PROJECT QUALITY PLAN

CHANGI BUSINESS PARK
LANDSCAPE WORKS

For

M/S JURONG TOWN CORPORATION

Copy No.	

Prepared By: Fok Yin Chwee

Authorised By: Richard Teo

Date: 26 January 1999

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	AEC's Project Team Member
3.3	Client/Client's Representative
3.4	Other Consultants
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	Not Used

TABLE OF CONTENTS

SECTION	DESCRIPTION
5	**PROJECT RECORDS**
5.1	List of Internal File
5.2	Filing of Drawings
6	**INTERFACING**
6.1	Method of Interface
6.2	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
8.2	List of Applicable Code of Practice and Regulations
8.3	Not Used
8.4	List of Applicable Quality System Procedures
8.5	List of Software Used for Design/Analysis
9	**CLIENT'S REQUIREMENTS**
9.1	List of Output Required by Client
9.2	Specific Procedures Required by Client
10	**LIST OF SUB-JOB**
10.1	Not Used

SECTION 1

QUALITY PLAN CONTROL AND DISTRIBUTION

1.1 List of Copy Holders

Copy No.	Copy Holder	Date of Issue
1	1192-PQP File	26 January 1999
2	Fok Y C	26 January 1999

1.2 Revision Record

Revision	Date of Issue	Section Reference	Page(s)	Remarks
1	28 September 1999	1.2, 2.2, 3.2, 3.4 - 3.5, 4.1 – 4.2 & 5.1	8	

SECTION 2

PROJECT INFORMATION

2.1 Project Description

Type of Development	Landscape

Statistics of Development	
Site Area, m²	66.54 ha
Nett Floor Area, m²	24% to be landscaped (16 ha)
Gross Floor Area, m²	-
Covered Carpark, m²	-
No. of Covered Carpark Lots	-
No. of Apartments/Houses	-
No. of Beds (for Hospitals)	-
No. of Guestroom (for Hotels)	-
No. of Blocks / No. of Storeys	-
No. of Phases	2 phases for completion only

2.2 Project Cost

M&E Services Cost Plan (S$ x 1M)		
	Phase 1	Phase 2
Estimate	0.79	0.635
Awarded	1.422 *	
Total Project Construction Cost (S$ x1M)		
	Phase 1	Phase 2
Estimate	7.5	
Awarded	6.989	

* *A provisional sum of $550,000.00 was included for Supply & Installation of Fibre Optic Luminaires.*

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 – Plumbing System

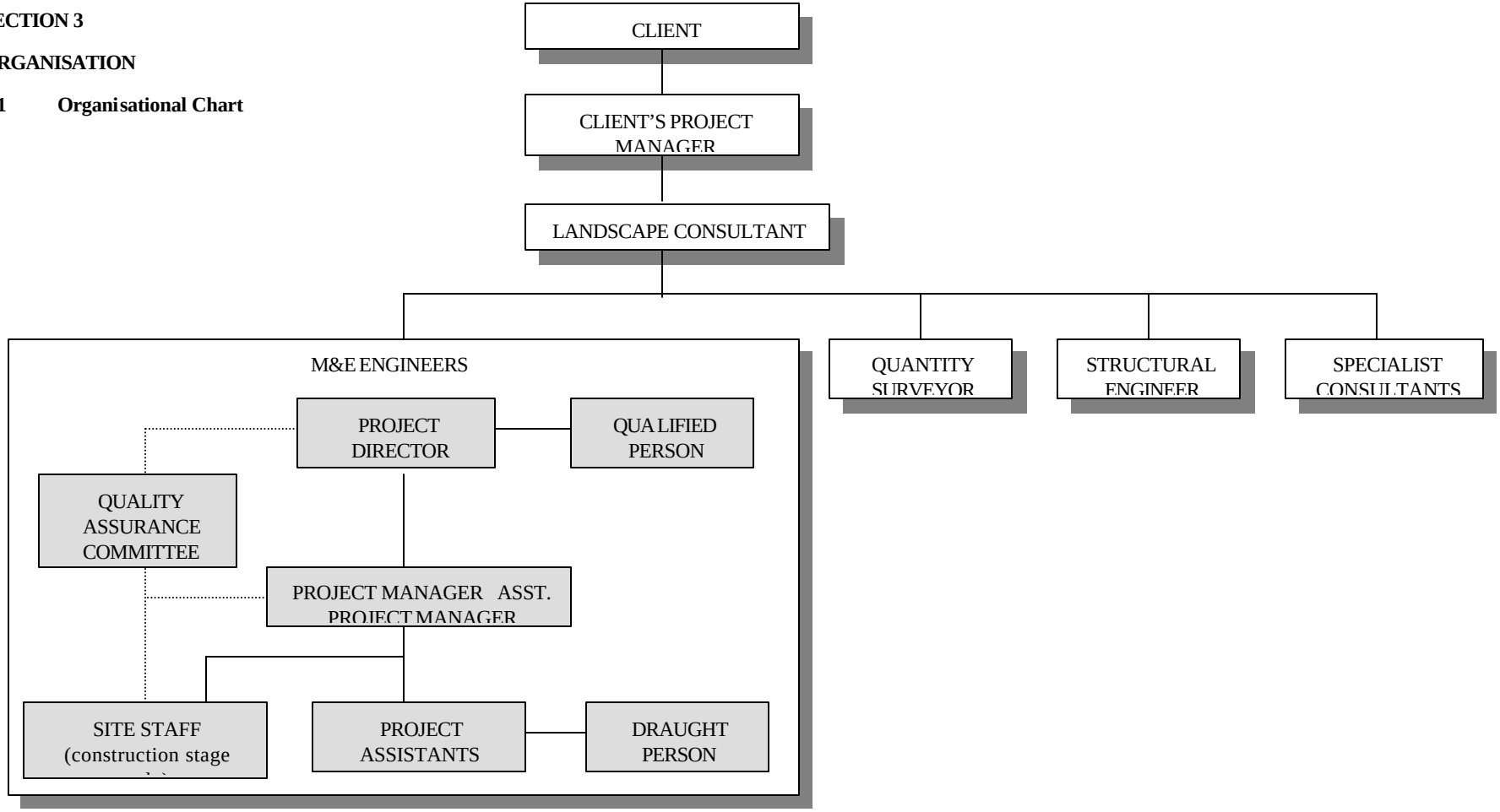
EJECTOR & DIVERTER		SUMP PUMP		FUEL OIL TANK		LIFT & ESCALATOR		PRESSURE VESSEL		HOISTS		FOAM	

(✓ *where applicable*)

SECTION 3

ORGANISATION

3.1 Organisational Chart



SECTION 3

ORGANISATION

3.2 AEC's Project Team Member

TITLE		NAME
Project Director		Richard Teo
Qualified Person	Mechanical	Andrew Loh
	Electrical	Richard Teo
Project Manager		Fok Y C
Assistant Project Manager		Chong L M
Project Assistant (Mech)		-
Project Assistant (Elect)		Anthony Cheng
Draughtsperson		Common Pool
Resident Engineer (M&E)		-
Assistant Resident Engineer (M&E)		-
Clerk-of-Work (M&E)		To be appointed

3.3 Client/Client's Representatives

Client:- Jurong Town Corporation

Address:- 301 Jurong Town Hall Road
Jurong Town Hall
Singapore 609431

Tel:- 560 0056

Fax:- 568 8571

Client's Representatives:-

Name of Firm	Contact Person	Contact
Jurong Town Corporation	Name: Ms Koong Pooi Kit Position: Senior Marketing Officer (BPDD & SDG)	Tel: 568 8209 Fax: 568 8571 Pager: 9540 3152 Handphone: - Email: -
Jurong Town Corporation	Name: Mr Chew Weng Huat Position: Site Planning	Tel: 568 8848 Fax: 569 8081 Pager: - Handphone: - Email: -
Jurong Town Corporation	Name: Mr Raymond Koa Position: Civil & Structural	Tel: 568 8314 Fax: 568 8400 Pager: 9540 4425 Handphone: - Email: -
Jurong Town Corporation	Name: Mr Lim Boon Kiam Position: Principal Electrical Engineer (M&E)	Tel: 568 8368 Fax: 568 8476 Pager: 9700 7919 Handphone: - Email: -

3.4 Other Consultants (Local)

Function / Name of Firm	Contact Person	Contact
Landscape Consultant ACLA Pte Ltd	Name: Mr Toh Kim Hor/Mr Keith Stead Position: Director/Sr. Landscape Architect	Tel: 533 6381 Fax: 535 5839 Pager: - Handphone: - Email: -
Quantity Surveyor RJ Consultants Pte Ltd	Name: Mr Yeo E S Position: Partner	Tel: 291 6383 Fax: : 299 0071 Pager: - Handphone: - Email: -
Structural Engineer CSE Consultants	Name: Mr Tan Yen Kee Position: Partner	Tel: 222 0701 Fax: 324 5159 Pager: - Handphone: - Email: -
Interior Designer -	Name: - Position: -	Tel: - Fax: - Pager: - Handphone: - Email: -
Lighting Consultant -	Name: - Position: -	Tel: - Fax: - Pager: - Handphone: - Email: -
Acoustic Consultant -	Name: - Position: -	Tel: - Fax: - Pager: - Handphone: - Email: -

3.4 Other Consultants (Overseas)

NOT USED

3.5 Contractors/Sub-Contractors

Function / Name of Firm	Contract *	Contact Person	Contact
Main Contractor Mao Sheng Quanji Construction Pte Ltd (Phase 1)	DC	Name: Mr Bruce Low Position: Project Manager	Tel: 285 2300 Fax: 285 2731 Pager: 9300 0154 Handphone: - Email: -
Air Conditioning & Ventilation Installation Sub-Contractor Not applicable		Name: - Position: -	Tel: - Fax: - Pager: - Handphone: - Email: -
Plumbing & Sanitary Installation Sub-Contractor Not applicable		Name: - Position: -	Tel: - Fax: - Pager: - Handphone: - Email: -
Electrical Installation Sub-Contractor Victor Engineering & Trading Pte Ltd (Phase 1)	DSC	Name: Mr Lim Shi Min Position: Project Manager	Tel: 744 2628 Fax: 746 7227 Pager: 9491 4917 Handphone: - Email: -
Lift & Escalator Installation Sub-Contractor Not applicable		Name: - Position: -	Tel: - Fax: - Pager: - Handphone: - Email: -
Fire Fighting & Alarm Installation Sub-Contractor Not applicable Swimming Pool Filtration Plant Installation Sub-Contractor Not applicable		Name: - Position: - Name: - Position: -	Tel: - Fax: - Pager: - Handphone: - Email: - Tel: - Fax: - Pager: - Handphone: - Email: -
Carpark System Installation Sub-Contractor Not applicable		Name: - Position: -	Tel: - Fax: - Pager: - Handphone: - Email: -

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

3.6 Authorities

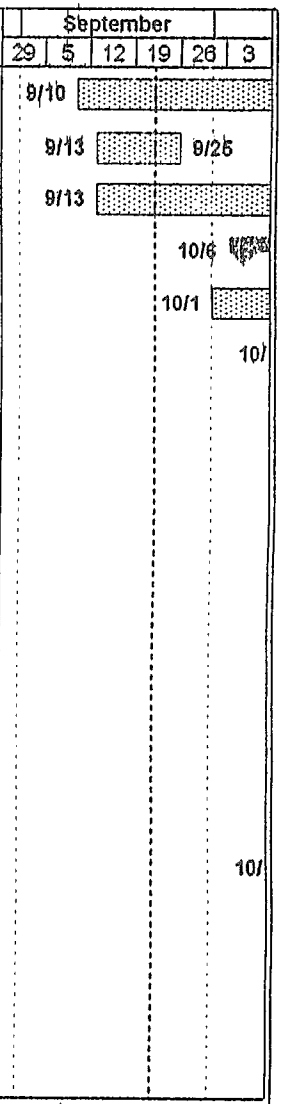
Authorities/Department	Contact Person	Tel/Fax Nos./E-mail
PowerGrid/Power Supply:		
(a) Customer Supply	Mr Tan Chong Poh	831 8551/831 8564
(b) Sub-Station	-	-
(c) Installation	-	-
(d) Meter Section	-	-
(e) Road Lighting	Mr William Chua	359 4908/253 6223
(f) Diversion	-	-
Telecom:		
(a) Planning/Line Plant	-	-
(b) Installation	-	-
(c) Diversion	-	-
BCD:		
(a) Building Plan	Not applicable	Not applicable
FSB:		
(a) Building Plan	Not applicable	Not applicable
(b) M&E Section	Not applicable	Not applicable
PUB (Water)		
(a) Water Conservation	-	-
(b) Plumbing Plan	Mr Michael Toh	731 3553/731 3023
(c) Diversion	-	-
PowerGas:		
(a) Planning/Submission	Not applicable	Not applicable
(b) Installation/Inspection	Not applicable	Not applicable
(c) Diversion	Not applicable	Not applicable
ENV (Sewerage):		
(a) Building Plan	Not applicable	Not applicable
(b) M&E Section	Not applicable	Not applicable
(c) Diversion	Not applicable	Not applicable
ENV (Pollution Control)		
(a) Planning/Submission	Not applicable	Not applicable
(b) Inspection	Not applicable	Not applicable

SECTION 4

PROGRAMME

4.1 Overall Programme – see attached (3 pages)

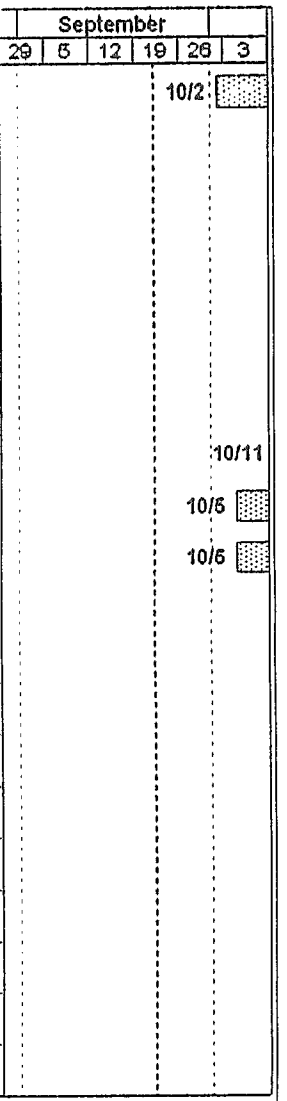
ID	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	% Complete
1	1. -- MOBILISATION.	27 days	Fri 9/10/99	Mon 10/11/99	NA	NA	0%
2	a. Offices and administratives	12 days	Mon 9/13/99	Sat 9/25/99	NA	NA	0%
3	b. Wasing bay and Sanitary works	25 days	Mon 9/13/99	Mon 10/11/99	NA	NA	0%
4	2. -- R.C STRUCTURAL.	214 days	Wed 10/6/99	Mon 7/10/00	NA	NA	0%
5	a. Area-A (Plot 8, 9, 10, 11, 12 and 13)	28 days	Fri 10/1/99	Tue 11/2/99	NA	NA	0%
6	b. Area -B (Plot 59, 60, 61 and 62)	28 days	Fri 10/15/99	Tue 11/16/99	NA	NA	0%
7	c. Area-C (Plot 54, 55, 56, 57 and 58)	28 days	Tue 11/2/99	Fri 12/3/99	NA	NA	0%
8	d. Area-D (Plot 48, 49, 50, 51, 52 53 and 72)	28 days	Tue 11/16/99	Tue 12/21/99	NA	NA	0%
9	e. Area-E (Plot 4, 5, 6, 7, 14, 15, 16 and 17)	28 days	Fri 12/3/99	Tue 1/11/00	NA	NA	0%
10	f. Area-F (Plot 23, 24, 25, 27, 28 and 29)	26 days	Mon 12/27/99	Fri 1/28/00	NA	NA	0%
11	g. Area-G (Plot 30, 31, 32, 33 and 34	28 days	Wed 1/19/00	Thu 2/24/00	NA	NA	0%
12	h. Area-H (Plot 37, 38 and 39)	28 days	Tue 2/15/00	Tue 3/21/00	NA	NA	0%
13	i. Area-I (Plot 40 and 41)	28 days	Tue 3/14/00	Tue 4/18/00	NA	NA	0%
14	j. Area-J (Plot 42, 43, 44, 45, 46 and 47)	28 days	Tue 4/4/00	Tue 5/9/00	NA	NA	0%
15	k. Area-K (Plot 1, 2, 3, 18, 19 and 20)	28 days	Mon 4/17/00	Tue 5/23/00	NA	NA	0%
16	l. Area-L (Plot 63)	28 days	Fri 10/15/99	Tue 11/16/99	NA	NA	0%
17	m. Area-M (Plot 64)	28 days	Mon 11/1/99	Thu 12/2/99	NA	NA	0%
18	n. Area-N (Plot 65)	28 days	Sat 1/15/00	Mon 2/21/00	NA	NA	0%
19	o. Area-O (Plot 68)	28 days	Thu 2/10/00	Thu 3/16/00	NA	NA	0%
20	p. Area-P (Plot 73)	28 days	Mon 3/6/00	Mon 4/10/00	NA	NA	0%



Project: PROPOSED HARDSCAPE, SOFTSCAPE AND ANCILLARY WORKS AT CHANGI BUSINESS PARK (PHASE 1)
Contract No. : JTC/ T/ 10c /1999. Contract Period:10 SEPT. 99 - 9 JULY 00

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
External Tasks
Project Summary
Split
Rolled Up Split

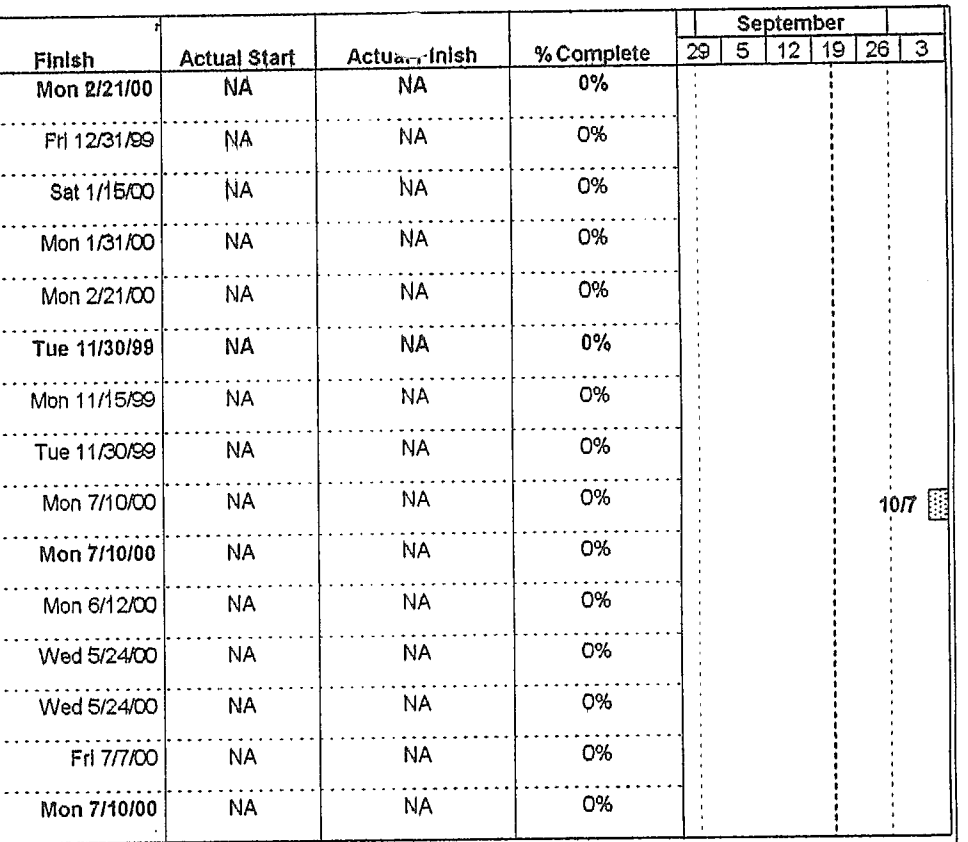
ID	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	% Complete
21	q. Pedestrain Walkway	217 days	Sat 10/2/99	Mon 7/10/00	NA	NA	0%
22	**3. -- STEEL STRUCTURAL.**	**113 days**	**Tue 1/4/00**	**Wed 5/31/00**	NA	NA	0%
23	a. Plot 63 Trellis Area	33 days	Mon 1/3/00	Tue 2/15/00	NA	NA	0%
24	b .Plot 64 Trellis Area	40 days	Wed 2/2/00	Fri 3/24/00	NA	NA	0%
25	c. Plot 65 Trellis Area	35 days	Wed 3/1/00	Sat 4/15/00	NA	NA	0%
26	d. Plot 68 Trellis Area	23 days	Mon 4/3/00	Mon 5/1/00	NA	NA	0%
27	e. Plot 71 Trellis Area	26 days	Thu 4/20/00	Wed 5/24/00	NA	NA	0%
28	**4. -- LANDSCAPING WORKS.**	**210 days**	**Mon 10/11/99**	**Mon 7/10/00**	NA	NA	0%
29	**1. Private Green Butter Zone.**	**123 days**	**Tue 10/5/99**	**Wed 3/8/00**	NA	NA	0%
30	a. (Plot 4 to 7)	14 days	Tue 10/5/99	Wed 10/20/99	NA	NA	0%
31	b. (Plot 14 to 17)	9 days	Thu 10/21/99	Sat 10/30/99	NA	NA	0%
32	c. (Plot 1 to 3)	13 days	Mon 11/1/99	Mon 11/15/99	NA	NA	0%
33	d. (Plot 18 to 20)	13 days	Mon 11/1/99	Mon 11/15/99	NA	NA	0%
34	e. (Plot 8 to 13)	13 days	Tue 11/16/99	Tue 11/30/99	NA	NA	0%
35	f. (Plot 59 to 62)	11 days	Wed 12/1/99	Wed 12/15/99	NA	NA	0%
36	g. (Plot 48 to 58)	12 days	Thu 12/16/99	Fri 12/31/99	NA	NA	0%
37	h. (Plot 42 to 47)	11 days	Mon 1/3/00	Sat 1/15/00	NA	NA	0%
38	I. (Plot 37 to 41)	11 days	Mon 1/17/00	Mon 1/31/00	NA	NA	0%
39	j. (Plot 22 to 28)	11 days	Tue 2/1/00	Tue 2/15/00	NA	NA	0%
40	k. (Plot 30 to 35)	18 days	Fri 2/18/00	Fri 3/10/00	NA	NA	0%



Project: PROPOSED HARDSCAPE, SOFTSCAPE AND ANCILLARY WORKS AT CHANGI BUSINESS PARK (PHASE 1)
Contract No. : JTC/ T/ 10c /1999. Contract Period:10 SEPT. 99 - 9 JULY 00

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
External Tasks
Project Summary
Split
Rolled Up Split

ID	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	% Complete
41	**2. Root Barrier Installation**	**60 days**	**Thu 12/2/99**	**Mon 2/21/00**	NA	NA	0%
42	a. (Phase 2 Area)	23 days	Wed 12/1/99	Fri 12/31/99	NA	NA	0%
43	b. (Plot 48 to 56)	11 days	Mon 1/3/00	Sat 1/15/00	NA	NA	0%
44	c. (Plot 42 to 47)	11 days	Mon 1/17/00	Mon 1/31/00	NA	NA	0%
45	d. (Plot 37 to 40)	15 days	Wed 2/2/00	Mon 2/21/00	NA	NA	0%
46	**3. Roadside Landscape.**	**26 days**	**Mon 11/1/99**	**Tue 11/30/99**	NA	NA	0%
47	a. Along Changi South Ave 3	13 days	Mon 11/1/99	Mon 11/15/99	NA	NA	0%
48	b. Along Changi South Ave 2	13 days	Tue 11/16/99	Tue 11/30/99	NA	NA	0%
49	4. Public Green	213 days	Thu 10/7/99	Mon 7/10/00	NA	NA	0%
50	**E. -- ELECTRICAL WORKS.**	**187 days**	**Sat 11/6/99**	**Mon 7/10/00**	NA	NA	0%
51	a. Outdoor lighting to park	167 days	Fri 11/5/99	Mon 6/12/00	NA	NA	0%
52	b. Wiring to Trellis.	109 days	Mon 1/3/00	Wed 5/24/00	NA	NA	0%
53	c. Lighting protection system	109 days	Mon 1/3/00	Wed 5/24/00	NA	NA	0%
54	d. Testing for electrical installation	0 days	Fri 7/7/00	Fri 7/7/00	NA	NA	0%
55	**F. -- CLEANING-UP.**	**19 days**	**Thu 6/15/00**	**Mon 7/10/00**	NA	NA	0%



Project: PROPOSED HARDSCAPE, SOFTSCAPE AND ANCILLARY WORKS AT CHANGI BUSINESS PARK (PHASE 1)
Contract No. : JTC/ T/ 10c /1999. Contract Period:10 SEPT. 99 - 9 JULY 00

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
External Tasks
Project Summary
Split
Rolled Up Split

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	Power Supply Pte Ltd	Feb 1999	22/3/99							
Power Supply Substation	PowerGrid Pte Ltd	Mar 1999	NA							
Main Single Line Diagram Consumer Switchroom Layout	Power Supply Pte Ltd PowerGrid Pte Ltd	Dec 1999 NA								
Metering Layout	PowerGrid Pte Ltd	Dec 1999								
Sanitary Installation	ENV (Sewerage)	NA								
Domestic Water Supply	PUB (Water)	NA								
Gas Supply Installation	PowerGas Pte Ltd	NA								
Air Conditioning & Ventilation Inst.	Fire Safety Bureau	NA								
Fire Fighting & Alarm Installation	Fire Safety Bureau	NA								
Telephone Installation	Telecom (Broadband) Telecom (TDCS)	NA NA								
	Telecom (Domestic Operation)	Apr 1999	NA							
Fuel Storage	Fire Safety Bureau	NA								
	Pollution Control Department	NA								

SECTION 4

PROGRAMME

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

NOT USED

SECTION 5

PROJECT RECORDS

5.1 List of Internal Files

Standard Files

File Ref:		File Ref:	
-CM		-QSP	
-PC		-BD	
-AE		-CC	
-AM		-CF	✓
-AA		-GC	
-PQP	✓	-1192	✓

Project Files to be initiated by PM as and when required

File Ref:		File Ref:		File Ref:	
-SM		-SR		-ET	
-SC		-QM		-MT	
-AI		-EC		-DF	
-SQ		-MC		-EOT	
-CO		-PP		-1192-1 (Phase 1)	✓
				-1192-2 (Phase 2)	✓

Service Files to be initiated by PM as and when required

	Service									
File Ref:	ACVI	FFAI	PSI	EI	LI	SPFP				
-G										
-Q										
-VO										
-PP										
-AI										
-AD										
-CF										

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 Landscape Plans	Fok Y C
Incoming Landscape Sketches/Details	Fok Y C
Incoming Structural Drawings	Fok Y C
M&E Drawings	
- Electrical Installation	Fok Y C
- Lift & Escalator Installation	-
- Air Conditioning & Ventilation Installation	-
- Fire Fighting & Alarm Installation	-
- Plumbing & Sanitary Installation	Chong L M
- Swimming Pool & Filtration Installation	-
Other Drawings	-

SECTION 6

INTERFACING

6.1 Method of Interface

Description	Method of Interface	
Client's Review & Approval	M&E Estimates	✓
	Pre-planned meeting at fixed intervals	
	Telefax, letter and telephone	✓
	Email	
Interface With External Design Teams	M&E Estimates	✓
	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

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

SECTION 7

WORK AUTHORISATION

Activity \ Authorised Signatories	PD	QP	PM	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 Questionaires	✓			
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
SS : AEC Site Staff

SECTION 8

DESIGN INPUT & METHODOLOGY

8.1 List of Client's Standards, Reference Documents or Brief

ITEM	KEPT BY
NA	NA

8.2 List of Applicable Code of Practice and Regulations

Electrical Wiring	~~BS~~	SS	~~IEE~~	~~NFPA~~	
Lightning Protection System	BS	SS			
Plumbing System	~~BS~~	SS	~~NFPA~~	~~AS~~	~~MS~~

(Delete where necessary)

SECTION 8

DESIGN INPUT & METHODOLOGY

8.3 List of Design Guide or Handbook Used - NOT USED

8.4 List of Applicable Quality System Procedures

Alpha Engineering Consultant's Quality System Procedures

Section	Title
A1	Documentation of Quality System Procedure
A2	Documentation of Project Quality Plan
A3	Administration Control
A4	Document Control
A6	Archive Control
A9	Feedback Reporting
B1	Preparation of Consultancy Offer
B2	Project Commission and Service Agreement
B3	Design Control
B4	Design Change Control
B5	Drawing Control
B6	Specification Control
B7	Tender Process and Evaluation
C1	Construction Process Control
C2	Testing and Commissioning
D1	Quality System Audit

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 Engineering	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 Engineering	Calculation of voltage drop and fault level	✓

(✓ *where applicable*)

SECTION 9

CLIENT'S REQUIREMENTS

9.1 List of Output Required by Client:-

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

** Remarks*

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

Other purposes and for action: please specify.

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

SECTION 10

LIST OF SUB-JOB

10.1 List of Sub-Job Numbers

NOT USED