PROJECT QUALITY PLAN

ISLAMIC SCHOOL AT NO. 395 VICTORIA STREET

For

M/S MAJLIS UGAMA ISLAM SINGAPURA

Copy No.	

Prepared By: Chim H L

Authorised By: Richard Teo

Date: 28 December 1998

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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	1084-PQP File	5 June 1997
2	Chim Heng Leong	5 June 1997

1.2 Revision Record

Revision	Date of Issue	Section Reference	Page(s)	Remarks
1/0	5 June 1997	Section 1 – 9	21	1st Issue
2	28 December 1998	Section 1 – 10	26	2nd Issue

SECTION 2

PROJECT INFORMATION

2.1 Project Description

Type of Development	5-Storey Islamic School

Statistics of Development	
Site Area, m²	5200
Nett Floor Area, m²	6115
Gross Floor Area, m²	9537.18
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	5
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	317.929	224.10	52.90	-	340.787					

Total Project Construction Cost (S$ x1M)			
	Site Clearance	Piling Works	Main Contract
Estimate	-	-	-
Awarded	-	1.38	6,007.40

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

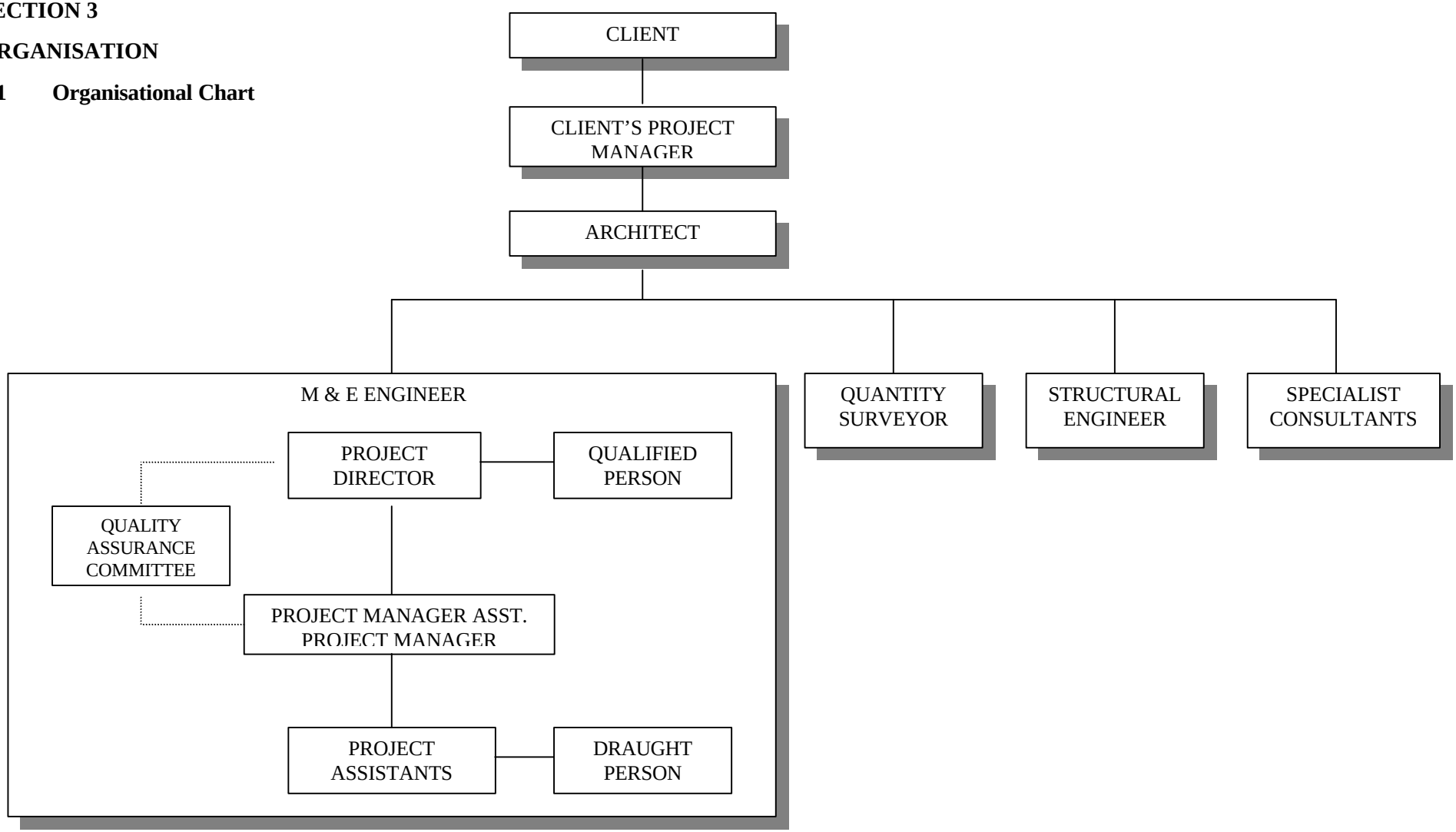
EJECTOR & DIVERTER		SUMP PUMP		FUEL OIL TANK		LIFT	✓	PRESSURE VESSEL		HOISTS		FOAM	

(✓ *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	Loh Chew Thong
	Electrical	Richard Teo
Project Manager		Chim H L
Assistant Project Manager		Loh F Y
Project Assistant (Mech)		-
Project Assistant (Elect)		Shirley Loke
Draughtsperson		Common Pool
Resident Engineer (M&E)		-
Assistant Resident Engineer (M&E)		-
Clerk-of-Work (M&E)		-

3.3 Client/Client's Representatives

Client:- Majlis Ugama Islam Singapura

Address:- Islamic Centre of Singapura
273 Braddell Road
Singapore 579702

Tel:- 256 8188

Fax:- 253 7572

Client's Representatives:-

Name of Firm	Contact Person	Contact
Majlis Ugama Islam Singapura	Name: Mr Md Zahid Yacob Position: Project Manager	Tel: 256 8188 Fax: 253 7572 Pager: Handphone: Email:
	Name: Position:	Tel: Fax: 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 DP Architects Pte Ltd	Name: Mr Chin Kah Vuan Position: Architect	Tel: 338 3988 Fax: 337 9989 Pager: Handphone: Email:
Quantity Surveyor A Peter Tan & Associates	Name: Mr Peter Tan Position:	Tel: 339 7715 Fax: 339 0628 Pager: Handphone: Email:
Structural Engineer Oscar Faber Consultants Pte Ltd	Name: Mdm Low Kwai Chor Position: Engineer	Tel: 336 7277 Fax: 338 1076 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:
_____	Name: Position:	Tel: Fax: Pager: Handphone: Email:
_____	Name: Position:	Tel: Fax: Pager: Handphone: Email:

3.4 Other Consultants (Overseas) – Not Used

Function / Name of Firm	Contact Person	Contact
Architect	Name: Position:	Tel: Fax: Pager: Handphone: Email:
M&E Consultant	Name: Position:	Tel: Fax: Pager: Handphone: Email:
Quantity Surveyor	Name: Position:	Tel: Fax: Pager: Handphone: Email:
Structural Engineer	Name: Position:	Tel: Fax: 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:
_____	Name: Position:	Tel: Fax: Pager: Handphone: Email:

3.5 Contractors/Sub-Contractors

Function / Name of Firm	Contract *	Contact Person	Contact
Main Contractor Peh Lee Construction Pte Ltd	DC	Name: Mr Bill Lim Eng Chun Position: Director	Tel: 454 4483 Fax: 453 4227 Pager: 9700 5662 Handphone: Email:
Air Conditioning & Ventilation Installation Sub-Contractor Komco Engineering Pte Ltd	NSC	Name: Robert Choong Kok Min Position: Managing Director	Tel: 261 6498 Fax: 261 3417 Pager: 9301 9077 Handphone: Email:
Plumbing & Sanitary Installation Sub-Contractor Hydraulic Engineering Pte Ltd	NSC	Name: Benson Tan T S Position: Managing Director	Tel: 258 7210 Fax: 259 8366 Pager: 9524 4811 Handphone: Email:
Electrical Installation Sub-Contractor Komco Engineering Pte Ltd	NSC	Name: Robert Choong Kok Min Position: Managing Director	Tel: 261 6498 Fax: 261 3417 Pager: 9301 9077 Handphone: Email:
Lift & Escalator Installation Sub-Contractor LG Industrial System Co Ltd	NSC	Name: Mr Teo Seng Kok Position: Project Engineer	Tel: 323 7361 Fax: 323 7362 Pager: 9591 0929 Handphone: Email:
Fire Fighting & Alarm Installation Sub-Contractor		Name: Position:	Tel: Fax: Pager: 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:
_____		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 Lee Chi Ming	831 8281
(b) Sub-Station	Mr Francis Chang See Tong	831 8555 / 831 8564
(c) Installation		
(d) Meter Section		
(e) Road Lighting	Mr Bala S K	359 4912 / 253 6223
(f) Diversion		
Telecom:		
(a) Planning/Line Plant	Mr Choo Liang Seng	
(b) Installation		
(c) Diversion		
BCD:		
(a) Building Plan		
FSB:		
(a) Building Plan		
(b) M&E Section	Mr Chor Kok Wai	838 6421 / 838 6427
PUB (Water)		
(a) Water Conservation	Mr Ramahad Singh	731 3518 / 731 3023
(b) Plumbing Plan	Mr Ng Kor Peng	731 3598 / 731 3023
(c) Diversion		
PowerGas:		
(a) Planning/Submission	Mr Wan Beng Seng	831 8683 / 831 8699
(b) Installation/Inspection		
(c) Diversion		
ENV (Sewerage):		
(a) Building Plan		
(b) M&E Section	Mr Yip Kwok Hoong	731 9783 / 731 9725
(c) Diversion		
ENV (Pollution Control)		
(a) Planning/Submission		
(b) Inspection		

SECTION 4

PROGRAMME

4.1 Overall Programme

			1998												1999											
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																									

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		1/8/96	-	-	-	-	-	-	10/8/96
Power Supply Substation	PowerGrid Pte Ltd	1/8/96	1/8/96	20/8/96	26/9/96	9/10/96	24/10/96	-	-	12/12/96
Main Single Line Diagram	Power Supply Pte Ltd	19/12/96								21/8/97
Consumer Switchroom Layout	PowerGrid Pte Ltd	-	-	-	-	-	-	-	-	
Metering Layout	PowerGrid Pte Ltd									
Sanitary Installation	ENV (Sewerage)	10/11/96	13/11/96	16/1/97	21/2/97					4/6/97
Domestic Water Supply	PUB (Water)	10/10/96	18/10/96	4/12/96	27/12/96	-	-	-	-	7/3/97
Gas Supply Installation	PowerGas Pte Ltd	15/10/96	18/10/96	-	-	-	-	-	-	26/10/96
Air Conditioning & Ventilation Inst.	Fire Safety Bureau	5/11/96	25/11/96	-	-	-	-	-	-	30/11/97
Fire Fighting & Alarm Installation	Fire Safety Bureau	-	-	-	-	-	-	-	-	-
Telephone Installation	Telecom (Broadband)		8/1/97	-	-	-	-	-	-	28/2/97
	Telecom (TDCS)									
	Telecom (Domestic Operation)									
Fuel Storage	Fire Safety Bureau									
	Pollution Control Department									

SECTION 4

PROGRAMME

4.3 Authority Submission Status for M&E Services (Amendments) - 2nd Submission – Not Applicable

Service	Authority	Original Submission		Comments/Resubmission						Approval/ Clearance
		Scheduled	Actual	Comment	Resubmit	Comment	Resubmit	Comment	Resubmit	
Application for Electricity Supply	Power Supply Pte Ltd									
Power Supply Substation	PowerGrid Pte Ltd									
Main Single Line Diagram	Power Supply Pte Ltd									
Consumer Switchroom Layout	PowerGrid Pte Ltd									
Metering Layout	PowerGrid Pte Ltd									
Sanitary Installation	ENV (Sewerage)									
Domestic Water Supply	PUB (Water)									
Gas Supply Installation	PowerGas Pte Ltd									
Air Conditioning & Ventilation Inst.	Building Control Division									
	Fire Safety Bureau									
Fire Fighting & Alarm Installation	Fire Safety Bureau									
	Telecom (Broadband)									
Telephone Installation	Telecom (TDCS)									
	Telecom (Domestic Operation)									
Fuel Storage	Fire Safety Bureau									
	Pollution Control Department									

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	✓		

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	✓		

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 Architectural Floor Plans	Chim H L
Incoming Architectural Sketches/Details	Chim H L
Incoming Structural Drawings	Chim H L
M&E Drawings	
- Electrical Installation	Loh F Y
- Lift Installation	Loh F Y
- Air Conditioning & Ventilation Installation	Chim H L
- Fire Fighting & Alarm Installation	
- Plumbing & Sanitary Installation	Chim H L
- Swimming Pool & Filtration Installation	
Other Drawings	

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 Applicable

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

SECTION 7

WORK AUTHORISATION

Activity \ Authorised Signatories	PD	QP	PM	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			
Emergency Voice Communication System	~~BS~~	SS	~~NFPA~~		
Air Conditioning & Ventilation Installation	~~BS~~	~~AS~~	~~NFPA~~	SS	~~MS~~
Lift Installation	~~BS~~	SS			
Sprinkler System	~~BS~~	~~SS~~	~~NFPA~~	~~AS~~	~~LPC~~
Wet Riser System	~~BS~~	~~SS~~	~~NFPA~~	~~AS~~	~~MS~~
Manual 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

ASHRAE Handbooks

Institute of Plumbing's Plumbing Services Design Guide

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
A5	Library Control
A6	Archive Control
A7	Purchasing Control
A8	Training Control
A9	Feedback Reporting
A10	Computer Control
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	A
M&E Cost Estimate Report	A
Pre-Qualification of Tenderers	-
Tender Documents	-
Tender Report	-
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)*

SECTION 10

LIST OF SUB-JOB

10.1 List of Sub-Job Numbers – Not Applicable

Sub Job No	Description	Allocation Details