Alpha
Consulting Engineers Pte Ltd

PROJECT QUALITY PLAN

PROPOSED 250-BEDDED NURSING HOMES AT BUKIT BATOK FOR MINISTRY OF HEALTH

For

MINISTRY OF HEALTH

Copy No.	1

Prepared By: Chia Chung Han/Ngu Kat Lung

Authorised By: Goh Soon Huat

Date: 7 November 2013

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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	6154-PQP File	7 November 2013

1.2 Revision Record

Revision	Date of Issue	Section Reference	Page(s)	Remarks
0	2 December 2011	1 to 11	28	+ 1 pg (Sect 4.1 – Overall Programme)
1	15 March 2013	1 to 11	29	+ 1 pg (Sect 4.1 – Overall Programme)
2	7 November 2013	1 to 11	29	+ 5 pgs (Sect 4.1 - Overall Programme)

SECTION 2

PROJECT INFORMATION

2.1 Project Description

Type of Development	New Erection of Nursing Home

Statistics of Development	
Site Area, m²	3400
Nett Floor Area, m²	-
Gross Floor Area, m²	6720
Covered Carpark, m²	-
No. of Covered Carpark Lots	25
No. of Apartments/Houses	-
No. of Beds (for Hospitals)	260
No. of Guestroom (for Hotels)	-
No. of Blocks / No. of Storeys	1 block of 7-storey
Green Mark Category	Certified
No. of Phases	1

2.2 Project Cost

M&E Services Cost Plan										
Services	EI	ACVI	LEI	FFAI	PSI	SPFI				
Estimate	1.263M	524.5K	570K	530K	700K	-				
Awarded	1,789,929	517,940	511,000	451,080	971,210	-				

Total Project Construction Cost (S$ x1M)			
	Site Clearance	Piling Works	Main Contract
Estimate			
Awarded			14,408,485.00

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

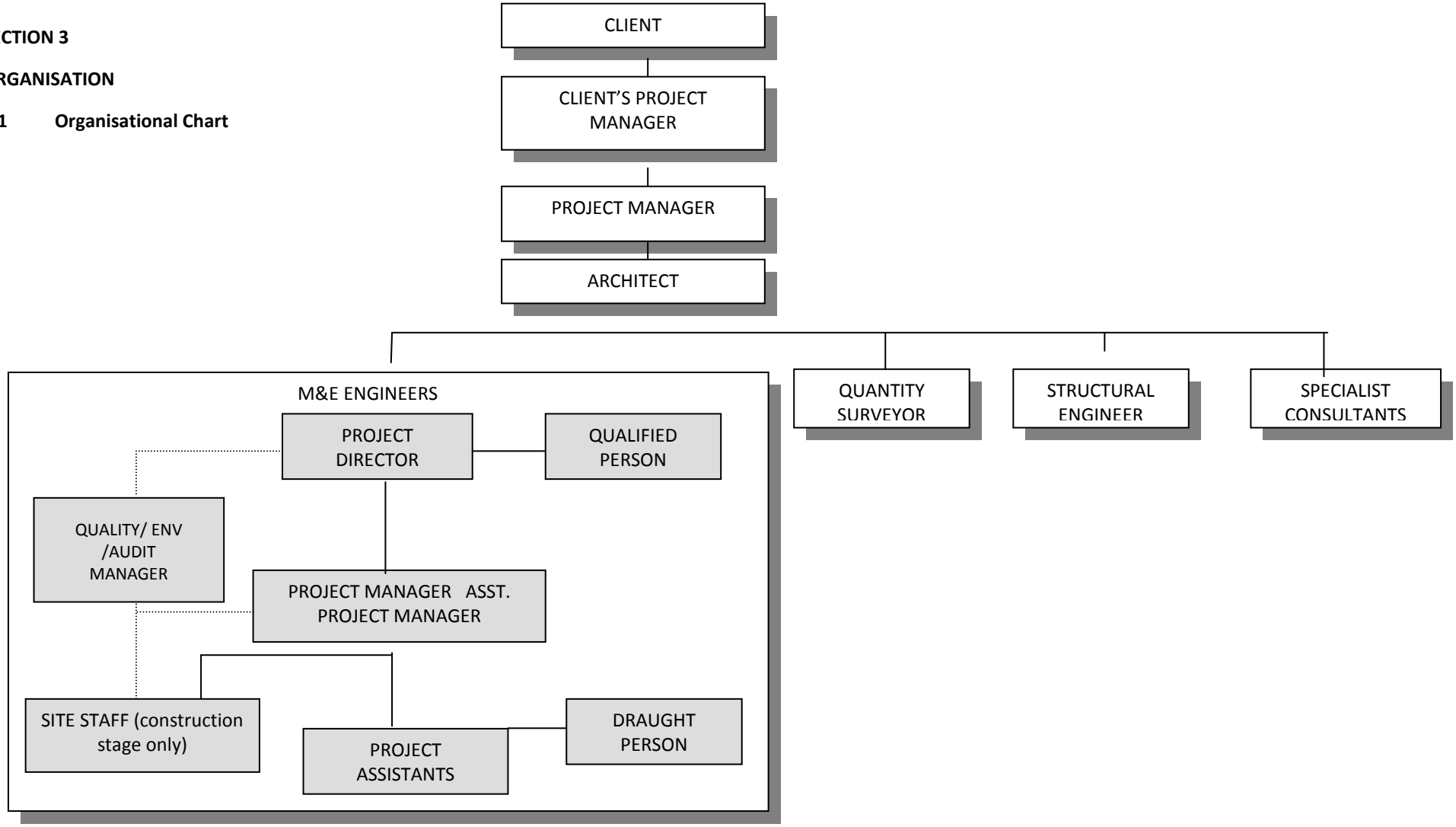
EJECTOR & DIVERTER		SUMP PUMP		FUEL OIL TANK		LIFT & ESCALATOR		PRESSURE VESSEL		HOISTS		FOAM	

(✓*where applicable*)

SECTION 3

ORGANISATION

3.1 Organisational Chart



SECTION 3

ORGANISATION

3.2 ACEPL's Project Team Member

TITLE		NAME
Project Director		Goh Soon Huat (GSH)
Qualified Person	Mechanical	Choong Choon Guan (CCG)
	Electrical	Loh Fook Yuen (LFY)
Project Manager		Chuan Kian Heng (CKH)
Assistant Project Manager		-
Project Assistant (Mech)		Chia Chung Han (CH)
Project Assistant (Elect)		Ngu Kat Lung (NKL)
Draughtsperson		Common Pool
Resident Technical Officer (M&E)		Boh Teck Wee (BTW)
Assistant Resident Engineer (M&E)		-
Clerk-of-Work (M&E)		-

3.3 Client/Client's Representatives

Client:- Ministry of Health — MOH Holdings Pte Ltd

Address:- College of Medicine Building, 16 College Road, Singapore 169854 — 1 Maritime Square #11-25, Harbour Front Centre, Singapore 099253

Tel:- 6325 1328 — 6818 1320

Fax:- 6325 1677 — 6720 0980

Client's Representatives:-

Name of Company	Contact Person	Contact
Ministry of Health	Name: Ms Yeo Meng Ni Position: Health Policy Analyst	Tel: 6325 1328 Fax: 6325 1677 Handphone: - Email: yeo_mengni@moh.gov.sg
MOH Holdings Pte Ltd (Client's Project Manager)	Name: Mr Lau Chang Gee Position: Senior Manager Healthcare Infrastructure Projects Division	Tel: 6818 1238 Fax: 6720 0980 Handphone: - Email: changgee.lau@mohh.com.sg
SIPM Consultants Pte Ltd (Project Manager)	Name: Ms Chen Min Sze Position: Assistant Vice President	Tel: 6248 1256 Fax: 6242 1294 Handphone: 9852 0602 Email: chenms@sipmconsultants.com
	Name: Position:	Tel: Fax: Handphone: Email:
	Name: Position:	Tel: Fax: Handphone: Email:

3.4 Other Consultants (Local)

Function / Name of Company	Contact Person	Contact
Architect Team Design Architects Pte Ltd	Name: Mr Yee Wei Wen Position: Project Director	Tel: 6323 3168 Fax: 6323 3618 Handphone: 9662 3255 Email: 1108@teamdesign.com.sg
Quantity Surveyor Langdon & Seah Singapore Pte Ltd	Name: Mr Teoh Wooi Sin Position: Executive Director	Tel: 6239 8248 Fax: 6224 7089 Handphone: 9658 2937 Email: 5789@dls.com.sg
Structural Engineer KTP Consultants Pte Ltd	Name: Mr Song Wee Ngee Position: Project Director	Tel: 6412 0308 Fax: 6273 8454 Handphone: 8189 5550 Email: songwn@ktp.com.sg
Interior Designer __	Name: Position:	Tel: Fax: Handphone: Email:
Lighting Consultant __	Name: Position:	Tel: Fax: Handphone: Email:
Acoustic Consultant __	Name: Position:	Tel: Fax: Handphone: Email:
Landscape Architect Site Concepts International Pte Ltd	Name: Mr William Koh Position: Senior Project Manager	Tel: 6221 8826 Fax: 6221 8937 Handphone: 9387 1159 Email: projectsplants_sg@sci.pl.com
_____	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 CMC Construction Pte Ltd	DSC	Name: Mr Toh Sze Seng Position: Project Manager	Tel: 6742 4268 Fax: 6742 4266 Handphone: 9188 6099 Email: cmcbbnh@tathong.com.sg
Air Conditioning & Ventilation Installation Sub-Contractor B&W Airconditioning Pte Ltd	DSC	Name: Mr Mohd. Othman Position: Project Manager	Tel: 6284 1383 Fax: 6284 1160 Handphone: 9852 5149 Email: bwaircon@singnet.com.sg
Plumbing & Sanitary Installation Sub-Contractor Pitney Enterprises Pte Ltd	DSC	Name: Mr Lionel Sng Position: Project Manager	Tel: 6440 9522 Fax: 6345 4690 Handphone: 8228 3833 Email: lionel@pitney.com.sg
Electrical Installation Sub-Contractor Lian Huah Engineering Pte Ltd	DSC	Name: Ms Aileen Ho Position: Project Manager	Tel: 6354 2988 Fax: 6354 2388 Handphone: 9090 1087 Email: aileenho@lianhuah.com
Lift & Escalator Installation Sub-Contractor Fujitec Singapore Corporation Ltd	DSC	Name: Mr Ronnie Pang Position: Project Manager	Tel: 6241 6222 Fax: 6444 7626 Handphone: - Email: -
Fire Fighting & Alarm Installation Sub-Contractor Rico Engineering Pte Ltd	DSC	Name: Mr MH Kamal Position: Project Manager	Tel: 6482 0153 Fax: 6482 0553 Handphone: 8338 4259 Email: mhkamal@ricoeng.com.sg
Dumbwaiter Installation Sub-Contractor Gylet Elevator Co Pte Ltd	DSC	Name: Mr Teo K L Position: Senior Project Manager	Tel: 6288 2822 Fax: 6743 9018 Handphone: 9661 7430 Email: klteo@gylet.com.sg
Carpark System Installation Sub-Contractor		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	Chin Yoke Fah	6378 8556
(b) Diversion		
SP Services:		
(a) Customer Supply	Yip Si Wah	6671 7192
(b) Installation		
(c) Meter Section		
(d) Road Lighting		
TFCC:		
(a) SCV		
(b) SingTel		
(c) IDA	Lee Chong Beng	9649 7719
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	Lam Tong Choy	6731 9385
(b) M&E Plan		
(c) Diversion		
City Gas Pte Ltd:	E Kien Mun	6578 7617
(a) Planning/Submission		
(b) Installation/Inspection		
PowerGas Pte Ltd		
(a) Diversion		
NEA (Pollution Control)		
(a) Planning/Submission		
(b) Inspection		

SECTION 4

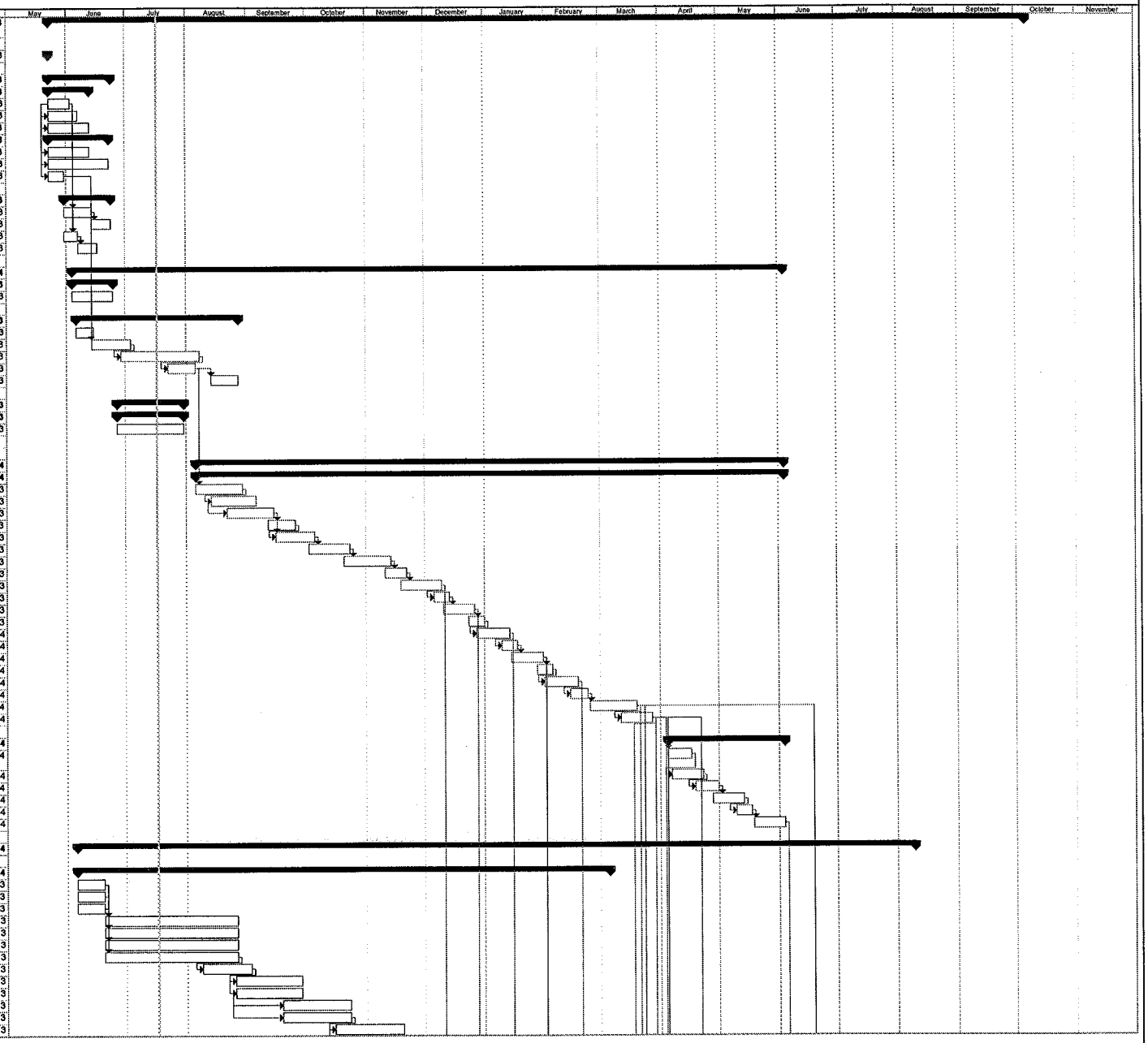
PROGRAMME

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																									

PROPOSED 7-STOREY NURING HOME AT BUKIT BATOK ST 52

ID	Task Name	Duration	Start	Finish
1	**PROPOSED 7 STOREY NURSING HOME AT BUKIT BATOK ST 52**	**435 days**	**Thu 23/5/13**	**Mon 6/10/14**
2				
3	**CONTRACT START DATE**	0 days	Thu 23/5/13	Thu 23/5/13
4				
5	**MOBILISATION**	**31 days**	**Thu 23/5/13**	**Sun 23/6/13**
6	**Authorities Submission**	**20 days**	**Thu 23/5/13**	**Wed 12/6/13**
7	Factory Permits, Insurance ,etc	10 days	Thu 23/5/13	Sun 2/6/13
8	LTA	14 days	Thu 23/5/13	Thu 6/6/13
9	MOM	20 days	Thu 23/5/13	Wed 12/6/13
10	**Site Facilities & Setting Out**	**30 days**	**Thu 23/5/13**	**Sat 22/6/13**
11	Hoarding and Site Offices	20 days	Thu 23/5/13	Wed 12/6/13
12	Temporary Services (Telephones, water, toilets,etc)	30 days	Thu 23/5/13	Sat 22/6/13
13	Survey setting out	7 days	Thu 23/5/13	Thu 30/5/13
14				
15	**Ecm Works**	**24 days**	**Fri 31/5/13**	**Sun 23/6/13**
16	Preparation/Submission	14 days	Fri 31/5/13	Thu 13/6/13
17	Peripheral Cut-off Drainage	10 days	Fri 14/6/13	Sun 23/6/13
18	Wash-bay/Silt Trap	7 days	Fri 31/5/13	Thu 6/6/13
19	Chemical Treatment Plant	10 days	Fri 7/6/13	Sun 16/6/13
20				
21	**STRUCTURAL WORKS**	**317 days**	**Tue 4/6/13**	**Tue 3/6/14**
22	**EXCAVATION WORKS**	**21 days**	**Tue 4/6/13**	**Mon 24/6/13**
23	Excavation to formation level	21 days	Tue 4/6/13	Mon 24/6/13
24				
25	**PILING WORKS**	**76 days**	**Thu 6/6/13**	**Tue 27/8/13**
26	Additional Borehole	9 days	Thu 6/6/13	Fri 14/6/13
27	Ultimate Load Test	20 days	Fri 14/6/13	Wed 3/7/13
28	Working Piles (60 nos.)	35 days	Sat 29/6/13	Wed 7/8/13
29	Working Load Test (No:1)	12 days	Tue 23/7/13	Mon 5/8/13
30	Working Load Test (No:2)	12 days	Wed 14/8/13	Tue 27/8/13
31				
32	**SUBMISSIONS**	**30 days**	**Thu 27/6/13**	**Tue 30/7/13**
33	**Temporary Works Submission**	**30 days**	**Thu 27/6/13**	**Tue 30/7/13**
34	Temporary shoring for excavation	30 days	Thu 27/6/13	Tue 30/7/13
35				
36				
37	**SUB-STRUCTURAL / SUPER-STRUCTURAL**	**269 days**	**Tue 6/8/13**	**Tue 3/6/14**
38	**7 storey Nursing Home Building**	**269 days**	**Tue 6/8/13**	**Tue 3/6/14**
39	Excavation of pile-caps	21 days	Tue 6/8/13	Thu 29/8/13
40	Hacking of pile-head	20 days	Wed 14/8/13	Thu 5/9/13
41	Pilecaps	21 days	Thu 22/8/13	Sat 14/9/13
42	U/G M&E Services within 1st slab (S&P,RWDP, Lea	12 days	Thu 12/9/13	Wed 25/9/13
43	1st Sty Beams/Slab	18 days	Mon 16/9/13	Sat 5/10/13
44	Column&Wall Construction (1st-2nd Sty)	18 days	Thu 3/10/13	Wed 23/10/13
45	2nd Sty Beams/Slab	21 days	Mon 21/10/13	Wed 13/11/13
46	Column & Wall Construction (2nd-3rd Sty)	10 days	Mon 11/11/13	Thu 21/11/13
47	3rd Sty Beams/Slab	18 days	Tue 19/11/13	Mon 9/12/13
48	Column & Wall construction (3rd-4th Sty)	7 days	Fri 6/12/13	Fri 13/12/13
49	4th Sty Beams/Slab	14 days	Wed 11/12/13	Thu 26/12/13
50	Column & Wall construction (4th-5th Sty)	7 days	Tue 24/12/13	Tue 31/12/13
51	5th Sty Beams/Slab	14 days	Sat 28/12/13	Mon 13/1/14
52	Column & Wall construction (5th-6th Sty)	7 days	Fri 10/1/14	Fri 17/1/14
53	6th Sty Beams/Slab	14 days	Wed 15/1/14	Thu 30/1/14
54	Column & Wall construction (6th-7th Sty)	7 days	Tue 28/1/14	Tue 4/2/14
55	7th Sty Beams/Slab	14 days	Sat 1/2/14	Mon 17/2/14
56	Column & Wall construction (7th-Roof Sty)	8 days	Fri 14/2/14	Sat 22/2/14
57	Roof RC Beams/Slab	21 days	Mon 24/2/14	Wed 19/3/14
58	Upper Roof	14 days	Wed 12/3/14	Thu 27/3/14
59				
60	**Outdoor Rehab**	**61 days**	**Sat 5/4/14**	**Tue 3/6/14**
61	U/G M&E Services within 1st slab (S&P,RWDP, Lead-In pipes,etc)	10 days	Sat 5/4/14	Wed 16/4/14
62	1st Sty Beams/Slab	14 days	Mon 7/4/14	Tue 22/4/14
63	Column&Wall Construction (1st-2nd Sty)	10 days	Sat 19/4/14	Wed 30/4/14
64	2nd Sty Beams/Slab	14 days	Mon 28/4/14	Tue 13/5/14
65	Column & Wall Construction (2nd-3rd Sty)	7 days	Sat 10/5/14	Sat 17/5/14
66	3rd Sty Beams/Slab	14 days	Mon 19/5/14	Tue 3/6/14
67				
68	**ARCHITECTURAL/M&E WORKS**	**373 days**	**Thu 6/6/13**	**Sat 9/8/14**
69				
70	**Architectural Material and Shop Drawing Submissions**	**238 days**	**Thu 6/6/13**	**Wed 5/3/14**
71	Anti termite	14 days	Thu 6/6/13	Wed 19/6/13
72	Waterproofing	14 days	Thu 6/6/13	Wed 19/6/13
73	Polyethylene Damp Proofing Membrane	14 days	Thu 6/6/13	Wed 19/6/13
74	Bricks, ALC, pre-cast wall panel	60 days	Thu 20/6/13	Mon 26/8/13
75	Dry wall system, stiffeners and lintol	60 days	Thu 20/6/13	Mon 26/8/13
76	Interlocking pavers	60 days	Thu 20/6/13	Mon 26/8/13
77	Sanitary wares (WC)	60 days	Thu 20/6/13	Mon 26/8/13
78	Cement and Hardeners	21 days	Fri 9/8/13	Mon 2/9/13
79	Door And Iron mongery	30 days	Mon 26/8/13	Sat 28/9/13
80	Window & Aluminium Work	30 days	Mon 26/8/13	Sat 28/9/13
81	Metal works & Substation finishes	30 days	Thu 19/9/13	Wed 23/10/13
82	Ceiling and partition works	30 days	Thu 19/9/13	Wed 23/10/13
83	Wall & Floor tiles	30 days	Wed 16/10/13	Tue 19/11/13

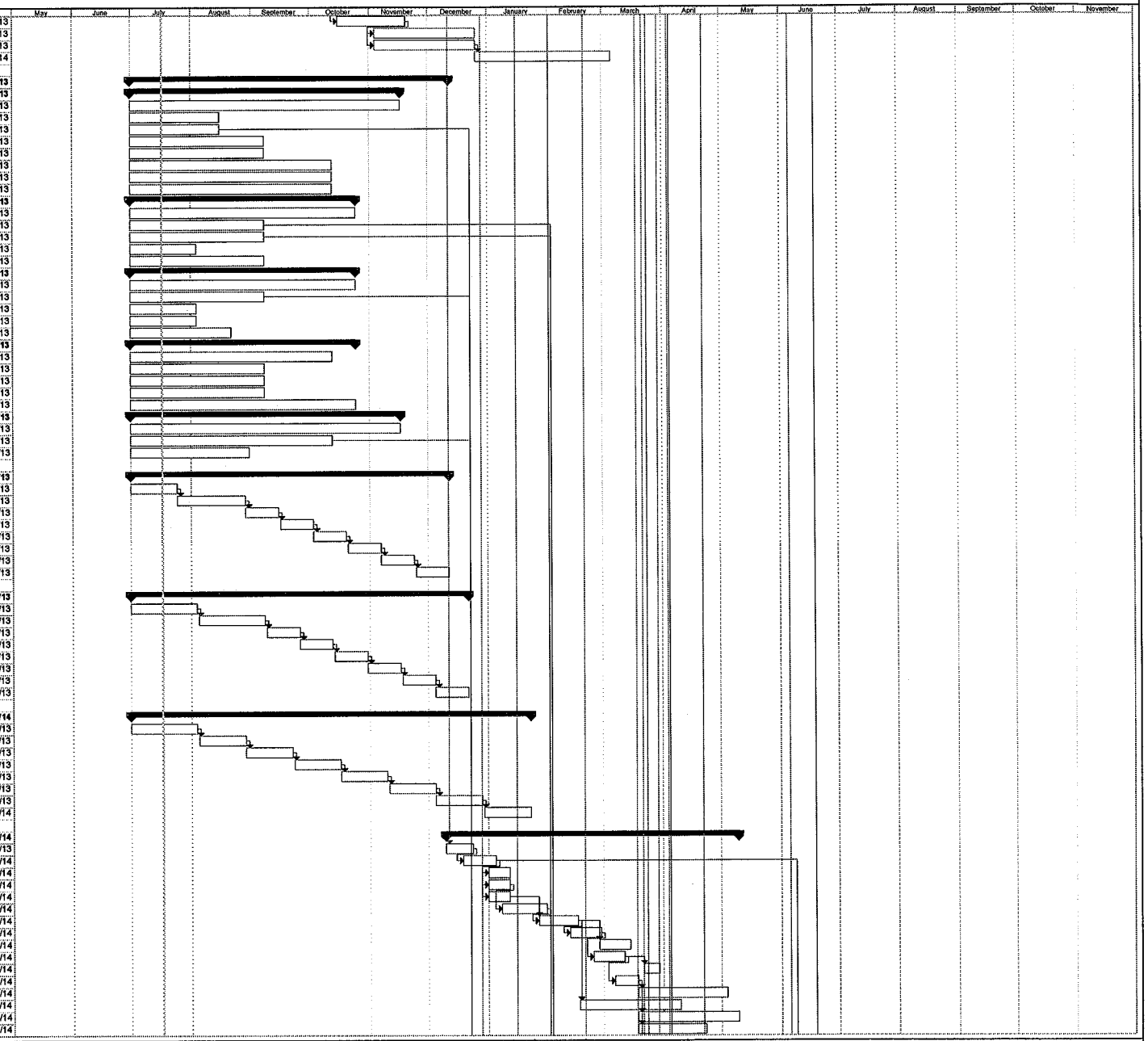


Project: Bukit Batok Nursing Home
Master Program : MP Rev4
16 July 2013

Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Inactive Task | Deadline
Critical Task | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By Summary | Progress

PROPOSED 7-STOREY NURING HOME AT BUKIT BATOK ST 52

ID	Task Name	Duration	Start	Finish
84	Sanitary wares (others)	30 days	Wed 16/10/13	Tue 19/11/13
85	Railings	45 days	Mon 4/11/13	Wed 25/12/13
86	System Furniture / Fitment	45 days	Mon 4/11/13	Wed 25/12/13
87	Landcapes	60 days	Thu 26/12/13	Wed 5/3/14
88				
89	**M&E Shop Dwgs/Samples Submissions**	**141 days**	**Mon 1/7/13**	**Wed 11/12/13**
90	**Electrical**	**120 days**	**Mon 1/7/13**	**Sat 16/11/13**
91	Electrical shop drawings	120 days	Mon 1/7/13	Sat 16/11/13
92	LV switchgear	40 days	Mon 1/7/13	Thu 15/8/13
93	Generator	40 days	Mon 1/7/13	Thu 15/8/13
94	Light and fitments	60 days	Mon 1/7/13	Sat 7/9/13
95	PA Equipment and system	60 days	Mon 1/7/13	Sat 7/9/13
96	Security CCTV & Card Access System	90 days	Mon 1/7/13	Sat 12/10/13
97	Nurse call system	90 days	Mon 1/7/13	Sat 12/10/13
98	Lan system	90 days	Mon 1/7/13	Sat 12/10/13
99	**ACMV**	**100 days**	**Mon 1/7/13**	**Thu 24/10/13**
100	ACMV Shop drawing	100 days	Mon 1/7/13	Thu 24/10/13
101	Fan coil unit	60 days	Mon 1/7/13	Sat 7/9/13
102	Condensing Unit	60 days	Mon 1/7/13	Sat 7/9/13
103	Fire damper	30 days	Mon 1/7/13	Sat 3/8/13
104	Machanical Fan/Exhaust/Fresh Air system	60 days	Mon 1/7/13	Sat 7/9/13
105	**Fire Protection**	**100 days**	**Mon 1/7/13**	**Thu 24/10/13**
106	Fire protection shop drawings	100 days	Mon 1/7/13	Thu 24/10/13
107	Sprinkler water pumps	60 days	Mon 1/7/13	Sat 7/9/13
108	Breeching Inlet	30 days	Mon 1/7/13	Sat 3/8/13
109	Hosereel/Fire Extingusher	30 days	Mon 1/7/13	Sat 3/8/13
110	Hosereel Tank	45 days	Mon 1/7/13	Wed 21/8/13
111	**Lift**	**100 days**	**Mon 1/7/13**	**Thu 24/10/13**
112	Lift shop drawing	90 days	Mon 1/7/13	Sat 12/10/13
113	Lift car	60 days	Mon 1/7/13	Sat 7/9/13
114	Control panels	60 days	Mon 1/7/13	Sat 7/9/13
115	Lift Motors	60 days	Mon 1/7/13	Sat 7/9/13
116	Lift car Finishes	100 days	Mon 1/7/13	Thu 24/10/13
117	**Plumbing**	**120 days**	**Mon 1/7/13**	**Sat 16/11/13**
118	Sanitary and shop drawings	120 days	Mon 1/7/13	Sat 16/11/13
119	Domestic water pump	90 days	Mon 1/7/13	Sat 12/10/13
120	Water tank	53 days	Mon 1/7/13	Fri 30/8/13
121				
122	**M&E Co-ordinated shop drawing**	**141 days**	**Mon 1/7/13**	**Wed 11/12/13**
123	Underground services co-ordination	21 days	Mon 1/7/13	Wed 24/7/13
124	1st sty co-ordinated	30 days	Thu 25/7/13	Wed 28/8/13
125	2nd sty co-ordinated	15 days	Thu 29/8/13	Sat 14/9/13
126	3rd sty co-ordinated	15 days	Mon 16/9/13	Wed 2/10/13
127	4th sty co-ordinated	15 days	Thu 3/10/13	Sat 19/10/13
128	5th sty co-ordinated	15 days	Mon 21/10/13	Wed 6/11/13
129	6th sty co-ordinated	15 days	Thu 7/11/13	Sat 23/11/13
130	7th sty co-ordinated	15 days	Mon 25/11/13	Wed 11/12/13
131				
132	**Structural shop drawing**	**160 days**	**Mon 1/7/13**	**Sat 21/12/13**
133	1st sty penetration	30 days	Mon 1/7/13	Sat 3/8/13
134	2nd sty penetration	30 days	Mon 5/8/13	Sat 7/9/13
135	3rd sty penetration	15 days	Mon 9/9/13	Wed 25/9/13
136	4th sty penetration	15 days	Thu 26/9/13	Sat 12/10/13
137	5th sty penetration	15 days	Mon 14/10/13	Wed 30/10/13
138	6th sty penetration	15 days	Thu 31/10/13	Sat 16/11/13
139	7th sty penetration	15 days	Mon 18/11/13	Wed 4/12/13
140	Roof penetration	15 days	Thu 5/12/13	Sat 21/12/13
141				
142	**Architectural shop drawing**	**177 days**	**Mon 1/7/13**	**Wed 22/1/14**
143	1st sty	30 days	Mon 1/7/13	Sat 3/8/13
144	2nd sty	21 days	Mon 5/8/13	Wed 28/8/13
145	3rd sty	21 days	Thu 29/8/13	Sat 21/9/13
146	4th sty	21 days	Mon 23/9/13	Wed 16/10/13
147	5th sty	21 days	Thu 17/10/13	Sat 9/11/13
148	6th sty	21 days	Mon 11/11/13	Wed 4/12/13
149	7th sty	21 days	Thu 5/12/13	Sat 28/12/13
150	Roof	21 days	Mon 30/12/13	Wed 22/1/14
151				
152	**1st Sty Interior works**	**130 days**	**Tue 10/12/13**	**Fri 9/5/14**
153	Ceiling Skim Coat	12 days	Tue 10/12/13	Mon 23/12/13
154	Walls - Brick wall, pre-cast wall, dry-wall	15 days	Thu 19/12/13	Sat 4/1/14
155	Window Frames/Door Frames	10 days	Wed 1/1/14	Sat 11/1/14
156	M&E 1st Fix (Conduits/Trunking)	10 days	Wed 1/1/14	Sat 11/1/14
157	Wet area waterproofing	10 days	Wed 1/1/14	Sat 11/1/14
158	Plastering	20 days	Wed 8/1/14	Thu 30/1/14
159	Floor Finishes	18 days	Mon 27/1/14	Sat 15/2/14
160	Install Door/Window Panels	14 days	Wed 12/2/14	Thu 27/2/14
161	Install Ceiling	14 days	Thu 27/2/14	Fri 14/3/14
162	Install Fitments / Jointery works	14 days	Mon 24/2/14	Tue 11/3/14
163	Internal Painting	7 days	Sat 22/3/14	Sat 29/3/14
164	M&E Final Fix (fittings)	10 days	Fri 7/3/14	Tue 18/3/14
165	M&E Transformer Room installation	40 days	Wed 19/3/14	Sat 3/5/14
166	M&E Powergrid Switchroom installation	45 days	Mon 17/2/14	Wed 9/4/14
167	M&E LV Switchroom	45 days	Wed 19/3/14	Fri 9/5/14
168	M&E Sprinkler Tank/Pump installation	30 days	Wed 19/3/14	Tue 22/4/14

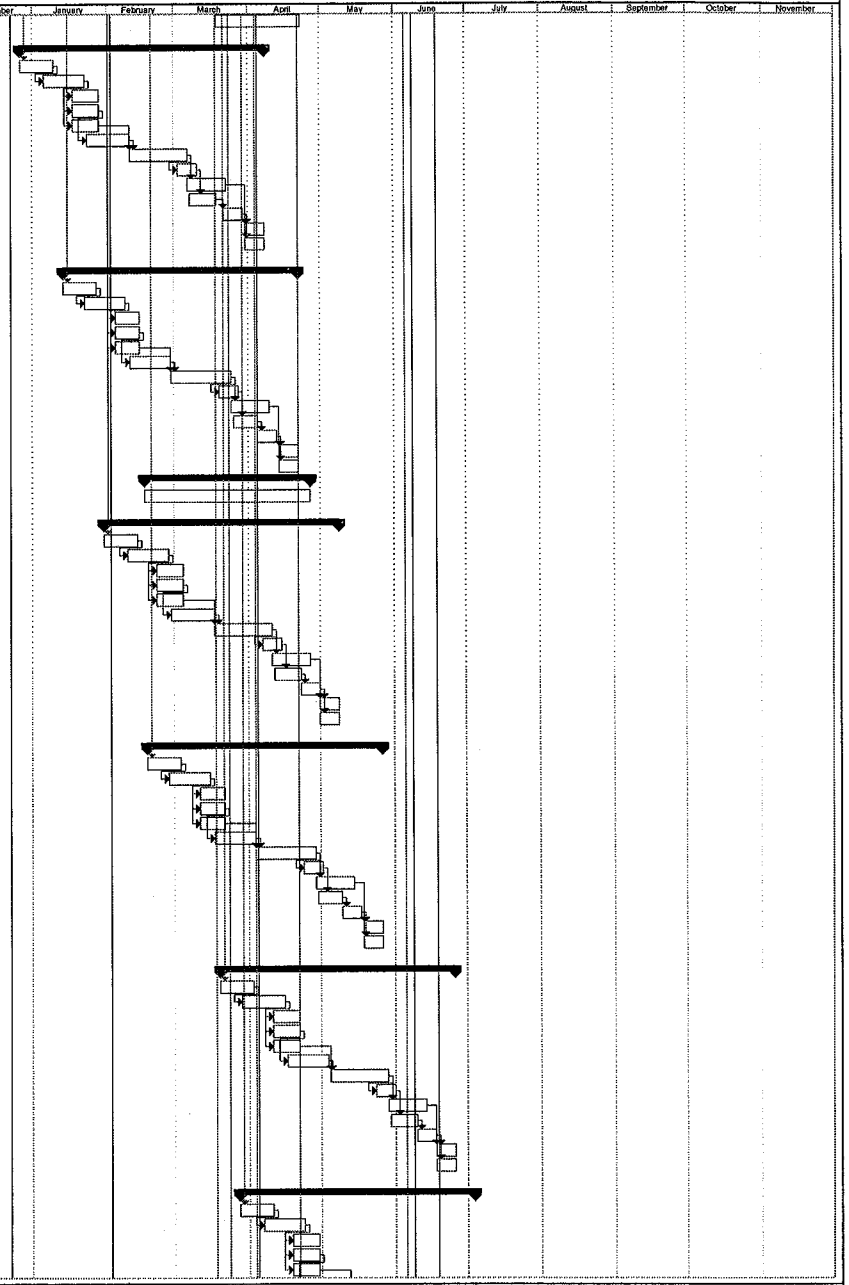


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Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Inactive Task | Deadline
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PROPOSED 7-STOREY NURING HOME AT BUKIT BATOK ST 52

ID	Task Name	Duration	Start	Finish
169	M&E Domestic Transfer Tank Installation	30 days	Wed 19/3/14	Tue 22/4/14
170				
171	**2nd Sty Interior works**	**97 days**	**Fri 27/12/13**	**Mon 7/4/14**
172	Ceiling Skim Coat	12 days	Fri 27/12/13	Thu 9/1/14
173	Walls - Brick wall, pre-cast wall, dry-wall	15 days	Mon 6/1/14	Wed 22/1/14
174	Window Frames/Door Frames	9 days	Sat 18/1/14	Tue 28/1/14
175	M&E 1st Fix (Conduits/Trunking)	9 days	Sat 18/1/14	Tue 28/1/14
176	Wet area waterproofing	9 days	Sat 18/1/14	Tue 28/1/14
177	Plastering	15 days	Fri 24/1/14	Mon 10/2/14
178	Floor Finishes	21 days	Tue 11/2/14	Thu 6/3/14
179	Install Door/Window Panels	7 days	Mon 3/3/14	Mon 10/3/14
180	Install Ceiling	14 days	Fri 7/3/14	Sat 22/3/14
181	Install Fitments / Jointery works	9 days	Sat 8/3/14	Tue 18/3/14
182	Internal Painting	7 days	Sat 22/3/14	Sat 29/3/14
183	M&E Final Fix	7 days	Mon 31/3/14	Mon 7/4/14
184	Install RWDP	7 days	Mon 31/3/14	Mon 7/4/14
185				
186	**3rd Sty Interior works**	**84 days**	**Tue 14/1/14**	**Mon 21/4/14**
187	Ceiling Skim Coat	12 days	Tue 14/1/14	Mon 27/1/14
188	Walls - Brick wall, pre-cast wall, dry-wall	15 days	Thu 23/1/14	Sat 8/2/14
189	Window Frames/Door Frames	9 days	Wed 5/2/14	Fri 14/2/14
190	M&E 1st Fix (Conduits/Trunking)	9 days	Wed 5/2/14	Fri 14/2/14
191	Wet area waterproofing	9 days	Wed 5/2/14	Fri 14/2/14
192	Plastering	15 days	Tue 11/2/14	Thu 27/2/14
193	Floor Finishes	21 days	Fri 28/2/14	Mon 24/3/14
194	Install Door/Window Panels	7 days	Thu 20/3/14	Thu 27/3/14
195	Install Ceiling	14 days	Tue 25/3/14	Wed 9/4/14
196	Install Fitments / Jointery works	9 days	Wed 26/3/14	Fri 4/4/14
197	Internal Painting	7 days	Sat 5/4/14	Sat 12/4/14
198	M&E Final Fix	7 days	Mon 14/4/14	Mon 21/4/14
199	Install RWDP	7 days	Mon 14/4/14	Mon 21/4/14
200	**Mock up at 3rd Storey**	**60 days**	**Mon 17/2/14**	**Sat 26/4/14**
201	Nurse wards	60 days	Mon 17/2/14	Sat 26/4/14
202				
203	**4th Sty Interior works**	**84 days**	**Fri 31/1/14**	**Thu 8/5/14**
204	Ceiling Skim Coat	12 days	Fri 31/1/14	Thu 13/2/14
205	Walls - Brick wall, pre-cast wall, dry-wall	15 days	Mon 10/2/14	Wed 26/2/14
206	Window Frames/Door Frames	9 days	Sat 22/2/14	Tue 4/3/14
207	M&E 1st Fix (Conduits/Trunking)	9 days	Sat 22/2/14	Tue 4/3/14
208	Wet area waterproofing	9 days	Sat 22/2/14	Tue 4/3/14
209	Plastering	15 days	Fri 28/2/14	Mon 17/3/14
210	Floor Finishes	21 days	Tue 18/3/14	Thu 10/4/14
211	Install Door/Window Panels	7 days	Mon 7/4/14	Mon 14/4/14
212	Install Ceiling	14 days	Fri 11/4/14	Sat 26/4/14
213	Install Fitments / Jointery works	9 days	Sat 12/4/14	Tue 22/4/14
214	Internal Painting	7 days	Wed 23/4/14	Wed 30/4/14
215	M&E Final Fix	7 days	Thu 1/5/14	Thu 8/5/14
216	Install RWDP	7 days	Thu 1/5/14	Thu 8/5/14
217				
218	**5th Sty Interior works**	**84 days**	**Tue 18/2/14**	**Mon 26/5/14**
219	Ceiling Skim Coat	12 days	Tue 18/2/14	Mon 3/3/14
220	Walls - Brick wall, pre-cast wall, dry-wall	15 days	Thu 27/2/14	Sat 15/3/14
221	Window Frames/Door Frames	9 days	Wed 12/3/14	Fri 21/3/14
222	M&E 1st Fix (Conduits/Trunking)	9 days	Wed 12/3/14	Fri 21/3/14
223	Wet area waterproofing	9 days	Wed 12/3/14	Fri 21/3/14
224	Plastering	15 days	Tue 18/3/14	Thu 3/4/14
225	Floor Finishes	21 days	Fri 4/4/14	Mon 28/4/14
226	Install Door/Window Panels	7 days	Thu 24/4/14	Thu 1/5/14
227	Install Ceiling	14 days	Tue 29/4/14	Wed 14/5/14
228	Install Fitments / Jointery works	9 days	Wed 30/4/14	Fri 9/5/14
229	Internal Painting	7 days	Sat 10/5/14	Sat 17/5/14
230	M&E Final Fix	7 days	Mon 19/5/14	Mon 26/5/14
231	Install RWDP	7 days	Mon 19/5/14	Mon 26/5/14
232				
233	**6th Sty Interior works**	**84 days**	**Thu 20/3/14**	**Wed 25/6/14**
234	Ceiling Skim Coat	12 days	Thu 20/3/14	Wed 2/4/14
235	Walls - Brick wall, pre-cast wall, dry-wall	15 days	Sat 29/3/14	Tue 15/4/14
236	Window Frames/Door Frames	9 days	Fri 11/4/14	Mon 21/4/14
237	M&E 1st Fix (Conduits/Trunking)	9 days	Fri 11/4/14	Mon 21/4/14
238	Wet area waterproofing	9 days	Fri 11/4/14	Mon 21/4/14
239	Plastering	15 days	Thu 17/4/14	Sat 3/5/14
240	Floor Finishes	21 days	Mon 5/5/14	Wed 28/5/14
241	Install Door/Window Panels	7 days	Sat 24/5/14	Sat 31/5/14
242	Install Ceiling	14 days	Thu 29/5/14	Fri 13/6/14
243	Install Fitments / Jointery works	9 days	Fri 30/5/14	Mon 9/6/14
244	Internal Painting	7 days	Tue 10/6/14	Tue 17/6/14
245	M&E Final Fix	7 days	Wed 18/6/14	Wed 25/6/14
246	Install RWDP	7 days	Wed 18/6/14	Wed 25/6/14
247				
248	**7th Sty Interior works**	**84 days**	**Fri 28/3/14**	**Thu 3/7/14**
249	Ceiling Skim Coat	12 days	Fri 28/3/14	Thu 10/4/14
250	Walls - Brick wall, pre-cast wall, dry-wall	15 days	Mon 7/4/14	Wed 23/4/14
251	Window Frames/Door Frames	9 days	Sat 19/4/14	Tue 29/4/14
252	M&E 1st Fix (Conduits/Trunking)	9 days	Sat 19/4/14	Tue 29/4/14
253	Wet area waterproofing	9 days	Sat 19/4/14	Tue 29/4/14



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Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Inactive Task | Deadline
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PROPOSED 7-STOREY NURING HOME AT BUKIT BATOK ST 52

ID	Task Name	Duration	Start	Finish
254	Plastering	15 days	Fri 25/4/14	Mon 12/5/14
255	Floor Finishes	21 days	Tue 13/5/14	Thu 5/6/14
256	Install Door/Window Panels	7 days	Mon 2/6/14	Mon 9/6/14
257	Install Ceiling	14 days	Fri 6/6/14	Sat 21/6/14
258	Install Fitments / Jointery works	9 days	Sat 7/6/14	Tue 17/6/14
259	Internal Painting	7 days	Wed 18/6/14	Wed 25/6/14
260	M&E Final Fix	7 days	Thu 26/6/14	Thu 3/7/14
261	Install RWDP	7 days	Thu 26/6/14	Thu 3/7/14
262				
263	**Roof/Upper Roof Interior works**	**109 days**	**Sat 5/4/14**	**Sat 9/8/14**
264	Waterproofing	25 days	Sat 5/4/14	Sat 3/5/14
265	Ceiling Skim Coat	12 days	Mon 5/5/14	Sat 17/5/14
266	Walls - Brick wall & pre-cast wall	15 days	Wed 14/5/14	Fri 30/5/14
267	Window Frames/Door Frames	9 days	Tue 27/5/14	Thu 5/6/14
268	M&E 1st Fix (Conduits/Trunking)	9 days	Tue 27/5/14	Thu 5/6/14
269	Plastering	15 days	Mon 2/6/14	Wed 18/6/14
270	Floor Finishes	21 days	Thu 19/6/14	Sat 12/7/14
271	Install Door/Window Panels	7 days	Wed 9/7/14	Wed 16/7/14
272	Install Ceiling	14 days	Mon 14/7/14	Tue 29/7/14
273	Install Fitments / Jointery works	9 days	Tue 15/7/14	Thu 24/7/14
274	Internal Painting	7 days	Fri 25/7/14	Fri 1/8/14
275	M&E Final Fix	7 days	Sat 2/8/14	Sat 9/8/14
276	Install RWDP	7 days	Sat 2/8/14	Sat 9/8/14
277				
278	**Outdoor Rehab Interior works**	**58 days**	**Wed 4/6/14**	**Sat 9/8/14**
279	Ceiling Skim Coat	5 days	Wed 4/6/14	Mon 9/6/14
280	Walls - Brick wall, pre-cast wall, dry-wall	7 days	Thu 5/6/14	Thu 12/6/14
281	Window Frames/Door Frames	5 days	Mon 9/6/14	Fri 13/6/14
282	M&E 1st Fix (Conduits/Trunking)	5 days	Mon 9/6/14	Fri 13/6/14
283	Wet area waterproofing	5 days	Mon 9/6/14	Fri 13/6/14
284	Plastering	7 days	Sat 14/6/14	Sat 21/6/14
285	Floor Finishes	7 days	Mon 23/6/14	Mon 30/6/14
286	Install Door/Window Panels	7 days	Tue 1/7/14	Tue 8/7/14
287	Install Ceiling	7 days	Tue 1/7/14	Tue 8/7/14
288	Install Fitments / Jointery works	7 days	Wed 9/7/14	Wed 16/7/14
289	Install Operable Wall, Aluminium Trellis	7 days	Thu 17/7/14	Thu 24/7/14
290	Internal Painting	7 days	Fri 25/7/14	Fri 1/8/14
291	M&E Final Fix	7 days	Sat 2/8/14	Sat 9/8/14
292	Install RWDP	7 days	Sat 2/8/14	Sat 9/8/14
293				
294				
295	**External Trades (Building)**	**91 days**	**Mon 24/3/14**	**Mon 7/7/14**
296	Aluminium screen/louvres (at water-tank)	21 days	Tue 22/4/14	Thu 15/5/14
297	External Plaster	75 days	Mon 24/3/14	Wed 18/6/14
298	External Painting	30 days	Tue 3/6/14	Mon 7/7/14
299				
300	**Lift Installation**	**352 days**	**Thu 6/6/13**	**Wed 16/7/14**
301	Shop drawings preparation and confirmation	60 days	Thu 6/6/13	Fri 9/8/13
302	Lift confirmation and delivery	180 days	Sat 10/8/13	Fri 7/3/14
303	Handover Lift Shaft	1 day	Sat 22/3/14	Sat 22/3/14
304	Install Internal Scaffolding	10 days	Sat 22/3/14	Wed 2/4/14
305	Install Lift Equipment	90 days	Thu 3/4/14	Wed 16/7/14
306				
307	**M&E Major Equipment Delivery**	**196 days**	**Sat 10/8/13**	**Wed 26/3/14**
308	Lift Equipment	180 days	Sat 10/8/13	Fri 7/3/14
309	Generator Set	60 days	Mon 23/12/13	Sat 1/3/14
310	AC equipment (FCUs and Cus)	45 days	Mon 3/2/14	Wed 26/3/14
311	Water Tanks/Pumps	60 days	Mon 23/12/13	Sat 1/3/14
312				
313	**EXTERNAL WORKS (within boundary)**	**311 days**	**Mon 2/9/13**	**Fri 29/8/14**
314	**Underground Services**	**116 days**	**Mon 2/9/13**	**Mon 13/1/14**
315	Sanitary Drainlines	90 days	Tue 1/10/13	Mon 13/1/14
316	Water Incoming Lines	30 days	Tue 1/10/13	Mon 4/11/13
317	Hydrant/Sprinkler Incoming Pipes	30 days	Fri 1/11/13	Thu 5/12/13
318	Electrical Lead-In Pipes	30 days	Mon 2/9/13	Sat 5/10/13
319	Telecoms Lead-In Pipes	30 days	Mon 2/9/13	Sat 5/10/13
320	Gas Incoming Pipes	30 days	Mon 2/12/13	Sat 4/1/14
321				
322	**Drainage Works**	**49 days**	**Thu 19/6/14**	**Thu 14/8/14**
323	Drain Structure	30 days	Thu 19/6/14	Wed 23/7/14
324	Gratings	19 days	Thu 24/7/14	Thu 14/8/14
325				
326	**Fencing**	**28 days**	**Tue 24/6/14**	**Fri 25/7/14**
327	Footing and Vertical Post	14 days	Tue 24/6/14	Wed 9/7/14
328	Fencing	14 days	Thu 10/7/14	Fri 25/7/14
329				
330	**EXTERNAL ROADWORKS**	**127 days**	**Fri 4/4/14**	**Fri 29/8/14**
331	Footpath	30 days	Fri 4/4/14	Thu 8/5/14
332	Road Kerb	45 days	Fri 9/5/14	Mon 30/6/14
333	Driveway Subbase	30 days	Tue 1/7/14	Mon 4/8/14
334	1st Premix	5 days	Tue 5/8/14	Sat 9/8/14
335	2nd Premix	5 days	Mon 11/8/14	Fri 15/8/14
336	Lamp post	21 days	Tue 1/7/14	Thu 24/7/14
337	Tree Planting & Turfing	45 days	Wed 9/7/14	Fri 29/8/14
338	Road Signage	5 days	Sat 16/8/14	Thu 21/8/14

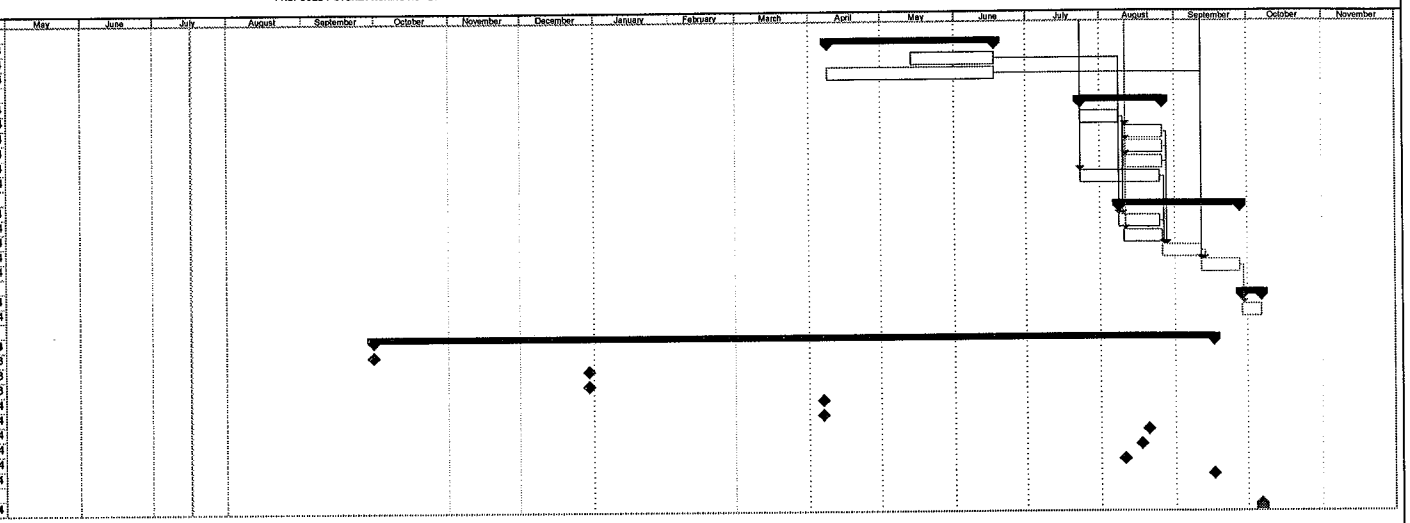


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PROPOSED 7-STOREY NURING HOME AT BUKIT BATOK ST 52

ID	Task Name	Duration	Start	Finish
339				
340	**EXTERNAL WORKS (outside boundary)**	**60 days**	**Wed 9/4/14**	**Tue 17/6/14**
341	Box Culvert Construction	30 days	Wed 14/5/14	Tue 17/6/14
342	Minor Sewer Construction	60 days	Wed 9/4/14	Tue 17/6/14
343				
344	**TESTING & COMMISSIONING**	**29 days**	**Thu 24/7/14**	**Tue 26/8/14**
345	Sanitary & Plumbing	14 days	Thu 24/7/14	Fri 8/8/14
346	Fire Protection (Final)	14 days	Mon 11/8/14	Tue 26/8/14
347	Electrical Services (Final)	14 days	Mon 11/8/14	Tue 26/8/14
348	ACMV (Final)	14 days	Mon 11/8/14	Tue 26/8/14
349	Lift Services (Final)	28 days	Thu 24/7/14	Mon 25/8/14
350				
351	**AUTHORITY INSPECTION**	**43 days**	**Sat 9/8/14**	**Sat 27/9/14**
352	PUB/ENV Inspection	14 days	Sat 9/8/14	Mon 25/8/14
353	Final Pressure Test by City Gas	14 days	Mon 11/8/14	Tue 26/8/14
354	RI Inspection	14 days	Wed 27/8/14	Thu 11/9/14
355	TOP Inspection	14 days	Fri 12/9/14	Sat 27/9/14
356				
357	**CLEANING & HANDOVER**	**7 days**	**Mon 29/9/14**	**Mon 6/10/14**
358	Final Cleaning & Handover	7 days	Mon 29/9/14	Mon 6/10/14
359				
360	**MILESTONE ACTIVITIES**	**301 days**	**Tue 1/10/13**	**Wed 17/9/14**
361	Confirmation of Kitchen specialist contractor	0 days	Tue 1/10/13	Tue 1/10/13
362	Confirmation of Laundry Supplier	0 days	Mon 30/12/13	Mon 30/12/13
363	Confirmation of Bedpan Sanitizer supplier	0 days	Mon 30/12/13	Mon 30/12/13
364	Switchroom Handover to PowerGrid (6 months before comp	0 days	Mon 7/4/14	Mon 7/4/14
365	Handover MDF Room (6 months before completion)	0 days	Mon 7/4/14	Mon 7/4/14
366	Completion of all services in FCC room	0 days	Thu 21/8/14	Thu 21/8/14
367	Power Turn-on	0 days	Mon 18/8/14	Mon 18/8/14
368	Water Turn-on	0 days	Mon 11/8/14	Mon 11/8/14
369	Gas Turn-on	0 days	Wed 17/9/14	Wed 17/9/14
370				
371	**CONTRACT END DATE**	**0 days**	**Mon 6/10/14**	**Mon 6/10/14**



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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	1/2012	5/2012							6/2012
Power Supply Substation	SP PowerGrid Ltd	1/2012	8/2012	9/2012	9/2012					10/2012
Metering Layout	SP Services Ltd									
Sanitary Installation	PUB Water Reclamation (Network) Dept	11/2012	2/2013							2/2013
Domestic Water Supply	PUB (Water Supply) Network Dept	12/2012								
Gas Supply Installation	City Gas Pte Ltd	1/2013	6/2013	6/2013						
Air Conditioning & Ventilation Inst.	FSSD	2/2013								
Fire Fighting & Alarm Installation	FSSD	3/2013								
Telephone Installation	TFCC	1/2012	1/2013							2/2013
Broadband Co-axial Cable System (BCS)	Starhub Cable Vision									
Fuel Storage	FSSD	NA								
	NEA (Pollution Control)	NA								

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:	
PP/VO	✓				

(✓*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	
- Swimming Pool & Filtration Installation	
Other Drawings	
- Electrical Shop Drawings	NKL
- Mechanical Shop Drawings	CH

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	A	C	C	I	
b.	Project Administration	I	A	C	I	I	
c.	Project Cost Estimate/Contract Cost	A	A	I	-	C	
2.	**Drawings**						
a.	Outline Design Drgs.	C	C	C	-	-	
b.	Sketch Design Drgs.	C	C	C	-	-	
c.	Final Design Drgs.	A	C	C	I	I	
d.	Shop Drawings	-	C	C	I	-	
e.	As Built Drgs.	I	I	I	I	-	
3.	**Other Document**						
a.	Specification	A	C	-	-	I	
b.	Tender Document	A	C	I	-	I	
c.	Tender Evaluation Report	-	A	I	-	I	
d.	Design Report	A	C	I	-	-	
e.	Progress Report	I	I	-	-	-	
f.	Financial Report	A	A	I	-	I	
g.	Minutes of Meeting	I	I	-	-	-	
h.	Inspection Report	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	CP5:1998 COP for Electrical Installation
Lightning Protection System	SS555:2010 COP for Protection against Lightning
Emergency Voice Communication System	SS546:2009 COP for Emergency Voice Communication Systems in Building
Air Conditioning & Ventilation Installation	SS553:2009 COP for Air Conditioning and Mechanical Ventilation in Buildings
Lift & Escalator Installation	SS550: 2009 COP for Installation, Operation and Maintenance of Electric Passenger and Goods Lifts
Sprinkler System	CP52:2004 COP for Automatic Fire Sprinkler System
Wet Riser System	SS575:2012 COP for Fire Hydrant, Rising Mains and Hosereel System
Automatic Fire Alarm System	CP10:2005 COP for Installation and Servicing of Electrical Fire Alarm Systems
Sanitary System	COP for Sewerage and Sanitary Works
Plumbing System	CP48:2005 COP for Water Services
Town Gas/LPG Supply System	CP51:2004 COP for Manufactured Gas Pipe Installation
Boiler and Steam Supply System	----
Mechanical Smoke Control System	SS553:2009 COP for Air Conditioning and Mechanical Ventilation in Buildings

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	
DiaLux	4.9		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	
Elevator	-	-	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	Certified
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:	NIL

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	C, A
M&E Cost Estimate Report	C, A
Pre-Qualification of Tenderers	C, A
Tender Documents	C
Tender Report	C, A
Payment Valuation for QS	By DLS
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)*

NOT USED

SECTION 11

LIST OF SUB-JOB

11.1 List of Sub-Job Numbers – NOT USED

Sub Job No	Description	Allocation Details