Alpha
Consulting Engineers Pte Ltd

PROJECT QUALITY PLAN

PROPOSED ERECTION OF A 8-STOREY SINGLE-USER GENERAL INDUSTRIAL DEVELOPMENT ON LOT 04893K MK 13 AT SENOKO SOUTH ROAD

For

SELECT PROPERTY MANAGEMENT PTE LTD

Copy No.	1

Prepared By: Tung Choi Mun/ Goh Xiang Fei

Authorised By: Choong Choon Guan

Date: 24 September 2014

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SECTION 1

QUALITY PLAN CONTROL AND DISTRIBUTION

1.1 List of Copy Holders

Copy No.	Copy Holder	Date of Issue
1	6189-PQP	24 September 2014

1.2 Revision Record

Revision	Date of Issue	Section Reference	Page(s)	Remarks
0	24 September 2014	1 to 11	29	+6 pages (Sec 4.1- Overall Programme)

SECTION 2

PROJECT INFORMATION

2.1 Project Description

Type of Development	Industrial

Statistics of Development	
Site Area, m²	5986.1
Nett Floor Area, m²	-
Gross Floor Area, m²	14829.9
Covered Carpark, m²	1929.50
No. of Covered Carpark Lots	46 + 10 (bicycle lots)
No. of Apartments/Houses	-
No. of Beds (for Hospitals)	-
No. of Guestroom (for Hotels)	-
No. of Blocks / No. of Storeys	1 Block/ 8 Storeys
Green Mark Category	Gold
No. of Phases	1

2.2 Project Cost

M&E Services Cost Plan (S$ x 1M)						
Services	EI	ACVI	LEI	FFAI	PSI	SPFI
Estimate	2.6	3.5	2.5	0.8	1.9	
Awarded	3.0899	3.1058	1.4448	0.6933	2.1208	

Total Project Construction Cost (S$ x1M)			
	Site Clearance	Piling Works	Main Contract
Estimate	-	-	-
Awarded	-	2.9	36.899

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

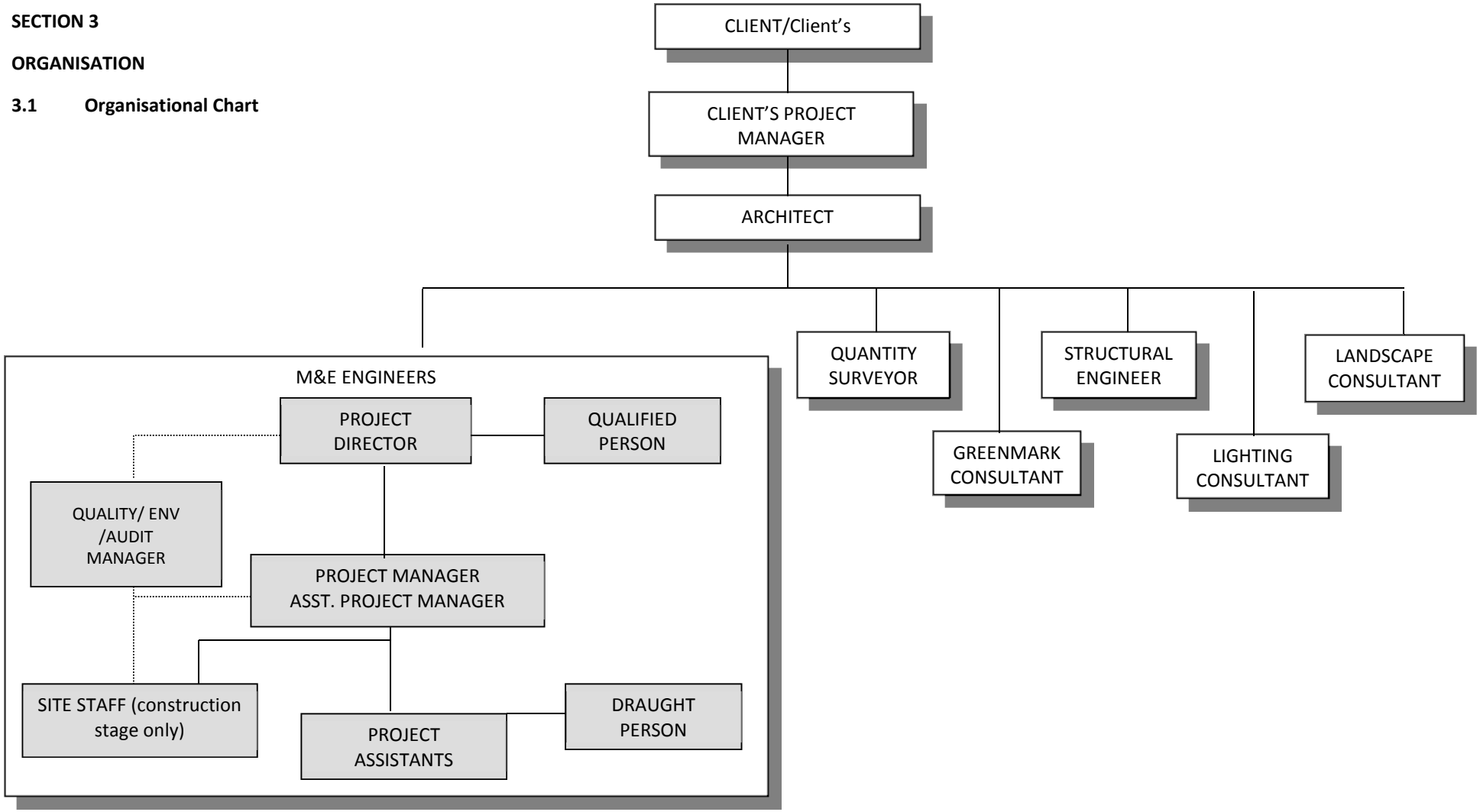
EJECTOR & DIVERTER		SUMP PUMP		FUEL OIL TANK		LIFT & ESCALATOR		PRESSURE VESSEL		HOISTS		FOAM	

(✓*where applicable*)

SECTION 3

ORGANISATION

3.1 Organisational Chart



SECTION 3

ORGANISATION

3.2 ACEPL's Project Team Member

TITLE		NAME
Project Director		Choong Choon Guan (CCG)
Qualified Person	Mechanical	Choong Choon Guan (CCG)
	Electrical	Loh Fook Yuen (LFY)
Project Manager		Chuan Kian Heng (CKH)
Assistant Project Manager		Lim Chai Hoon (LCY)
Project Assistant (Mech)		Tung Choi Mun (CM)
Project Assistant (Elect)		Goh Xiang Fei (GXF)
Draughtsperson		Common Pool
Resident Engineer (M&E)		Ip Yu To (IYT)
Assistant Resident Engineer (M&E)		-
Clerk-of-Work (M&E)		-

3.3 Client/Client's Representatives

Client: Select Property Management Pte Ltd

Address: 36, Senoko Cresent, Singapore 758282

Tel: 6887 8300

Fax: 6852 3335

Client's Representatives:-

Name of Company	Contact Person	Contact
Select Property Management Pte Ltd	Name: Mr Vincent Tan Position: Chairman / Founder and MD	Tel: 6887 8300 Fax: 6852 3335 Handphone: 9736 0958 Email: vincent@select.com.sg
Select Property Management Pte Ltd	Name: Mr Simon Soh Position: Business Development & Franchising Manager	Tel: 6887 8319 Fax: 6753 1645 Handphone: 9790 2998 Email: simonsoh@select.com.sg
	Name: Position:	Tel: Fax: Handphone: Email:
	Name: Position:	Tel: Fax: Handphone: Email:
	Name: Position:	Tel: Fax: Handphone: Email:

3.4 Other Consultants (Local)

Function / Name of Company	Contact Person	Contact
Project Manager Arcadis Project Management Pte Ltd	Name: Mr Lee Lik Hong Position: Executive Senior Project Manager	Tel: 6239 8607 Fax: 6538 4508 Handphone: 9009 8513 Email: PM1175@arcadis.sg
Architect Kay Ngee Tan Architects	Name: Mr Bryan Lee Position: Architect	Tel: 6423 0198 Fax: 6423 0197 Handphone: - Email: bryan@kayngeetanarchitects.com
Structural Engineer Ronnie & Koh Consultants Pte Ltd	Name: Mr Low Chee Kong Position: Director	Tel: 6922 2268 Fax: 6225 7182 Handphone: 9736 1870 Email: selecthq13323@rkconsl.com
Quantity Surveyor Langdon & Seah Singapore Pte Ltd	Name: Mr Jason Ling Lyi Hoe Position: Senior Executive Quantity Surveyor	Tel: 6239 8331 Fax: 6538 4508 Handphone: - Email: 6350@sg.langdonseah.com
Landscape Consultant 3fP Landscape Atelier Pte Ltd	Name: Mr Christopher S H Long Position: Managing Director	Tel: 6575 8210 Fax: - Handphone: 9818 2033 Email: chrislong@3fp.com.sg
GreenMark Consultant IGnesis Consultants Pte Ltd	Name: Mr Henry Ho Keen Peng Position: Managing Director	Tel: 6293 5431 Fax: 6292 3529 Handphone: 9685 9425 Email: henry@ignesisconsultants.com
Lighting Consultant LIGHTBOXPLUS Pte Ltd	Name: Ms Warinya Pintongkam (Jui) Position: Managing Director	Tel: 6294 6803 Fax: 6324 0868 Handphone: 9741 1599 Email: jui@lightboxlighting.com
-	Name: Position:	Tel: Fax: Handphone: Email:
-	Name: Position:	Tel: Fax: Handphone: Email:

3.4 Other Consultants (Overseas) **- NOT USED**

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 SH Design & Build Pte Ltd	DSC	Name: Mr Dave Soh Position: Senior Project Manager	Tel: 66616800 Fax: 62666996 Handphone: 90265681 Email: dave.soh@shdb.com.sg
Air Conditioning & Ventilation Installation Sub-Contractor Kin Xin Engineering Pte Ltd	DSC	Name: Mr Tan Yew Sing Position: Project Manager	Tel: 6844 2683 Fax:6844 4378 Handphone:9487 3438 Email: tanys@kinxin.com.sg
Plumbing & Sanitary Installation Sub-Contractor Markpoint Engineering Pte Ltd	DSC	Name: Mr P.Sathiyamoorthi Position: Senior Project Manager	Tel: 6456 8012 Fax: 6454 8012 Handphone: 8163 0356 Email:sathiya@markpoint.com.sg
Electrical Installation Sub-Contractor Tai Lee Hang Electrical Engineering Pte Ltd	DSC	Name:Mr Steven Lee Position: Senior Project Manager	Tel: 6744 6169 Fax: 6858 1598 Handphone: 9068 3663 Email: stevenlee@taileehang.com.sg
Lift & Escalator Installation Sub-Contractor Hitachi Elevator Asia Pte Ltd	DSC	Name: Mr Ying Kee Khuan Position: Project Manager	Tel: 6416 1711 Fax: 6561 0766 Handphone: 9793 4443 Email: keekhuan.ying@hea.hitachi.com.sg
Fire Fighting & Alarm Installation Sub-Contractor SKYDE Engineering Pte Ltd	DSC	Name: Mr Tennon Ong Position: Project Manager	Tel: 6336 6058 Fax: 6336 6059 Handphone: 9181 1881 Email: tennon@sepl.com.sg
-	-	Name: Position:	Tel: Fax: Handphone: Email:
-	-	Name: Position:	Tel: Fax: Handphone: Email:
-	-	Name: Position:	Tel: Fax: Handphone: Email:

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

3.6 Authorities

Authorities/Department	Contact Person	Tel/Fax Nos./E-mail
SP PowerGrid:		
(a) Sub-Station	Mr Francis Chang	63788555
(b) Diversion		
SP Services:		
(a) Customer Supply	Mr Ellex Ng	66717193
(b) Installation		
(c) Meter Section		
(d) Road Lighting		
TFCC:		
(a) SCV	Mr Roland Lim	68256245
(b) SingTel	Mr Lee Chong Beng	96497719
(c) IDA	Mr Liang Shuang	62111129
BCA:		
(a) Building Plan		
(b) Green Mark	Mr Eddy Susilo	6325 5028
FSSD:		
(a) Building Plan		
(b) M&E Plan		
PUB (Water Supply) Network Dept:		
(a) Water Conservation		
(b) Plumbing Plan	Ms Norain Binte Dalail	6731 3762
(c) Diversion		
(d) NEWater	Mr Md Nazry Md Noor	6885 2453
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		
PowerGas Pte Ltd		
(a) Diversion		
NEA (Pollution Control)		
(a) Planning/Submission		
(b) Inspection		

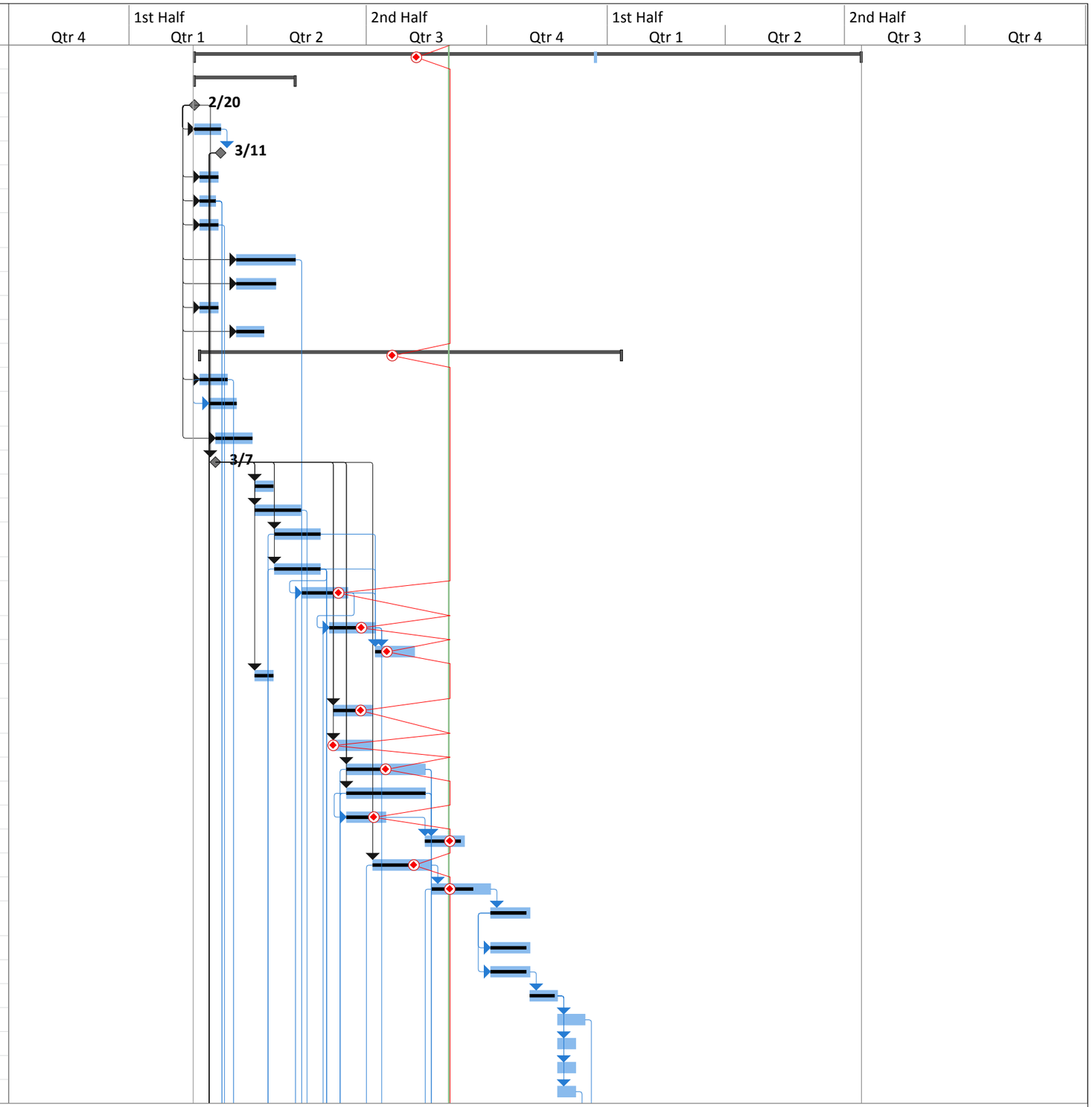
SECTION 4

PROGRAMME

4.1 Overall Programme (Refer to attached)

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																									

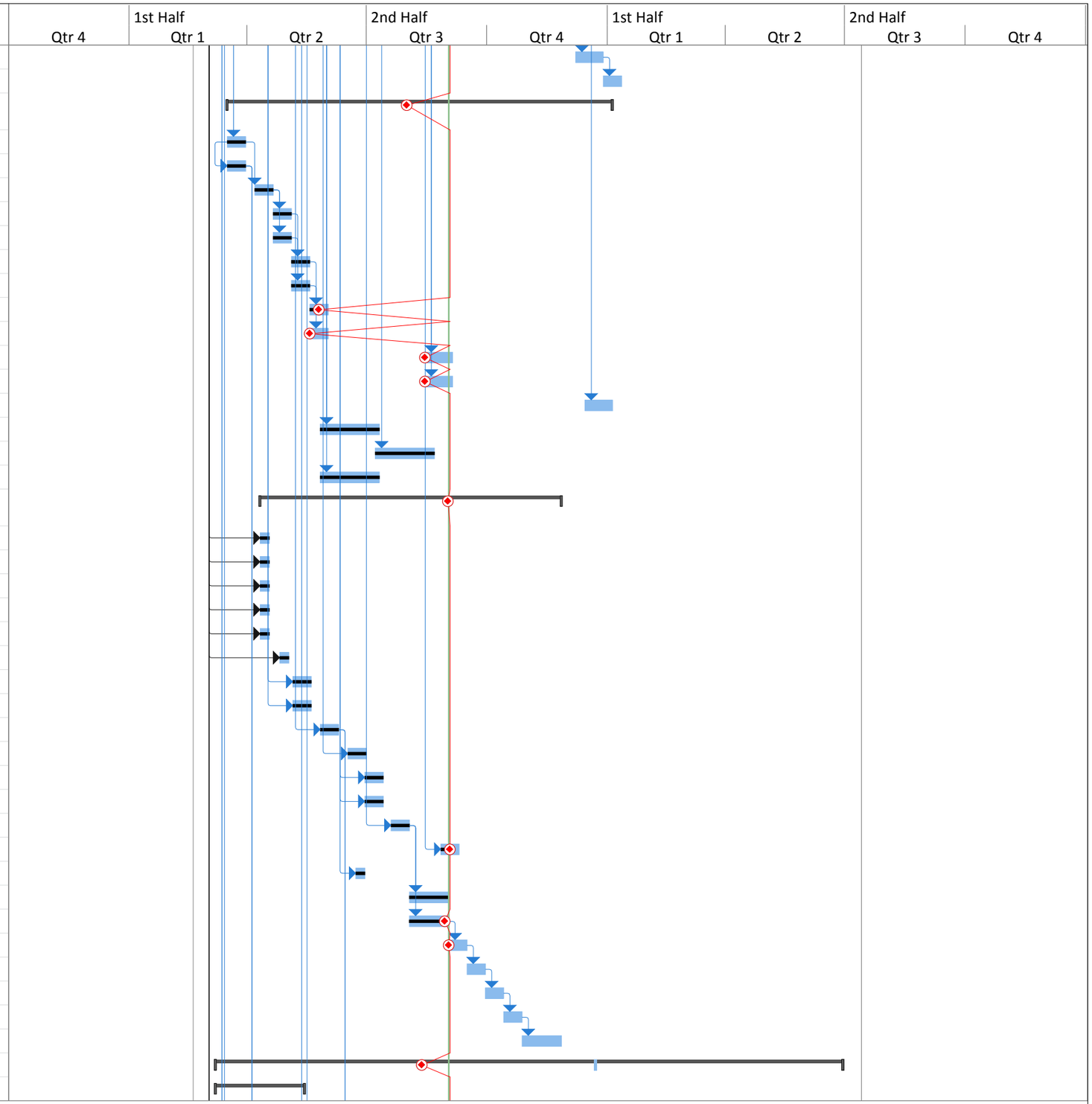
ID	Task Name	Duration	Start	Finish	% Complete
1	**SELECT HQ @ SENOKO SOUTH**	**498 days**	**Thu 2/20/14**	**Mon 7/13/15**	**28%**
2	**Authorities' Submissions (Preliminary Wor**	**75 days**	**Thu 2/20/14**	**Wed 5/7/14**	**100%**
3	Letter of Award	0 days	Thu 2/20/14	Thu 2/20/14	100%
4	Mobilisations	18 days	Thu 2/20/14	Tue 3/11/14	100%
5	Contract Commencement Date	0 days	Tue 3/11/14	Tue 3/11/14	100%
6	Insurance & Performance Bond	14 days	Mon 2/24/14	Sun 3/9/14	100%
7	MOM Factory Permit	12 days	Mon 2/24/14	Fri 3/7/14	100%
8	Proposal & Submissions of Earth Control Measures	14 days	Mon 2/24/14	Sun 3/9/14	100%
9	LTA Temporary Crossings	45 days	Mon 3/24/14	Wed 5/7/14	100%
10	PUB (Temporary Water)	30 days	Mon 3/24/14	Tue 4/22/14	100%
11	EMA (Temporary Genset Power)	14 days	Mon 2/24/14	Sun 3/9/14	100%
12	CAAS (Tower/Crawler Crane)	21 days	Mon 3/24/14	Sun 4/13/14	100%
13	**Design & Detailings**	**322 days**	**Mon 2/24/14**	**Sun 1/11/15**	**70%**
14	RC Piles Design Submissions & Approvals	21 days	Mon 2/24/14	Sun 3/16/14	100%
15	Pile-Caps Design & Calculations Submissions & Approvals	21 days	Mon 3/3/14	Sun 3/23/14	100%
16	Post Tension Design & Calculations	28 days	Sat 3/8/14	Fri 4/4/14	100%
17	Issuance of Construction Drawings	0 days	Fri 3/7/14	Fri 3/7/14	100%
18	M&E Underground CSD Shop Drawings	14 days	Mon 4/7/14	Sun 4/20/14	100%
19	Lifts Shop-Drawings Submissions & Appro	35 days	Mon 4/7/14	Sun 5/11/14	100%
20	Fire Protection Shop-Drawings Submissions & Approvals	35 days	Tue 4/22/14	Mon 5/26/14	100%
21	PSG Shop-Drawings Submissions & Appr	35 days	Tue 4/22/14	Mon 5/26/14	100%
22	Electrical Shop-Drawings Submissions & Approvals	35 days	Tue 5/13/14	Mon 6/16/14	80%
23	ACMV Shop-Drawings Submissions & App	35 days	Tue 6/3/14	Mon 7/7/14	70%
24	M&E Combined Services Drawings	30 days	Tue 7/8/14	Wed 8/6/14	30%
25	Water-Proofing Shop-Drawings Submissions & Approvals	14 days	Mon 4/7/14	Sun 4/20/14	100%
26	Syphonic Rwdp Shop-Drawings Submissions & Approvals	30 days	Fri 6/6/14	Sat 7/5/14	70%
27	L3-L7 Sky Bridge Steel Shop-Drawings	30 days	Fri 6/6/14	Sat 7/5/14	0%
28	Aluminium & Curtain Wall Façade Shop-D	60 days	Mon 6/16/14	Thu 8/14/14	50%
29	GRC Façade Shop-Drawings	60 days	Mon 6/16/14	Thu 8/14/14	100%
30	PlasWall Shop-Drawings	30 days	Mon 6/16/14	Tue 7/15/14	70%
31	Combined Façade Shop-Drawings	30 days	Fri 8/15/14	Sat 9/13/14	90%
32	Soft & Hardscape Shop-Drawings (L1,L2 &	45 days	Sun 7/6/14	Tue 8/19/14	70%
33	Façade Lightings Shop-Drawings	45 days	Wed 8/20/14	Fri 10/3/14	70%
34	L2/L7/Sky Bridge Pebble Wash Setting Out Shop-Drawings	30 days	Sat 10/4/14	Sun 11/2/14	90%
35	Lobby Tiles Setting Out Shop-Drawings	30 days	Sat 10/4/14	Sun 11/2/14	90%
36	Toilets Tiles Setting Out Shop-Drawings	30 days	Sat 10/4/14	Sun 11/2/14	90%
37	Lobby & Toilets Carpentry Shop-Drawings	21 days	Mon 11/3/14	Sun 11/23/14	90%
38	Staircase Railings	21 days	Mon 11/24/14	Sun 12/14/14	0%
39	Fire-Rated Drywall Shop-Drawings	14 days	Mon 11/24/14	Sun 12/7/14	0%
40	Ceiling Shop-Drawings	14 days	Mon 11/24/14	Sun 12/7/14	0%
41	Fire & Non Fire Rated Doors Shop-Drawin	14 days	Mon 11/24/14	Sun 12/7/14	0%



Project: SELECT - Master Program

Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline	
Split	External Tasks	Inactive Summary	Manual Summary	Progress	
Milestone	External Milestone	Manual Task	Start-only	Manual Progress	
Summary	Inactive Task	Duration-only	Finish-only		

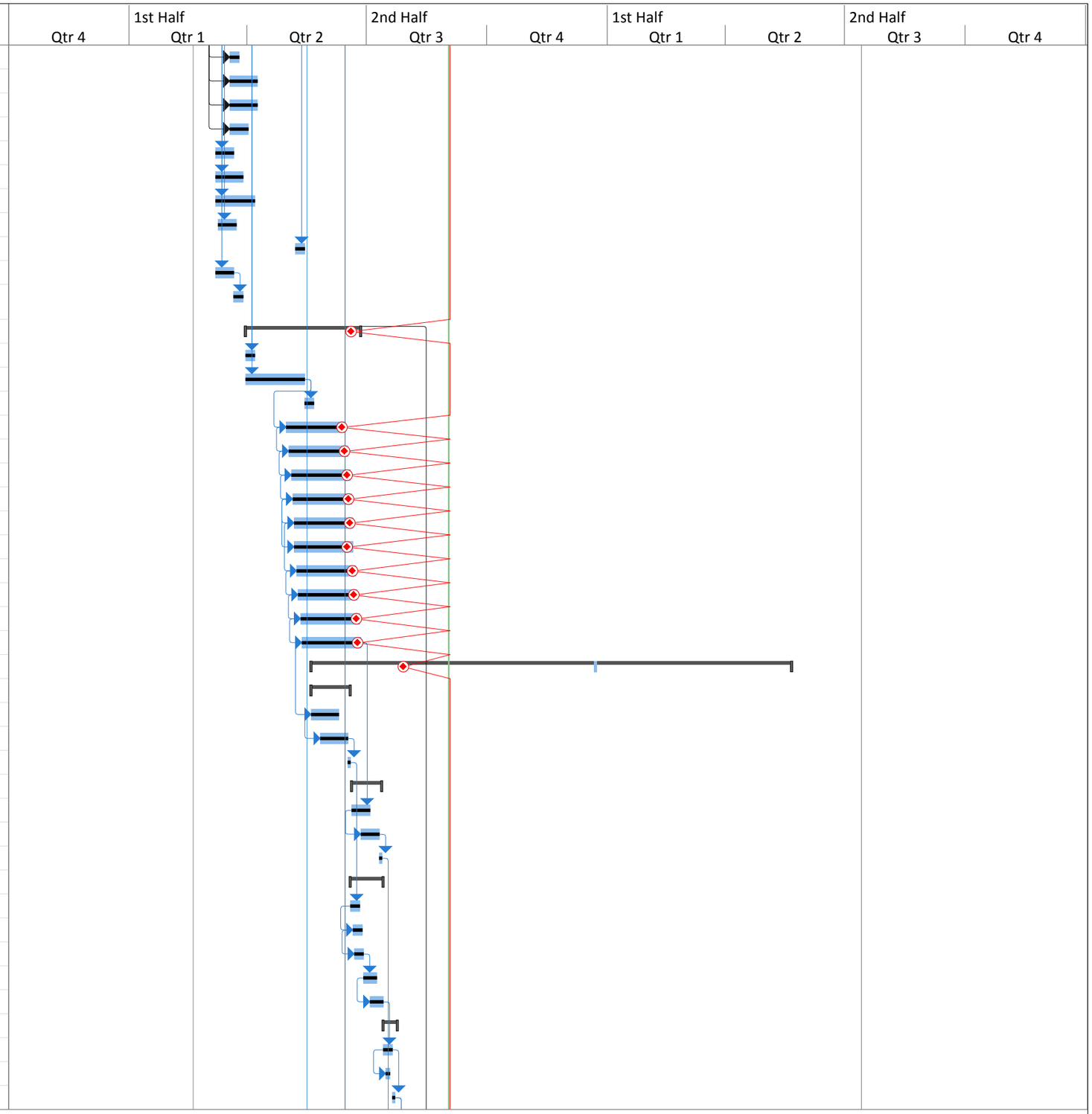
ID	Task Name	Duration	Start	Finish	% Complete
42	Letter Boxes Shop-Drawings	21 days	Mon 12/8/14	Sun 12/28/14	0%
43	TOP & Other Signages	14 days	Mon 12/29/14	Sun 1/11/15	0%
44	**Authorities' Submissions (Main Building Works)**	**294 days**	**Mon 3/17/14**	**Sun 1/4/15**	**74%**
45	BCA - ST03 (RC Pilings)	14 days	Mon 3/17/14	Sun 3/30/14	100%
46	BCA - Permit to Commence Works	14 days	Mon 3/17/14	Sun 3/30/14	100%
47	BCA - ST04 (Amendments to RC Piles)	14 days	Mon 4/7/14	Sun 4/20/14	100%
48	BCA - ST50 (ERSS)	14 days	Mon 4/21/14	Sun 5/4/14	100%
49	BCA - ST05 (Pilecaps Amendments)	14 days	Mon 4/21/14	Sun 5/4/14	100%
50	BCA - ST06 (Retaining Wall Amendments)	14 days	Mon 5/5/14	Sun 5/18/14	100%
51	BCA - ST07 (2nd to 6th Storey Slab & Col	14 days	Mon 5/5/14	Sun 5/18/14	100%
52	BCA - ST08 (7th to Roof Storey Slab & Co	14 days	Mon 5/19/14	Sun 6/1/14	50%
53	BCA - ST09 (Miscellaneous RC Elements)	14 days	Mon 5/19/14	Sun 6/1/14	0%
54	BCA - ST10 (Aluminium & Curtain Wall Fa	21 days	Fri 8/15/14	Thu 9/4/14	0%
55	BCA - ST11 (GRC Façade)	21 days	Fri 8/15/14	Thu 9/4/14	0%
56	BCA - ST12 (Staircase Railings)	21 days	Mon 12/15/14	Sun 1/4/15	0%
57	Power Grid Incoming & Sub-Station	45 days	Tue 5/27/14	Thu 7/10/14	100%
58	PUB Water Incoming & Meter Chamber	45 days	Tue 7/8/14	Thu 8/21/14	100%
59	TFCC Incoming & MDF Room	45 days	Tue 5/27/14	Thu 7/10/14	100%
60	**Main Materials Submissions, Presentations & Approvals**	**230 days**	**Fri 4/11/14**	**Wed 11/26/14**	**69%**
61	Concrete Design Mix	7 days	Fri 4/11/14	Thu 4/17/14	100%
62	Rebars/BRC	7 days	Fri 4/11/14	Thu 4/17/14	100%
63	Post Tension System	7 days	Fri 4/11/14	Thu 4/17/14	100%
64	Passenger & Goods Lifts*	7 days	Fri 4/11/14	Thu 4/17/14	100%
65	Anti-Termite Treatment	7 days	Fri 4/11/14	Thu 4/17/14	100%
66	Water-Proofing System*	7 days	Sat 4/26/14	Fri 5/2/14	100%
67	M&E Major Equipment - Plumbing & Sanit	14 days	Tue 5/6/14	Mon 5/19/14	100%
68	M&E Major Equipment - Fire Protection*	14 days	Tue 5/6/14	Mon 5/19/14	100%
69	M&E Major Equipment - Electrical*	14 days	Tue 5/27/14	Mon 6/9/14	100%
70	M&E Major Equipment - ACMV*	14 days	Tue 6/17/14	Mon 6/30/14	100%
71	External Façade (Aluminium & Glazings)*	14 days	Mon 6/30/14	Sun 7/13/14	100%
72	External Façade (GRC System)*	14 days	Mon 6/30/14	Sun 7/13/14	100%
73	Hard & Soft Scape Works*	14 days	Sun 7/20/14	Sat 8/2/14	100%
74	Façade Lightings Proposal*	14 days	Wed 8/27/14	Tue 9/9/14	50%
75	PlasWall System*	7 days	Mon 6/23/14	Sun 6/29/14	100%
76	Sanitary Wares & Fittings	30 days	Sun 8/3/14	Mon 9/1/14	100%
77	Granite & Homogeneous Tiles & Pebble W	30 days	Sun 8/3/14	Mon 9/1/14	90%
78	Drywall Paritions & Ceilings	14 days	Tue 9/2/14	Mon 9/15/14	0%
79	Doors & Ironmongery	14 days	Tue 9/16/14	Mon 9/29/14	0%
80	PU System*	14 days	Tue 9/30/14	Mon 10/13/14	0%
81	Painting System	14 days	Tue 10/14/14	Mon 10/27/14	0%
82	Building Main Signages Presentation & Aw	30 days	Tue 10/28/14	Wed 11/26/14	0%
83	**Construction Site Works**	**474 days**	**Sat 3/8/14**	**Mon 6/29/15**	**18%**
84	**Stage 1 - Preliminaries & Site Setting-up**	**68 days**	**Sat 3/8/14**	**Wed 5/14/14**	**100%**



Project: SELECT - Master Program

Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline
Split	External Tasks	Inactive Summary	Manual Summary	Progress
Milestone	External Milestone	Manual Task	Start-only	Manual Progress
Summary	Inactive Task	Duration-only	Finish-only	

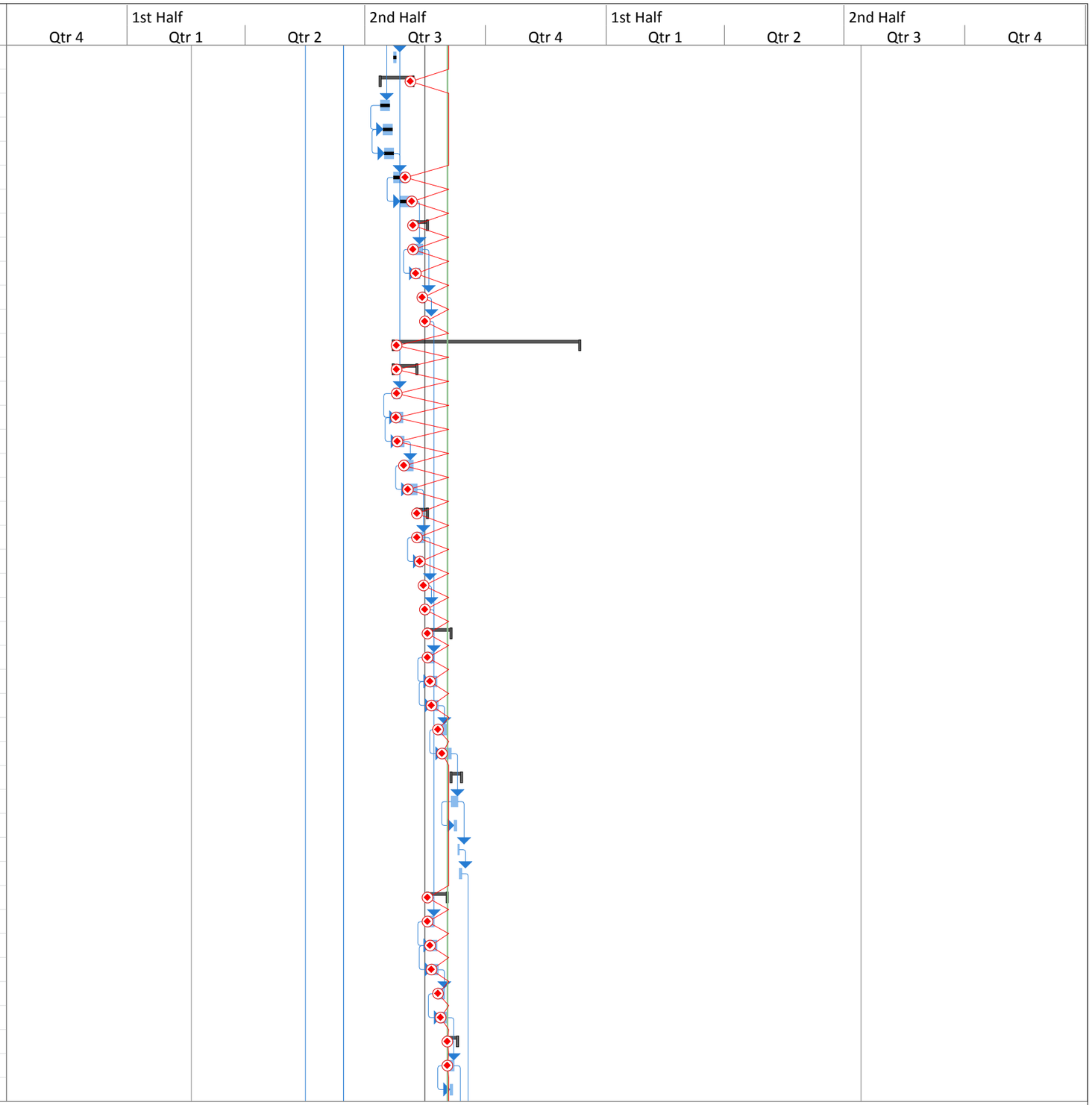
ID	Task Name	Duration	Start	Finish	% Complete
85	Cable Detection Works	7 days	Wed 3/19/14	Tue 3/25/14	100%
86	Dilapidation Survey	21 days	Wed 3/19/14	Tue 4/8/14	100%
87	Pre-Construction CCTV Survey on Sew	21 days	Wed 3/19/14	Tue 4/8/14	100%
88	Setting-Out & Pre-Computation Plan	14 days	Wed 3/19/14	Tue 4/1/14	100%
89	Mobilisation & Commencement of ULT	14 days	Sat 3/8/14	Fri 3/21/14	100%
90	Site Hoardings & BCA Signboard	21 days	Sat 3/8/14	Fri 3/28/14	100%
91	Oversite Clearances	30 days	Sat 3/8/14	Sun 4/6/14	100%
92	ECM & Wash Bay	14 days	Mon 3/10/14	Sun 3/23/14	100%
93	Temporary Crossings	7 days	Thu 5/8/14	Wed 5/14/14	100%
94	Site Office Setting-up	14 days	Sat 3/8/14	Fri 3/21/14	100%
95	Instrumentation & Monitoring (Noise & Vibrations)	7 days	Sat 3/22/14	Fri 3/28/14	100%
96	**Stage 2A - Pilings & Sub-Structure Worl**	**88 days**	**Mon 3/31/14**	**Thu 6/26/14**	**95%**
97	Mobilisation of Additional Piling Rigs	7 days	Mon 3/31/14	Sun 4/6/14	100%
98	Installation of RC Piles	45 days	Mon 3/31/14	Wed 5/14/14	100%
99	Working Loads & PDA Tests	7 days	Thu 5/15/14	Wed 5/21/14	100%
100	Excavation of Pile Caps	45 days	Thu 5/1/14	Sat 6/14/14	95%
101	Cutting of Pile-Heads	45 days	Sat 5/3/14	Mon 6/16/14	95%
102	ECC Checks	45 days	Mon 5/5/14	Wed 6/18/14	95%
103	Lean Concrete to Base of Pile-Caps	45 days	Tue 5/6/14	Thu 6/19/14	95%
104	Construction of Pile-Caps	45 days	Wed 5/7/14	Fri 6/20/14	95%
105	Excavation for MEP Services (Lead-in)	45 days	Wed 5/7/14	Fri 6/20/14	90%
106	Back-Filling & Compactions	45 days	Fri 5/9/14	Sun 6/22/14	95%
107	Anti-Termite Treatment	45 days	Sat 5/10/14	Mon 6/23/14	95%
108	Lean Concrete for Slab	45 days	Mon 5/12/14	Wed 6/25/14	95%
109	Water-Proofing to Underside of Slab	45 days	Tue 5/13/14	Thu 6/26/14	95%
110	**Stage 2B - Superstructure Works**	**367 days**	**Tue 5/20/14**	**Thu 5/21/15**	**18%**
111	**L1 Slab - Zone A (GL3-6/A-I)**	**30 days**	**Tue 5/20/14**	**Wed 6/18/14**	**100%**
112	Rebars	21 days	Tue 5/20/14	Mon 6/9/14	100%
113	Formwork	21 days	Tue 5/27/14	Mon 6/16/14	100%
114	Concrete	2 days	Tue 6/17/14	Wed 6/18/14	100%
115	**L1 Slab - Zone B (GL1-3/A-I)**	**23 days**	**Fri 6/20/14**	**Sat 7/12/14**	**100%**
116	Rebars	14 days	Fri 6/20/14	Thu 7/3/14	100%
117	Formwork	14 days	Fri 6/27/14	Thu 7/10/14	100%
118	Concrete	2 days	Fri 7/11/14	Sat 7/12/14	100%
119	**L1-L2 Columns (Zone A)**	**25 days**	**Thu 6/19/14**	**Sun 7/13/14**	**100%**
120	Rebars	7 days	Thu 6/19/14	Wed 6/25/14	100%
121	Formwork	7 days	Sat 6/21/14	Fri 6/27/14	100%
122	Concrete	7 days	Sun 6/22/14	Sat 6/28/14	100%
123	Erection of Staging to L2 Slab	10 days	Sun 6/29/14	Tue 7/8/14	100%
124	Laying of Timber Platform	10 days	Fri 7/4/14	Sun 7/13/14	100%
125	**L2 Slab - Zone A (GL3-6/A-I)**	**11 days**	**Mon 7/14/14**	**Thu 7/24/14**	**100%**
126	Rebars	7 days	Mon 7/14/14	Sun 7/20/14	100%
127	Laying of PT Strains	3 days	Wed 7/16/14	Fri 7/18/14	100%
128	Formwork	2 days	Mon 7/21/14	Tue 7/22/14	100%



Project: SELECT - Master Program

Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline	
Split	External Tasks	Inactive Summary	Manual Summary	Progress	
Milestone	External Milestone	Manual Task	Start-only	Manual Progress	
Summary	Inactive Task	Duration-only	Finish-only		

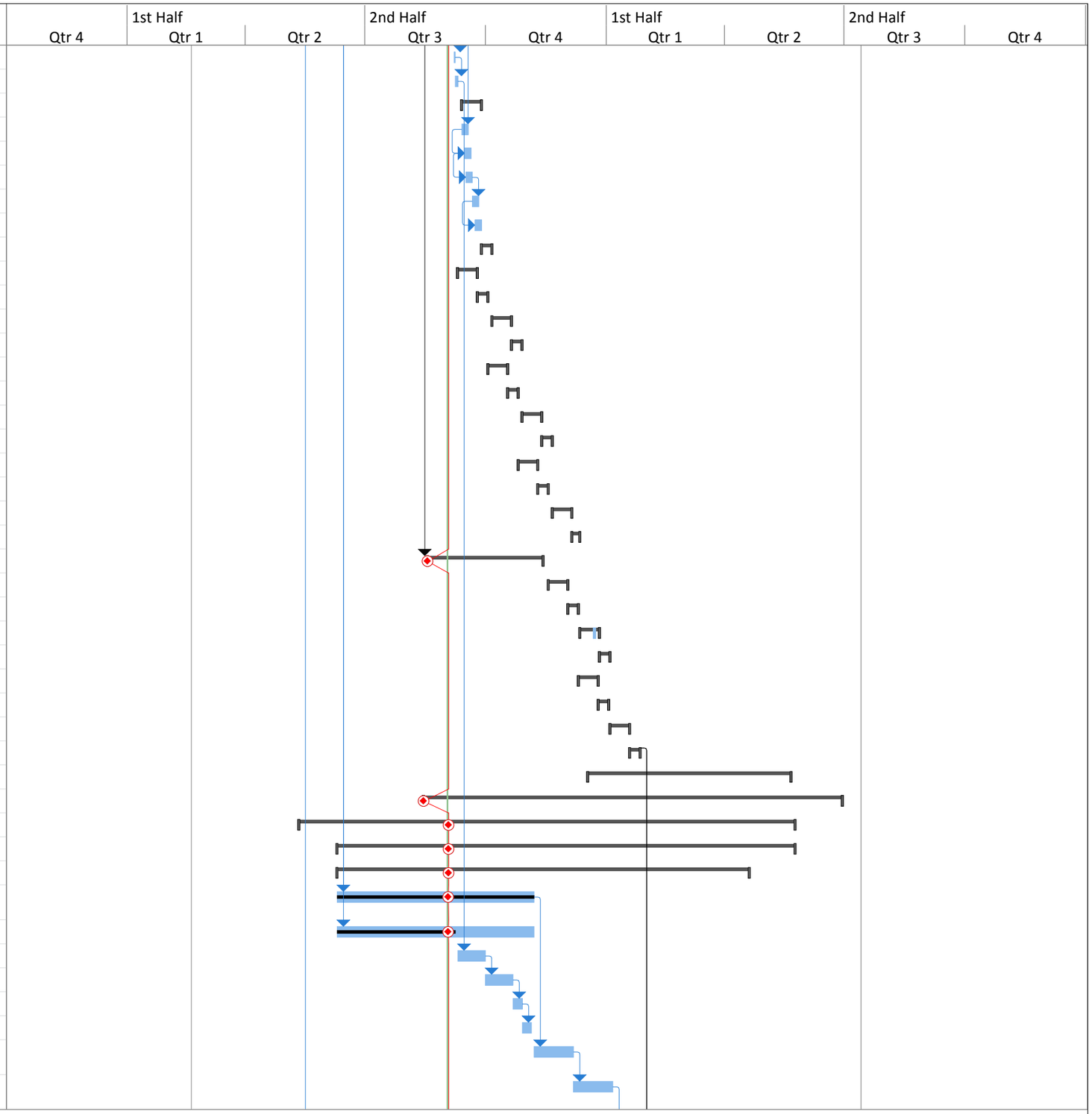
ID	Task Name	Duration	Start	Finish	% Complete
129	Concrete	2 days	Wed 7/23/14	Thu 7/24/14	100%
130	**L1-L2 Columns (Zone B)**	**25 days**	**Sun 7/13/14**	**Wed 8/6/14**	**95%**
131	Rebars	7 days	Sun 7/13/14	Sat 7/19/14	100%
132	Formwork	7 days	Tue 7/15/14	Mon 7/21/14	100%
133	Concrete	7 days	Wed 7/16/14	Tue 7/22/14	100%
134	Erection of Staging to L2 Slab	10 days	Wed 7/23/14	Fri 8/1/14	90%
135	Laying of Timber Platform	10 days	Mon 7/28/14	Wed 8/6/14	90%
136	**L2 Slab - Zone B (GL1-3/A-I)**	**11 days**	**Thu 8/7/14**	**Sun 8/17/14**	**0%**
137	Rebars	7 days	Thu 8/7/14	Wed 8/13/14	0%
138	Laying of PT Strains	3 days	Sat 8/9/14	Mon 8/11/14	0%
139	Formwork	2 days	Thu 8/14/14	Fri 8/15/14	0%
140	Concrete	2 days	Sat 8/16/14	Sun 8/17/14	0%
141	**FACTORY/CK BLOCK**	**142 days**	**Wed 7/23/14**	**Thu 12/11/14**	**1%**
142	**L2-L3 Columns (Zone A)**	**18 days**	**Wed 7/23/14**	**Sat 8/9/14**	**9%**
143	Rebars	5 days	Wed 7/23/14	Sun 7/27/14	50%
144	Formwork	5 days	Fri 7/25/14	Tue 7/29/14	0%
145	Concrete	5 days	Sat 7/26/14	Wed 7/30/14	0%
146	Erection of Staging to L3 Slab	7 days	Thu 7/31/14	Wed 8/6/14	0%
147	Laying of Timber Platform	7 days	Sun 8/3/14	Sat 8/9/14	0%
148	**L3 Slab - Zone A (GL3-6/D-I)**	**8 days**	**Sun 8/10/14**	**Sun 8/17/14**	**0%**
149	Rebars	5 days	Sun 8/10/14	Thu 8/14/14	0%
150	Laying of PT Strains	2 days	Tue 8/12/14	Wed 8/13/14	0%
151	Formwork	1 day	Fri 8/15/14	Fri 8/15/14	0%
152	Concrete	2 days	Sat 8/16/14	Sun 8/17/14	0%
153	**L2-L3 Columns (Zone B)**	**18 days**	**Mon 8/18/14**	**Thu 9/4/14**	**0%**
154	Rebars	5 days	Mon 8/18/14	Fri 8/22/14	0%
155	Formwork	5 days	Wed 8/20/14	Sun 8/24/14	0%
156	Concrete	5 days	Thu 8/21/14	Mon 8/25/14	0%
157	Erection of Staging to L3 Slab	7 days	Tue 8/26/14	Mon 9/1/14	0%
158	Laying of Timber Platform	7 days	Fri 8/29/14	Thu 9/4/14	0%
159	**L3 Slab - Zone B (GL 1-3/D-I)**	**8 days**	**Fri 9/5/14**	**Fri 9/12/14**	**0%**
160	Rebars	5 days	Fri 9/5/14	Tue 9/9/14	0%
161	Laying of PT Strains	2 days	Sun 9/7/14	Mon 9/8/14	0%
162	Formwork	1 day	Wed 9/10/14	Wed 9/10/14	0%
163	Concrete	2 days	Thu 9/11/14	Fri 9/12/14	0%
164	**L3-L4 Columns (Zone A)**	**15 days**	**Mon 8/18/14**	**Mon 9/1/14**	**0%**
165	Rebars	5 days	Mon 8/18/14	Fri 8/22/14	0%
166	Formwork	5 days	Wed 8/20/14	Sun 8/24/14	0%
167	Concrete	5 days	Thu 8/21/14	Mon 8/25/14	0%
168	Erection of Staging to L4 Slab	5 days	Tue 8/26/14	Sat 8/30/14	0%
169	Laying of Timber Platform	5 days	Thu 8/28/14	Mon 9/1/14	0%
170	**L4 Slab - Zone A (GL 3-6/D-I)**	**8 days**	**Tue 9/2/14**	**Tue 9/9/14**	**0%**
171	Rebars	5 days	Tue 9/2/14	Sat 9/6/14	0%
172	Laying of PT Strains	2 days	Thu 9/4/14	Fri 9/5/14	0%



Project: SELECT - Master Program

Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline
Split	External Tasks	Inactive Summary	Manual Summary	Progress
Milestone	External Milestone	Manual Task	Start-only	Manual Progress
Summary	Inactive Task	Duration-only	Finish-only	

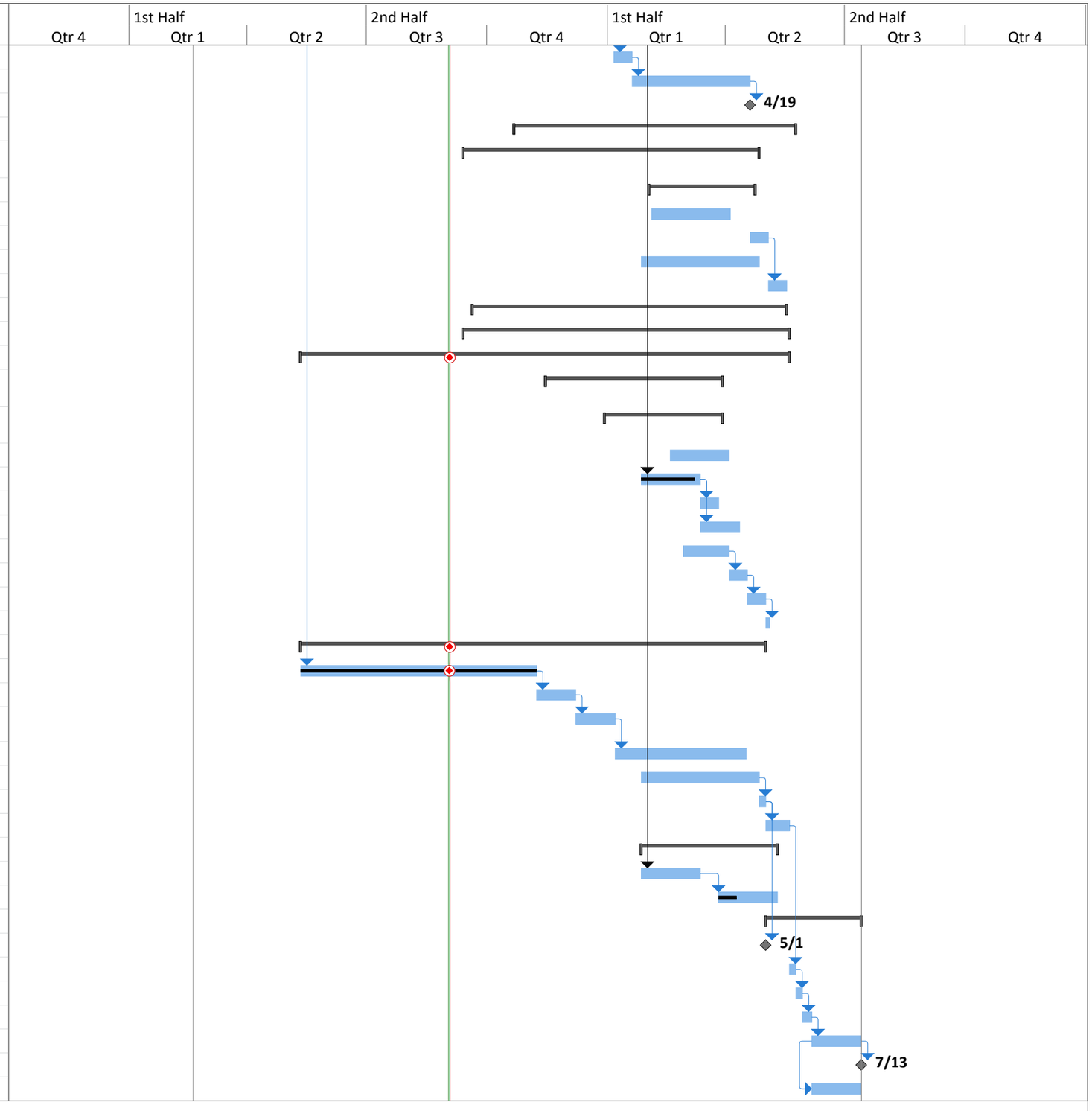
ID	Task Name	Duration	Start	Finish	% Complete
173	Formwork	1 day	Sun 9/7/14	Sun 9/7/14	0%
174	Concrete	2 days	Mon 9/8/14	Tue 9/9/14	0%
175	**L3-L4 Columns (Zone B)**	**15 days**	**Sat 9/13/14**	**Sat 9/27/14**	**0%**
176	Rebars	5 days	Sat 9/13/14	Wed 9/17/14	0%
177	Formwork	5 days	Mon 9/15/14	Fri 9/19/14	0%
178	Concrete	5 days	Tue 9/16/14	Sat 9/20/14	0%
179	Erection of Staging to L4 Slab	5 days	Sun 9/21/14	Thu 9/25/14	0%
180	Laying of Timber Platform	5 days	Tue 9/23/14	Sat 9/27/14	0%
181	**L4 Slab - Zone B (GL 1-3/D-I)**	**8 days**	**Sun 9/28/14**	**Sun 10/5/14**	**0%**
186	**L4-L5 Columns (Zone A)**	**15 days**	**Wed 9/10/14**	**Wed 9/24/14**	**0%**
192	**L5 Slab - Zone A (GL 3-6/D-I)**	**8 days**	**Thu 9/25/14**	**Thu 10/2/14**	**0%**
197	**L4-L5 Columns (Zone B)**	**15 days**	**Mon 10/6/14**	**Mon 10/20/14**	**0%**
203	**L5 Slab - Zone B (GL 1-3/A-I)**	**8 days**	**Tue 10/21/14**	**Tue 10/28/14**	**0%**
208	**L5-L6 Columns (Zone A)**	**15 days**	**Fri 10/3/14**	**Fri 10/17/14**	**0%**
214	**L6 Slab - Zone A (GL 3-6/A-I)**	**8 days**	**Sat 10/18/14**	**Sat 10/25/14**	**0%**
219	**L5-L6 Columns (Zone B)**	**15 days**	**Wed 10/29/14**	**Wed 11/12/14**	**0%**
225	**L6 Slab - Zone B (GL 1-3/A-I)**	**8 days**	**Thu 11/13/14**	**Thu 11/20/14**	**0%**
230	**L6-L7 Columns (Zone A)**	**15 days**	**Sun 10/26/14**	**Sun 11/9/14**	**0%**
236	**L7 Slab - Zone A (GL 3-6/A-I)**	**8 days**	**Mon 11/10/14**	**Mon 11/17/14**	**0%**
241	**L6-L7 Columns (Zone B)**	**15 days**	**Fri 11/21/14**	**Fri 12/5/14**	**0%**
247	**L7 Slab - Zone B (GL 1-3/A-I)**	**6 days**	**Sat 12/6/14**	**Thu 12/11/14**	**0%**
252	**ANNEX/OFFICE BLOCK**	**88 days**	**Mon 8/18/14**	**Thu 11/13/14**	**0%**
308	**L7-L8 Columns (Zone A)**	**15 days**	**Tue 11/18/14**	**Tue 12/2/14**	**0%**
314	**L8 Slab - Zone A (GL 3-6/A-I)**	**8 days**	**Wed 12/3/14**	**Wed 12/10/14**	**0%**
319	**L7-L8 Columns (Zone B)**	**15 days**	**Fri 12/12/14**	**Fri 12/26/14**	**0%**
325	**L8 Slab - Zone B (GL 1-3/A-I)**	**8 days**	**Sat 12/27/14**	**Sat 1/3/15**	**0%**
330	**L8-Roof Columns (Zone A)**	**15 days**	**Thu 12/11/14**	**Thu 12/25/14**	**0%**
336	**Roof Slab - Zone A (GL 3-6/A-I)**	**8 days**	**Fri 12/26/14**	**Fri 1/2/15**	**0%**
341	**L8-Roof Columns (Zone B)**	**15 days**	**Sun 1/4/15**	**Sun 1/18/15**	**0%**
347	**Roof Slab - Zone B (GL 3-6/A-I)**	**8 days**	**Mon 1/19/15**	**Mon 1/26/15**	**0%**
352	**Sky Bridge**	**155 days**	**Thu 12/18/14**	**Thu 5/21/15**	**0%**
363	**Stage 2C - Architectural & Facade Work**	**314 days**	**Fri 8/15/14**	**Mon 6/29/15**	**0%**
487	**Mech/Elec/S&P Works**	**378 days**	**Mon 5/12/14**	**Sun 5/24/15**	**14%**
488	**Electrical works**	**349 days**	**Tue 6/10/14**	**Sun 5/24/15**	**18%**
489	**Sub-Station Works**	**314 days**	**Tue 6/10/14**	**Sun 4/19/15**	**46%**
490	Indent & Delivery of Transformer & HT Switchgear	150 days	Tue 6/10/14	Thu 11/6/14	100%
491	Indent & Delivery of MSB	150 days	Tue 6/10/14	Thu 11/6/14	60%
492	Brickworks to Sub-Station & Switc	21 days	Wed 9/10/14	Tue 9/30/14	0%
493	Plastering/Skim Coat	21 days	Wed 10/1/14	Tue 10/21/14	0%
494	Doors & Ironmongery	7 days	Wed 10/22/14	Tue 10/28/14	0%
495	Painting Works	7 days	Wed 10/29/14	Tue 11/4/14	0%
496	Installation of Transformer & HT Switchgear	30 days	Fri 11/7/14	Sat 12/6/14	0%
497	Installation of MSB (Consumer LT Switchboard)	30 days	Sun 12/7/14	Mon 1/5/15	0%



Project: SELECT - Master Program

Task
Split
Milestone
Summary
Project Summary
External Tasks
External Milestone
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
Deadline
Progress
Manual Progress

ID	Task Name	Duration	Start	Finish	% Complete
498	Substation/CSR Cabling Works	14 days	Tue 1/6/15	Mon 1/19/15	0%
499	Substation Handing Over to PG	90 days	Tue 1/20/15	Sun 4/19/15	0%
500	Power Turn-On	0 days	Sun 4/19/15	Sun 4/19/15	0%
501	**MDF Room**	**215 days**	**Wed 10/22/14**	**Sun 5/24/15**	**0%**
505	**Power/Lightings/Data Cabling/ELV/PA Works**	**226 days**	**Sat 9/13/14**	**Sun 4/26/15**	**0%**
524	**Busbars & DB Panels**	**81 days**	**Mon 2/2/15**	**Thu 4/23/15**	**0%**
534	Lightning & Earthing System	60 days	Wed 2/4/15	Sat 4/4/15	0%
535	Standby Generator Installation	14 days	Mon 4/20/15	Sun 5/3/15	0%
536	Light Fittings & Power Outlets	90 days	Tue 1/27/15	Sun 4/26/15	0%
537	Testing & Commissioning	14 days	Mon 5/4/15	Sun 5/17/15	0%
538	**ACMV**	**240 days**	**Sat 9/20/14**	**Sun 5/17/15**	**0%**
576	**Fire Fighting & Alarm System**	**249 days**	**Sat 9/13/14**	**Tue 5/19/15**	**0%**
604	**Plumbing, Sanitary & Gas System**	**373 days**	**Mon 5/12/14**	**Tue 5/19/15**	**25%**
605	**Installation of Above Ground Sanitary Pipes**	**135 days**	**Sat 11/15/14**	**Sun 3/29/15**	**0%**
615	**Installation of Above Ground Plumbing Pipes**	**90 days**	**Tue 12/30/14**	**Sun 3/29/15**	**0%**
625	Domestic & Transfers Tanks	45 days	Wed 2/18/15	Fri 4/3/15	0%
626	Underground IC and Connections	45 days	Tue 1/27/15	Thu 3/12/15	90%
627	Hydrostatic Test for IC	14 days	Fri 3/13/15	Thu 3/26/15	0%
628	Post Construction CCTV Survey	30 days	Fri 3/13/15	Sat 4/11/15	0%
629	Installation of Sanitary Wares & Fittir	35 days	Sat 2/28/15	Fri 4/3/15	0%
630	Inspection by PUB on Completed W	14 days	Sat 4/4/15	Fri 4/17/15	0%
631	Installation of Water Meter	14 days	Sat 4/18/15	Fri 5/1/15	0%
632	Water Turn-on	3 days	Sat 5/2/15	Mon 5/4/15	0%
633	**Vertical Transportation System**	**355 days**	**Mon 5/12/14**	**Fri 5/1/15**	**41%**
634	Equipment Confirmations & Fabric	180 days	Mon 5/12/14	Fri 11/7/14	100%
635	Equipment Delivery	30 days	Sat 11/8/14	Sun 12/7/14	0%
636	Checking, Plumbing & Erection of Scaffolding	30 days	Mon 12/8/14	Tue 1/6/15	0%
637	Goods Lift Installation	100 days	Wed 1/7/15	Thu 4/16/15	0%
638	PL & FL Installations	90 days	Tue 1/27/15	Sun 4/26/15	0%
639	Load Testing	5 days	Mon 4/27/15	Fri 5/1/15	0%
640	MEP Combined Services Testing	18 days	Sat 5/2/15	Tue 5/19/15	0%
641	**Stage 2D - External works**	**104 days**	**Tue 1/27/15**	**Sun 5/10/15**	**15%**
642	Drains	45 days	Tue 1/27/15	Thu 3/12/15	0%
643	Driveways	45 days	Fri 3/27/15	Sun 5/10/15	30%
644	**Authorities Inspections & Handing Over**	**64 days**	**Fri 5/1/15**	**Mon 7/13/15**	**0%**
645	Pre RI Inspections	0 days	Fri 5/1/15	Fri 5/1/15	0%
646	RI Inspections - Issuance of Form 2	5 days	Wed 5/20/15	Sun 5/24/15	0%
647	Applications of TFP	5 days	Mon 5/25/15	Fri 5/29/15	0%
648	Applications for TOP	6 days	Sat 5/30/15	Fri 6/5/15	0%
649	BCA TOP/Green Marks Inspections	30 days	Sat 6/6/15	Mon 7/13/15	0%
650	Issuance of TOP Certificate	0 days	Mon 7/13/15	Mon 7/13/15	0%
651	Final Cleaning & Handing Over	30 days	Sat 6/6/15	Mon 7/13/15	0%



Project: SELECT - Master Program

Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline
Split	External Tasks	Inactive Summary	Manual Summary	Progress
Milestone	External Milestone	Manual Task	Start-only	Manual Progress
Summary	Inactive Task	Duration-only	Finish-only	

SECTION 4

PROGRAMME

4.2 Authority Submission Status for M&E Services - 1st Submission

Service	Authority	Original Submission		Comments/Resubmission						Approval/
		Scheduled	Actual	Comment	Resubmit	Comment	Resubmit	Comment	Resubmit	Clearance
Application for Electricity Supply	SP Services Ltd		15-Aug-13							4-Sept-13
Power Supply Substation	SP PowerGrid Ltd		29-Oct-13	13-Nov-13	9-Dec-13	23-Dec-13	9-Jan-14			24-Jan-14
Metering Layout	SP Services Ltd		3-Dec-13							16-Dec-13
Sanitary Installation	PUB Water Reclamation (Network) Dept	17-Mar-14	7-Apr-14							8-Apr-14
Domestic Water Supply	PUB (Water Supply) Network Dept	21-Feb-14	13-Mar-14	28-Apr-14	26-Jun-14	31-July-14	1-Sept-14			
Gas Supply Installation	City Gas Pte Ltd	-	-	-	-	-	-	-	-	-
Air Conditioning & Ventilation Inst.	FSSD									
Fire Fighting & Alarm Installation	FSSD									
Telephone Installation	TFCC		31-Oct-13							19-Nov-13
Broadband Co-axial Cable System (BCS)	Starhub Cable Vision									
Fuel Storage	FSSD	-	-	-	-	-	-	-	-	-
	NEA (Pollution Control)	-	-	-	-	-	-	-	-	-

SECTION 4

PROGRAMME

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

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:	
Progress Payment	✓				

(✓*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	All project drawings in softcopy to be saved in 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	
Other Drawings - Electrical Shop Drawings - Mechanical Shop Drawings	All project drawings in softcopy to be saved in server

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 USED

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	C	C	C	I	
b.	Project Administration	A	C	I	I	I	
c.	Project Cost Estimate/Contract Cost	A	C	I	-	C	
2.	**Drawings**						
a.	Outline Design Drgs.	A	C	C	I	-	
b.	Sketch Design Drgs.	A	C	C	I	-	
c.	Final Design Drgs.	A	C	C	C	I	
d.	Shop Drawings	C	I	C	I	-	
e.	As Built Drgs.	I	I	I	I	I	
3.	**Other Document**						
a.	Specification	A	I	I	-	I	
b.	Tender Document	A	I	I	-	I	
c.	Tender Evaluation Report	A	I	I	-	I	
d.	Design Report	A	I	I	I	-	
e.	Progress Report	I	I	I	-	I	
f.	Financial Report	A	I	I	-	I	
g.	Minutes of Meeting	I	I	I	-	I	
h.	Inspection Report	I	I	I	-	-	
i.	Testing & Comm. Report	I	I	-	-	-	
j.	O & M Manual	I	I	-	-	-	

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 USED

ITEM	KEPT BY

8.2 List of Applicable Code of Practice and Regulations

Services	Title of Code of Practice/Standard
Electrical Wiring	CP 5
Lightning Protection System	SS 555
Emergency Voice Communication System	SS 546
Air Conditioning & Ventilation Installation	CP 553
Lift & Escalator Installation	SS 550
Sprinkler System	CP52
Wet Riser System	-
Automatic Fire Alarm System	CP10
Sanitary System	COP on Sewerage and Sanitary Works
Plumbing System	CP48
Town Gas/LPG Supply System	CP51
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 USED

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	
QE1	Quality & Environmental System Audit	✓
QE2	Feedback Reporting	✓
QE3	Clients Feedback	✓
QE4	Management Review	✓

8.6 List of Software Used For Design/Analysis

DESCRIPTION/ PACKAGE NAME	VERSION	SUPPLIER/ SOURCE	PURPOSE	
Calculux	2.30	Philips	Lighting design	
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	
Lift Traffic	-	Alpha Consulting Engineers Pte Ltd	Lift traffic calculation	
Econdial	2.5	Merlin Gerlin	Design for low voltage network	
Hyena	4.00.1	ACADS-BSG	Fire Sprinkler & Hydrant Analysis	
Fault Level Calculation	-	Alpha Consulting Engineers Pte Ltd	Calculation of voltage drop and fault level	

(✓*where applicable*)

SECTION 9

ENVIRONMENTAL CONSIDERATIONS

9.1 Sustainable Design Features / Criteria

Item	Remarks
Green Mark criteria	GOLD
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	I

* *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)* – NOT USED

SECTION 11

LIST OF SUB-JOB

11.1 List of Sub-Job Numbers – NOT USED

Sub Job No	Description	Allocation Details