Alpha
Consulting Engineers Pte Ltd

PROJECT QUALITY PLAN

NASSIM PARK RESIDENCES

For

NASSIM PARK DEVELOPMENTS PTE LTD

Copy No.	1

Prepared By: Lim Chai Hoon / Vivien Tan

Authorised By: Loh Fook Yuen

Date: 11 January 2011

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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	6030-PQP	11 January 2011

1.2 Revision Record

Revision	Date of Issue	Section Reference	Page(s)	Remarks
0	6 July 2007	1 to 10	26	+ 1 pg (Sect 4.1 – Overall Programme
1	30 May 2008	1 to 11	28	+ 1 pg (Sect 4.1 – Overall Programme
2	30 June 2009	1 to 11	28	+ 1 pg (Sect 4.1 – Overall Programme
3	5 May 2010	1 to 11	28	+ 1 pg (Sect 4.1 – Overall Programme
4	11 January 2011	1 to 11	28	+ 1 pg (Sect 4.1 – Overall Programme

SECTION 2

PROJECT INFORMATION

2.1 Project Description

Type of Development	Residential

Statistics of Development	
Site Area, m²	23,082.9
Nett Floor Area, m²	-
Gross Floor Area, m²	35,505.53
Covered Carpark, m²	
No. of Covered Carpark Lots	213
No. of Apartments/Houses	100
No. of Beds (for Hospitals)	-
No. of Guestroom (for Hotels)	-
No. of Blocks / No. of Storeys	2 Blks of 5-Storey & 2 Blks of 5-Storey with an attic condominium
No. of Phases	1

2.2 Project Cost

M&E Services Cost Plan (S$ x 1M)							
Services	EI	ACVI	LEI	FFAI	PSI	SPFI	
Estimate	4.5	4.5	6.8	0.56	2.8	1.3	
Awarded	7.25	5.06	4.24	0.699	2.81	0.941	

Total Project Construction Cost (S$ x1M)			
	Site Clearance	Piling Works	Main Contract
Estimate	-	-	-
Awarded	-	-	148.92

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

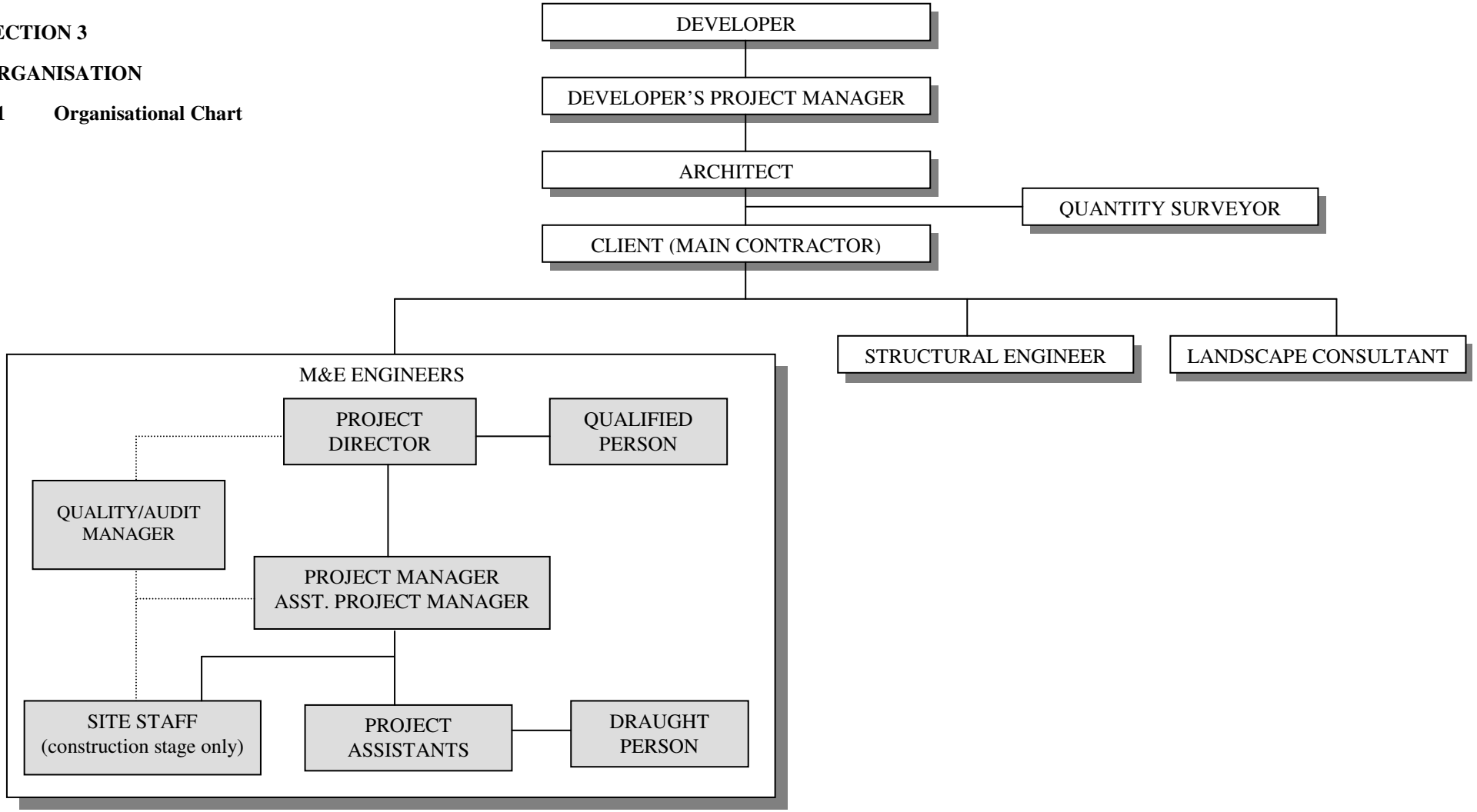
EJECTOR & DIVERTER	✓	SUMP PUMP	✓	FUEL OIL TANK		LIFT & ESCALATOR	✓	PRESSURE VESSEL		HOISTS		FOAM	

(✓*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	Andrew Loh (LCT)
	Electrical	Loh Fook Yuen (LFY)
Project Manager		Loh Fook Yuen (LFY)
Assistant Project Manager		Chim Heng Leong (CHL)
Project Assistant (Mech)		Kevin Kee (KK)
Project Assistant (Elect)		Lim Chai Hoon (LCY) / Vivien Tan (VT)
Draughtsperson		Common Pool
Resident Engineer (M&E)		Ip Yu To
Assistant Resident Engineer (M&E)		-
Clerk-of-Work (M&E)		Lim Lian Peng

3.3 Client/Client's Representatives

Client:	Nassim Park Developments Pte Ltd	Client:	Shimizu Corporation
Address:	101 Thomson Road #33-00 United Square Singapore 307591	Address:	78 Shenton Way #11-01 Lippo Centre Singapore 079120
Tel:	6255 0233	Tel:	6220 0406
Fax:	6252 9822	Fax:	6224 9890

Client's Representatives:

Name of Company	Contact Person	Contact
Nassim Park Developments Pte Ltd	Name: Mr Steven Leow Position: Project Manager	Tel: 6255 0233 Fax: 6252 9822 Handphone: - Email: leow.steven@uol.com.sg
Shimizu Corporation 78 Shenton Way #11-01 Lippo Centre Singapore 079120	Name: Mr Chua Beng Tong Position: Project Director	Tel: 6738 7283 Fax: 6220 3391 Handphone: 9759 9366 Email: chua.bengtong@shimz.biz
	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
Architect SCDA Architects Pte Ltd	Name: Ms Sumina Surya Position: Architect	Tel: 6324 5458 Fax: 6324 5450 Handphone: - Email: s346_nassim_road@scdaarchitects.com
Quantity Surveyor Davis Langdon & Seah Singapore Pte Ltd	Name: Mr Kwan Y L Position: Associate Director	Tel: 6222 3888 Fax: 6224 7089 Handphone: - Email: 5260@dls.com.sg
Structural Engineer TEP Consultants Pte Ltd	Name: Mr Pok Ming Wee Position: Director	Tel: 6339 7277 Fax: 6338 8362 Handphone: 9689 5595 Email: pok_ming_wee@tepc.com.sg
Interior Designer NA	Name: Position:	Tel: Fax: Handphone: Email:
Lighting Consultant Lighting Planners Associates (S) Pte Ltd	Name: Ms Yaeko Otsuka Position: Associate	Tel: 6734 3086 Fax: 6734 2786 Handphone: Email: otsuka@lighting.co.jp
Acoustic Consultant NA	Name: Position:	Tel: Fax: Handphone: Email:
Landscape Consultant Japan Landscape Consultants Ltd	Name: Mr Keiichi Narikawa Position:	Tel: 81+455715204 Fax: 81+455715201 Handphone: Email: k_narikawa@kenkohji.jp
_____	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 Shimizu Corporation	D&B Contractor	Name: Mr Lim Soon Sen Position: M&E Manager	Tel: 6738 7283 Fax: 6220 3391 Handphone: 9109 4049 Email: lim.soonsen@shimz.biz
Air Conditioning & Ventilation Installation Sub-Contractor Leong Hum Engineering Pte Ltd	DSC	Name: Mr Joshua Aung Position: Project Manager	Tel: 6296 8473 Fax: 6296 0213 Handphone: 9180 5724 Email: joshua@leonghum.com.sg
Plumbing & Sanitary Installation Sub-Contractor Hai Yong Engineering Pte Ltd	DSC	Name: Mr Tan Chee Meng Position: Director	Tel: 6553 0503 Fax: 6553 0710 Handphone: 9060 1008 Email: hyengrg@singnet.com.sg
Electrical Installation Sub-Contractor Powen Electrical Engineering Pte Ltd	DSC	Name: Mr Lim Sing Hak Position: Project Manager	Tel: 6303 0269 Fax: 6892 3633 Handphone: 9851 5994 Email: shlim@powen.com.sg
Lift & Escalator Installation Sub-Contractor Hitachi Elevator Engineering (S) Pte Ltd	DSC	Name: Mr Nicholas Li Position: Assisstant Engineering Executive	Tel: 6416 1711 Fax: 6561 0766 Handphone: - Email: kaiming-Li@hees-hitachi.com
Fire Fighting & Alarm Installation Sub-Contractor Sprinkler Engineering Pte Ltd	DSC	Name: Mr Tan Tiong Hin Position: General Manager	Tel: 6453 1488 Fax: 6453 7656 Handphone: 9780 0452 Email: sprinkler@singnet.com.sg
Swimming Pool Filtration Plant Installation Sub-Contractor Aquawork & Engineering Pte Ltd	DSC	Name: Mr Tan Boon Sing Position: Project Director	Tel: 6588 2033 Fax: 6588 2022 Handphone: 9679 5337 Email: bstan@arco.com.sg
Carpark System Installation Sub-Contractor NA		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 Chin Yoke Fah	6823 8556
(b) Diversion		
SP Services:		
(a) Customer Supply	Mr Rick Lim	6823 8008
(b) Installation		
(c) Meter Section		
(d) Road Lighting	Mr Leow Yong Jye	9712 7367
TFCC:		
(a) SCV	Mr Kent Foo	9457 9500
(b) SingTel	Mr Gilbert Ho	9739 9128
(c) IDA	Mr Chiam Choong Juke	6211 1830
BCA:		
(a) Building Plan		
FSSD:		
(a) Building Plan		
(b) M&E Plan	Mr Tan Chee Keong	6848 1491
PUB (Water Supply) Network Dept:		
(a) Water Conservation		
(b) Plumbing Plan	Mr Lee Lai Jie	6731 3669
(c) Diversion		
PUB Water Reclamation (Network) Dept:		
(a) Building Plan/CBPU		
(b) M&E Plan	Mr Tay Swee Hoe	6731 9384
(c) Diversion		
City Gas Pte Ltd:		
(a) Planning/Submission	Mr Liew Khee Boon	6578 7878
(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 programme)

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																									

NASSIM PARK CONDOMINIUM MASTER SCHEDULE

ID		TASK NAME	START	FINISH	DURATION
1		Pre-Construction Stages			
2		Issuance of BP Drawings	Fri 25/1/08	Fri 25/1/08	0 DAYS
3		1st Issuance of Construction Drawings	Tue 11/3/08	Tue 11/3/08	0 DAYS
4		2nd Issuance of Construction Drawings	Thu 24/3/08	Thu 24/3/08	0 DAYS
5					
6		Preparation/Submission of Structure Plans	Fri 1/2/08	Fri 28/3/08	48 DAYS
7		Submission/Approval of Structure Plans (Block 1)	Mon 7/4/08	Mon 14/4/08	6 DAYS
8		Submission/Approval: Permit to Commence Works)	Mon 7/4/08	Wed 16/4/08	8 DAYS
9		Submission/Approval of Structure Plans (Block 2,3 & 4)	Mon 5/5/08	Mon 5/5/08	0 DAYS
10		TOWER Design Stage	Sun 4/1/09	Thu 30/3/09	14 DAYS
11		TOWER Submission and Approval	Fri 21/3/08	Tue 8/5/08	27 DAYS
12					
13		Site Possession	Thu 13/3/08	Thu 13/3/08	0 DAYS
14		Commencement of the Works	Sun 23/3/08	Sun 23/3/08	0 DAYS
15		Hand over of Sub-Station to Powergrid	Thu 22/4/10	Thu 22/4/10	0 DAYS
16		Pre Turn On Inspection by Powergrid	Thu 1/7/10	Thu 1/7/10	0 DAYS
17		Power Turn On	Wed 4/8/10	Wed 4/8/10	0 DAYS
18		SP Services Inspection of Unit Electrical Installation	Sun 23/8/09	Sun 23/8/09	0 DAYS
19		SCV Inspection for Cable Readiness Certificate	Mon 30/8/10	Mon 30/8/10	0 DAYS
20		Singtel and SCV Inspection	Mon 30/8/10	Mon 30/8/10	0 DAYS
21		Lighting Protection-In House Readiness	Sat 1/10/10	Sat 1/10/10	0 DAYS
22		Sanitary Works Inspection-In House & by PUB	Wed 01/9/10	Wed 01/9/10	0 DAYS
23		Ejector / Sump Pumps Inspection by PUB	Wed 1/9/10	Wed 1/9/10	0 DAYS
24		Water Turn On	Wed 15/9/10	Wed 15/9/10	0 DAYS
25		Male Swimming Pool Inspection By Authorities	Thu 1/10/10	Thu 1/12/10	0 DAYS
26		Gas Pressure Testing / Inspection	Tue 1/11/10	Tue 1/11/10	0 DAYS
27		Gas Turn On	Thu 1/12/10	Thu 1/12/10	0 DAYS
28		Pre-FI Inspection	Fri 01/10/10	Fri 01/10/10	0 DAYS
29		FI Inspection	Sun 30/10/10	Sun 30/10/10	0 DAYS
30		TOP Ready	Thu 1/12/10	Thu 1/12/10	0 DAYS
31		Household Shelter Commissioning by BCA	Sat 3/12/10	Sat 3/12/10	0 DAYS
32		LTA (Vehicle Parking) Inspection	Tue 6/12/10	Tue 6/12/10	0 DAYS
33		BCA Inspection	Thu 9/12/10	Thu 9/12/10	0 DAYS
34		Expected TOP	Thu 22/12/10	Thu 22/12/10	0 DAYS
35		Swimming Pool License	Thu 23/12/10	Thu 23/12/10	0 DAYS
36		Certificate of Lift Maintenance and Testing	Thu 23/12/10	Thu 23/12/10	0 DAYS
37					
38		ZONE 4 (BLOCK 4)	Mon 19/1/09	Wed 8/12/10	
39		12--3	Wed 7/15/09	Wed 30/6/10	350 DAYS
40		10--5	Sat 29/8/09	Fri 30/7/10	244 DAYS
41		Superstructure Works			
42		Roofing	Tue 9/3/10	Sat 18/6/10	102 DAYS
43		Attic	Wed 3/2/10	Tue 9/3/10	34 DAYS
44		5F	Wed 30/12/09	Tue 2/2/10	34 DAYS
45		4F	Wed 25/11/09	Wed 30/12/09	35 DAYS
46		3F	Wed 21/10/09	Wed 25/11/09	33 DAYS
47		2F	Wed 16/9/09	Wed 21/10/09	35 DAYS
48					
49		External Wall Finishes			
50		Zone 4C			
51		Substructure Works			
52		1F Slab and Beams	Fri 7/8/09	Sat 12/9/09	31 DAYS
53		Basement Walls / Columns-1F	Mon 13/7/09	Fri 7/8/09	25 DAYS
54		2nd Stage Basement Slab	Mon 8/6/09	Mon 13/7/09	35 DAYS
55		2nd Stage Excavation	Thu 21/5/09	Mon 8/6/09	18 DAYS
56		Raker Struts	Mon 4/5/09	Thu 21/5/09	17 DAYS
57		RC Works for Basement Slab	Mon 30/3/09	Mon 4/5/09	35 DAYS
58		1st Stage Excavation	Fri 20/3/09	Mon 30/3/09	10 DAYS
59					
60		Zone 4B			
61		Substructure Works			
62		1F Slab and Beams	Wed 28/1/09	Fri 20/3/09	51 DAYS
63		Basement Walls / Columns	Wed 24/12/08	Wed 28/1/09	35 DAYS
64		RC Works for Basement Slab/Beams	Thu 27/11/08	Wed 24/12/08	27 DAYS
65		Raker Struts	Sat 1/11/08	Thu 27/11/08	26 DAYS
66		2nd Stage Excavation	Wed 15/10/08	Sat 1/11/08	17 DAYS
67		Raker Struts	Fri 10/9/08	Wed 15/10/08	36 DAYS
68		RC Works for Basement Slab	Fri 15/8/08	Tue 16/9/08	34 DAYS
69		Excavation / RC Works for Lift Pits	Mon 21/7/08	Fri 15/8/08	25 DAYS
70		1st Stage Excavation	Wed 2/7/08	Sat 19/7/08	17 DAYS
71		Soldier Piles / Sheet Piles	Mon 16/6/08	Wed 2/7/08	16 DAYS
72					
73		Zone 4A			
74		Substructure Works			
75		1F Slab and Beams (C-Deck)	Mon 25/7/09	Wed 16/9/09	53 DAYS
76		Basement Walls / Columns-1F	Mon 22/6/09	Sat 25/7/09	33 DAYS
77		2nd Stage Basement Slab	Mon 18/5/09	Mon 22/6/09	33 DAYS
78		RC Works for Ejector Pit	Thu 30/4/09	Mon 18/5/09	20 DAYS
79		Strutting	Tue 21/4/09	Wed 29/4/09	8 DAYS
80		2nd Stage Excavation/Ejector Pit	Mon 13/4/09	Tue 21/4/09	8 DAYS
81		Raker Struts	Thu 26/3/09	Mon 13/4/09	18 DAYS
82		RC Works for Basement Slab	Mon 2/2/09	Thu 26/3/09	52 DAYS
83		Excavation / RC Works for Lift Pits	Mon 29/12/08	Mon 2/2/09	25 DAYS
84		1st Stage Excavation	Thu 11/12/08	Mon 29/12/08	18 DAYS
85		Soldier Piles / Sheet Piles	Mon 24/11/08	Thu 11/12/08	17 DAYS
86					
87		ZONE 1 (BLOCK 1)	Mon 16/8/08	Fri 19/12/10	
88		7C--1	Thu 19/1/09	Sat 30/7/10	253 DAYS
89		Superstructure Works			
90		Roofing	Mon 15/3/10	Sat 26/6/10	103 DAYS
91		5F	Mon 8/2/10	Mon 15/3/10	35 DAYS
92		4F	Mon 4/1/10	Mon 8/2/10	35 DAYS
93		3F	Mon 30/11/09	Mon 4/1/10	35 DAYS
94		2F	Mon 26/10/09	Mon 30/11/09	35 DAYS
95		External Wall Finishes			
96		Zone 1C			
97		Substructure Works			
98		1F Slab and Beams	Tue 18/8/09	Mon 26/10/09	68 DAYS
99		Basement Walls / Columns-1F	Fri 26/6/09	Mon 17/8/09	52 DAYS
100		2nd Stage Basement Slab	Sat 30/5/09	Wed 25/6/09	26 DAYS
101		RC Works for Ejector Pit	Tue 5/5/09	Sat 30/5/09	25 DAYS
102		Strutting	Mon 27/4/09	Tue 5/5/09	8 DAYS
103		2nd Stage Excavation/Ejector Pit	Fri 17/4/09	Sat 25/4/09	7 DAYS
104		Raker Struts	Tue 31/3/09	Fri 17/4/09	17 DAYS
105		RC Works for Basement Slab	Tue 24/2/09	Tue 24/3/09	30 DAYS
106		Excavation / RC Works for Lift Pits	Tue 20/1/09	Tue 24/2/09	35 DAYS
107		1st Stage Excavation	Mon 12/1/09	Tue 20/1/09	8 DAYS
108		Soldier Piles / Sheet Piles	Thu 25/12/08	Mon 12/1/09	18 DAYS
109		Zone 1B			
110		Substructure Works			
111		1F Slab and Beams	Wed 28/1/09	Tue 7/4/09	69 DAYS
112		Basement Walls / Columns-1F	Wed 24/12/08	Wed 28/1/09	35 DAYS
113		Basement Slab : Upper Raft	Wed 19/11/08	Wed 24/12/08	35 DAYS
114		Dewatering	Thu 23/10/08	Wed 19/11/08	27 DAYS
115		Basement Wall : Lower Raft--Upper Raft	Fri 19/9/08	Thu 23/10/08	34 DAYS
116		RC Works for Basement Slab : Lower Raft	Fri 15/8/08	Thu 18/9/08	35 DAYS
117		1st Stage Excavation : Base of Lower Raft	Tue 29/7/08	Fri 15/8/08	17 DAYS
118		Zone 1A			
119		Substructure Works			
120		1F Slab and Beams	Thu 20/11/08	Thu 29/1/09	70 DAYS
121		Basement Walls / Columns	Sat 1/11/08	Thu 27/11/08	26 DAYS
122		Basement Slab	Tue 7/10/08	Sat 1/11/08	25 DAYS
123		RC Works for Storm Water Tank	Fri 10/9/08	Wed 15/10/08	28 DAYS
124		Strutting	Wed 10/9/08	Thu 18/9/08	8 DAYS
125		2nd Stage Excavation SWT	Tue 2/9/08	Wed 10/9/08	8 DAYS
126		Raker Struts	Sat 23/8/08	Tue 2/9/08	10 DAYS
127		RC Works For Basement Slab	Tue 29/7/08	Sat 23/8/08	25 DAYS
128		Excavation / RC Works for Lift Pits	Wed 2/7/08	Tue 29/7/08	27 DAYS
129		1st Stage Excavation	Tue 24/6/08	Wed 2/7/08	8 DAYS
130		Soldier Piles / Sheet Piles	Mon 16/6/08	Tue 24/6/08	8 DAYS
131					
132		ZONE 2 & 3 (BLOCKS 2 AND 3)	Sat 17/5/08	Mon 9/8/10	
133					
134		TOWER CRANES	Thu 15/1/09	Sat 28/11/09	
135		TC--1	Fri 23/1/09	Thu 19/11/09	300 DAYS
136		TC--2	Thu 15/1/09	Sat 28/11/09	316 DAYS
137					
138		Superstructure Works			
139		Roof	Sat 25/7/09	Tue 3/11/09	101 DAYS
140		Attic	Mon 22/6/09	Sat 25/7/09	33 DAYS
141		5F	Mon 18/5/09	Mon 22/6/09	33 DAYS
142		4F	Mon 13/4/09	Mon 18/5/09	35 DAYS
143		3F	Mon 9/3/09	Mon 13/4/09	35 DAYS
144		2F	Mon 2/2/09	Mon 9/3/09	33 DAYS
145		Substructure Works			
146		1F Slab and Beams	Mon 24/11/08	Mon 2/2/09	70 DAYS
147		Basement Walls / Columns	Mon 20/10/08	Mon 24/11/08	35 DAYS
148		Basement Slab	Tue 16/9/08	Mon 20/10/08	34 DAYS
149		2nd Stage Excavation	Wed 10/9/08	Sat 27/9/08	17 DAYS
150		Raker Struts	Sat 23/8/08	Wed 10/9/08	18 DAYS
151		RC Works for Basement Slab	Mon 21/7/08	Sat 23/8/08	35 DAYS
152		Excavation / RC Works for Lift Pits	Wed 2/7/08	Tue 29/7/08	27 DAYS
153		1st Stage Excavation	Mon 16/6/08	Wed 2/7/08	15 DAYS
154		Soldier Piles (250 m)	Thu 29/5/08	Mon 16/6/08	18 DAYS
155		Mobilisation	Sat 9/5/08	Wed 28/5/08	19 DAYS
156					
157					
158		Mock Up	Mon 13/4/09	Thu 3/12/09	
159					
160		External Works			
161					
162		New Main Entrance	Fri 23/5/08	Mon 15/11/10	
163		Finishing Works	Tue 3/8/10	Mon 15/11/10	105 DAYS
164		Temporary Access	Thu 18/12/08	Mon 26/7/10	585 DAYS
165		RC Works	Thu 31/7/08	Thu 18/12/08	140 DAYS
166		Authorities Submission and Approval	Fri 23/5/08	Thu 31/7/08	69 DAYS
167					
168		Basements			
169		First Opening	Fri 29/10/10	Sun 9/12/10	37 DAYS
170		Testing and Commissioning	Fri 27/8/10	Sat 9/11/10	73 DAYS
171		Finish/Painting Works	Tue 9/3/10	Sun 10/10/10	222 DAYS
172		Carpark Marking/Signage	Wed 7/7/10	Sun 30/10/10	116 DAYS
173		Ceiling Works	Wed 3/2/10	Tue 14/9/10	223 DAYS
174		Staircase to MF / Refection Pools	Sat 29/8/09	Mon 16/8/10	353 DAYS
175		Basement Lift Lobbies	Wed 29/7/09	Mon 30/8/10	398 DAYS
176		M & E Works	Wed 1/7/09	Thu 30/9/10	456 DAYS
177		Miscellaneous Structure Works	Fri 15/5/09	Sat 28/12/09	227 DAYS
178					
179		Passage to Temple	Wed 8/9/10	Wed 27/10/10	141 DAYS
180		Softscape	Wed 5/5/10	Wed 27/10/10	176 DAYS
181		Bin Center	Mon 19/4/10	Fri 23/7/10	65 DAYS
182		Hardscape	Mon 15/3/10	Sat 9/10/10	209 DAYS
183		Guard House	Mon 15/3/10	Sat 4/9/10	173 DAYS
184		Drop Off Area	Tue 13/4/10	Mon 8/11/10	213 DAYS
185		Clubhouse	Mon 8/2/10	Wed 27/10/10	262 DAYS
186		Gardens and Ponds	Mon 30/11/09	Wed 27/10/10	332 DAYS
187		Boundary Walls	Sat 12/12/09	Mon 8/11/10	338 DAYS
188		Fire Engine Access	Sat 31/10/09	Sat 30/10/10	363 DAYS
189		Substation	Thu 24/9/09	Thu 22/4/10	210 DAYS
190		Swimming Pools/Lap/Wadding Pools	Tue 18/8/09	Mon 1/11/10	441 DAYS
191		External Perimeter Drains	Mon 25/1/10	Thu 21/10/10	454 DAYS
192					
193		PROVISIONAL SUM ITEMS			
194		Interior Unit Lighting	Mon 1/3/10	Tue 1/11/10	
195		Private Pool Equipment	Mon 1/3/10	Tue 1/11/10	
196		Sanitary Ware	Mon 1/3/10	Tue 1/11/10	
197		Internal Timber Flooring	Wed 1/10/08	Tue 1/11/10	
198		Built In Wardrobes	Wed 1/25/08	Tue 1/11/10	
199		Vanity Cabinets w/ Counter Tops	Wed 1/10/08	Fri 15/11/10	
200		Kitchen Cabinet w/ Counter Tops	Wed 1/10/08	Tue 15/11/10	
201		Kitchen Appliances	Sat 1/11/08	Tue 15/11/10	
202		Shoe Cabinets	Sat 1/11/08	Wed 30/11/10	
203		Lift Interior Finishes	Sat 1/11/08	Wed 30/11/10	
204					
205					
206		Reflective Pool Equipments (External Areas)	Wed 10/12/08	Thu 30/4/10	
207		Special Light Fitting In Clubhouse	Wed 15/10/08	Thu 27/10/10	
208		Softscape Works	Mon 8/12/08	Mon 29/11/10	
209		Hardscape Finishes	Mon 12/1/09	Thu 27/10/10	
210		Children Playground Equipment	Tue 13/10/09	Sat 4/12/10	
211		Landscape Lighting	Wed 15/10/08	Mon 21/11/10	
212		Facade Lighting	Thu 15/1/09	Wed 30/11/10	
213		Fitness Equipments	Sat 17/10/09	Thu 4/11/10	
214		Gymnasium Equipments	Sat 17/10/09	Thu 4/11/10	
215		Pool Deck Furniture	Sat 18/7/09	Thu 18/11/10	
216					
217					
218		PC Rated Items			
219		Internal Stone (Marble Granite)	Tue 30/9/08	Wed 30/11/10	
220		Internal Homogenous Tiles	Tue 30/9/08	Wed 30/11/10	
221		External Stone (Marble Granite)	Mon 1/12/08	Thu 27/10/10	
222		Internal Timber Veneer and Panelling	Sat 1/11/08	Wed 30/11/10	
223		External Glass Mosaic Tiles	Mon 1/12/08	Thu 27/10/10	
224		External Homogenous Tiles	Mon 1/12/08	Thu 27/11/10	
225		External Ceramic Tiles	Mon 1/12/08	Thu 27/10/10	

2008 2009 2010

NASSIM PARK CONDOMINIUM PROJECT

APPROVED

KEY PLAN

OWNER:
NASSIM PARKS DEVELOPMENTS
MR KWAN BOON POON
101 THOMSON ROAD #13-00
UNITED SQUARE
SINGAPORE 307591
TEL : 65 6225 0333 FAX : 65 62520432

ARCHITECT:
S C D A Architects Pte Ltd
10 TOCK LIN ROAD
SINGAPORE 088386
TEL : 6324 8406 FAX : 6324 8480

CIVIL & STRUCTURAL ENGINEER:
TEP CONSULTANTS PTE. LTD.
100 MIDDLE ROAD, #15-04,
PARKVIEW CENTRE, SINGAPORE 188978.
TEL: 63382777 (5 LINES) FAX: 63386988

MECHANICAL & ELECTRICAL ENGINEER :
Alpha Consulting Engineers Pte Ltd
2 ALEXANDRA ROAD #20-03 BLOCK D SINGAPORE 159919
TEL: (65) 6274 2256 FAX: (65) 6276 9628
E-MAIL: alpha@pacific.net.sg WEBSITE: www.alpha.com.sg

LANDSCAPE DESIGN CONSULTANT:

CONTRACTOR:
SHIMIZU CORPORATION
SINGAPORE 079120
Facsimile: 3246900
Tel: 3256488 (10 lines)
75 SHENTON WAY #11-01
Main: 80 21488 SINGAPORE

PROJECT TITLE:
PROPOSED CONDOMINIUM HOUSING DEVELOPMENT COMPRISING 2 BLOCKS OF 5-STOREY & 2 BLOCKS OF 5-STOREY WITH AN ATTIC (TOTAL : 100 UNITS) WITH A BASEMENT CARPARK, SWIMMING POOL AND COMMUNAL FACILITIES ON LOTS 1352L, 1353C & 1056M T.S. 25 AT NO. 15~21 NASSIM ROAD (TANGLIN PLANNING AREA)

DRAWING TITLE:
NASSIM PARK CONDOMINIUM MASTER SCHEDULE

DRAWING NO.	REVISION NO.
NPC-MS-01	A

FILENAME :

SCALE:	DATE:	DRAWN:	CHECKED:
	11 JULY 2008	WKH	

REV	DATE	REMARKS
A	11 JULY 2008	AS PER CONSULTANT COMMENTS

AMENDMENTS:

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	-	5/2/07							23/2/07
Power Supply Substation	SP PowerGrid Ltd	30/11/07	25/4/07	12/5/08	1/6/09					17/6/09
Sanitary Installation	PUB Water Reclamation (Network) Dept	16/7/07	20/3/09							24/3/09
Domestic Water Supply	PUB (Water Supply) Network Dept	29/2/08	26/5/08	17/7/08	19/12/08	5/2/09	19/2/09			14/4/09
Gas Supply Installation	City Gas Pte Ltd	30/9/09	10/9/09	9/10/09	20/10/09					9/11/09
Air Conditioning & Ventilation Inst.	FSSD	30/10/09	11/1/10							15/1/10
Fire Fighting & Alarm Installation	FSSD	30/11/09	10/11/09	11/12/09	5/1/10					14/1/10
Telephone Installation	TFCC	30/1/08	14/7/08							8/8/08
Broadband Co-axial Cable System (BCS)	Starhub Cable Vision	31/12/08	14/7/08							8/8/08

SECTION 4

PROGRAMME

4.3 Authority Submission Status for M&E Services (Amendments) - 2nd Submission

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	14/6/2010	11/6/2010							29/6/2010
Air Conditioning & Ventilation Inst.	FSSD	20/12/2010	21/12/2010							30/12/2010
Fire Fighting & Alarm Installation	FSSD	7/1/2011	4/1/2011							
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	✓	- IC	✓	-EC/MC	✓
-VO-Purchaser's Request -1ST to 3rd Storey	✓	-VO-E/M/M&E	✓		
-VO-Purchaser's Request -4th to 5th Storey	✓				

(✓*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	LCY
Incoming Architectural Sketches/Details	LCY
Incoming Structural Drawings	LCY
M&E Drawings - Electrical Installation	LCY
- Lift & Escalator Installation	LCY
- Air Conditioning & Ventilation Installation	CHL
- Fire Fighting & Alarm Installation	CHL
- Plumbing & Sanitary Installation	CHL
- Swimming Pool & Filtration Installation	CHL
Other Drawings - Interior Design	LCY
- Landscape	LCY

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

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

Electrical Wiring	~~BS~~	SS	~~IEE~~	~~NFPA~~		
Lightning Protection System	~~BS~~	SS				
Emergency Voice Communication System	~~BS~~	SS	~~NFPA~~			
Air Conditioning & Ventilation Installation	~~BS~~	AS	~~NFPA~~	SS	~~MS~~	
Lift & Escalator Installation	~~BS~~	SS				
Sprinkler System	~~BS~~	SS	~~NFPA~~	~~AS~~	~~LPC~~	
Dry Riser System	~~BS~~	SS	~~NFPA~~	~~AS~~	~~MS~~	
Automatic Fire Alarm System	~~BS~~	SS	~~NFPA~~	~~AS~~	~~MS~~	
Sanitary System	~~BS~~	SS	~~NFPA~~	~~AS~~	~~MS~~	
Plumbing System	~~BS~~	~~SS~~	~~NFPA~~	~~AS~~	~~MS~~	
Town Gas/LPG Supply System	~~BS~~	SS	~~NFPA~~	~~AS~~		
Boiler and Steam Supply System	~~ASME~~	~~BS~~	~~AS~~			
Mechanical Smoke Control System	~~BS~~	~~NFPA~~	~~AS~~			

(Delete where necessary)

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 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	✓

8.5 List of Software Used For Design/Analysis

DESCRIPTION/ PACKAGE NAME	VERSION	SUPPLIER/ SOURCE	PURPOSE	
Calculux	5.05	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	N.A
Green Design Features	N.A

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:	N.A

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
M&E Cost Estimate Report	N.A
Pre-Qualification of Tenderers	N.A
Tender Documents	I
Tender Report	N.A
Payment Valuation for QS	I
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