Alpha
Consulting Engineers Pte Ltd

PROJECT QUALITY PLAN

PROPOSED CONDOMINIUM HOUSING DEVELOPMENT COMPRISING OF 5 BLOCKS OF 19 STOREY APARTMENT BLOCK (TOTAL 348 UNIT) AT DAKOTA CRESCENT

For

RIVERSHORE PTE LTD

Copy No.	1

Prepared By: Yip Yoke Fun

Authorised By: Goh Soon Huat

Date: 26 May 2010

TABLE OF CONTENTS

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

TABLE OF CONTENTS

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

SECTION 1

QUALITY PLAN CONTROL AND DISTRIBUTION

1.1 List of Copy Holders

Copy No.	Copy Holder	Date of Issue
1	6063-PQP	2 January 2008

1.2 Revision Record

Revision	Date of Issue	Section Reference	Page(s)	Remarks
0	2 January 2008	1 to 11	28	+ 1 pg (Sect 4.1 – Overall Programme)
1	9 June 2009	1 to 11	28	+ 1 pg (Sect 4.1 – Overall Programme)
2	26 May 2010	1 to 11	28	+ 2 pgs (Sect 4.1 – Overall Programme & Sect 9.1 – Sustainable Design Features/ Criteria)

SECTION 2

PROJECT INFORMATION

2.1 Project Description

Type of Development	Residential

Statistics of Development	
Site Area, m²	11601.40
Nett Floor Area, m²	-
Gross Floor Area, m²	44664.03
Covered Carpark, m²	(Approx) 12,000
No. of Covered Carpark Lots	353
No. of Apartments/Houses	348
No. of Beds (for Hospitals)	NA
No. of Guestroom (for Hotels)	NA
No. of Blocks / No. of Storeys	5 Blocks of 19-storey with a basement level
No. of Phases	1

2.2 Project Cost

M&E Services Cost Plan (S$ x 1M)							
Services	EI	ACVI	LEI	FFAI	PSI	SPFI (including water feature)	
Estimate	-	-	-	-	-	-	
Awarded	8.3	4.5	1.7	0.75	5.1	0.48	

Total Project Construction Cost (S$ x1M)			
	Site Clearance	Piling Works	Main Contract
Estimate	-	-	-
Awarded	-	Included	131

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

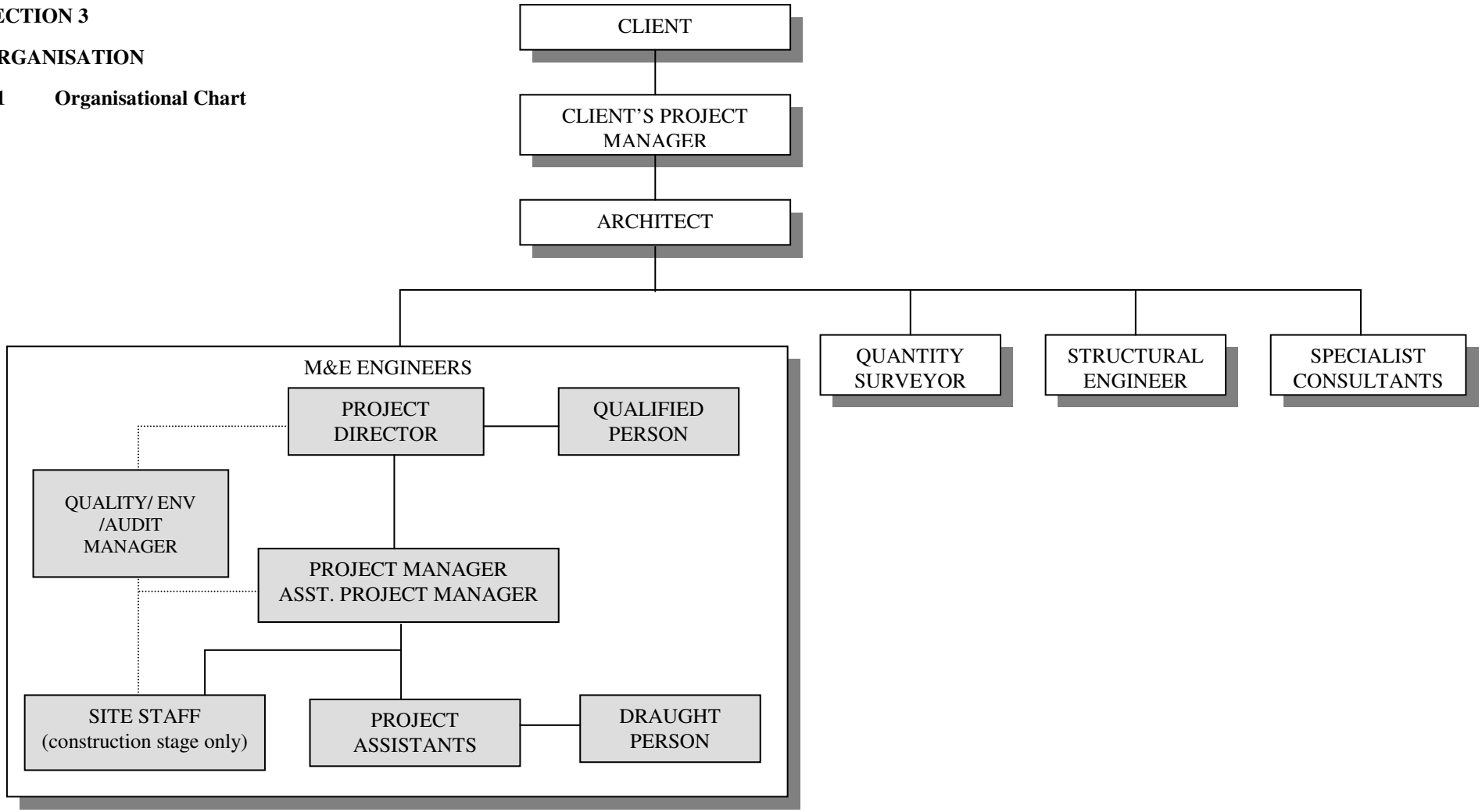
EJECTOR & DIVERTER	✓	SUMP PUMP	✓	FUEL OIL TANK		LIFT & ESCALATOR	✓	PRESSURE VESSEL		HOISTS		FOAM	

(✓*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		Yip Yoke Fun (YYF)
Assistant Project Manager		Goh Soon Huat (GSH)
Project Assistant (Mech)		-
Project Assistant (Elect)		Winston Chee (WC)
Draughtsperson		Common Pool
Resident Engineer (M&E)		-
Assistant Resident Engineer (M&E)		-
Clerk-of-Work (M&E)		-

3.3 Client/Client's Representatives

Client: (Developer)	RIVERSHORE PTE LTD	Client: (Main Contractor)	Dragages Singapore Pte Ltd
Address:	No. 1 Marina Boulevard #15-05 One Marina Boulevard Singapore 018989	Address:	19 Keppel Road #09-01/04 & #10-00 Jit Poh Building Singapore 089058
Tel:	6213 8822	Tel:	6227 3551
Fax:	6327 5966	Fax:	6227 2652

Client's Representatives:-

Name of Company	Contact Person	Contact
Ho Bee Investment Ltd (Developer JV)	Name: Mr Choong Kar Fai Position: Project Manager	Tel: 6843 0725 Fax: 6745 9167 Handphone: 9677 0304 Email: karfai@hobee.com
Choicehomes Investment Pte Ltd (Developer JV)	Name: Mr Ronnie Tok Position: General Manager	Tel: 6213 8819 Fax: 63275966 Handphone: - Email: toksh@ntuc-choicehomes.com
Choiceshomes Investment Pte Ltd (Developer JV)	Name: Mr Lee Leong Seng Position: Senior Project Manager	Tel: 6213 8821 Fax: 6327 5966 Handphone: - Email: leels@ntuc-choicehomes.com
Dragages Singapore Pte Ltd (Main Contractor)	Name: Mr Allan tan Position: Project Director	Tel: 6227 3551 Fax: 6227 2652 Handphone: 9669 0722 Email: allan.tan@bouygues-construction.com

3.4 **Other Consultants** (Local)

Function / Name of Company	Contact Person	Contact
Architect Architects 61 Pte Ltd	Name: Mr Chan Mun Kit Position: Associates	Tel: 6393 6876 Fax: 6732 5439 Handphone: - Email: munkit@a61.com.sg
Quantity Surveyor KPK Quantity Surveyors (S) Pte Ltd	Name: Ms Chang Yen Lin Position: Project Director	Tel: 6239 7488 Fax: 6536 2633 Handphone: - Email: yenlin@kpkqs.com.sg
Structural Engineer KTP Consultants Pte Ltd	Name: Mr Song Wee Ngee Position: Managing Director	Tel: 6273 5622 Fax: 6273 8454 Handphone: 9388 6878 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 Consultant DLQ Design Pte Ltd	Name: Ms Lena Quek Position: Director	Tel: 6738 0171 Fax: 6738 3124 Handphone: 9367 6813 Email: lenaquek@dlqdesign.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 Dragages Singapore Pte Ltd	DC	Name: Mr Allan Tan G H Position: Project Director	Tel: 6227 3551 Fax: 6227 2652 Handphone: 9669 0722 Email: allan.tan@bouygues-construction.com
Air Conditioning & Ventilation Installation Sub-Contractor Kembla Air-Con (S) Pte Ltd	DSC	Name: Mr Tey Kok Cheng Position: Managing Director	Tel: 6747 3600 Fax: 6 7472989 Handphone: 9639 3289 Email: kemblaac@singnet.com.sg
Plumbing & Sanitary Installation Sub-Contractor King Wan Construction Pte Ltd	DSC	Name: Mr Siow Nyoke Khoon Position: Principal Project Manager	Tel: 6368 4300 Fax: 6368 1016 Handphone: 9018 3300 Email: kwc@kingwan.com.sg
Electrical Installation Sub-Contractor Pro-Soon Electrical Engineering Pte Ltd	DSC	Name: Mr Goh Lay Koon Position: Project Manager	Tel: 6484 6266 Fax: 6482 4512 Handphone: 9126 1885 Email: gohlaykoon@pro-soon.com
Lift & Escalator Installation Sub-Contractor Chevalier S'pore Holding Pte Ltd	DSC	Name: Mr B R Prasad Position: Project Manager	Tel: 6273 2266 Fax: 6747 2988 Handphone: - Email: prasad@chevalier.com.sg
Fire Fighting & Alarm Installation Sub-Contractor King Wan Construction Pte Ltd	DSC	Name: Mr Jeffrey Wong Position: Project Manager	Tel: 6368 4300 Fax: 6368 1016 Handphone: 9018 3300 Email: kwc@kingwan.com.sg
Swimming Pool Filtration Plant Installation Sub-Contractor BES Technology Pte Ltd	DSC	Name: Mr Darren Lim Position: Project Manager	Tel: 6454 1788 Fax: 6454 0100 Handphone: - Email: atlim@bestech.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 Yeo Cheng Hee	68238552/ 68238564
(b) Diversion	Mr Zain	62409211/ 90618224
SP Services:		
(a) Customer Supply		
(b) Installation		
(c) Meter Section		
(d) Road Lighting		
TFCC:		
(a) SCV		
(b) SingTel	Mr Lee Him Buan	96531397/ 64406304
(c) IDA		
BCA:		
(a) Building Plan		
FSSD:		
(a) Building Plan		
(b) M&E Plan	Mr Ridzuwan Supari	6848 1418
PUB (Water Supply) Network Dept:		
(a) Water Conservation		
(b) Plumbing Plan	Ms Cheng Kia Yin	6731 3683
(c) Diversion		
PUB Water Reclamation (Network) Dept:		
(a) Building Plan/CBPU		
(b) M&E Plan		
(c) Diversion		
City Gas Pte Ltd:		
(a) Planning/Submission	Mr Liew Khee Boon	6578 7603
(b) Installation/Inspection	Mr Lim Teck Seng	6578 7814
PowerGas Pte Ltd		
(a) Diversion	Mr Abdul Aziz Bin Aidi	6823 8621
NEA (Pollution Control)		
(a) Planning/Submission		
(b) Inspection		

SECTION 4

PROGRAMME

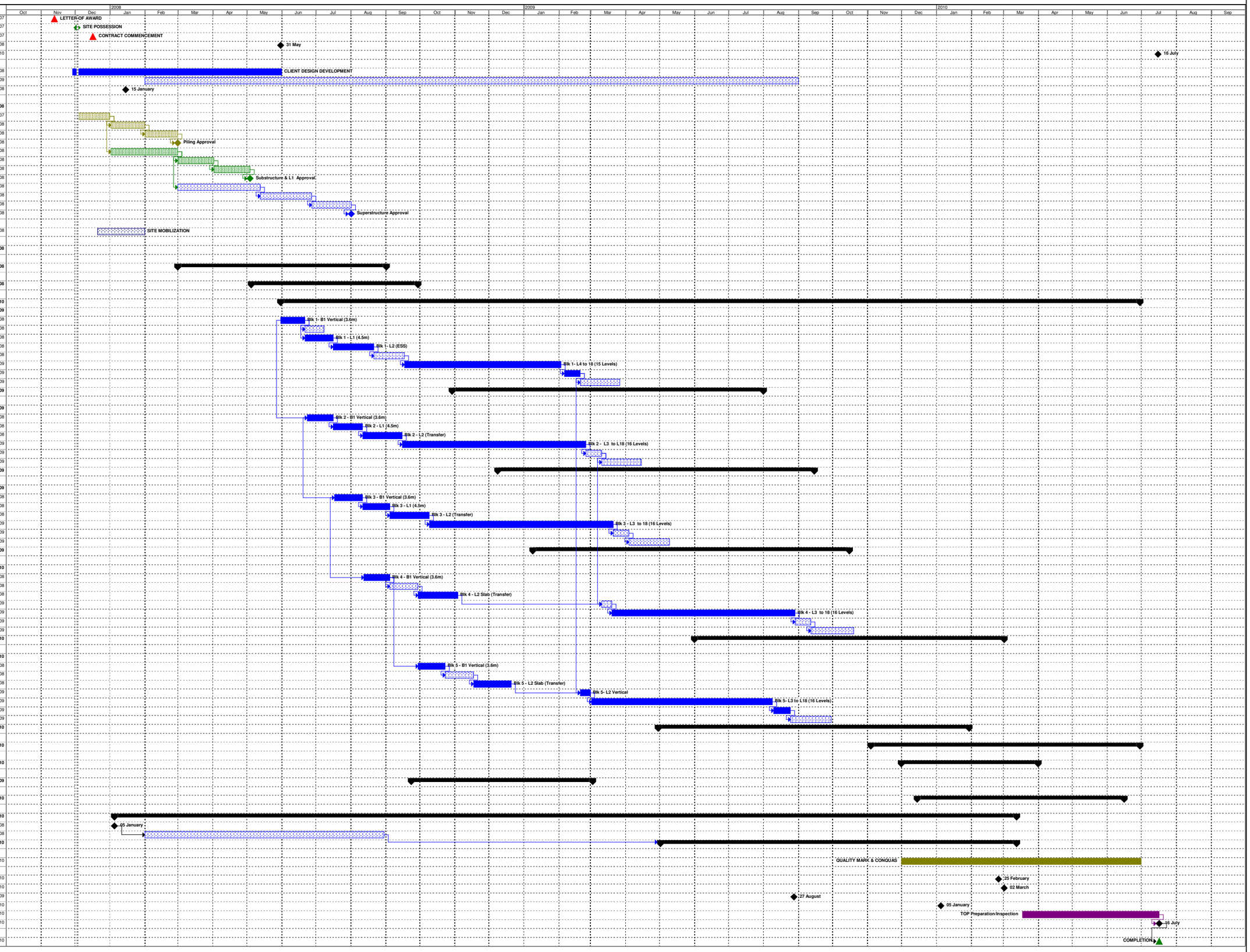
4.1 Overall Programme (refer to attached master programme)

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																									

CONDOMINIUM DEVELOPMENT @ DAKOTA CRESCENT

MASTER PROGRAMME Rev. 0
Date: Mon 03-12-07

ID	Activity	Duration	Start	Finish
1	**LETTER OF AWARD**	0 days	Tue 13-11-07	Tue 13-11-07
2	**SITE POSSESSION**	0 days	Mon 03-12-07	Mon 03-12-07
3	**CONTRACT COMMENCEMENT**	0 days	Mon 17-12-07	Mon 17-12-07
4	**RETURN OF SHOW FLAT LAND**	0 days	Sat 31-05-08	Sat 31-05-08
5	**END OF CONTRACT**	0 days	Fri 16-07-10	Fri 16-07-10
6				
7	**CLIENT DESIGN DEVELOPMENT**	149 days	Thu 29-11-07	Sat 31-05-08
8	**CONSTRUCTION SHOP DRAWING DEVELOPMENT**	476 days	Fri 01-02-08	Mon 31-08-09
9	**BP Approval**	0 days	Tue 15-01-08	Tue 15-01-08
10				
11	**STRUCTURAL DESIGN DEVELOPMENT**	**200 days**	**Mon 03-12-07**	**Fri 01-08-08**
12	**Piling Design**	24 days	Mon 03-12-07	Mon 31-12-07
13	Piling AC	25 days	Wed 02-01-08	Thu 31-01-08
14	Piling BCA Submission	21 days	Fri 01-02-08	Fri 29-02-08
15	Piling Approval	0 days	Fri 29-02-08	Fri 29-02-08
16	**Substructure & L1 Design**	46 days	Wed 02-01-08	Fri 29-02-08
17	Substructure & L1 AC	27 days	Sat 01-03-08	Tue 01-04-08
18	Substructure & L1 BCA Submission	26 days	Wed 02-04-08	Sat 03-05-08
19	Substructure & L1 Approval	0 days	Sat 03-05-08	Sat 03-05-08
20	**Superstructure Design**	60 days	Sat 01-03-08	Mon 12-05-08
21	Superstructure AC	40 days	Tue 13-05-08	Fri 27-06-08
22	Superstructure BCA Submission	30 days	Fri 27-06-08	Fri 01-08-08
23	Superstructure Approval	0 days	Fri 01-08-08	Fri 01-08-08
24				
25	**SITE MOBILIZATION**	33 days	Fri 21-12-07	Thu 31-01-08
26				
27	**TEMPORARY WORKS**	**157 days**	**Wed 19-12-07**	**Sat 28-06-08**
32				
33	**Piling Works**	**155 days**	**Sat 01-03-08**	**Mon 01-09-08**
39				
40	**SUBSTRUCURE WORKS**	**126 days**	**Mon 05-05-08**	**Mon 29-09-08**
43				
44	**SUPERSTRUCTURE WORKS**	**633 days**	**Sat 31-05-08**	**Tue 29-06-10**
45	**Blk 1 (7616.3sqm)**	**355 days**	**Sat 31-05-08**	**Fri 31-07-09**
46	Blk 1- B1 Vertical (3.6m)	20 days	Sat 31-05-08	Sat 21-06-08
47	Blk 1 - B1-L1 Ramp	14 days	Sat 21-06-08	Tue 08-07-08
48	Blk 1 - L1 (4.5m)	21 days	Sat 21-06-08	Wed 16-07-08
49	Blk 1- L2 (ESS)	30 days	Wed 16-07-08	Thu 21-08-08
50	Blk 1 - L3 (Transfer)	23 days	Thu 21-08-08	Wed 17-09-08
51	Blk 1- L4 to 18 (15 Levels)	115 days	Wed 17-09-08	Mon 02-02-09
52	Blk 1 - L19	12 days	Fri 06-02-09	Thu 19-02-09
53	Blk 1 - Roof	30 days	Fri 20-02-09	Thu 26-03-09
54	**Blk 1 - Trades & Finishes**	**225 days**	**Wed 29-10-08**	**Fri 31-07-09**
75				
76	**Blk 2 (9427.1sqm)**	**371 days**	**Mon 23-06-08**	**Mon 14-09-09**
77	Blk 2 - B1 Vertical (3.6m)	20 days	Mon 23-06-08	Wed 16-07-08
78	Blk 2 - L1 (4.5m)	21 days	Wed 16-07-08	Mon 11-08-08
79	Blk 2 - L2 (Transfer)	30 days	Mon 11-08-08	Mon 15-09-08
80	Blk 2 - L3 to L18 (16 Levels)	133 days	Mon 15-09-08	Tue 24-02-09
81	Blk 2 - L19	12 days	Wed 25-02-09	Tue 10-03-09
82	Blk 2 - Roof	30 days	Wed 11-03-09	Tue 14-04-09
83	**Blk 2 - Trades & Finishes**	**228 days**	**Mon 08-12-08**	**Mon 14-09-09**
104				
105	**Blk 3 (9314.8sqm)**	**375 days**	**Thu 17-07-08**	**Thu 15-10-09**
106	Blk 3 - B1 Vertical (3.6m)	20 days	Thu 17-07-08	Mon 11-08-08
107	Blk 3 - L1 (4.5m)	21 days	Mon 11-08-08	Thu 04-09-08
108	Blk 3 - L2 (Transfer)	30 days	Thu 04-09-08	Thu 09-10-08
109	Blk 3 - L3 to 18 (16 Levels)	133 days	Thu 09-10-08	Fri 20-03-09
110	Blk 3 - L19	12 days	Sat 21-03-09	Fri 03-04-09
111	Blk 3 - Roof	30 days	Sat 04-04-09	Sat 09-05-09
112	**Blk 3 - Trades & Finishes**	**228 days**	**Thu 08-01-09**	**Thu 15-10-09**
133				
134	**Blk 4 (9579.6sqm)**	**467 days**	**Tue 12-08-08**	**Mon 01-03-10**
135	Blk 4 - B1 Vertical (3.6m)	20 days	Tue 12-08-08	Thu 04-09-08
136	Blk 4 - L1 (4.5m)	21 days	Thu 04-09-08	Mon 29-09-08
137	Blk 4 - L2 Slab (Transfer)	30 days	Mon 29-09-08	Mon 03-11-08
138	Blk 4 L2 Vertical	8 days	Wed 11-03-09	Thu 19-03-09
139	Blk 4 - L3 to 18 (16 Levels)	133 days	Fri 20-03-09	Fri 28-08-09
140	Blk 4 - L19	12 days	Sat 29-08-09	Fri 11-09-09
141	Blk 4 - Roof	30 days	Sat 12-09-09	Mon 19-10-09
142	**Blk 4 - Trades & Finishes**	**225 days**	**Mon 01-06-09**	**Mon 01-03-10**
163				
164	**Blk 5 (8205.0sqm)**	**400 days**	**Mon 29-09-08**	**Fri 29-01-10**
165	Blk 5 - B1 Vertical (3.6m)	20 days	Mon 29-09-08	Thu 23-10-08
166	Blk 5 - L1 (4.5m)	21 days	Thu 23-10-08	Mon 17-11-08
167	Blk 5 - L2 Slab (Transfer)	30 days	Mon 17-11-08	Sat 20-12-08
168	Blk 5- L2 Vertical	8 days	Fri 20-02-09	Sat 28-02-09
169	Blk 5- L3 to L18 (16 Levels)	133 days	Mon 02-03-09	Sat 08-08-09
170	Blk 5 - L19	12 days	Mon 10-08-09	Mon 24-08-09
171	Blk 5 - Roof	30 days	Tue 25-08-09	Tue 29-09-09
172	**Blk 5 - Trades & Finishes**	**225 days**	**Thu 30-04-09**	**Fri 29-01-10**
193				
194	**L2 Podium Works**	**201 days**	**Wed 04-11-09**	**Tue 29-06-10**
200				
201	**Ancillary Buildings**	**101 days**	**Tue 01-12-09**	**Wed 31-03-10**
205				
206	**Sub-Station**	**131 days**	**Tue 23-09-08**	**Mon 02-03-09**
209				
210	**Level 1 External Works**	**155 days**	**Tue 15-12-09**	**Tue 15-06-10**
214				
215	**Lift**	**658 days**	**Sat 05-01-08**	**Fri 12-03-10**
216	Lift Contract Award	0 days	Sat 05-01-08	Sat 05-01-08
217	Equipment Ordering	175 days	Fri 01-02-08	Sat 30-08-08
218	**Lift Installation**	**259 days**	**Sat 02-05-09**	**Fri 12-03-10**
224				
225	**QUALITY MARK & CONQUAS**	179 days	Tue 01-12-09	Wed 30-06-10
226				
227	**RI Inspection (M&E)**	0 days	Thu 25-02-10	Thu 25-02-10
228	**RI Inspection (Architecture)**	0 days	Tue 02-03-10	Tue 02-03-10
229	**Power Turn On**	0 days	Thu 27-08-09	Thu 27-08-09
230	**Water Turn On**	0 days	Tue 05-01-10	Tue 05-01-10
231	**TOP Preparation/Inspection**	104 days	Thu 18-03-10	Fri 16-07-10
232	**TOP**	0 days	Fri 16-07-10	Fri 16-07-10
233				
234	**COMPLETION**	0 days	Fri 16-07-10	Fri 16-07-10



SECTION 4

PROGRAMME

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

Service	Authority	Original Submission		Comments/Resubmission						Approval/ Clearance
		Scheduled	Actual	Comment	Resubmit	Comment	Resubmit	Comment	Resubmit	
Application for Electricity Supply	SP Services Ltd	30/03/08								
Power Supply Substation	SP PowerGrid Ltd	30/05/08	28/5/08	6/6/08	15/7/08	28/5/08	13/8/08			25/8/08
Metering Layout	SP Services Ltd	30/05/09								
Sanitary Installation	PUB Water Reclamation (Network) Dept	30/7/08	20/8/09							21/8/09
Domestic Water Supply	PUB (Water Supply) Network Dept	29/8/08	2/3/09	6/4/09	13/5/09					5/6/09
Gas Supply Installation	City Gas Pte Ltd	30/6/08	3/10/08	8/10/08	23/10/08					10/11/08
Air Conditioning & Ventilation Inst.	FSSD	30/9/08	22/12/08							2/1/09
Fire Fighting & Alarm Installation	FSSD	30/10/08								12/5/10
Telephone Installation	TFCC	30/08/08	26/4/10							
Broadband Co-axial Cable System (BCS)	Starhub Cable Vision	30/08/08								
Fuel Storage	FSSD	N.A.								
	NEA (Pollution Control)	N.A.								

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	✓
- CC/CF	✓	- PQP	✓

Project Files to be initiated by PM as and when required

File Ref:		File Ref:		File Ref:	
- PP/VO	✓				
- MC/EC	✓				

(✓*where applicable*)

SECTION 5

PROJECT RECORDS

5.2 Filing of Drawings

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

Description	Team Member
Incoming Architectural Floor Plans	YYF
Incoming Architectural Sketches/Details	YYF
Incoming Structural Drawings	WC
M&E Drawings - Electrical Installation	WC
- Lift & Escalator Installation	WC
- Air Conditioning & Ventilation Installation	YYF
- Fire Fighting & Alarm Installation	YYF
- Plumbing & Sanitary Installation	YYF
- Swimming Pool & Filtration Installation	YYF
Other Drawings - Landscape Drawing	WC

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

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 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	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	Certified
Green Design Features	Refer To Attachment

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	✓

Information for Green Mark Info-Portal @ www.greenmark.sg

a) Description of Project: (types of use, size, no. of storey, location etc)

Dakota Residences is a condominium development located along Geylang river and Dakota Crescent opposite Broadrick Secondary School. It consists of 5 blocks of 19 storey units. There are 4 unit types inclusive of the penthouse unit which is located on the 19th storey of each block. In total there are 348 units.

There is 1 basement for car parking and additional car parks on the 1st storey. Communal facilities are located on the 1st and 2nd storey which consists of swimming pool, children's pool, function room, gymnasium, spa sanctuary, BBQ, children's play area, fitness corner etc.

b) Summary of Green Features

Estimated energy savings (kwh/yr)	766,944
Estimated water savings (m^3/yr)	9,479.52

List of other prominent green features

1. Inverter and environmentally friendly air conditioner split units with 4 NEA 'ticks' green label is used in all apartment units.
2. Install PLC lights for lobby, staircase and corridor
3. Use alternate looping and timer controller for lights in car-park and landscape
4. Variable frequency variable voltage (VVVF) drive lifts. The lights and fans in the lifts will be switched off after a predetermined time delay when there are no hall calls.
5. Basement &1st Storey car-parks are provided with 2.5%.
6. CO sensors are provided at basement &1st Storey car-park to control ductless exhaust system.
7. Automatic sensor taps and flushing cistern for the WCs in the clubhouse changing rooms.
8. All basin, sink & shower mixer taps in the clubhouse changing rooms/toilets is fitted with constant flow regulator.
9. Dual flush cistern for WC is used in all apartment unit toilets.
10. All basin, sink & shower mixer taps in apartment unit toilets is fitted with constant flow regulator

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	NA
Pre-Qualification of Tenderers	NA
Tender Documents	A
Tender Report	A
Payment Valuation for QS	NA
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