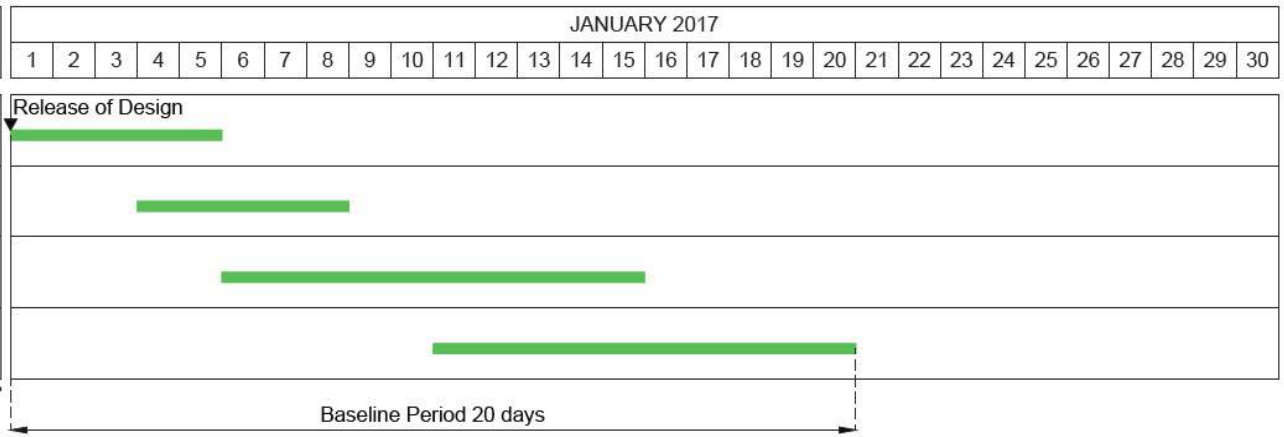
Methodology – Hypothetical Plan (1/9)

Step 1 Baseline Programme

Create simple chart of each activity to show the logic between the activities to complete the construction from 1 January 2017 to 20 January 2017.

Baseline Programme

Item	Description	Baseline Duration
1	Excavation	5 days
2	Baseslab	5 days
3	Superstructure	10 days
4	Finishes	10 days
Accomplish @ cutoff		30 days
Forecast Completion		20 Jan 17



In essence, the Subcontractor needs to complete 30 day/points of works to complete the works in 20 days (Say an average of 1.5 day points/day). Since we are adopting Baseline Productivity, the analysis is not distorted.

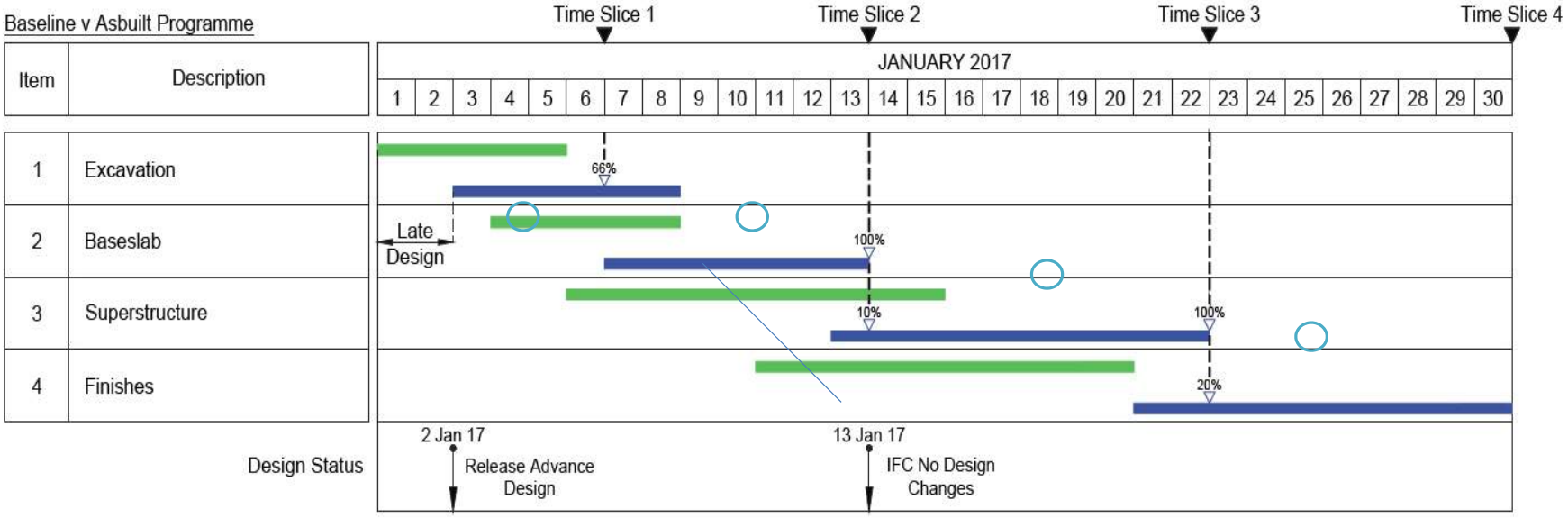
Step 2 – Asbuilt Programme

- I reviewed and initially adopted the asbuilt start and finish dates of each activity a shown in the weekly/monthly reports. Then, I reviewed the site diaries to verify the accuracy of the weekly/monthly reports to confirm the accuracy of the dates.

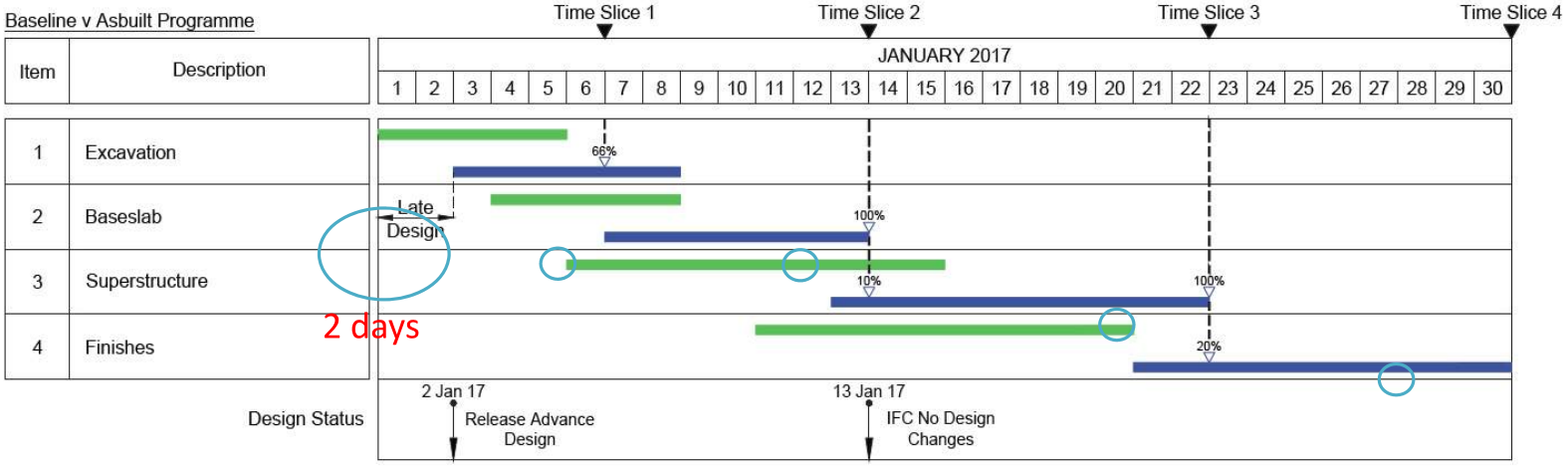
- To provide a fair assessment of each parties responsibility, I chose various time slices during the construction. For example, receipt of the first design, completion of base slab, superstructure, cladding, masonry work and finishes to assess the party responsible for the delays (if any).

As shown in my hypothetical example, I chose four-time slices as follows;

- Time Slice 1 - Before the Commencement of Baseslab
- Time Slice 2 - Completion of Baseslab
- Time Slice 3 - Completion of Superstructure
- Time Slice 4 - Substantial Completion of Building



Then, I assess the actual progress of works based on the actual accomplishment of each activity as shown below;



Asbuilt Progress Status

Item	Description	Time Slice 1	Time Slice 2	Time Slice 3	Time Slice 4
1	Excavation	66%	100%	100%	100%
2	Baseslab	0%	100%	100%	100%
3	Superstructure	0%	10%	100%	100%
4	Finishes	0%	0%	20%	100%
	Overall Achievement	8.3%	36.7%	60.0%	100%

13. Methodology – Hypothetical Plan (6/9)

Asbuilt Progress Status

Item	Description	Time Slice 1												Time Slice 2												Time Slice 3												Time Slice 4						
		JANUARY 2017																																										
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30													
1	Excavation	66%												100%												100%												100%						
2	Baseslab	0%												100%												100%												100%						
3	Superstructure	0%												10%												100%												100%						
4	Finishes	0%												0%												20%												100%						
	Overall Achievement	8.3%												36.7%												60.0%												100%						

Item	Description of Work	Baseline cd	Delay Assessment Cut off Period (Time Slice)							
			06-Jan-17		13-Jan-17		22-Jan-17		30-Jan-17	
				7		9		8		
1	Excavation	5	66%	3.3	100%	5.0	100%	5.0	100%	5.0
2	Baseslab	5	0%	-	100%	5.0	100%	5.0	100%	5.0
3	Superstructure	10	0%	-	10%	1.0	100%	10.0	100%	10.0
4	Finishes	10	0%	-	0%	-	20%	2.0	100%	10.0
(A)	Accomplishment @ Cut Off	30		3.3		11.0		22.0		30.0
(B)	Equivalent % Complete			11.0%		36.7%		73.3%		100.0%
(C)	Balance of Period	20		18	Difference 6d	12		6		-
(D)	Forecast Completion @ Cut Off	20-Jan-17		24-Jan-17		25-Jan-17		28-Jan-17		30-Jan-17
(E)	Achieved in Period			11.0%		25.7%		36.7%		26.7%
(F)	Time Equivalent			2		6		6		6
(G)	Add to previous window					12-Jan-17		19-Jan-17		28-Jan-17
(H)	Delay to this window					1		3		2
(I)	Delay Forecast @ Cut Off			4		5		8		10
(J)	Total Delay	10								

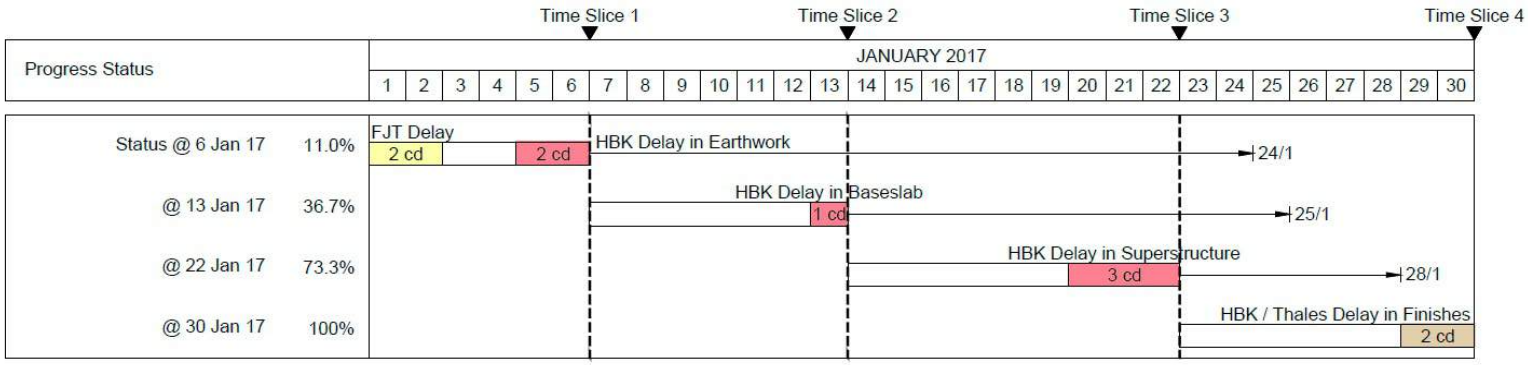
Late Design 2 days

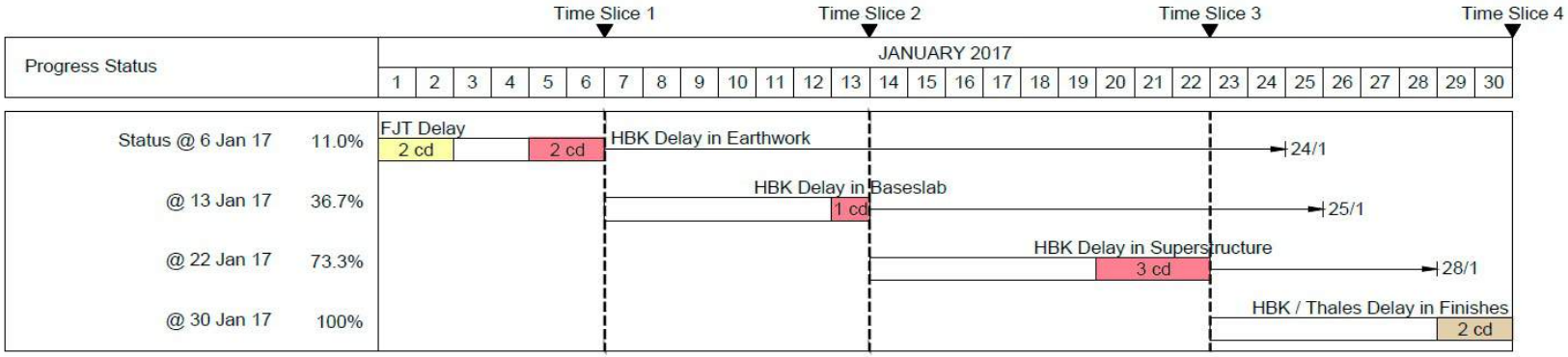
Excavation Delay 2 days

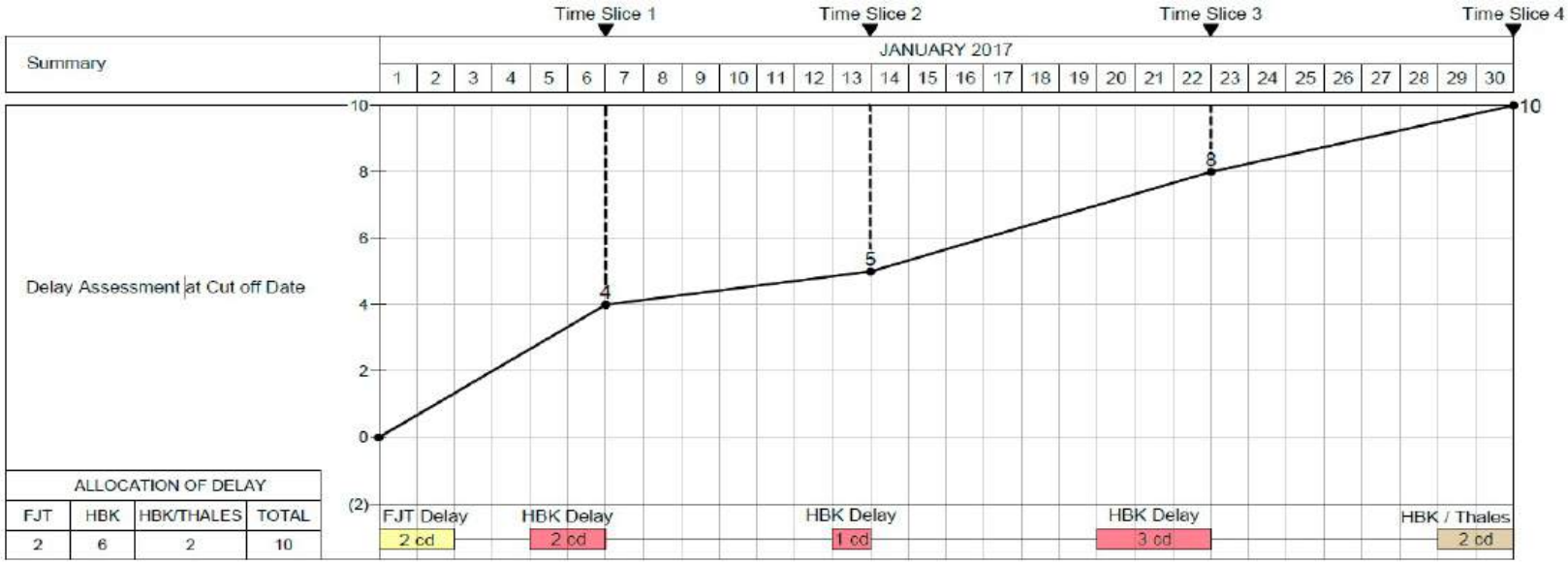
Item	Description of Work	Baseline cd	Delay Assessment Cut off Period (Time Slice)							
			06-Jan-17		13-Jan-17		22-Jan-17		30-Jan-17	
				7		9		8		
1	Excavation	5	66%	3.3	100%	5.0	100%	5.0	100%	5.0
2	Baseslab	5	0%	-	100%	5.0	100%	5.0	100%	5.0
3	Superstructure	10	0%	-	10%	1.0	100%	10.0	100%	10.0
4	Finishes	10	0%	-	0%	-	20%	2.0	100%	10.0
(A)	Accomplishment @ Cut Off	30		3.3		11.0		22.0		30.0
(B)	Equivalent % Complete			11.0%		36.7%		73.3%		100.0%
(C)	Balance of Period	20		18	Difference 6d	12		6		-
(D)	Forecast Completion @ Cut Off	20-Jan-17		24-Jan-17		25-Jan-17		28-Jan-17		30-Jan-17
(E)	Achieved in Period			11.0%		25.7%		36.7%		26.7%
(F)	Time Equivalent			2		6		6		6
(G)	Add to previous window					12-Jan-17		19-Jan-17		28-Jan-17
(H)	Delay to this window					1		3		2
(I)	Delay Forecast @ Cut Off			4		5		8		10
(J)	Total Delay	10								

Late Design 2 days

Excavation Delay 2 days







ALLOCATION OF DELAY			
FJT	HBK	HBK/THALES	TOTAL
2	6	2	10