PROJECT QUALITY PLAN

SIANG HOW WAREHOUSE AT TAGORE AVENUE

For

M/S SIANG HOW REALTY PTE LTD

Copy No.	

Prepared By: Goh Soon Huat

Authorised By: Tan L S

Date: 7 January 1999

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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	1072-PQP File	6 June 1997
2	Alan Lau	6 June 1997

1.2 Revision Record

Revision	Date of Issue	Section Reference	Page(s)	Remarks
1	7 January 1999	Section 1 to Section 10	29	-

SECTION 2

PROJECT INFORMATION

2.1 Project Description

Type of Development	Showroom & Warehouse Development

Statistics of Development	
Site Area, m²	10388
Nett Floor Area, m²	20482
Gross Floor Area, m²	23374
Covered Carpark, m²	1790
No. of Covered Carpark Lots	73
No. of Lorry Parking	19
No. of Warehouses	82 at approximately 212m^2 each
No. of Showrooms	16 at approximately 194m^2 each
No. of Apartments/Houses	-
No. of Beds (for Hospitals)	-
No. of Guestroom (for Hotels)	-
No. of Blocks / No. of Storeys	4 + 1 Basement
No. of Phases	1

2.2 Project Cost

M&E Services Cost Plan (S$ x 1M)										
Services	EI	ACVI	LEI	FFAI	PSI	SPFI				
Estimate	-	-	-	-	-	-				
Awarded	1.5	0.7	1.08	1.14	0.88	-				

Total Project Construction Cost (S$ x1M)			
	Site Clearance	Piling Works	Main Contract
Estimate	-	-	-
Awarded	-	2.0	23.8

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

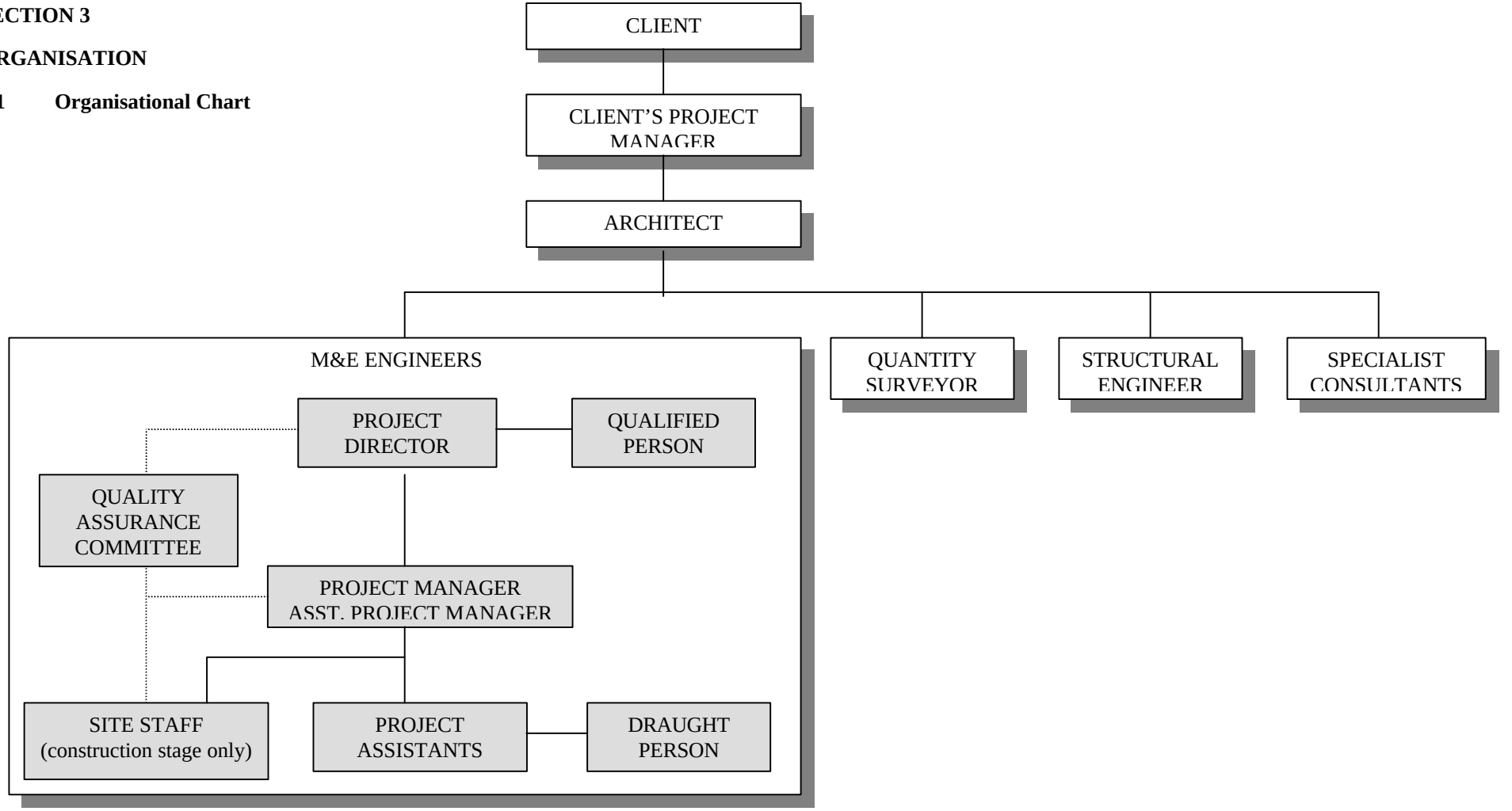
EJECTOR & DIVERTER		SUMP PUMP		FUEL OIL TANK		LIFT & ESCALATOR	✓	PRESSURE VESSEL		HOISTS		FOAM	

(✓ *where applicable*)

SECTION 3

ORGANISATION

3.1 Organisational Chart



SECTION 3

ORGANISATION

3.2 AEC's Project Team Member

TITLE		NAME
Project Director		Tan L S
Qualified Person	Mechanical	Andrew Loh
	Electrical	Tan L S
Project Manager		Alan Lau
Assistant Project Manager		Goh Soon Huat
Project Assistant (Mech)		Serene The
Project Assistant (Elect)		-
Draughtsperson		-
Resident Engineer (M&E)		-
Assistant Resident Engineer (M&E)		-
Clerk-of-Work (M&E)		Patrick Mui (part time basis)

3.3 Client/Client's Representatives

Client:- Siang How Reality Pte Ltd

Address:- 190 Middle Road
#10-08 Fortune Centre
Singapore 188979

Tel:- 337 1691

Fax:- 338 5486

Client's Representatives:-

Name of Firm	Contact Person	Contact
Siang How Reality Pte Ltd	Name: Mr Ng Siow How Position: Chairman	Tel: 337 1691 Fax: 338 5486 Pager: - Handphone: - Email: -
Siang How Reality Pte Ltd	Name: Mr Lim Sian Hoon Position: Managing Director	Tel: 337 1691 Fax: 338 5486 Pager: Handphone: Email:
-	Name: Position:	Tel: Fax: Pager: Handphone: Email:
-	Name: Position:	Tel: Fax: Pager: Handphone: Email:
-	Name: Position:	Tel: Fax: Pager: Handphone: Email:

3.4 Other Consultants (Local)

Function / Name of Firm	Contact Person	Contact
Architect APCO Architects & Town Planners Collaborative	Name: Ms Belinda Abey Position: Name: Mr C C Leong Position:	Tel: 225 0322 Fax: 225 0366 Pager: - Handphone: - Email: -
Quantity Surveyor Northcroft Lim Consultants Pte Ltd	Name: Mr Giauw J N Position: Name: Mr Yong Pei Yee Position:	Tel: 220 7188 Fax: 222 0868 Pager: - Handphone: - Email: -
Structural Engineer WTS Consulting Engineers	Name: Mr Shum Wing Tung Position: Name: Mr Dong Wei Bin Position:	Tel: 356 4788 Fax: 356 6911 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:
Landscape Consultant Ecoplan Landscape Architects & Planners	Name: Ms Jane McGregor Position: Architect	Tel: 252 2188 Fax: 252 2988 Pager: - Handphone: - Email: -
_____	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 Kenston Construction Pte Ltd	DC	Name: Mr S Y Low Position: - Name: Mr Paul Theng Position: -	Tel: 455 4355 Fax: 553 0907 Pager: 9305 7880 Handphone: - Email: -
Air Conditioning & Ventilation Installation Sub-Contractor Hussman Tempcool (S) Pte Ltd	NSC	Name: Mr Y P Teo Position: Manager Name: Mr Kelvin Kweck Position: Project Co-ordinator	Tel: 746 2867 Fax: 743 0206 Pager: - Handphone: - Email: -
Plumbing & Sanitary Installation Sub-Contractor Kenston Construction Pte Ltd	DSC	Name: Mr Teo Soon Chye Position: -	Tel: 455 4355 Fax: 553 0907 Pager: 9400 8605 Handphone: - Email: -
Electrical Installation Sub-Contractor MecBonn Engineering Pte Ltd	NSC	Name: Mr Ng Hai Hock Position: - Name: Mr Alan Tay Position: -	Tel: 799 2933 Fax: 788 2033 Pager: 9707 4903 Handphone: Email: mecbonn@pacific.net.sg
Lift & Escalator Installation Sub-Contractor Fujitec Singapore Corporation Ltd	NSC	Name: Mr Alan Khoo Position: Project Executive	Tel: 249 3270 Fax: 444 7626 Pager: 9527 0381 Handphone: - Email: -
Fire Fighting & Alarm Installation Sub-Contractor Chubb Singapore Pte Ltd	NSC	Name: Mr K T Toh Position: Contract Manager	Tel: 292 8421 Fax: 298 7310 Pager: 9210 8760 Handphone: - Email: -
Swimming Pool Filtration Plant Installation Sub-Contractor -		Name: Position:	Tel: Fax: Pager: Handphone: Email:
Carpark System Installation Sub-Contractor -		Name: Position:	Tel: Fax: Pager: Handphone: Email:

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

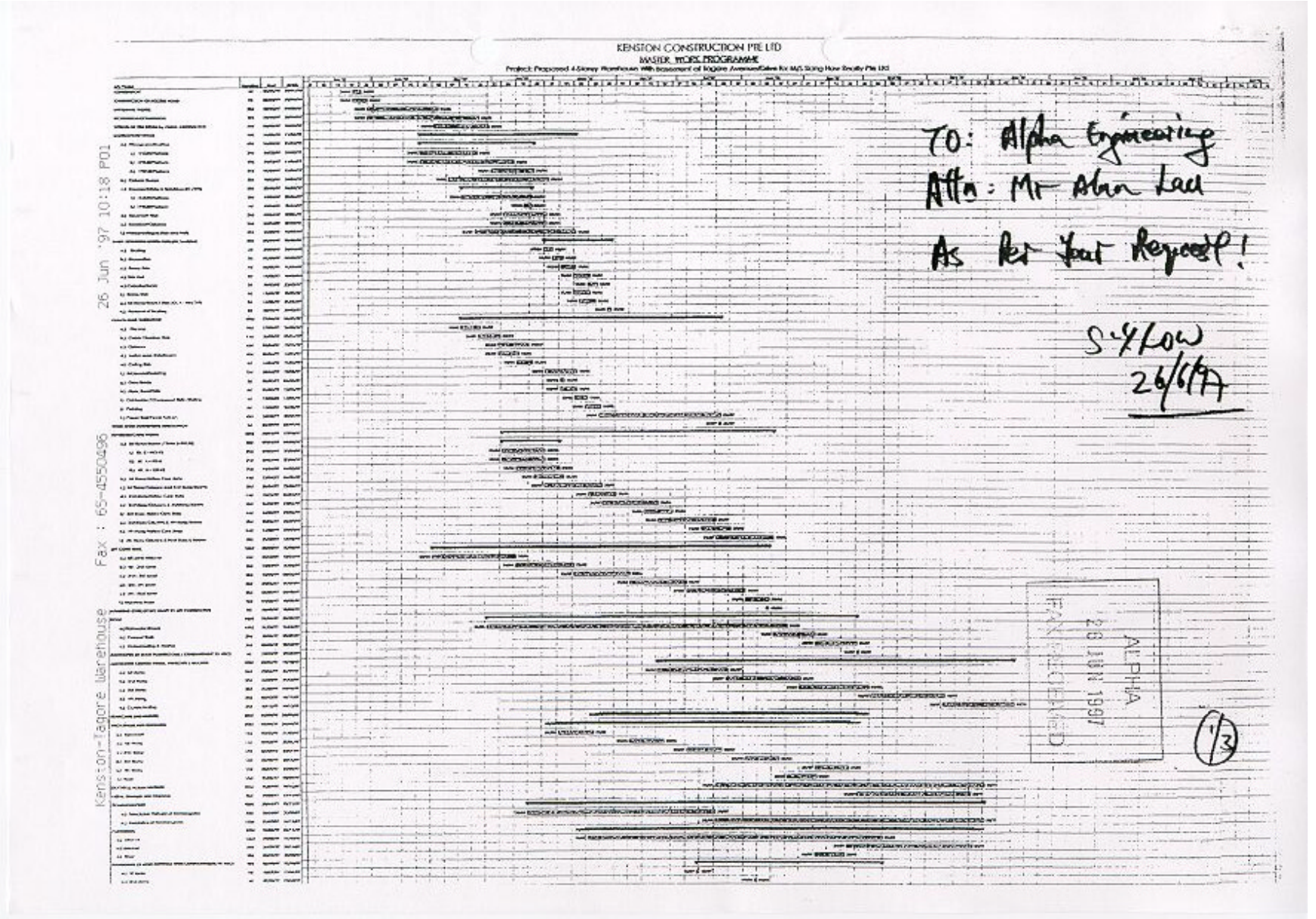
3.6 Authorities

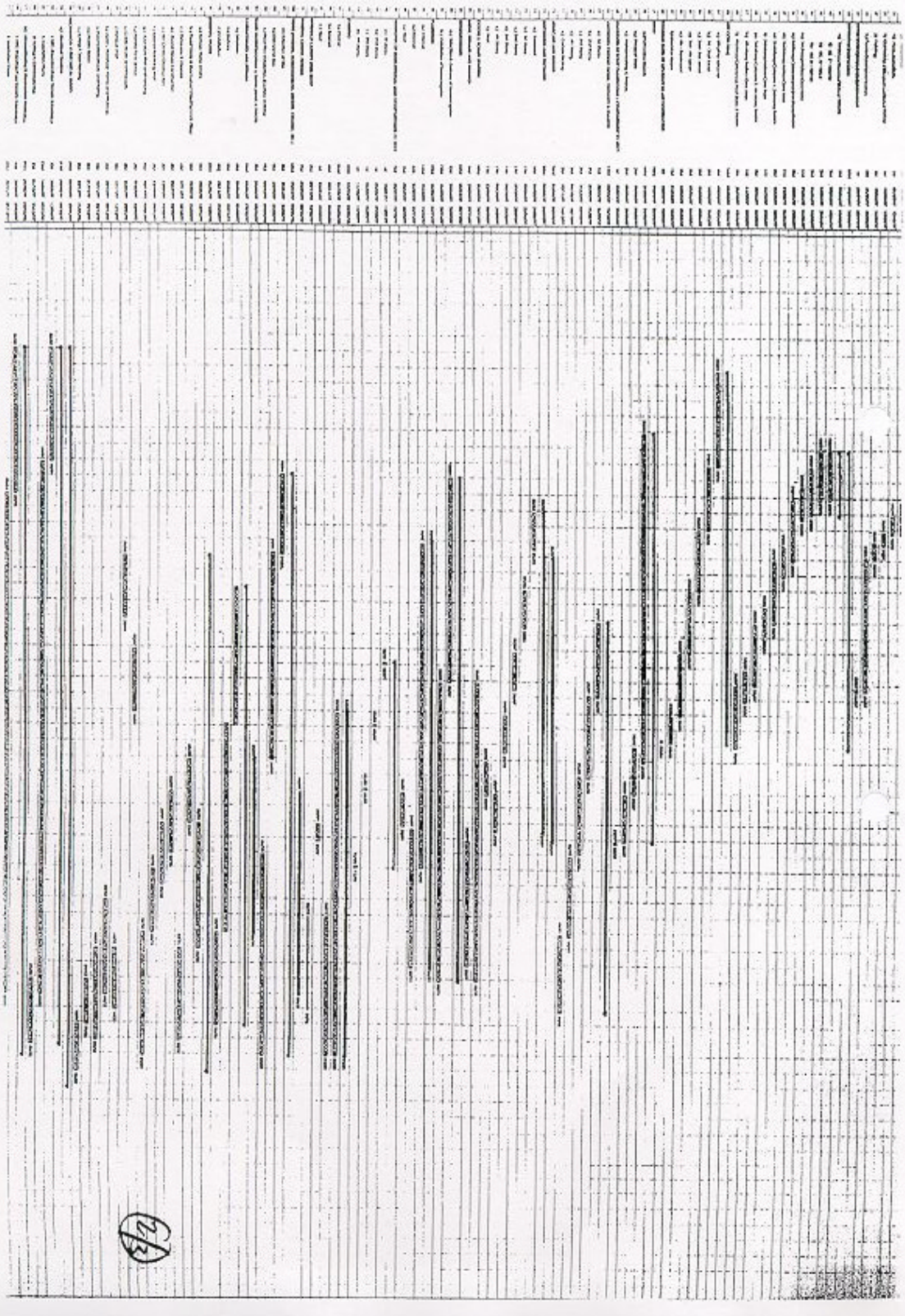
Authorities/Department	Contact Person	Tel/Fax Nos./E-mail
PowerGrid/Power Supply:		
(a) Customer Supply	Mr Lim Jit Meng	Tel: 831 8552 Fax: 831 8564
(b) Sub-Station	Mr Francis Chang	Tel: 831 8555 Fax: 831 8564
(c) Installation	Mr Lim Jit Meng	Tel: 831 8552 Fax: 831 8564
(d) Meter Section	-	-
(e) Road Lighting	-	-
(f) Diversion	-	-
Telecom:		
(a) Planning/Line Plant	Mr Yong Joon Chon	Tel: 838 3807
(b) Installation	-	-
(c) Diversion	-	-
BCD:		
(a) Building Plan	-	-
FSB:		
(a) Building Plan	-	-
(b) M&E Section	-	-
PUB (Water)		
(a) Water Conservation	Mr Chng Meng Hor	Tel: 731 3977 Fax: 731 3023
(b) Plumbing Plan	Mr Ng Kok Peng	Tel: 731 3598
(c) Diversion	-	-
PowerGas:		
(a) Planning/Submission	-	-
(b) Installation/Inspection	-	-
(c) Diversion	-	-
ENV (Sewerage):		
(a) Building Plan	Mr David Lim	Tel: 731 9627
(b) M&E Section	Mr Lam Tong Chai	Tel: 731 9783
(c) Diversion	-	-
ENV (Pollution Control)		
(a) Planning/Submission	-	-
(b) Inspection	-	-

SECTION 4

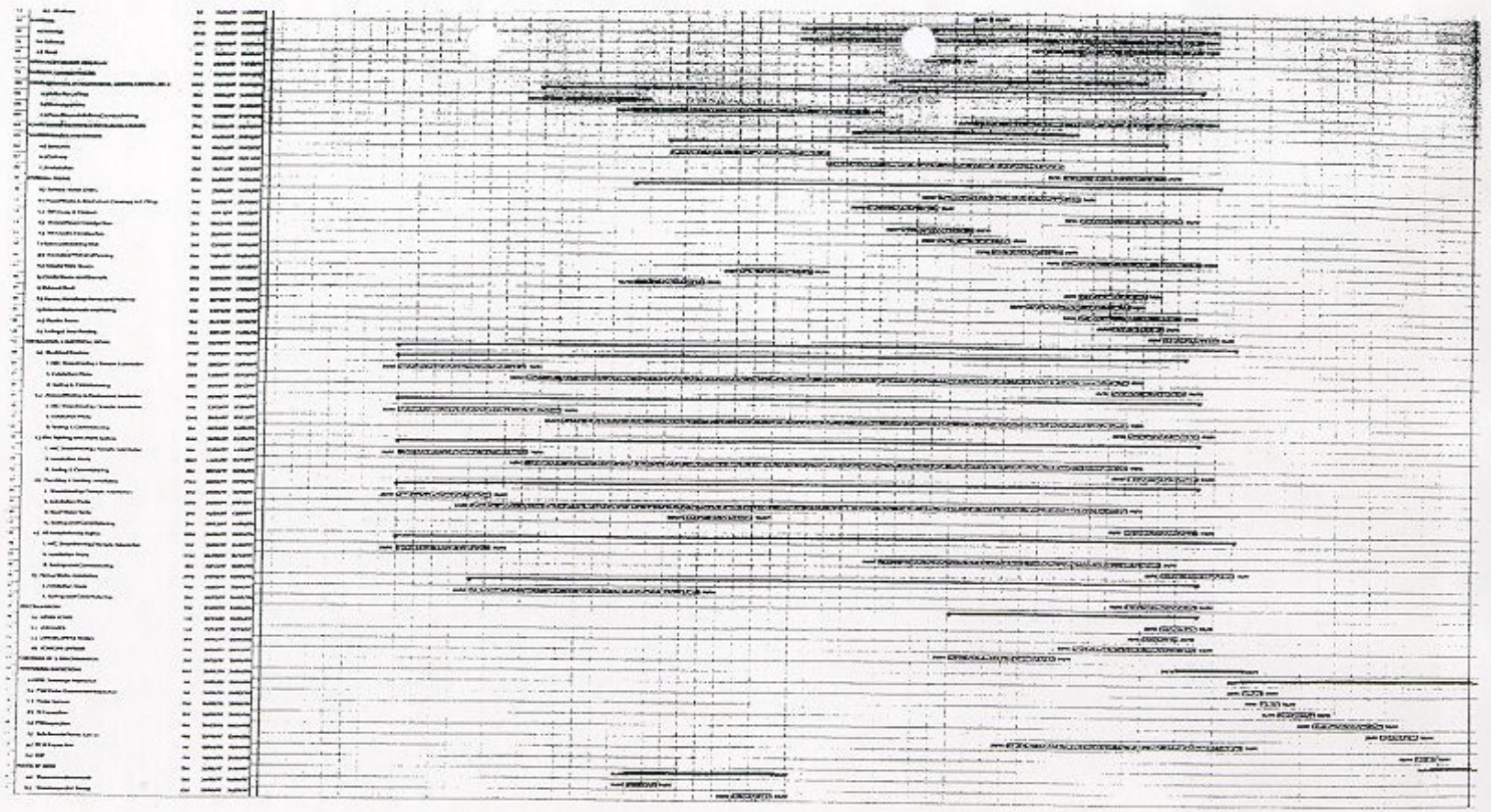
PROGRAMME

4.1 Overall Programme - Refer to attached schedule (3 pages)


KENSTON CONSTRUCTION PTE LTD
MASTER WORKS PROGRAMME
Project: Proposed 4-Storey Warehouse With Basement at Tagore Avenue/Sales for M/S Sing How Realty Pte Ltd
TO: Alpha Engineering
Attn: Mr Alan Lee
As Per Your Request!
S.Y/Low
26/6/97
ALPHA
26 JUN 1997
FAX RECEIVED
1/3
26 Jun '97 10:18 P01
Fax : 65-4550496
Kenston-Tagore Warehouse



Kenston-Tagore Warehouse Fax : 65-4550496 26 Jun '97 10:18 P03



(3/3)

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	-	130596	230596	280596	-				120696
Power Supply Substation	PowerGrid Pte Ltd	-	150496	240496	270696	150796	300796	210896	040996	130096
Main Single Line Diagram	Power Supply Pte Ltd	-	010797	110797	-	-	-	-	-	080998
Consumer Switchroom Layout	PowerGrid Pte Ltd	NA								-
Metering Layout	PowerGrid Pte Ltd	-	131097	-	-	-	-	-	-	211097
Sanitary Installation	ENV (Sewerage)	-	130696	030796	200996	171096	061196	-	-	271296
Domestic Water Supply	PUB (Water)	-	131196	091296	090596	-	-	-	-	290596
Gas Supply Installation	PowerGas Pte Ltd	-	-	-	-	-	-	-	-	-
Air Conditioning & Ventilation Inst.	Fire Safety Bureau	-	190697	-	-	-	-	-	-	030797
Fire Fighting & Alarm Installation	Fire Safety Bureau	300697	110997	141097	171097	-	-	-	-	101197
Telephone Installation	Telecom (Broadband)		031296	020496	200597					
	Telecom (TDCS)	NA								
	Telecom (Domestic Operation)	-	280797	-	-	-	-	-	-	090198
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: 1072		File Ref: 1072	
-CM	✓	-QSP	✓
-PC	✓	-BD	✓
-AE	✓	-CC	✓
-AM	✓	-CF	✓
-AA	✓	-GC	✓
-PQP	✓		

Project Files to be initiated by PM as and when required

File Ref: 1072		File Ref: 1072		File Ref: 1072	
-SM	✓	-SR	✓	-ET	-
-SC	✓	-QM	-	-MT	-
-AI	✓	-EC/-MC	✓	-DF	-
-SQ	✓	- PP	✓	-EOT	-
-CO	✓	- AD	✓		

Service Files to be initiated by PM as and when required

	Service										
File Ref: 1072	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 Architectural Floor Plans	Alan Lau
Incoming Architectural Sketches/Details	Alan Lau
Incoming Structural Drawings	Alan Lau
M&E Drawings	
- Electrical Installation	Goh Soon Huat
- Lift & Escalator Installation	Goh Soon Huat
- Air Conditioning & Ventilation Installation	Alan Lau
- Fire Fighting & Alarm Installation	Alan Lau
- Plumbing & Sanitary Installation	Alan Lau
- Swimming Pool & Filtration Installation	-
Other Drawings	

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

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

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
NIL	NIL

8.2 List of Applicable Code of Practice and Regulations

Electrical Wiring	BS	SS	~~IEE~~	~~NFPA~~	
Lightning Protection System	~~BS~~	SS			
Air Conditioning & Ventilation Installation	BS	~~AS~~	~~NFPA~~	SS	~~MS~~
Lift & Escalator Installation	BS	SS			
Automatic Fire Alarm System	BS	SS	~~NFPA~~	~~AS~~	~~MS~~
Sanitary System	BS	SS	~~NFPA~~	~~AS~~	~~MS~~
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

8.5 List of Software Used For Design/Analysis

NOT USED

SECTION 9

CLIENT'S REQUIREMENTS

9.1 List of Output Required by Client:-

Item	* Remarks
M&E Design Report	A
M&E Cost Estimate Report	A
Pre-Qualification of Tenderers	Not Required
Tender Documents	I
Tender Report	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.

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

N.A

SECTION 10

LIST OF SUB-JOB

10.1 List of Sub-Job Numbers

Sub Job No	Description	Allocation Details
601	Alterations/Additions to Unit #03-13 at 3rd Storey for M/s Ideal International Pte Ltd	-
602	Alterations/Additions to Existing Automatic Sprinkler System to Unit #03-11 at 3rd Storey for M/s Pharmaforte Singapore Pte Ltd	-
603	Alterations/Additions to Existing Automatic Sprinkler System to Unit #03-12 at 3rd Storey for M/s Kino Grease Control Pte Ltd	-
604	Alterations/Additions to Existing Automatic Sprinkler System to Unit #03-02 at 2nd Storey for M/s Oriv Marketing Pte Ltd	-
605	Alterations/Additions to Existing Automatic Sprinkler System to Unit #02-07 at 2nd Storey for M/s AV Hi-Tech Systems Pte Ltd	-
606	Minor Internal Partition Works to Existing Unit #03-18 at 3rd Storey for M/s Kudantai Trading	-
607	Alterations/Additions to Existing Automatic Sprinkler System to Unit #02-05 at 2nd Storey for M/s Sprinkler Engineering Pte Ltd	-
608	Alterations/Additions to Existing Automatic Sprinkler System to Unit #02-14 at 2nd Storey for M/s Broadcast Engineering Services Pte Ltd	-
609	Alterations/Additions to Existing Automatic Sprinkler System to Unit #03-07 at 3rd Storey for M/s Menard Holdings Pte Ltd	-
610	Alterations/Additions to Existing Automatic Sprinkler System to Unit #03-04 at 3rd Storey for M/s Beste (S) Pte Ltd	-