Alpha
Consulting Engineers Pte Ltd

PROJECT QUALITY PLAN

PROPOSED NEW ERECTION OF A BLOCK OF 5-STOREY SCHOOL OF COMPUTING BUILDING WITH LINK BRIDGE TO COM3 AND EXISTING I 4.0 BUILDING AT NATIONAL UNIVERSITY OF SINGAPORE MK03 ON LOT 03891P, 03894K, 04340V, 04342T, 05023L, 05025M & 05112L AT RESEARCH LINK FOR NATIONAL UNIVERSITY OF SINGAPORE (COM4)

For

NATIONAL UNIVERSITY OF SINGAPORE

Copy No.	1

Prepared By: Chong Lai Meng/Chin Ching Yi

Authorised By: Loh Fook Yuen

Date: 21 March 2022

TABLE OF CONTENTS

SECTION	DESCRIPTION
-	**TITLE PAGE**
-	**TABLE OF CONTENTS**
1	**QUALITY PLAN CONTROL AND DISTRIBUTION**
1.1	List of Copy Holders
1.2	Revision Record
2	**PROJECT INFORMATION**
2.1	Project Description
2.2	Project Cost
2.3	Scope of Works
3	**ORGANISATION**
3.1	Organisation Chart
3.2	ACEPL's Project Team Member
3.3	Client/Client's Representative
3.4	Other Consultants - Local - Overseas – NOT APPLICABLE
3.5	Contractor/Sub-Contractors
3.6	Authorities – NOT APPLICABLE
4	**PROGRAMME**
4.1	Overall Programme
4.2	Authority Submission Status for M&E Services – 1st Submission – NOT APPLICABLE
4.3	Authority Submission Status for M&E Services (Amendment) – 2nd Submission – NOT APPLICABLE
5	**PROJECT RECORDS**
5.1	List of Internal Files
5.2	Filing of Drawings

TABLE OF CONTENTS

SECTION	DESCRIPTION
6	**INTERFACING**
6.1	Method of Interface
6.2	Internal Design Interface – NOT APPLICABLE
6.3	Circulation of Documents to External Parties
7	**WORK AUTHORISATION**
8	**DESIGN INPUT AND METHODOLOGY**
8.1	List of Client's Standards, Reference Documents or Brief – NOT APPLICABLE
8.2	List of Applicable Code of Practice and Regulations
8.3	List of Design Guide or Handbook Used
8.4	List of Pre-Consultation and Waiver – NOT APPLICABLE
8.5	List of Applicable Quality System Procedures
8.6	List of Software Used for Design/Analysis
9	**ENVIRONMENTAL CONSIDERATIONS**
9.1	Sustainable Design Features / Criteria
9.2	Site PPE Requirement
9.3	Site Emergency Preparedness
9.4	Reporting of Environmental Non-conformances
9.5	List of Applicable Environmental Management System Procedures
10	**CLIENT'S REQUIREMENTS**
10.1	List of Output Required by Client
10.2	Specific Procedures Required by Client
11	**LIST OF SUB-JOB**
11.1	List of Sub-Job Numbers – NOT APPLICABLE

SECTION 1

QUALITY PLAN CONTROL AND DISTRIBUTION

1.1 List of Copy Holders

Copy No.	Copy Holder	Date of Issue
1	6268-601	21 March 2022

1.2 Revision Record

Revision	Date of Issue	Section Reference	Page(s)	Remarks
0	21 March 2022	1 to 11	34	+ 9 pages (Section 4.1 – Overall Programme)

SECTION 2

PROJECT INFORMATION

2.1 Project Description

Type of Development	Institutional

Statistics of Development	
Site Area, m²	-
Nett Floor Area, m²	-
Gross Floor Area, m²	4,323.35
Covered Carpark, m²	-
No. of Covered Carpark Lots	-
No. of Apartments/Houses	-
No. of Beds (for Hospitals)	-
No. of Guestroom (for Hotels)	-
No. of Blocks / No. of Storeys	1 Block/6 Stories
Green Mark Category	Platinum
No. of Phases	1

2.2 Project Cost

M&E Services Cost Plan (S$ x 1M)										
Services	EI	ACVI	LEI	FFAI	PSI	SPFI				
Estimate	1.4	1.8	0.22	0.65	0.46	-				
Awarded	1.4	1.8	0.22	0.65	0.46					

Total Project Construction Cost (S$ x1M)			
	Site Clearance	Piling Works	Main Contract
Estimate			15
Awarded			15.55

Site Clearance shall include earth work, soil improvement, service diversion and termination.

2.3 Scope of Works

2.3.1 Scope of Consultancy Services

Conceptual/Schematic Design	✓
Detailed Design	✓
Tender Documentation	✓
Tender Evaluation	✓
Contract Supervision	✓
M&E Costing	✓
Submissions to Authority	✓

(✓*where applicable*)

2.3.2 Scope of M&E Services

ELECTRICAL	✓	AIR CONDITIONING	✓	SPRINKLER	✓	SANITARY	✓	SWIMMING POOL	
LIFT	✓	MECHANICAL VENTILATION	✓	FIRE ALARM	✓	COLD WATER	✓	STEAM BOILER	
ESCALATOR		MECHANICAL SMOKE EXTRACT		HOSEREEL	✓	HOT WATER		FUEL STORAGE	
PABX		COMPUTER A/C	✓	WET RISER		TOWN GAS	✓		
SECURITY	✓	BST CARPARK EXH		DRY RISER	✓	LPG GAS			
TELELIFT		HEATING				MEDICAL GAS			
DATA COMM.	✓								
FLUSHFLOOR TRUNKING									

(✓ where applicable)

2.3.3 Submission to Relevant Authorities by Others

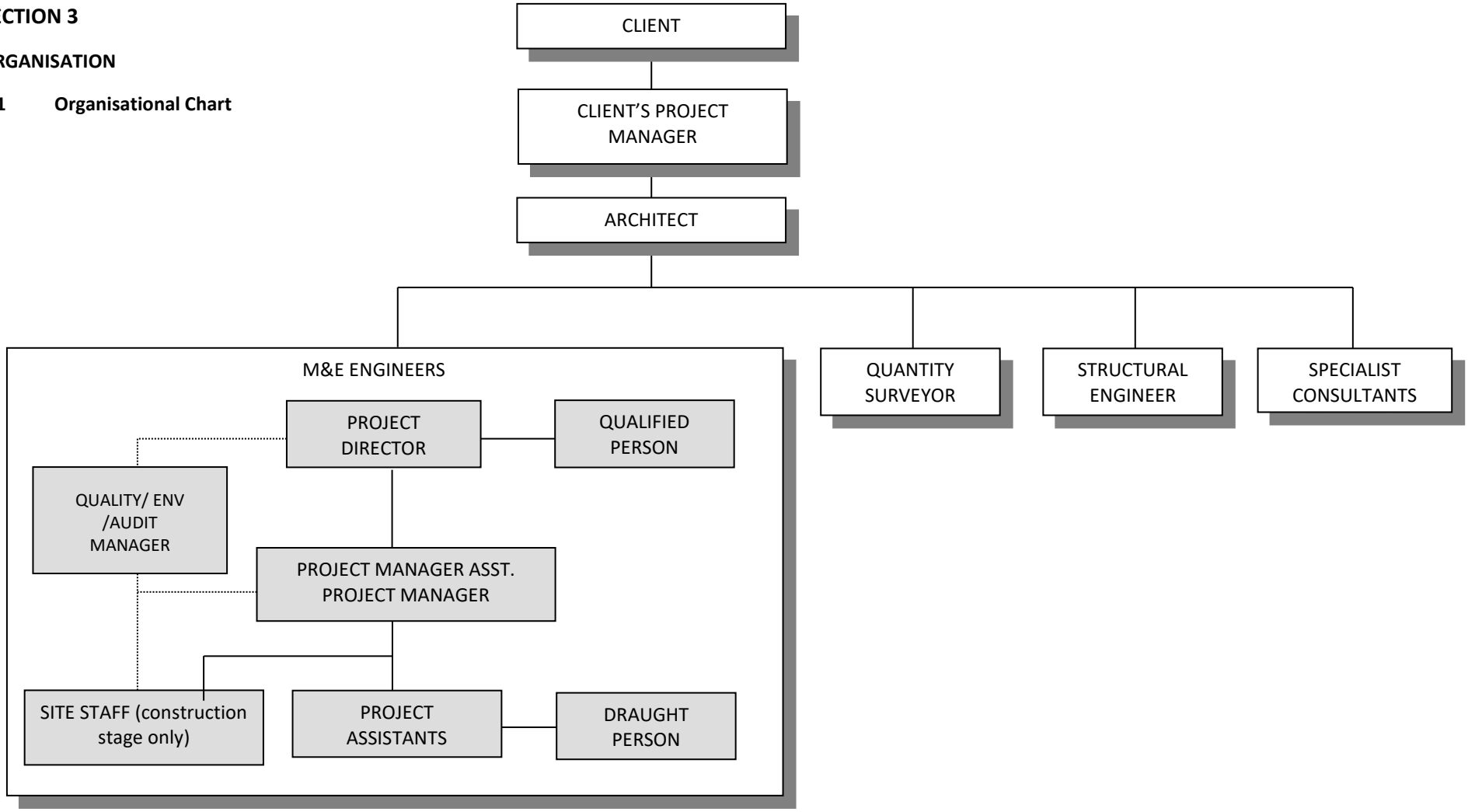
EJECTOR & DIVERTER		SUMP PUMP		FUEL OIL TANK		LIFT & ESCALATOR	✓	PRESSURE VESSEL		HOISTS	✓	FOAM	

(✓*where applicable*)

SECTION 3

ORGANISATION

3.1 Organisational Chart



SECTION 3

ORGANISATION

3.2 ACEPL's Project Team Member

TITLE		NAME
Project Director		Loh Fook Yuen (LFY)
Qualified Person	Mechanical	Choong Choon Guan (CCG)
	Electrical	Loh Fook Yuen (LFY)
Project Manager		Chong Lai Meng (CLM)
Assistant Project Manager		–
Project Assistant (Mech)		Chin Ching Yi (CCY)
Project Assistant (Elect)		Koh Kok Siang (KKS)
Draughtsperson		Common Pool
Resident Engineer (M&E)		–
Assistant Resident Engineer (M&E)		–
Clerk-of-Work (M&E)		–
Resident Technical Officer (M&E		Henry Lai

3.3 Client/Client's Representatives

Client: National University of Singapore (NUS)

Address: 8 Kent Ridge Drive
#02-02 Ventus
Singapore 119246

Tel:- 6601 2502

Fax:- 6778 6031

Client's Representatives:

Name of Company	Contact Person	Contact
NUS Office of Estate Development (OED)	Name: Ms Tricia Chew Position: Project Director	Tel: 6601 3510 Fax: – Handphone: 9655 5719 Email: triciachew@nus.edu.sg
NUS Office of Estate Development (OED)	Name: Mr Kwan Soon Boon Position: Project Manager	Tel: 9799 2205 Fax: – Handphone: 8233 7667 Email: sb.kwan@nus.edu.sg
NUS Office of Estate Development (OED)	Name: Mr Oong Eng Choon (Wen Yongchun) Position: Technical Manager	Tel: 6516 7091 Fax: – Handphone: 9388 7760 Email: oedoec@nus.edu.sg
NUS Office of Estate Development (OED)	Name: Mr Ong Tso Sheng Position: Associate Director	Tel: 6601 5007 Fax: – Handphone: 9767 9256 Email: oedongts@nus.edu.sg
	Name: Position:	Tel: Fax: Handphone: Email:

3.4 **Other Consultants** (Local)

Function / Name of Company	Contact Person	Contact
Architect LAUD Architects Pte Ltd	Name: Mr Ho Tzu Yin Position: Architectural QP	Tel: 6259 2122 Fax: 6259 1151 Handphone: 9068 8107 Email: 209-ir@laudarchitects.com
	Name: Ms Faith Wong Position: Proj Architect/BIM Coordinator	Tel: 6259 2122 Fax: 6259 1151 Handphone: 9623 3769 Email: 209-ir@laudarchitects.com
	Name: Ms Phrae Khongtanadith Position: Des Architect	Tel: 6259 2122 Fax: 6259 1151 Handphone: 9391 1252 Email: 209-ir@laudarchitects.com
	Name: Mr Neil Loyola Position: Proj BIM Manager	Tel: 6259 2122 Fax: 6259 1151 Handphone: 8749 8022 Email: 209-ir@laudarchitects.com
Quantity Surveyor Northcroft Lim Consultants Pte Ltd	Name: Ms Yvonne Tho Position: Project Director	Tel: 6220 7188 Fax: 6222 0868 Handphone: 9853 7922 Email: 1827dv@northcroft.sg
	Name: Mr Darren Bong Position: Quantity Surveyor	Tel: 6220 7188 Fax: 6222 0868 Handphone: 9126 9212 Email: 1827dv@northcroft.sg
	Name: Mr Ng Siang Heng Position: Quantity Surveyor	Tel: 6220 7188 Fax: 6222 0868 Handphone: 9180 9209 Email: 1827dv@northcroft.sg
	Name: Mr Anson Goh Zhang Roong Position: Quantity Surveyor	Tel: 6220 7188 Fax: 6222 0868 Handphone: 9180 9209 Email: 1827dv@northcroft.sg

3.4 Other Consultants (Local) (Cont'd)

Function / Name of Company	Contact Person	Contact
Structural Engineer Ronnie & Koh Consultants Pte Ltd	Name: Mr Ronnie Chong Position: Structural QP	Tel: 6225 7128 Fax: 6225 7182 Handphone: 9450 9672 Email: 18103nusdigi@rkconsl.com
	Name: Mr Yee Cheng Chuan Position: Proj Director	Tel: 6225 7128 Fax: 6225 7182 Handphone: 9067 6350 Email: 18103nusdigi@rkconsl.com
	Name: Mr Thusiyanthan Position: Proj Engineer	Tel: 6225 7128 Fax: 6225 7182 Handphone: 8268 2076 Email: 18103nusdigi@rkconsl.com
	Name: Ms Nwe Nwe Win Position: BIM Coordinator	Tel: 6225 7128 Fax: 6225 7182 Handphone: 9240 8481 Email: 18103nusdigi@rkconsl.com
Interior Designer Designphase Dba Pte Ltd	Name: Mr Derek MacKenzie Position: –	Tel: 6339 3677 Fax: 6334 7280 Handphone: 9634 9503 Email: comp-e18@designphasedba.com
	Name: Mr Alexander Hew Position: –	Tel: 6339 3677 Fax: 6334 7280 Handphone: 9758 9193 Email: comp-e18@designphasedba.com
	Name: Ms Sherie Heng Position: –	Tel: 6339 3677 Fax: 6334 7280 Handphone: 9061 1394 Email: comp-e18@designphasedba.com

3.4 Other Consultants (Local) (Cont'd)

Function / Name of Company	Contact Person	Contact
Lighting Consultant The Lightbox Pte Ltd	Name: Ms Warinya Pintongkam Position: Managing Director	Tel: 6294 6803 Fax: 6324 0868 Handphone: 9741 1599 Email: jui@lightboxlighting.com
	Name: Mr Edwin Chia Position: Project Manager	Tel: 6294 6803 Fax: 6324 0868 Handphone: 9070 5670 Email: edwin@lightboxlighting.com
	Name: Ms Lilian Tham Position: Designer	Tel: 6294 6803 Fax: 6324 0868 Handphone: 8571 1286 Email: lilian@lightboxlighting.com
Acoustic Consultant Alfem Engineering Consultancy Pte Ltd	Name: Mr Alvin Cheong Position: Project Lead	Tel: 6686 4372 Fax: 6570 3200 Handphone: 9690 2285 Email: nus_soc@alfem-engineering.com
	Name: Mr Tim Cheah Position: Project Engineer	Tel: 6686 4372 Fax: 6570 3200 Handphone: 8368 4994 Email: nus_soc@alfem-engineering.com
Landscape Consultant Tinderbox Pte Ltd	Name: Mr Tan Peck Cheong Position: Principal	Tel: 6255 6024 Fax: – Handphone: 8228 0776 Email: project@tinderbox.com.sg
	Name: Ms Zhang Shuhan Position: Associate	Tel: 6255 6024 Fax: – Handphone: 9005 8718 Email: project@tinderbox.com.sg
ESD Consultant Building System & Diagnostics Pte Ltd	Name: Mr Koy Beng Tuang Position: Green Mark Pro	Tel: 6560 0702 Fax: 6795 0020 Handphone: 9488 0311 Email: nuscom3_esd@bsd.com.sg
	Name: Mr John Ong Xin Yang Position: -	Tel: 6560 0702 Fax: 6795 0020 Handphone: 8102 0375 Email: nuscom3_esd@bsd.com.sg
	Name: Ms Liow Hui Wen Position: Executive Engineer	Tel: 6560 0702 Fax: 6795 0020 Handphone: 8790 0832 Email: huiwen.liow@bsd.com.sg

3.4 Other Consultants (Local) (Cont'd)

Function / Name of Company	Contact Person	Contact
WELL Consultant Earth-In-Mind Pte Ltd	Name: Ms Emily Tan Position: WELL Consultant	Tel: 6686 4272 Fax: 6570 3200 Handphone: 9690 1132 Email: emily@earth-in-mind.com
	Name: Mr Alvin Cheong Position: -	Tel: 6686 4272 Fax: 6570 3200 Handphone: 9690 2285 Email: alvin@earth-in-mind.com
DFS Consultant CN2E Consultants Pte Ltd	Name: Ms Ng Lee Chian Position: DfS Professional Director	Tel: – Fax: – Handphone: 9062 0599 Email: nglc@cn2econsult.com
	Name: Ms Koh Yan Nee Position: Associate Director	Tel: – Fax: – Handphone: 9297 5086 Email: yannee@cn2econsult.com
ABC Consultant Nature Landscape Pte Ltd	Name: Mr Luke Lee Position: Design Director	Tel: 6252 6802 Fax: 6252 6681 Handphone: 8228 6122 Email: luke.lee@naturelandscapes.com
	Name: Ms Eunice Chia Position: Senior LA	Tel: 6252 6802 Fax: 6252 6681 Handphone: 9766 0889 Email: eunice.chia@naturelandscapes.com
	Name: Ms Norizah Hasan Position: LA	Tel: 6252 6802 Fax: 6252 6681 Handphone: 9655 1731 Email: norizah.hassan@naturelandscapes.com

3.4 Other Consultants (Local) (Cont'd)

Function / Name of Company	Contact Person	Contact
Façade Consultant HCCH Consulting Pte Ltd (BFG)	Name: Mr Sani Chang Position: Project Director	Tel: 6222 5451 Fax: 6444 0126 Handphone: 9681 8336 Email: sani@hcch.sg
	Name: Mr Edward Sun Position: Project Leader	Tel: 6222 5451 Fax: 6444 0126 Handphone: 9889 9132 Email: edward@hcch.sg
	Name: Ms Sofrane Farjado Position: Façade Specialist (Design)	Tel: 6222 5451 Fax: 6444 0126 Handphone: – Email: sofrane@hcch.sg
	Name: Ms Farzana Parveen Position: Façade Engineer (Engineering)	Tel: 6222 5451 Fax: 6444 0126 Handphone: – Email: farzana@hcch.sg
	Name: Mr Simon Chung Position: Façade Specialist (Site Phase)	Tel: 6222 5451 Fax: 6444 0126 Handphone: – Email: heng@hcch.sg
Signage Consultant Aecom Signage	Name: Mr Giles Clement Position: Wayfinding Lead	Tel: – Fax: – Handphone: 8508 4897 Email: giles.clement@aecom.com
	Name: Mr Zaidi Lee Position: –	Tel: – Fax: – Handphone: 9168 2001 Email: zaidi.lee@aecom.com

3.4 Other Consultants (Overseas) **– NOT APPLICABLE**

Function / Name of Company	Contact Person	Contact
Architect	Name: Position:	Tel: Fax: Handphone: Email:
M&E Consultant	Name: Position:	Tel: Fax: Handphone: Email:
Quantity Surveyor	Name: Position:	Tel: Fax: Handphone: Email:
Structural Engineer	Name: Position:	Tel: Fax: Handphone: Email:
Interior Designer	Name: Position:	Tel: Fax: Handphone: Email:
Lighting Consultant	Name: Position:	Tel: Fax: Handphone: Email:
Acoustic Consultant	Name: Position:	Tel: Fax: Handphone: Email:
_____	Name: Position:	Tel: Fax: Handphone: Email:

3.5 Contractors/Sub-Contractors

Function / Name of Company	Contract *	Contact Person	Contact
Main Contractor Kim Seng Heng Engineering Construction Pte Ltd	DC	Name: Mr Gair Huat Kian Position: Sr Proj. Director	Tel:- Fax:- Handphone: 9675 8292 Email: ksh-com3@kimsengheng.com.sg
Air Conditioning & Ventilation Installation Sub-Contractor Fortuna Airconditioning & Electrical Pte Ltd	DSC	Name: Patrick Chan Position: Project Manager	Handphone: 9764 1193 Email: patrick@fortuna.com.sg
Building Management System Sub-Contractor Honeywell Pte Ltd	DSC	Name: Michael Jeevan Position: Project Supervisor	Handphone: 8161 5805 Email: michael.jeevan@hotmail.com
Plumbing & Sanitary Installation Sub-Contractor Ngee Lek P&S Services Pte Ltd	DSC	Name: Langston Position: Project Manager	Handphone: 8161 5805 Email: langston@emesh.com.sg
Electrical Installation Sub-Contractor LCE Engineering Pte Ltd	DSC	Name: Alan Tang Position: Project Manager	Handphone: 8833 6266 Email: alantang@lce.com.sg
Lift & Escalator Installation Sub-Contractor KONE Pte Ltd	DSC	Name: Samuel Pang Position: Project Manager	Tel: 6424 6246 Fax: – Handphone: 9276 6464 Email: Samuel.pang@kone.com
Fire Fighting & Alarm Installation Sub-Contractor Chubb Singapore Pte Ltd	DSC	Name: Venkata Shiva Prasad Position: Project Manager	Tel: 6292 8421 Fax: 6298 7310 Handphone: 9755 8587 Email: VenkataShivaPrasad.Gundu@chubb.com.sg

** Type of Contract*
- *NSC (Nominated Sub-Contract)*
- *DSC (Domesticated Sub-Contract)*
- *DC (Direct Contract)*
- *NS (Nominated Supplier)*

3.6 Authorities – NOT APPLICABLE

Authorities/Department	Contact Person	Tel/Fax Nos./E-mail
SP PowerGrid: (a) Sub-Station		
(b) Diversion		
SP Services: (a) Customer Supply		
(b) Installation		
(c) Meter Section		
(d) Road Lighting		
TFCC: (a) SCV		
(b) SingTel		
(c) IDA		
BCA: (a) Building Plan		
(b) Green Mark		
FSSD: (a) Building Plan		
(b) M&E Plan		
PUB (Water Supply) Network Dept: (a) Water Conservation		
(b) Plumbing Plan		
(c) Diversion		
(d) NEWater		
PUB Water Reclamation (Network) Dept: (a) Building Plan/CBPU		
(b) M&E Plan		
(c) Diversion		
City Gas Pte Ltd: (a) Planning/Submission		
(b) Installation/Inspection		

3.6 Authorities – NOT APPLICABLE (Cont'd)

Authorities/Department	Contact Person	Tel/Fax Nos./E-mail
PowerGas Pte Ltd (a) Diversion		
(b) Installation		
NEA (Pollution Control) (a) Planning/Submission		
(b) Inspection		

SECTION 4

PROGRAMME

4.1 Overall Programme (Refer to attached program)

ID	TASK NAME	MONTHS	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1.	Preliminary Planning																									
2.	Planning Submission																									
3.	Detail Design																									
4.	BP Submission																									
5.	BP Submission (Amendments)																									
6.	Tender Period for Piling																									
7.	Tender Period for Sub-Structure																									
8.	Tender Period for Super-Structure																									
9.	Piling Period																									
10.	Sub-Structure Construction Period																									
11.	Super-Structure Construction Period																									
12.	TOP																									
13.	CSC																									

KIM SENG HENG ENGINEERING CONSTRUCTION (PTE) LTD
Proposed Erection of a Block of 5 Storey Building for School of Computing, NUS-COM4
Preliminary Construction Work Programme (Rev;0)

ID	Task Name	Duration	Start	Finish
1	**Letter of Award for COM4**	**0 wks**	**15/11/2021**	**15/11/2021**
2	**Contract Period for COM4 (Rev; 0)**	**56.5 wks**	**29/11/2021**	**28/12/2022**
3	**Commencement of work**	**0 wks**	**29/11/2021**	**29/11/2021**
4	**Completion of structural work**	**0 wks**	**27/6/2022**	**27/6/2022**
5	**Completion of Architectural, ID and M&E work**	**0 wks**	**17/10/2022**	**17/10/2022**
6	**Completion of External work**	**0 wks**	**7/11/2022**	**7/11/2022**
7	**M&E work- T&C**	**0 wks**	**24/10/2022**	**24/10/2022**
8	**Completion of RI inspections**	**0 wks**	**28/11/2022**	**28/11/2022**
9	**Obtain TOP**	**0 wks**	**26/12/2022**	**26/12/2022**
10	**Temporary Design & Authority Clearance**	**6 wks**	**29/11/2021**	**8/1/2022**
11	**MOM and BCA.**	**4 wks**	**29/11/2021**	**25/12/2021**
12	Insurance & workmen compensation	**4 wks**	**29/11/2021**	**25/12/2021**
13	BCA Covid-19 SMS. submission, approval & implementati	**4 wks**	**29/11/2021**	**25/12/2021**
14	**NEA - Noise control**	**4 wks**	**29/11/2021**	**25/12/2021**
15	NEA submission & approval	3 wks	29/11/2021	18/12/2021
16	Install noise meters	1 wk	20/12/2021	25/12/2021
17	**PUB -(Notice of commencement of excavation-NCE)**	**3 wks**	**29/11/2021**	**18/12/2021**
18	Site cable detection work	2 wks	29/11/2021	11/12/2021
19	Apply & obtain NCE	2 wks	6/12/2021	18/12/2021
20	**PUB - ECM**	**6 wks**	**29/11/2021**	**8/1/2022**
21	ECM design & plan for drains, bundwall, treatment tank.	2 wks	29/11/2021	11/12/2021
22	ECM submission & approval	2 wks	6/12/2021	18/12/2021
23	ECM work includes drains, bundwall, treatment tank etc.	3 wks	20/12/2021	8/1/2022
24	**BCA - Structural plans approval**	**2 wks**	**29/11/2021**	**11/12/2021**
25	**BCA - Permit to commence structural works**	**2 wks**	**13/12/2021**	**25/12/2021**
26	**Site Setup work**	**6 wks**	**29/11/2021**	**8/1/2022**
27	**Survey & Inspections**	**3 wks**	**29/11/2021**	**18/12/2021**
28	Pre-condition survey	3 wks	29/11/2021	18/12/2021
29	Pre-computation survey	3 wks	29/11/2021	18/12/2021
30	**Site office, hoarding, access, facilities etc.**	**6 wks**	**29/11/2021**	**8/1/2022**
31	planning, materials procurement and mobilisation.	3 wks	29/11/2021	18/12/2021
32	site clearance including diversion of any extg services	4 wks	6/12/2021	1/1/2022
33	install hoarding, gate and washing bay	4 wks	6/12/2021	1/1/2022
34	site office and facilities	3 wks	6/12/2021	25/12/2021



Project:NUS COM4
Date: 23 Nov 2021

Baseline Milestone ◇ Critical Split Milestone ◆ Critical Slippage
Baseline Summary Task Summary Baseline

KIM SENG HENG ENGINEERING CONSTRUCTION (PTE) LTD
Proposed Erection of a Block of 5 Storey Building for School of Computing, NUS-COM4
Preliminary Construction Work Programme (Rev;0)

ID	Task Name	Duration	Start	Finish
35	Removal of extg trees including disposal.	2 wks	6/12/2021	18/12/2021
36	transplanting of extg trees.	4 wks	13/12/2021	8/1/2022
37	**Appointment, shopdrawings & Sample submission, Materials procurement and Production/ fabrication.**	**30 wks**	**29/11/2021**	**25/6/2022**
38	**Structural steelwork for link-bridge to COM 3**	**19 wks**	**29/11/2021**	**9/4/2022**
39	Appointment	1 wk	29/11/2021	4/12/2021
40	Shopdrawings & Material sample submission for approval	8 wks	6/12/2021	29/1/2022
41	Material procurement & fabrication of steel frames	10 wks	31/1/2022	9/4/2022
42	**Structural materials-conc. & rebar incldg prefab rebar**	**11 wks**	**29/11/2021**	**12/2/2022**
43	Appointment	2 wks	29/11/2021	11/12/2021
44	Shopdrawings & Material sample submission for approval	4 wks	6/12/2021	1/1/2022
45	Material procurement and Production	10 wks	6/12/2021	12/2/2022
46	**Structural -precast RC staircase flight**	**16 wks**	**6/12/2021**	**26/3/2022**
47	Appointment	3 wks	6/12/2021	25/12/2021
48	Shopdrawings & Material sample submission for approval	5 wks	27/12/2021	29/1/2022
49	Material procurement and Production	8 wks	31/1/2022	26/3/2022
50	**Façade**	**28 wks**	**29/11/2021**	**11/6/2022**
51	Appointment	1 wk	29/11/2021	4/12/2021
52	Shopdrawings & Material sample submission for approval	6 wks	6/12/2021	15/1/2022
53	Shop drawings prepration & submission for QP's approval	6 wks	10/1/2022	19/2/2022
54	Material procurement and Production	16 wks	21/2/2022	11/6/2022
55	**Interior & fitting out work**	**29 wks**	**6/12/2021**	**25/6/2022**
56	Appointment	3 wks	6/12/2021	25/12/2021
57	Shopdrawings & Material sample submission for approval	10 wks	27/12/2021	5/3/2022
58	Material procurement and Production	16 wks	7/3/2022	25/6/2022
59	**MEP(plumb & sanitary, fire-protectn, ACMV, Elect & Lift)**	**29 wks**	**29/11/2021**	**18/6/2022**
60	Appointment	1 wk	29/11/2021	4/12/2021
61	Shopdrawings & Material sample submission for approval	10 wks	6/12/2021	12/2/2022
62	Material procurement, Equipment production & delivery	16 wks	28/2/2022	18/6/2022
63	**Construction Works**	**56.17 wks**	**29/11/2021**	**26/12/2022**
64	**Structural works - 1st storey to roof inclusive.**	**30.17 wks**	**29/11/2021**	**27/6/2022**
65	**1st storey**	**10.33 wks**	**29/11/2021**	**8/2/2022**
66	**Excavation for raft foundation**	5.5 wks	29/11/2021	5/1/2022
67	Design & approval of open cut method	2 wks	29/11/2021	11/12/2021

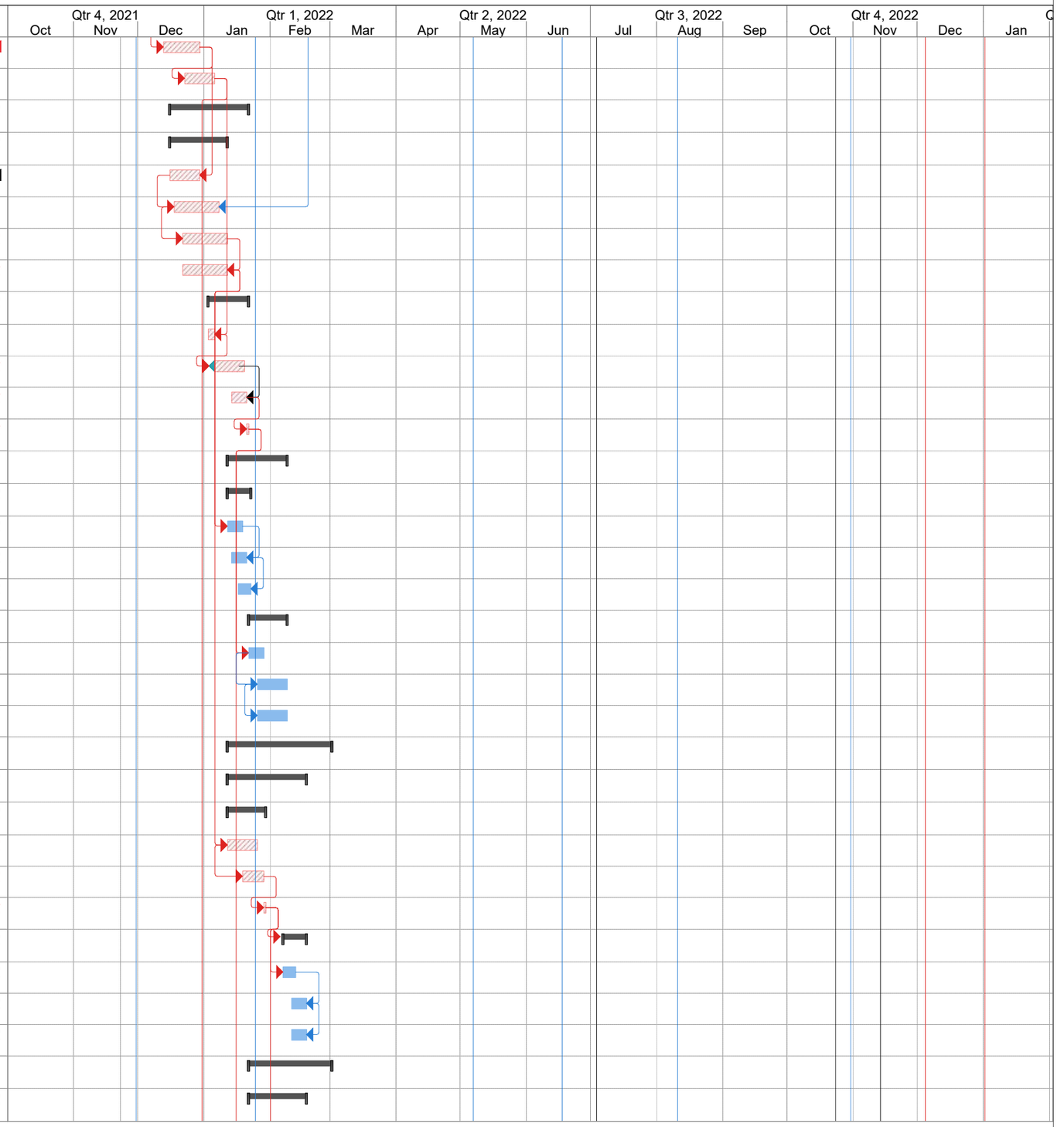


Project:NUS COM4
Date: 23 Nov 2021

Baseline Milestone ◇ Critical Split Milestone ◆ Critical Slippage
Baseline Summary Task Summary Baseline

KIM SENG HENG ENGINEERING CONSTRUCTION (PTE) LTD
Proposed Erection of a Block of 5 Storey Building for School of Computing, NUS-COM4
Preliminary Construction Work Programme (Rev;0)

ID	Task Name	Duration	Start	Finish
68	ZONE A - Gridlines A-C / 1-5 includes plate load test	2.5 wks	13/12/2021	29/12/2021
69	ZONE B - Gridlines C-E / 1-4 includes plate load test	2 wks	23/12/2021	5/1/2022
70	**Raft foundation (1st storey)**	**5.33 wks**	**16/12/2021**	**21/1/2022**
71	**ZONE A**	**3.83 wks**	**16/12/2021**	**11/1/2022**
72	Damp-proof Membrane and lean concrete	2 wks	16/12/2021	29/12/2021
73	lay rebar plus wall/column starter bar, M&E pipes e	3 wks	18/12/2021	7/1/2022
74	formwork to sides & construction joints	3 wks	22/12/2021	11/1/2022
75	*Pour concrete*	*3 wks*	*22/12/2021*	*11/1/2022*
76	**ZONE B**	**2.83 wks**	**3/1/2022**	**21/1/2022**
77	*Damp-proof Membrane and lean concrete*	*3 days*	*3/1/2022*	*5/1/2022*
78	*lay rebar plus wall/column starter bar, M&E pipes e*	*2 wks*	*6/1/2022*	*19/1/2022*
79	*formwork to sides*	*1 wk*	*14/1/2022*	*20/1/2022*
80	*Pour concrete*	*1 day*	*21/1/2022*	*21/1/2022*
81	**Wall and Columns**	**4 wks**	**12/1/2022**	**8/2/2022**
82	**ZONE A**	**1.67 wks**	**12/1/2022**	**22/1/2022**
83	rebars (Column-14 nos, liftwall and staircase wall)	1 wk	12/1/2022	18/1/2022
84	formwork	1 wk	14/1/2022	20/1/2022
85	Pour concrete	1 wk	17/1/2022	22/1/2022
86	**ZONE B**	**2.5 wks**	**22/1/2022**	**8/2/2022**
87	rebars (Column-4 nos, retaining walls cw stiffeners	1 wk	22/1/2022	28/1/2022
88	formwork	2 wks	26/1/2022	8/2/2022
89	Pour concrete	2 wks	26/1/2022	8/2/2022
90	**2nd storey**	**7 wks**	**12/1/2022**	**1/3/2022**
91	**ZONE A (G/L A-C/1-5)**	5.33 wks	12/1/2022	17/2/2022
92	**floor**	**2.67 wks**	**12/1/2022**	**29/1/2022**
93	slab and beam formwork	2 wks	12/1/2022	25/1/2022
94	slab and beam rebar including embedded items	1.5 wks	19/1/2022	28/1/2022
95	*Pour concrete*	*1 day*	*29/1/2022*	*29/1/2022*
96	**wall & columns**	**1.67 wks**	**7/2/2022**	**17/2/2022**
97	rebars (Column-11 nos, liftwall and staircase wall)	1 wk	7/2/2022	12/2/2022
98	formwork	1 wk	11/2/2022	17/2/2022
99	Pour concrete	1 wk	11/2/2022	17/2/2022
100	**ZONE B (G/L C-E/1-4)**	**5.5 wks**	**22/1/2022**	**1/3/2022**
101	**floor**	**3.83 wks**	**22/1/2022**	**17/2/2022**

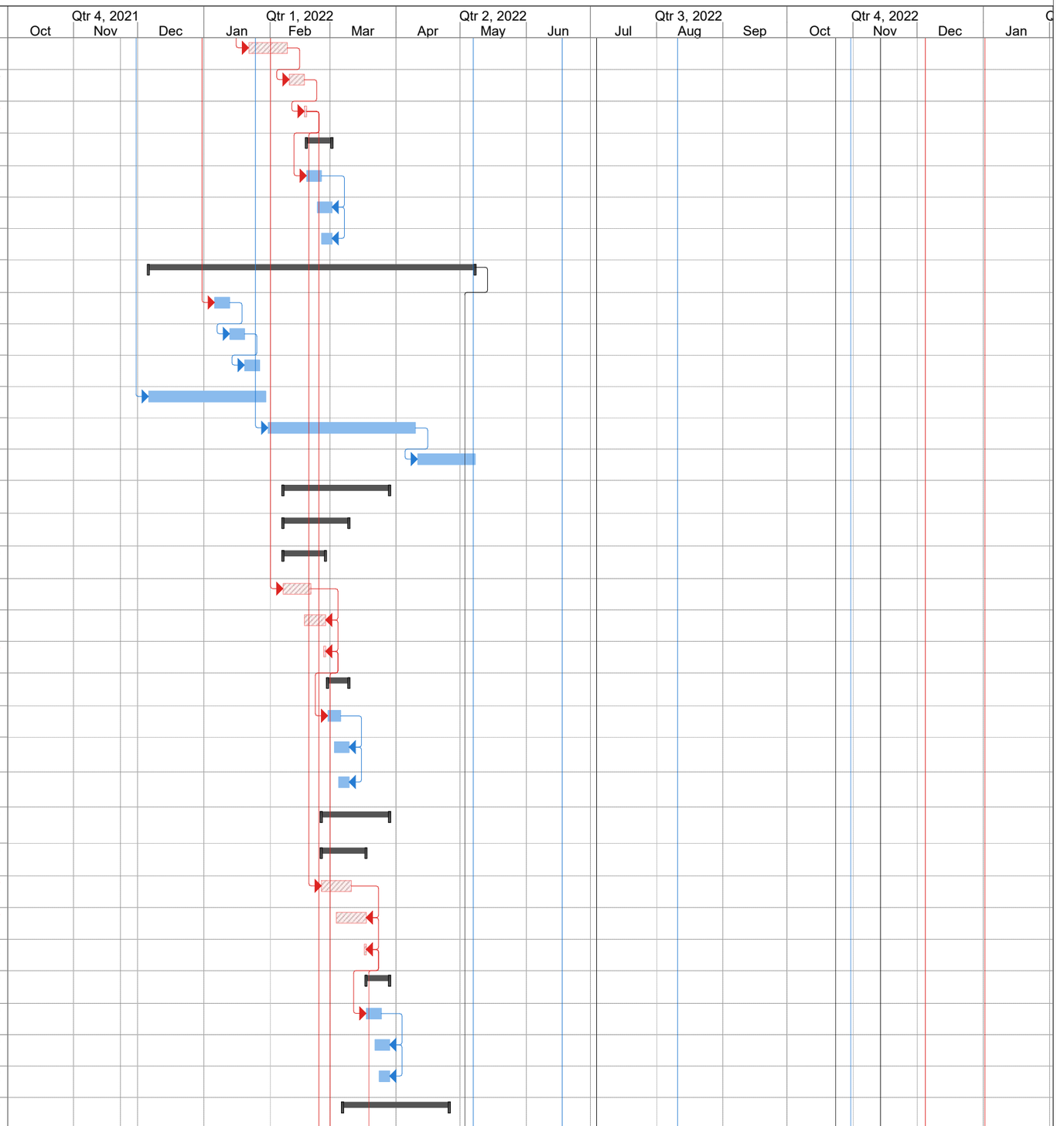


Project:NUS COM4
Date: 23 Nov 2021

Baseline Milestone ◇ | Critical Split | Milestone ◆ | Critical | Slippage
Baseline Summary | Task | Summary | Baseline

KIM SENG HENG ENGINEERING CONSTRUCTION (PTE) LTD
Proposed Erection of a Block of 5 Storey Building for School of Computing, NUS-COM4
Preliminary Construction Work Programme (Rev;0)

ID	Task Name	Duration	Start	Finish
102	*slab and beam formwork*	*2.5 wks*	*22/1/2022*	*8/2/2022*
103	*slab and beam rebar including embedded items*	*1 wk*	*10/2/2022*	*16/2/2022*
104	*Pour concrete*	*1 day*	*17/2/2022*	*17/2/2022*
105	**wall & columns**	**1.67 wks**	**18/2/2022**	**1/3/2022**
106	rebars (Column-4nos, end-wall and staircase wall)	1 wk	18/2/2022	24/2/2022
107	formwork	1 wk	23/2/2022	1/3/2022
108	Pour concrete	4 days	25/2/2022	1/3/2022
109	**2nd storey steelwork - linkbridge spanning to COM 3**	**22 wks**	**6/12/2021**	**7/5/2022**
110	Excavation including soil load bearing test.& lean concre	1 wk	6/1/2022	12/1/2022
111	RC foundation	1 wk	13/1/2022	19/1/2022
112	RC column and corbel	1 wk	20/1/2022	26/1/2022
113	Shop drawings prepration & submission for QP's approv	8 wks	6/12/2021	29/1/2022
114	procurement of materials & fabrication of steel frames	10 wks	31/1/2022	9/4/2022
115	site asembly and installation of steel frames	4 wks	11/4/2022	7/5/2022
116	**3rd storey**	**7.17 wks**	**7/2/2022**	**28/3/2022**
117	**Zone A (G/L A-C/1-5)**	**4.5 wks**	**7/2/2022**	**9/3/2022**
118	**floor**	**3 wks**	**7/2/2022**	**26/2/2022**
119	slab and beam formwork	2 wks	7/2/2022	19/2/2022
120	slab and beam rebar incldg embedded items	1.5 wks	17/2/2022	26/2/2022
121	*Pour concrete*	*1 day*	*26/2/2022*	*26/2/2022*
122	**wall & columns**	**1.5 wks**	**28/2/2022**	**9/3/2022**
123	rebar	1 wk	28/2/2022	5/3/2022
124	formwork	1 wk	3/3/2022	9/3/2022
125	Pour concrete	4 days	5/3/2022	9/3/2022
126	**Zone B (G/L C-A/1-4)**	**4.5 wks**	**25/2/2022**	**28/3/2022**
127	**floor**	**3 wks**	**25/2/2022**	**17/3/2022**
128	*slab and beam formwork*	*2 wks*	*25/2/2022*	*10/3/2022*
129	*slab and beam rebar incldg embedded items*	*2 wks*	*4/3/2022*	*17/3/2022*
130	Pour concrete	1 day	17/3/2022	17/3/2022
131	**wall & columns**	**1.5 wks**	**18/3/2022**	**28/3/2022**
132	rebar	*1 wk*	18/3/2022	24/3/2022
133	formwork	*1 wk*	22/3/2022	28/3/2022
134	Pour concrete	4 days	24/3/2022	28/3/2022
135	**4th storey**	**7.17 wks**	**7/3/2022**	**25/4/2022**

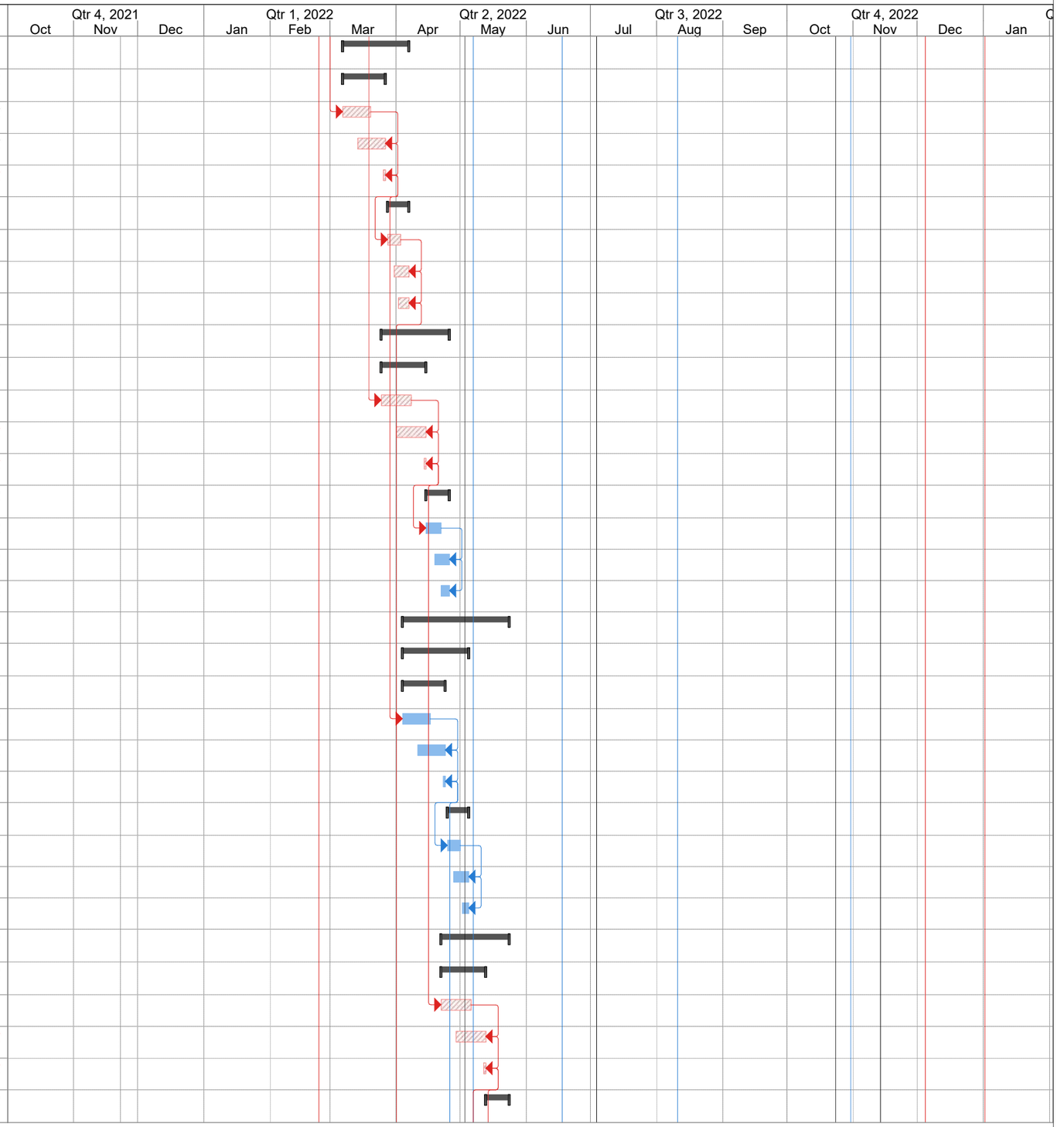


Project:NUS COM4
Date: 23 Nov 2021

Baseline Milestone ◇ Critical Split Milestone ◆ Critical Slippage
Baseline Summary Task Summary Baseline

KIM SENG HENG ENGINEERING CONSTRUCTION (PTE) LTD
Proposed Erection of a Block of 5 Storey Building for School of Computing, NUS-COM4
Preliminary Construction Work Programme (Rev;0)

ID	Task Name	Duration	Start	Finish
136	**Zone A (G/L A-C/1-5)**	**4.5 wks**	**7/3/2022**	**6/4/2022**
137	**floor**	**3 wks**	**7/3/2022**	**26/3/2022**
138	*slab and beam formwork*	*2 wks*	*7/3/2022*	*19/3/2022*
139	*slab and beam rebar incldg embedded items*	*2 wks*	*14/3/2022*	*26/3/2022*
140	*Pour concrete*	*1 day*	*26/3/2022*	*26/3/2022*
141	**wall & columns**	**1.5 wks**	**28/3/2022**	**6/4/2022**
142	*rebar*	*1 wk*	*28/3/2022*	*2/4/2022*
143	*formwork*	*1 wk*	*31/3/2022*	*6/4/2022*
144	*Pour concrete*	*4 days*	*2/4/2022*	*6/4/2022*
145	**Zone B (G/L C-A/1-4)**	**4.5 wks**	**25/3/2022**	**25/4/2022**
146	**floor**	**3 wks**	**25/3/2022**	**14/4/2022**
147	*slab and beam formwork*	*2 wks*	*25/3/2022*	*7/4/2022*
148	*slab and beam rebar incldg embedded items*	*2 wks*	*1/4/2022*	*14/4/2022*
149	*Pour concrete*	*1 day*	*14/4/2022*	*14/4/2022*
150	**wall & columns**	**1.5 wks**	**15/4/2022**	**25/4/2022**
151	rebar	*1 wk*	15/4/2022	21/4/2022
152	formwork	*1 wk*	19/4/2022	25/4/2022
153	Pour concrete	3 days	22/4/2022	25/4/2022
154	**5th storey**	**7.17 wks**	**4/4/2022**	**23/5/2022**
155	**Zone A (G/L E-C/1-4)**	**4.5 wks**	**4/4/2022**	**4/5/2022**
156	**floor**	**3 wks**	**4/4/2022**	**23/4/2022**
157	slab and beam formwork	2 wks	4/4/2022	16/4/2022
158	slab and beam rebar incldg embedded items	*2 wks*	11/4/2022	23/4/2022
159	Pour concrete	1 day	23/4/2022	23/4/2022
160	**wall & columns**	**1.5 wks**	**25/4/2022**	**4/5/2022**
161	rebar	*1 wk*	25/4/2022	30/4/2022
162	formwork	*1 wk*	28/4/2022	4/5/2022
163	Pour concrete	3 days	2/5/2022	4/5/2022
164	**Zone B (G/L C-A/1-4)**	**4.5 wks**	**22/4/2022**	**23/5/2022**
165	**floor**	**3 wks**	**22/4/2022**	**12/5/2022**
166	*slab and beam formwork*	*2 wks*	*22/4/2022*	*5/5/2022*
167	*slab and beam rebar incldg embedded items*	*2 wks*	*29/4/2022*	*12/5/2022*
168	*Pour concrete*	*1 day*	*12/5/2022*	*12/5/2022*
169	**wall & columns**	**1.5 wks**	**13/5/2022**	**23/5/2022**

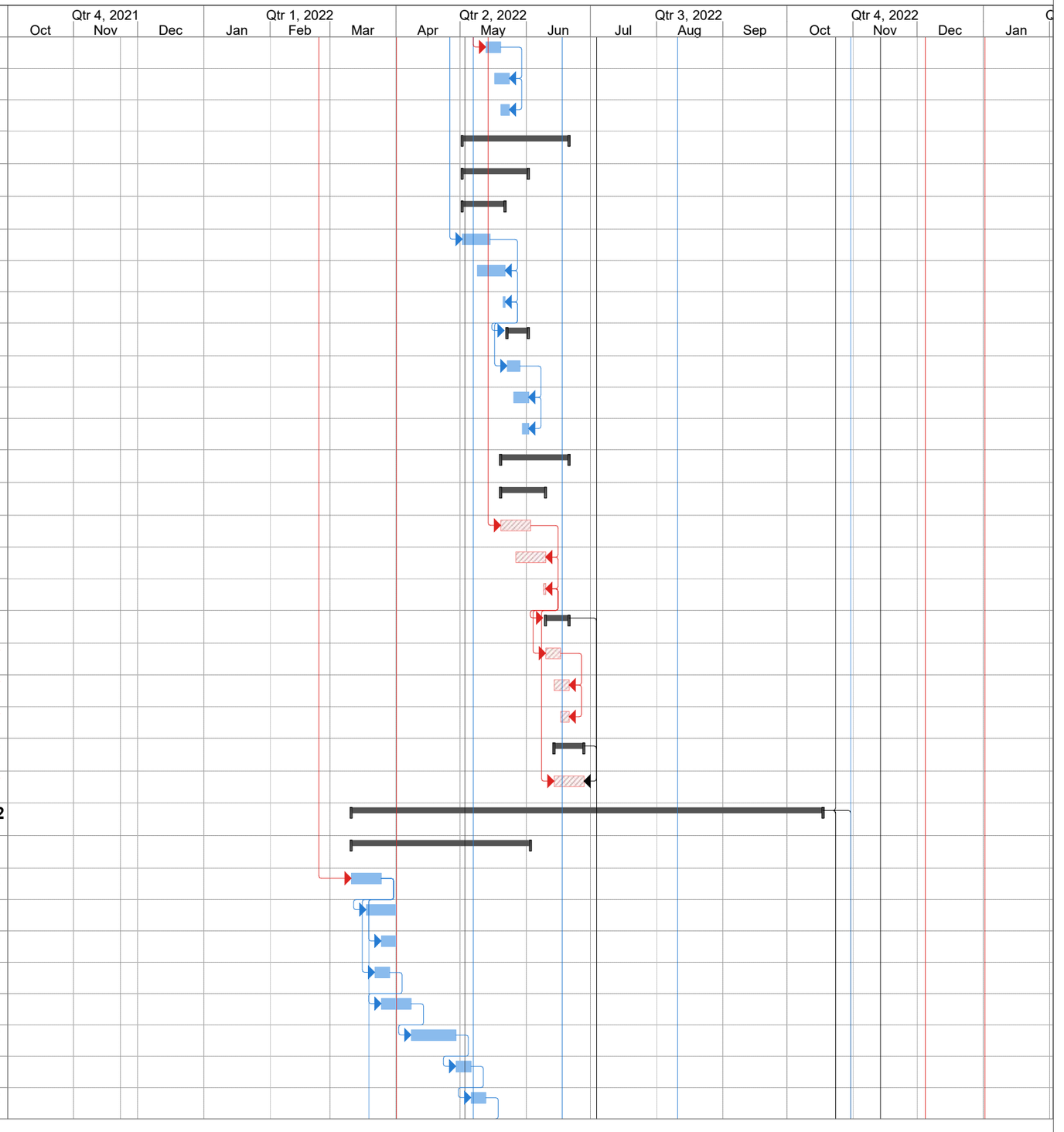


Project:NUS COM4
Date: 23 Nov 2021

Baseline Milestone ◇ Critical Split Milestone ◆ Critical Slippage
Baseline Summary Task Summary Baseline

KIM SENG HENG ENGINEERING CONSTRUCTION (PTE) LTD
Proposed Erection of a Block of 5 Storey Building for School of Computing, NUS-COM4
Preliminary Construction Work Programme (Rev;0)

ID	Task Name	Duration	Start	Finish
170	rebar	*1 wk*	13/5/2022	19/5/2022
171	formwork	*1 wk*	17/5/2022	23/5/2022
172	Pour concrete	3 days	20/5/2022	23/5/2022
173	**roof**	**7.17 wks**	**2/5/2022**	**20/6/2022**
174	**Zone A (G/L E-C/1-4)**	**4.5 wks**	**2/5/2022**	1/6/2022
175	**floor**	**3 wks**	**2/5/2022**	**21/5/2022**
176	slab and beam formwork	2 wks	2/5/2022	14/5/2022
177	slab and beam rebar incldg embedded items	*2 wks*	9/5/2022	21/5/2022
178	Pour concrete	1 day	21/5/2022	21/5/2022
179	**wall**	**1.5 wks**	**23/5/2022**	**1/6/2022**
180	rebar	*1 wk*	23/5/2022	28/5/2022
181	formwork	1 wk	26/5/2022	1/6/2022
182	Pour concrete	3 days	30/5/2022	1/6/2022
183	**Zone B (G/L C-A/1-4)**	**4.5 wks**	**20/5/2022**	**20/6/2022**
184	**floor**	**3 wks**	**20/5/2022**	**9/6/2022**
185	*slab and beam formwork*	*2 wks*	*20/5/2022*	*2/6/2022*
186	*slab and beam rebar incldg embedded items*	*2 wks*	*27/5/2022*	*9/6/2022*
187	*Pour concrete*	*1 day*	*9/6/2022*	*9/6/2022*
188	**wall**	**1.5 wks**	**10/6/2022**	**20/6/2022**
189	*rebar*	*1 wk*	*10/6/2022*	*16/6/2022*
190	*formwork*	*1 wk*	*14/6/2022*	*20/6/2022*
191	*Pour concrete*	*3 days*	*17/6/2022*	*20/6/2022*
192	**Upper roof**	**2 wks**	**14/6/2022**	**27/6/2022**
193	*floor formwork, rebar and pour concrete.*	*2 wks*	*14/6/2022*	*27/6/2022*
194	**Architectural & MEP works -1st storey to roof inclusive.**	**31.5 wks**	**11/3/2022**	**17/10/2022**
195	**1st storey**	**12 wks**	**11/3/2022**	**2/6/2022**
196	PC Wall	2 wks	11/3/2022	24/3/2022
197	MEP 1st fix (concealed in wall)	2 wks	18/3/2022	31/3/2022
198	Waterproofing	1 wk	25/3/2022	31/3/2022
199	Door and window frame	1 wk	22/3/2022	28/3/2022
200	Screeding & plastering	2 wks	25/3/2022	7/4/2022
201	MEP 2nd fix	3 wks	8/4/2022	28/4/2022
202	floor finishes	1 wk	29/4/2022	5/5/2022
203	false ceiling	1 wk	6/5/2022	12/5/2022

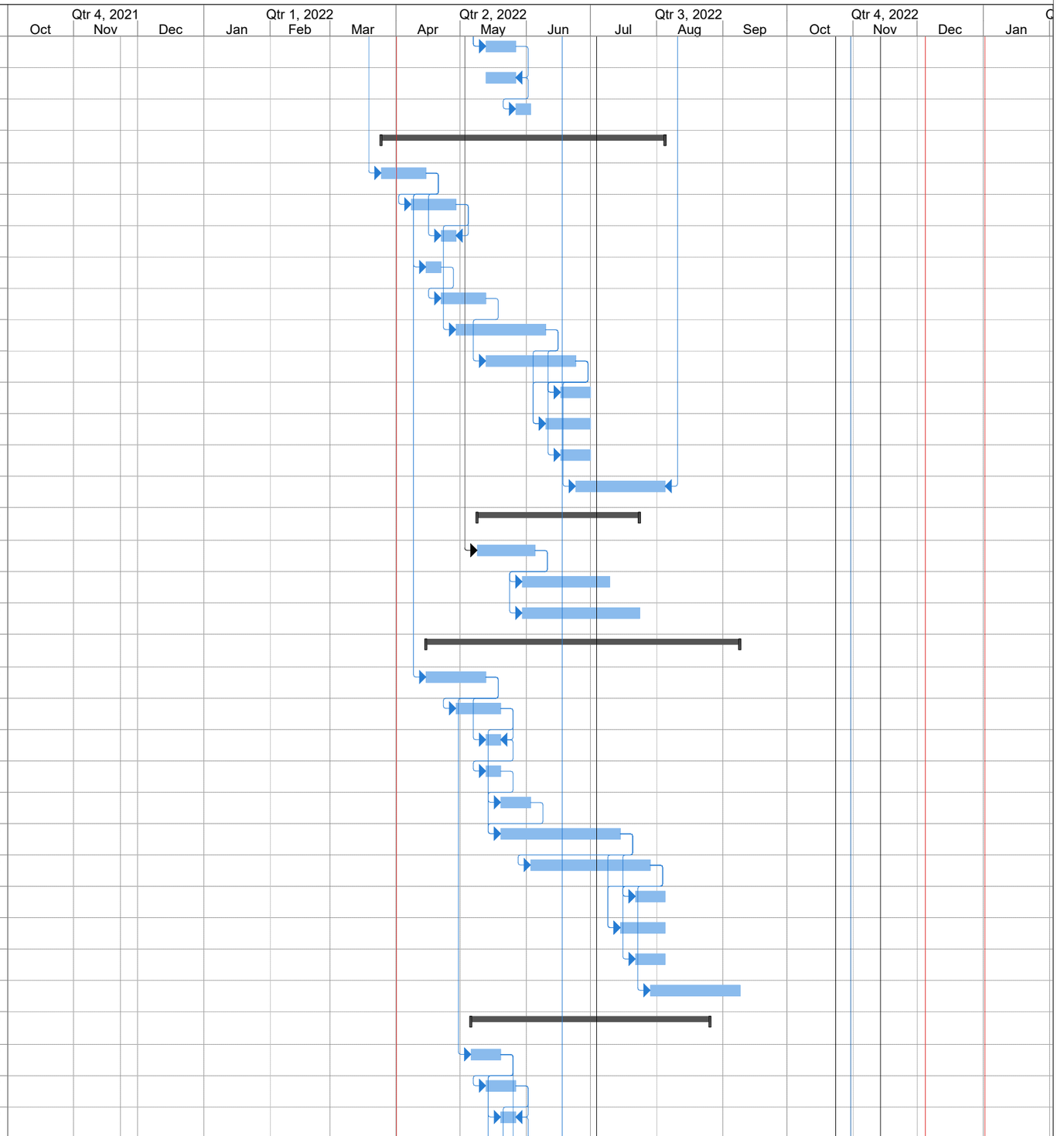


Project:NUS COM4
Date: 23 Nov 2021

Baseline Milestone ◇ Critical Split Milestone ◆ Critical Slippage
Baseline Summary Task Summary Baseline

KIM SENG HENG ENGINEERING CONSTRUCTION (PTE) LTD
Proposed Erection of a Block of 5 Storey Building for School of Computing, NUS-COM4
Preliminary Construction Work Programme (Rev;0)

ID	Task Name	Duration	Start	Finish
204	MEP final fix & equipment	2 wks	13/5/2022	26/5/2022
205	Door and window panel & ironmongery	2 wks	13/5/2022	26/5/2022
206	final painting	1 wk	27/5/2022	2/6/2022
207	**2nd storey**	**19 wks**	**25/3/2022**	**4/8/2022**
208	PC Wall & partition	3 wks	25/3/2022	14/4/2022
209	MEP 1st fix (concealed in wall)	3 wks	8/4/2022	28/4/2022
210	Waterproofing	1 wk	22/4/2022	28/4/2022
211	Door and window frame	1 wk	15/4/2022	21/4/2022
212	Screeding & plastering	3 wks	22/4/2022	12/5/2022
213	MEP 2nd fix	6 wks	29/4/2022	9/6/2022
214	Floor, wall & ceiling finishes	6 wks	13/5/2022	23/6/2022
215	Sanitary wares	2 wks	17/6/2022	30/6/2022
216	MEP final fix & equipment	3 wks	10/6/2022	30/6/2022
217	Door and window panel & ironmongery	2 wks	17/6/2022	30/6/2022
218	Internal fit-out work	6 wks	24/6/2022	4/8/2022
219	**Linkbridge to COM 3**	**11 wks**	**9/5/2022**	**23/7/2022**
220	metal roof and cladding work	4 wks	9/5/2022	4/6/2022
221	M&E works	6 wks	30/5/2022	9/7/2022
222	floor, wall and ceiling finishes work	8 wks	30/5/2022	23/7/2022
223	**3rd storey**	**21 wks**	**15/4/2022**	**8/9/2022**
224	PC Wall & partition	4 wks	15/4/2022	12/5/2022
225	MEP 1st fix (concealed in wall)	3 wks	29/4/2022	19/5/2022
226	Waterproofing	1 wk	13/5/2022	19/5/2022
227	Door and window frame	1 wk	13/5/2022	19/5/2022
228	Screeding & plastering	2 wks	20/5/2022	2/6/2022
229	MEP 2nd fix	8 wks	20/5/2022	14/7/2022
230	Floor, wall & ceiling finishes	8 wks	3/6/2022	28/7/2022
231	Sanitary wares	2 wks	22/7/2022	4/8/2022
232	MEP final fix & equipment	3 wks	15/7/2022	4/8/2022
233	Door and window panel & ironmongery	2 wks	22/7/2022	4/8/2022
234	Internal fit-out work	6 wks	29/7/2022	8/9/2022
235	**4th storey**	**16 wks**	**6/5/2022**	**25/8/2022**
236	PC Wall	2 wks	6/5/2022	19/5/2022
237	MEP 1st fix (concealed in wall)	2 wks	13/5/2022	26/5/2022
238	Waterproofing	1 wk	20/5/2022	26/5/2022

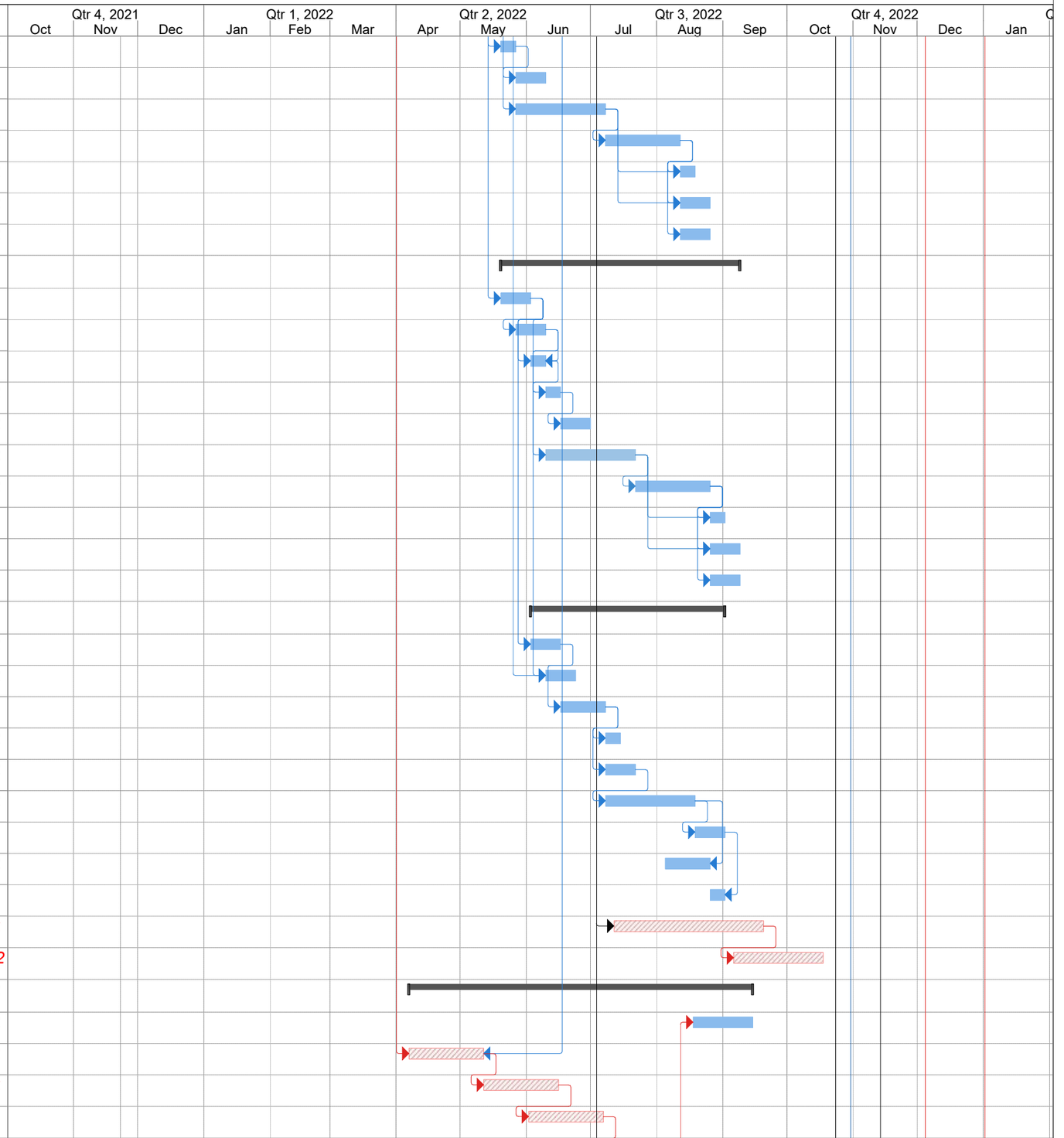


Project:NUS COM4
Date: 23 Nov 2021

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Baseline Summary Task Summary Baseline

KIM SENG HENG ENGINEERING CONSTRUCTION (PTE) LTD
Proposed Erection of a Block of 5 Storey Building for School of Computing, NUS-COM4
Preliminary Construction Work Programme (Rev;0)

ID	Task Name	Duration	Start	Finish
239	Door and window frame	1 wk	20/5/2022	26/5/2022
240	Screeding & plastering	2 wks	27/5/2022	9/6/2022
241	MEP 2nd fix	6 wks	27/5/2022	7/7/2022
242	Floor, wall & ceiling finishes	5 wks	8/7/2022	11/8/2022
243	Sanitary wares	1 wk	12/8/2022	18/8/2022
244	MEP final fix & equipment	2 wks	12/8/2022	25/8/2022
245	Door and window panel & ironmongery	2 wks	12/8/2022	25/8/2022
246	**5th storey**	**16 wks**	**20/5/2022**	**8/9/2022**
247	PC Wall	2 wks	20/5/2022	2/6/2022
248	MEP 1st fix (concealed in wall)	2 wks	27/5/2022	9/6/2022
249	Waterproofing	1 wk	3/6/2022	9/6/2022
250	Door and window frame	1 wk	10/6/2022	16/6/2022
251	Screeding & plastering	2 wks	17/6/2022	30/6/2022
252	MEP 2nd fix	6 wks	10/6/2022	21/7/2022
253	Floor, wall & ceiling finishes	5 wks	22/7/2022	25/8/2022
254	Sanitary wares	1 wk	26/8/2022	1/9/2022
255	MEP final fix & equipment	2 wks	26/8/2022	8/9/2022
256	Door and window panel & ironmongery	2 wks	26/8/2022	8/9/2022
257	**Roof including upper roof.**	**13 wks**	**3/6/2022**	**1/9/2022**
258	PC Wall	2 wks	3/6/2022	16/6/2022
259	MEP 1st fix	2 wks	10/6/2022	23/6/2022
260	Waterproofing	3 wks	17/6/2022	7/7/2022
261	Door frame	1 wk	8/7/2022	14/7/2022
262	Screeding & plastering	2 wks	8/7/2022	21/7/2022
263	MEP 2nd fix & equipment	6 wks	8/7/2022	18/8/2022
264	Floor, wall & ceiling finishes	2 wks	19/8/2022	1/9/2022
265	MEP final fix	3 wks	5/8/2022	25/8/2022
266	Door panel & ironmongery	1 wk	26/8/2022	1/9/2022
267	*Staircases finishes - S1 & S2 - 1st storey to roof*	*10 wks*	*12/7/2022*	*19/9/2022*
268	*SSL lobby finishes- 1st storey to roof*	*6 wks*	*6/9/2022*	*17/10/2022*
269	**Building façade work**	**23 wks**	**7/4/2022**	**14/9/2022**
270	1st storey	4 wks	18/8/2022	14/9/2022
271	2nd storey	5 wks	7/4/2022	11/5/2022
272	*3rd storey*	*5 wks*	*12/5/2022*	*15/6/2022*
273	*4th storey*	*5 wks*	*2/6/2022*	*6/7/2022*

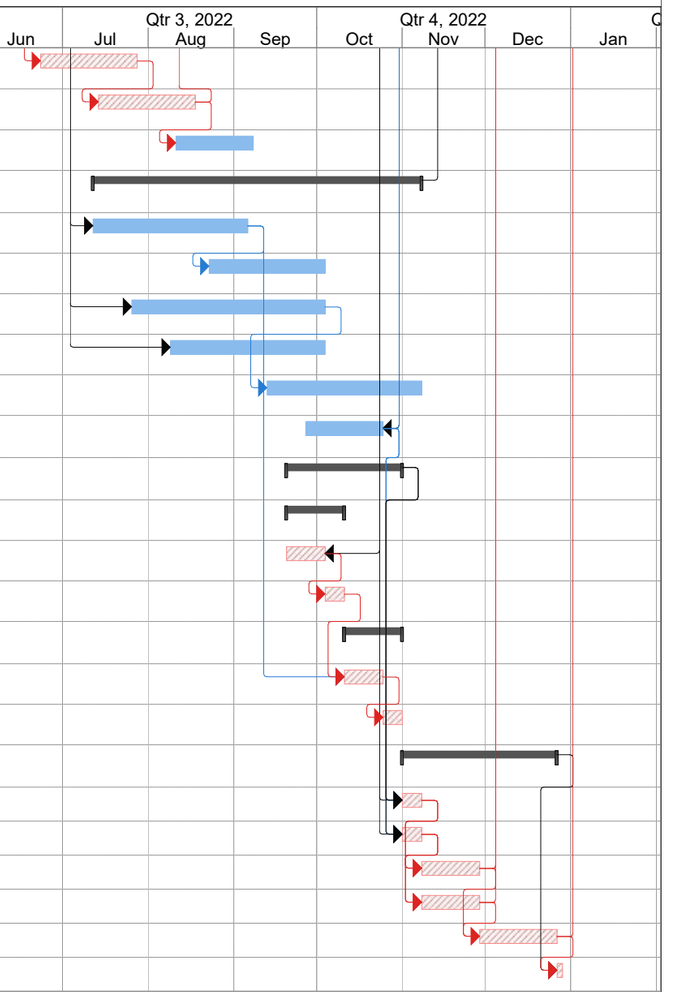


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Baseline Summary Task Summary Baseline

KIM SENG HENG ENGINEERING CONSTRUCTION (PTE) LTD
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Preliminary Construction Work Programme (Rev;0)

ID	Task Name	Duration	Start	Finish
274	*5th storey*	*5 wks*	*23/6/2022*	*27/7/2022*
275	*Roof*	*5 wks*	*14/7/2022*	*17/8/2022*
276	Cladding cleaning and façade watertightness test work	4 wks	11/8/2022	7/9/2022
277	**External works**	**17 wks**	**12/7/2022**	**7/11/2022**
278	External building services	8 wks	12/7/2022	5/9/2022
279	Drainage	6 wks	23/8/2022	3/10/2022
280	Linkway to i4.0 incldg steel frames, roof & finishes etc.	10 wks	26/7/2022	3/10/2022
281	driveway including fire engine access road	8 wks	9/8/2022	3/10/2022
282	landscape	8 wks	13/9/2022	7/11/2022
283	**M&E T&C work**	**4 wks**	**27/9/2022**	**24/10/2022**
284	**PUB and BCA inspections**	**6 wks**	**20/9/2022**	**31/10/2022**
285	PUB (Sanitary)	3 wks	20/9/2022	10/10/2022
286	Application & inspection of sewer & sanitary work	2 wks	20/9/2022	3/10/2022
287	Obtain clearance	1 wk	4/10/2022	10/10/2022
288	**PUB - water turn-on**	**3 wks**	**11/10/2022**	**31/10/2022**
289	Application and inspection	2 wks	11/10/2022	24/10/2022
290	Obtain clearance & water turn on	1 wk	25/10/2022	31/10/2022
291	**TFP / TOP**	**8 wks**	**1/11/2022**	**26/12/2022**
292	*M&E Pre-RI inspections*	*1 wk*	*1/11/2022*	*7/11/2022*
293	*Archi Pre-RI inspections*	*1 wk*	*1/11/2022*	*7/11/2022*
294	*M&E RI inspections & clearance*	*3 wks*	*8/11/2022*	*28/11/2022*
295	*Archi RI inspections & clearance*	*3 wks*	*8/11/2022*	*28/11/2022*
296	***TOP inspection & clearance***	***4 wks***	***29/11/2022***	***26/12/2022***
297	***Project completion and Handover to NUS.***	***2 days***	***27/12/2022***	***28/12/2022***



Project:NUS COM4
Date: 23 Nov 2021

Baseline Milestone ◇ Critical Split Milestone ◆ Critical Slippage
Baseline Summary Task Summary Baseline

SECTION 4

PROGRAMME

4.2 Authority Submission Status for M&E Services - 1st Submission – NOT APPLICABLE

Service	Authority	Original Submission		Comments/Resubmission						Approval/
		Scheduled	Actual	Comment	Resubmit	Comment	Resubmit	Comment	Resubmit	Clearance
Application for Electricity Supply	SP Services Ltd									
Power Supply Substation	SP PowerGrid Ltd									
Metering Layout	SP Services Ltd									
Sanitary Installation	PUB Water Reclamation (Network) Dept									
Domestic Water Supply	PUB (Water Supply) Network Dept									
Gas Supply Installation	City Gas Pte Ltd									
Air Conditioning & Ventilation Inst.	FSSD									
Fire Fighting & Alarm Installation	FSSD									
Telephone Installation	TFCC									
Broadband Co-axial Cable System (BCS)	Starhub Cable Vision									
Emergency Voice Communication System (EVC)	FSSD									

SECTION 4

PROGRAMME

4.3 Authority Submission Status for M&E Services (Amendments) - 2nd Submission – NOT APPLICABLE

Service	Authority	Original Submission		Comments/Resubmission						Approval/
		Scheduled	Actual	Comment	Resubmit	Comment	Resubmit	Comment	Resubmit	Clearance
Application for Electricity Supply	SP Services Ltd									
Power Supply Substation	SP PowerGrid Ltd									
Metering Layout	SP Services Ltd									
Sanitary Installation	PUB Water Reclamation (Network) Dept									
Domestic Water Supply	PUB (Water Supply) Network Dept									
Gas Supply Installation	City Gas Pte Ltd									
Air Conditioning & Ventilation Inst.	FSSD									
Fire Fighting & Alarm Installation	FSSD									
Telephone Installation	TFCC									
Broadband Co-axial Cable System (BCS)	Starhub Cable Vision									
Fuel Storage	FSSD									
	NEA (Pollution Control)									

SECTION 5

PROJECT RECORDS

5.1 List of Internal Files

Standard Files

File Ref:		File Ref:	
- Owner	✓	- Architect	✓
- Authorities	✓	- Other Consultants	✓
- Contractors	✓	- CC	✓
- CF	✓	- PQP/QSP	✓

Project Files to be initiated by PM as and when required

File Ref:		File Ref:		File Ref:	
MC/EC	✓				

(✓ *where applicable*)

SECTION 5

PROJECT RECORDS

5.2 Filing of Drawings

The following team members shall take charge of filing of drawings, stamping "SUPERSEDED" drawings, etc.

Description	Team Member
Incoming Architectural Floor Plans	Softcopy saved in the server
Incoming Architectural Sketches/Details	
Incoming Structural Drawings	
M&E Drawings - Electrical Installation - Lift & Escalator Installation - Air Conditioning & Ventilation Installation - Fire Fighting & Alarm Installation - Plumbing & Sanitary Installation - Swimming Pool & Filtration Installation	
Other Drawings	

SECTION 6

INTERFACING

6.1 Method of Interface

Description	Method of Interface	
Client's Review & Approval	M&E Design Report	✓
	Pre-planned meeting at fixed intervals	✓
	Telefax, letter and telephone	✓
	Email	✓
Interface With External Design Teams	M&E Design Report	✓
	Pre-planned meeting at fixed intervals	✓
	Telefax, letter and telephone	✓
	Email	✓
Interface Between Internal Design Teams	Telephone	✓
	Email	✓
	Internal Project Team Meeting	✓
	Circulation of Information	✓

(✓*where applicable*)

SECTION 6

INTERFACING

6.2 Internal Design Interface – NOT APPLICABLE

Item No.	Description*	Required From	Required By	Date Required	Remarks

** Information required by INTERNAL DESIGN TEAM MEMBERS*

SECTION 6

INTERFACING

6.3 Circulation of Documents to External Parties

	Code: A - Approval Required C - For Comments I - For Information Only	Client/ Client Rep.	* Client's Project Manager	Architect	Structural Engineer	Quantity Surveyor	
1.	**Letters/Fax:**						
a.	Project Design	A	I	I	-	-	
b.	Project Administration						
c.	Project Cost Estimate/Contract Cost	A	I	I	-	I	
2.	**Drawings**						
a.	Outline Design Drgs.	A	I	C	I	I	
b.	Sketch Design Drgs.	A	I	C	I	I	
c.	Final Design Drgs.	A	I	C	I	I	
d.	Shop Drawings	I	I	A	-	-	
e.	As Built Drgs.	I	I	I	-	-	
3.	**Other Document**						
a.	Specification	A	I	I	I	I	
b.	Tender Document	A	I	I	I	I	
c.	Tender Evaluation Report	A	I	I	I	I	
d.	Design Report	A	I	I	-	-	
e.	Progress Report	-	-	-	-	-	
f.	Financial Report	-	-	-	-	-	
g.	Minutes of Meeting	A	I	I	-	-	
h.	Inspection Report	I	I	I	-	-	
i.	Testing & Comm. Report	I	I	I	-	-	
j.	O & M Manual	I	I	I	-	-	

*Note: Applicable only, if the client engaged a Project Manager.

SECTION 7

WORK AUTHORISATION

Activity \ Authorised Signatories	PD	QP	PM	AE	SS
General Correspondences with Client			√	√	
General Correspondences with Other Consultants			√	√	
M&E Cost Estimate Report	√	√	√		
M&E Design Report	√	√	√		
Check Prints		√			
Tender Drawing Approval	√	√	√		
Tender Specification Approval	√	√	√		
List of Tenderers	√	√	√		
Tender Questionnaires	√	√	√		
Tender Reports	√	√	√		
Draft Letter of Award	√	√	√		
Review of Contractor's Shop Drawing			√	√	
Review of Contractor's Technical Submittal			√	√	
Review of Contractor's Sample Submittal			√	√	
Contractor's Request for Deviation		√	√		
Progress Payment Valuation Form	√		√		
Final Account Valuation	√		√		
Draft Variation Order	√		√		
Engineer/Architect's Instruction/Direction	√		√		
Site Instruction/Direction			√		
Correspondence/Submission to Authorities	√	√			

(✓ *where authorised*)

Key to abbreviations:-

PD : Project Director
QP : Qualified Person
PM : Project Manager/Assistant Project Manager
AE : Assistant Engineer
SS : ACEPL Site Staff

SECTION 8

DESIGN INPUT & METHODOLOGY

8.1 List of Client's Standards, Reference Documents or Brief – NOT APPLICABLE

ITEM	KEPT BY

8.2 List of Applicable Code of Practice and Regulations

Services	Title of Code of Practice/Standard
Electrical Wiring	CP 5: 1998
Lightning Protection System	SS 555: 2010
Emergency Voice Communication System	SS 546: 2009
Telephone Installation	COPIF: 2013
Air Conditioning & Ventilation Installation	SS 553: 2016
Lift & Escalator Installation	SS 550: 2020
Sprinkler System	CP 52: 2004
Wet Riser System	SS 575: 2012
Automatic Fire Alarm System	SS 645: 2019
Sanitary System	Code of Practice on Sewerage & Sanitary Works
Plumbing System	SS636: 2018
Town Gas/LPG Supply System	SS 608: 2015 (Formerly CP 51)
Boiler and Steam Supply System	-
Mechanical Smoke Control System	-

SECTION 8

DESIGN INPUT & METHODOLOGY

8.3 List of Design Guide or Handbook Used

Carrier's Handbook of Air Conditioning System Design

ASHRAE Handbooks

Institute of Plumbing's Plumbing Services Design Guide

8.4 List of Pre-Consultation and Waiver – NOT APPLICABLE

S/N	Description	Date of Application	Date of Approval	Remarks
1	*Clause number in Code of Practice for (Services) which require clarification or waiver. Consultation Ref No. Waiver Ref. No.			
2	*Clause number in Code of Practice for (Services) which require clarification or waiver. Consultation Ref No. Waiver Ref. No.			
3	*Clause number in Code of Practice for (Services) which require clarification or waiver. Consultation Ref No. Waiver Ref. No.			

*To fill in actual information

8.5 List of Applicable Quality System Procedures

Alpha Consulting Engineers Pte Ltd's Quality Management System Procedures

Section	Title	✓ where applicable
M1	Preparation of Consultancy Offer	✓
M2	Project Commissioning and Service Agreement	✓
M3	Design Control	✓
M4	Design Change Control	✓
M5	Tender Process and Evaluation	✓
M6	Authority Submission	✓
M7	Construction Process Control	✓
M8	Testing and Commissioning	✓
S1	Document Control	✓
S2	Documentation of Quality & Environmental Management System Procedure	✓
S3	Documentation of Project Quality Plan	✓
S4	Specification Control	✓
S5	Library Control	✓
S6	Archive Control	✓
S7	Filing Control	✓
S8	Drawing Control	✓
S9	Administration Control	✓
S10	Purchasing Control	✓
S11	Training Control	✓
S12	Computer Control	✓
S13	Non-Conformity and Corrective Action Procedures	✓
S14	Quality & Environmental System Audit	✓
S15	Feedback Reporting	✓
S16	Clients Feedback	✓
S17	Management Review	✓
S18	Risk Identification, Assessment & Control	✓

8.6 List of Software Used For Design/Analysis

DESCRIPTION/ PACKAGE NAME	VERSION	SUPPLIER/ SOURCE	PURPOSE	
Cophos	3.31	Zumtobel	Lighting design	
Carrier E20-II	3.21	Carrier	Programme for determination of heat load, duct size and its losses, etc.	✓
Gensize 2	2.1	Onan	Generator sizing	
Hyena	4.00.1	ACADS-BSG	Fire Sprinkler & Hydrant Analysis	
Dialux	4.11	Freeware	Lighting design	✓
Lift Traffic	7.18	Elevate	Lift traffic calculation	
Fault Level Calculation	11.11	ETAP	Calculation of fault level and voltage drop	
Revit	2018.3	Autodesk	Modelling of Services	✓

(✓*where applicable*)

SECTION 9

ENVIRONMENTAL CONSIDERATIONS

9.1 Sustainable Design Features/Criteria

Item	Remarks
Green Mark criteria	Platinum
Green Design Features	-

9.2 Site PPE Requirement

The necessary Personal Protective Equipment (detailed below) shall be provided by the main contractor/Company in accordance to the site EHS requirements prior to the site monitoring.

PPE	✓ where applicable
Safety Helmet	✓
Safety Shoes	✓
Eye Protection	✓
Ear Protection	✓
Safety Harness / Belt	✓
Others:	

9.3 Site Emergency Preparedness

Site staff shall comply with the site emergency preparedness and response procedure, established by the main contractor/owner, which shall include the following details.

Items	✓ where applicable
Evacuation Route	✓
Emergency Exit	✓
Assembly Point	✓
Emergency Contact List/Person	✓
Alarm system/methods	✓

SECTION 9

ENVIRONMENTAL CONSIDERATIONS

9.4 Reporting of Environmental Non-conformances

When encountering environmental non-conformances, Site Staff shall be responsible to feedback to the main contractor.

9.5 List of Applicable Environmental Management System Procedures

Alpha Consulting Engineers Pte Ltd's Environmental Management System Procedures

Section	Title	✓ where applicable
E1	Aspect/Impact Identification, Risk Assessment & Risk Control	✓
E2	Identifying Legal & Other Requirements	✓
E3	Objectives, Targets & Programmes	✓
E4	Communication	✓
E5	Emergency Preparedness & Response	✓
E6	Monitoring & Measurement	✓
E7	Control of Air & Noise Pollution	✓
E8	Management of Wastes	✓

SECTION 10

CLIENT'S REQUIREMENTS

10.1 List of Output Required by Client:

Item	* Remarks
M&E Design Report	A
M&E Cost Estimate Report	A
Pre-Qualification of Tenderers	A
Tender Documents	A
Tender Report	A
Payment Valuation for QS	A
Certificates of Supervision for TOP/CSC	Re

* *Remarks*

A: for approval *C: for comment* *I: for Information* *Re: for record*

Other purposes and for action: please specify.

10.2 Specific Procedures Required By Client *(If applicable)*

SECTION 11

LIST OF SUB-JOB

11.1 List of Sub-Job Numbers – NOT APPLICABLE

Sub Job No	Description	Allocation Details