Alpha
Engineering Consultant

PROJECT QUALITY PLAN

PROPOSED LANDED HOUSING DEVELOPMENT COMPRISING 83 UNITS OF 3-STOREY TERRACE HOUSES & 7 UNITS OF SHOW-HOUSES ON LOTS 884, 2013, 2015, 2017, 2019, 2021 & 2051 MK19 AT SEMBAWANG RD/JALAN ULU SELETAR (PHASE 6B, 7B1, 8A, 8B & 9A)

For

M/S KALLANG DEVELOPMENT (PTE) LTD

Copy No.	1

Prepared By: Soh Kai Yea

Authorised By: Richard Teo

Date: 1 September 2003

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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	1285-PQP File	1 September 2003
2	Soh Kai Yea	1 September 2003

1.2 Revision Record

Revision	Date of Issue	Section Reference	Page(s)	Remarks
0	1 September 2003	1 to 10	32	

SECTION 2

PROJECT INFORMATION

2.1 Project Description

Type of Development	Residential

Statistics of Development	
Site Area, m²	24,000 (Phase 6B,7B1, 8A, 8B & 9A)
Nett Floor Area, m²	N.A
Gross Floor Area, m²	26,000 (excl carporch GFA)
Covered Carpark, m²	N.A
No. of Covered Carpark Lots	N.A
No. of Apartments/Houses	90 units for Phase 6B, 7B1, 8A, 8B & 9A
No. of Beds (for Hospitals)	N.A
No. of Guestroom (for Hotels)	N.A
No. of Blocks / No. of Storeys	9 blocks / 3 storeys
No. of Phases	Total 15 Phases, Phase 1 to 5 completed by others Previous Phase 6A, 7A & 7B (1272), Current Phase 6B, 7B1, 8A, 8B & 9A

2.2 Project Cost

M&E Services Cost Plan (S$ x 1K) – 7 Units Show Houses										
Services	EI	ACVI	LEI	FFAI	PSI	SPFI	Auto Gate			
Estimate	-	-	-	-	-	-	-			
Awarded*	355	122	-	-	145	24	-			

Total Project Construction Cost (S$ x1M)			
	Site Clearance	Piling Works	Main Contract
Estimate	-	-	-
Awarded*	N.A	-	3.28

* Denotes projected cost based on 7 Units

M&E Services Cost Plan (S$ x 1M) – 76 Units								
Services	EI	ACVI	LEI	FFAI	PSI	SPFI	Auto Gate	
Estimate	2.2	1.2	-	-	1.8	0.2	0.12	
Awarded								

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

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.		AUTO GATE CONTROL	✓						
FLUSHFLOOR TRUNKING									

(✓ *where applicable*)

2.3.3 Submission to Relevant Authorities by Others

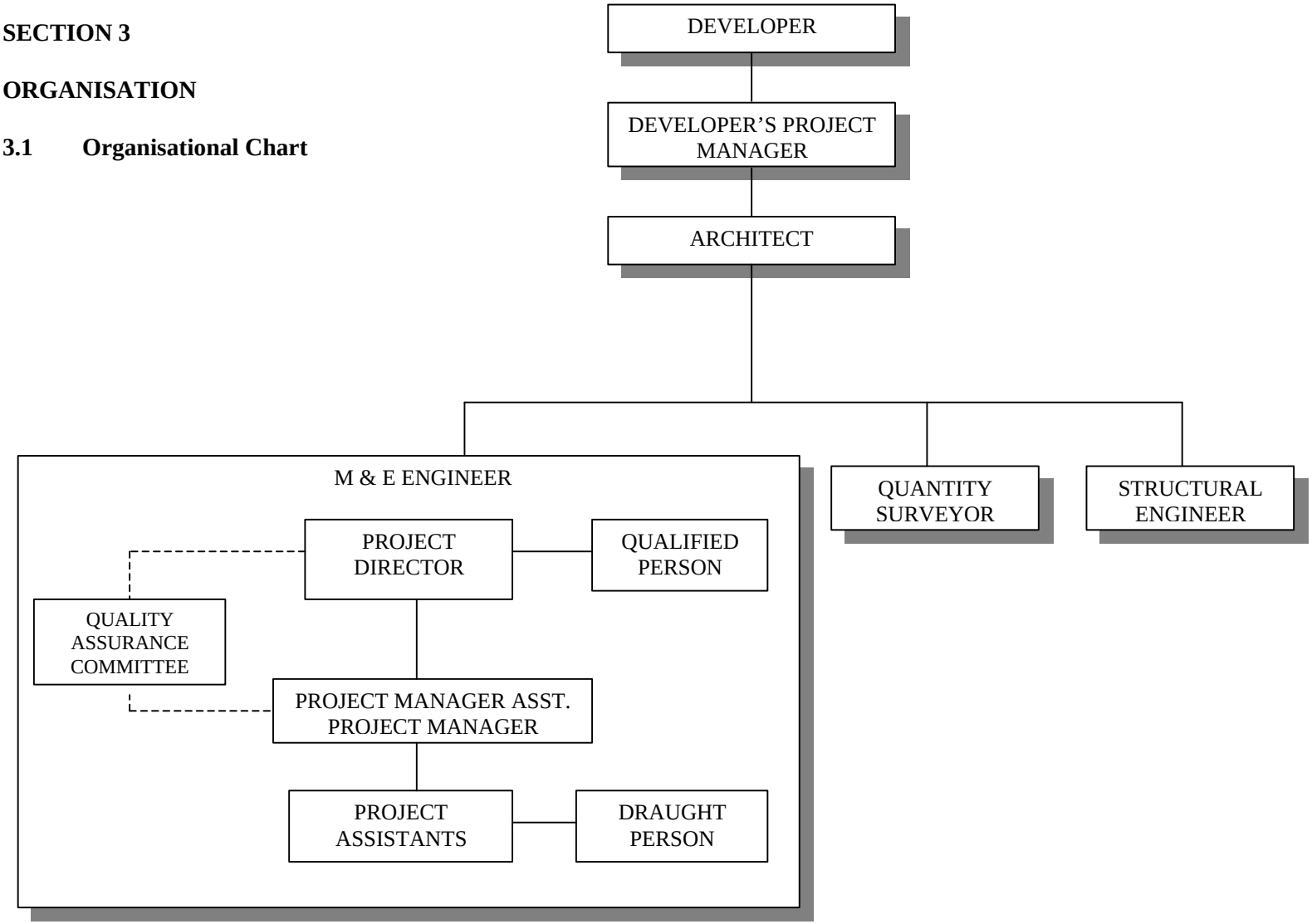
EJECTOR & DIVERTER		SUMP PUMP		FUEL OIL TANK		LIFT & ESCALATOR		PRESSURE VESSEL		HOISTS		FOAM	

(✓ *where applicable*)

SECTION 3

ORGANISATION

3.1 Organisational Chart



SECTION 3

ORGANISATION

3.2 AEC's Project Team Member

TITLE		NAME
Project Director		Richard Teo (RT)
Qualified Person	Mechanical	Andrew Loh (LCT)
	Electrical	Richard Teo (RT)
Project Manager		Soh Kai Yea (SKY)
Assistant Project Manager		Alan Lau (LTC)
Project Assistant (Mech)		Serene Teh (ST)
Project Assistant (Elect)		Jade Bai Yu Chen (JB)
Draughtsperson		Common Pool
Resident Engineer		Jason Chua (Civil & Architectural)
Assistant Resident Engineer (M&E)		-
Clerk-of-Work (M&E)		Mr Koh C H (seconded from Client) Mr Rashid (seconded from Client)

3.3 Client/Client's Representatives

Client: Kallang Development (Pte) Ltd

Address: 65 Chulia Street #45-01
OCBC Centre
Singapore 049513

Tel: 6538 2372

Fax: 6535 5217

Client's Representatives: Areca Property Management Pte Ltd acted as Project Manager for Kallang Development (Pte) Ltd

Name of Firm	Contact Person	Contact
Areca Property Management Pte Ltd	Name: Ms Quek Chay Hoon Position: Project Manager	Tel: 6538 2372 Fax: 6535 5217 Pager: - Handphone: 9853 5318 Email: CHQuek@singapore-e.com.sg
Areca Property Management Pte Ltd	Name: Ms Ann Awyong Position: Personal Assistant to PM	Tel: 6236 0201 Fax: 6535 55217 Pager: - Handphone: - Email: AnnAwyong@singapore-.com.sg
	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 ADDP Architects Pte Ltd	Name: Mr Tang Kok Thye Position: Architect	Tel: 6220 2153 Fax: 6325 4918 Pager: - Handphone: 9667 5360 Email: tangkokthye@addp-do.com.sg
	Name: Ms Janice Ha Position: Architect	Tel: 6220 2153 Fax: 6325 4918 Pager: - Handphone: - Email: Janice@addp-do.com.sg
Quantity Surveyor Northcroft Lim Consultants Pte Ltd	Name: Mr James Loo Position: Director	Tel: 6220 7188 Fax: 6222 0868 Pager: - Handphone: - Email: jloo@northcroft.com.sg
Structural Engineer DE Consultants (S) Pte Ltd	Name: Mr Tan Siang Jick Position: Director	Tel: 6227 3900 Fax: 6227 2909 Pager: - Handphone: - Email: deconsult@pacific.net.sg
Interior Designer Design Minako Pte Ltd	Name: Ms Minako Position: Director	Tel: 6468 7866 Fax: 6469 8532 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:

3.4 **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 (7 Units Show Houses)

Function / Name of Firm	Contract *	Contact Person	Contact
Main Contractor Great Peak Construction Pte Ltd		Name: Mr Gerard Soh Position: Project Manager	Tel: 6254 2823 Fax: 6254 2086 Pager: - Handphone: 9027 0549 Email: -
Air Conditioning & Ventilation Installation Sub-Contractor Leong Hum Engineering Pte Ltd	DSC	Name: Mr Prasad Position: Project Manager	Tel: 6296 8473 Fax: 6296 0213 Pager: - Handphone: - Email: lhepl@starhub.net.sg
Plumbing & Sanitary Installation Sub-Contractor OSK Engineering Pte Ltd	DSC	Name: Mr Tan YK Position: Project Manager	Tel: 6759 8888 Fax: 6758 1370 Pager: - Handphone: 9638 6173 Email: oskpl@singnet.com.sg
Electrical Installation Sub-Contractor GDS Engineering Pte Ltd	DSC	Name: Mr Eddie Chew Position: Project Manager	Tel: 6289 1624 / 6286 1327 Fax: 6287 8430 Pager: - Handphone: 9119 0097 Email: kimsan@kimgds.com.sg
Lift & Escalator Installation Sub-Contractor		Name: Position:	Tel: Fax: Pager: Handphone: Email:
Fire Fighting & Alarm Installation Sub-Contractor		Name: Position:	Tel: Fax: Pager: Handphone: Email:
Swimming Pool Filtration Plant Installation Sub-Contractor Clean & Clear Pool Service	DSC	Name: Mr Tee Beng Hock Position: Project Manager	Tel : 6289 3526 Fax: 6289 6271 Pager: - Handphone: 9663 6078 Email: ccpsvc@singnet.com.sg
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)*

3.5 Contractors/Sub-Contractors (83 Units)

Function / Name of Firm	Contract *	Contact Person	Contact
Main Contractor		Name Position:	Tel: Fax: Pager: Handphone: Email:
Air Conditioning & Ventilation Installation Sub-Contractor		Name Position:	Tel: Fax: Pager: Handphone: Email:
Plumbing & Sanitary Installation Sub-Contractor		Name Position:	Tel: Fax: Pager: Handphone: Email:
Electrical Installation Sub-Contractor		Name Position:	Tel: Fax: Pager: Handphone: Email:
Swimming Pool Filtration Plant Installation Sub-Contractor		Name Position:	Tel: Fax: Pager: Handphone: Email:
Autogate Control System		Name Position:	Tel: Fax: Pager: Handphone: Email:
Street Light Installation		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 Rick Lim	Tel: 6823 8008
(b) Sub-Station	Mr Francis Chang	Tel: 6823 8555
(c) Installation	-	
(d) Meter Section	Mr Kong K M	Tel: 6277 7056
(e) LV Reticulation	M/s Tony Yeo/Joseph Samy	Tel: 6823 8552 / 6240 9268
(f) Diversion	-	-
Telecom:	TFCC/2064	
(a) Planning/Line Plant	Ms Jane Peh (StarHub)	Tel: 6825 6366
(b) Installation	Mr Chin Y H (SingTel)	Tel: 6848 5615
(c) Diversion	-	-
BCD:		
(a) Building Plan	Mr Tan Cheong Ee	Tel: 6325 8638
FSSD:		
(a) Building Plan	-	-
(b) M&E Section	-	-
PUB (Water)		
(a) Water Conservation		
(b) Plumbing Plan	Mr Pratheipa Rajendram	Tel: 67313 553
(c) Diversion	-	-
PowerGas:		
(a) Planning/Submission	Mr Michael Wong	Tel: 6823 8681
(b) Installation/Inspection		
(c) Diversion	Mr Ng Koh Pek	Tel: 6823 8641
ENV (Sewerage):		
(a) Building Plan	M/s Tan K H/Lam TC	Tel: 6732 7733
(b) M&E Section	-	-
(c) Diversion	-	-
ENV (Pollution Control)	-	-
(a) Planning/Submission	-	-
(b) Inspection		
LTA	-	-
(a) Public Lighting	Ms Thong	Tel: 6332 6356
SCV	Mr Kelvin Choo	Tel: 6825 6377

SECTION 4

PROGRAMME

4.1 Overall Programme – (Refer to attached)

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																									

THE SPRINGSIDE (PHASE 8 - 9)

SCHEDULE FOR SHOWHOUSES

	ITEMS	TARGET DATE	ACTUAL DATE	ACTION
	AUTHORITY SUBMISSION			
1	WP Approval	15 October 02		ADDP
2	Application For House Number	18 October 02		ADDP
3	BP Approval	02 December 02		ADDP
4	Strata Sub-Division	01 November 02		TTK / ADDP
	SHOWHOUSE CONSTRUCTION TYPE TA/TC			
1	Confirmation Of Tiles	22 May 02		
2	Delivery Of Tiles			
3	Confirmation Of Natural Marble/Homogenous Tiles	15 May 02		
4	Delivery Of Natural Marble/Homogenous Tiles			
5	Confirmation Of Sanitarywares and Fittings	23 April 02		
6	Delivery Of Sanitarywares and Fittings			
7	Confirmation Of Alum Frame / Window	15 April 02		
8	Delivery Of Alum Frame / Window			
9	Confirmation Of Kitchen Cabinet / Vanity	01 September 02		
10	Installation Of Kitchen Cabinet / Vanity			
11	Confirmation Of Roof Tiles	02 May 02		
12	Delivery Of Roof Tiles			
13	Confirmation Of Door Frame / Leaf	01 November 02		
14	Delivery Of Door Frame / Leaf			
15	Confirmation Of M.S. Staircase Railing	01 November 02		
16	Confirmation Of Ironmongery	01 November 02		
17	Installation Of Parquet Floor	01 November 02		
18	Installation Of Hood & Hob	01 November 02		
19	Confirmation Of Wardrobe	01 November 02		
20	Installation Of Wardrobe			
21	Confirmation of A/C			
22	Confirmation of Pool System			
	Interior Designer - Soft Furnishings			
1	Quotation	02 September 02		
2	Award	06 September 02		
3	Commencement of Works	18 November 02		
4	Completion Date	10 January 03		
	Interior Designer - Showhouses			
1	Tender	20 July 02		
2	Award	29 August 02		
3	Commencement of Works	16 December 02		
4	Completion Date	10 January 03		
	Landscape Designer			
1	Tender	20 July 02		
2	Award	29 August 02		
3	Commencement of Works	16 December 02		
4	Completion Date	10 January 03		
	MODELS			
1	Commencement Of Models 1:50	21 June 02		AE MODELS
2	Completion Of Models	31 July 02		AE MODELS
3	Commencement Of Part Site Model 1:200	22 November 03		AE MODELS
4	Completion Of Part Site Model 1:200	06 January 03		AE MODELS
5	Completion Of Model's Stand	06 January 03		AE MODELS

TARGET TO LAUNCH BY JANUARY 2003

THE SPRINGSIDE (PHASE 8 - 9)

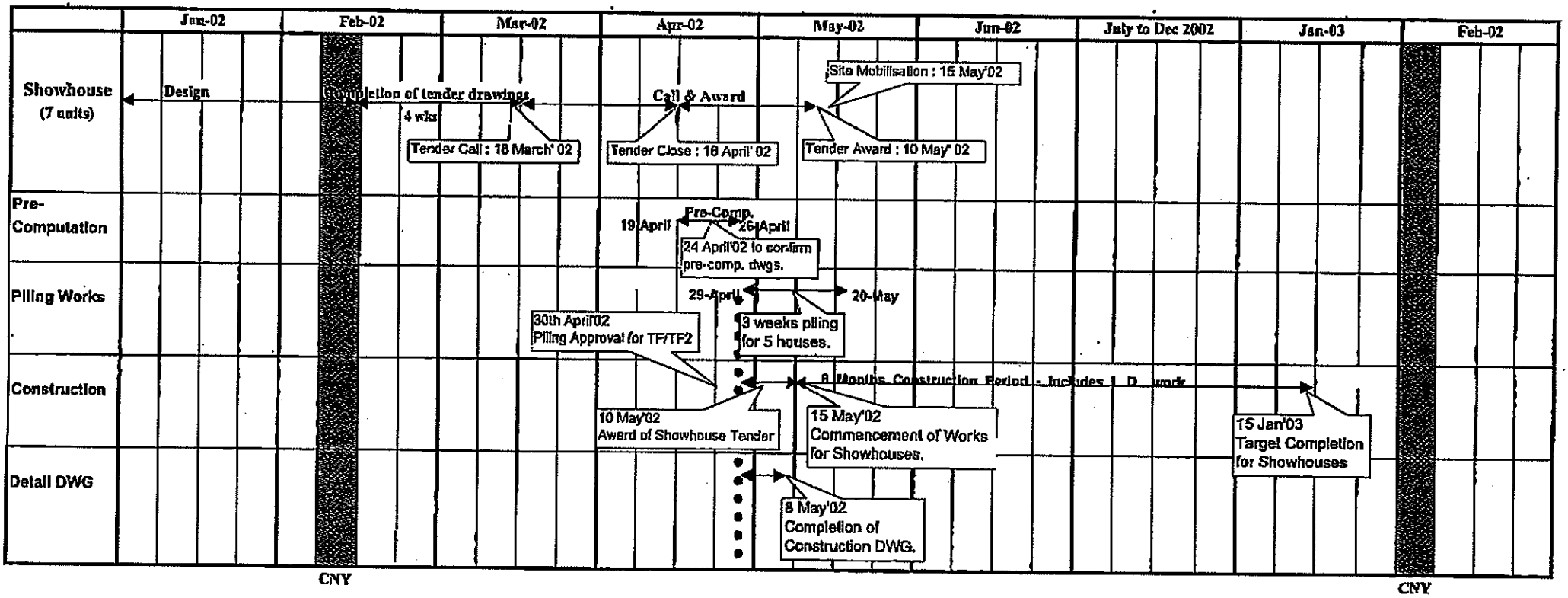
SCHEDULE FOR
SHOWHOUSE

	ITEMS	TARGET DATE	ACTUAL DATE	ACTION
	OTHERS			
1	Built-In Area for Sales & Agreement Plan (engage Surveyor)	01 November 02		
2	Specification & Write-Up (to give to Marketing)	15 October 02		
3	Photography for Brochures (to arrange with Marketing)			
4	Sales Brochures (Showhouse ready date)	16 December 02		
5	Developer's License (WP Date)	01 December 02		
6	Fitting Out by Advertising Agency (Showhouse ready date)	20 December 02		
7	Street Name Proposal (submission by Architect)			
8	RI Engagement (for safety)			
9	Construction Phasing (to tie-in with Sale)			
10	S&P Agreement (to check)			
11	Material Options (if any) and what to provide			
	APPROVAL			
1	Project Account			
2	Developers' Licence (case BP is obtained)			
3	Share Value (for Condominium)			
4	Name & Unit No. Street Naming Com			
	A&P PROGRAMME			
	Appointment of Ad Consultants			
1	Naming Exercise			
2	A&P Theme			
3	Brochures			
4	Flyers / Mailers			
5	Media, Ads			
6	TV Ads			
7	Radio Ads			
8	Video / CD-Rom			
9	Internet Marketing			
	SHOWHOUSE			
1	Construction of Sale Gallery and Sales Office (Marketing Input)			
	LEGAL DOCUMENTS			
1	Appointment of Lawyers			
2	Legal Documents			
3	Approval from COH			
	DECISION OF APPOINT MARKETING AGENTS (YES / NO) PRICING			
1	Preliminary Pricing and Market Survey			
2	Review of Pricing			
	OTHERS			
1	Database System			
2	Setting-Up at Show House			

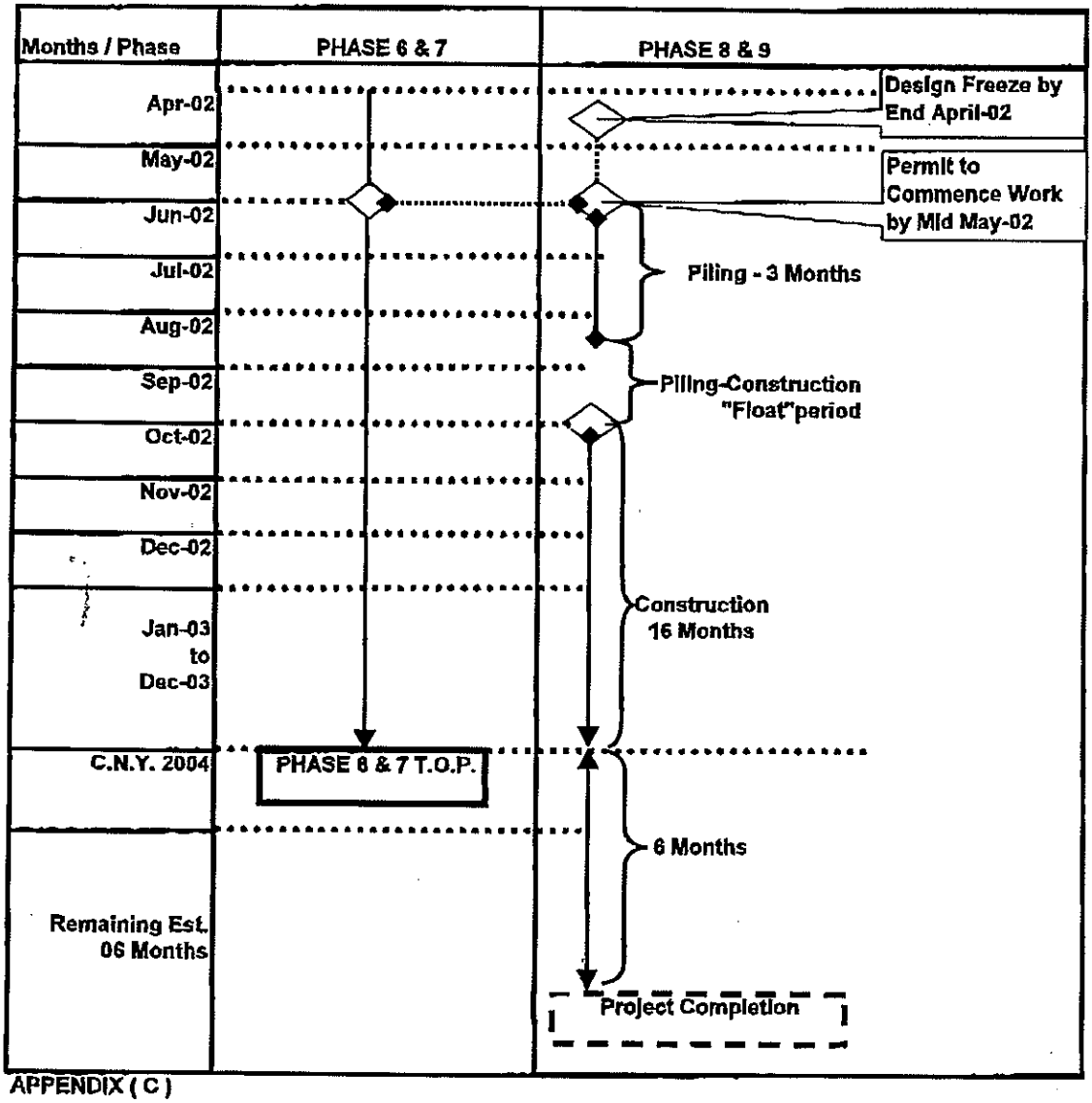
TARGET TO LAUNCH BY JANUARY 2003

005/005

SPRINGSIDE PHASE 8 & 9 PILING & SHOWHOUSE PROGRAMME



25/04 2002 THU 18:09 FAX 2218886 DO ARCHITECTS



APPENDIX (C)

Above : Construction Schedule for 44 units of Springside Phase 8 & 9

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 Ltd	-	9/04/03							7/5/03
Power Supply Substation	PowerGrid Ltd	-	-							-
Main Single Line Diagram	Power Supply Ltd	15/05/05								
Consumer Switchroom Layout	PowerGrid Ltd	-	-							
Metering Layout	PowerGrid Ltd	15/08/04								
Sanitary Installation	ENV (Sewerage)	15/08/04								
Gas Supply Installation	PowerGas Pte Ltd	-	-							-
Air Conditioning & Ventilation Inst.	Building Control Division	-	-							-
Fire Fighting & Alarm Installation	Fire Safety Bureau	-	-							-
Telephone Installation	TFCC	-	10/10/97							4/11/97
	Telecom (TDCS)	-	-							-
	Telecom (Domestic Operation)	-	-							-
Fuel Storage	Fire Safety Bureau	-	-							-
	Pollution Control Department	-	-							-
Street Lighting	LTA	15/08/04								
Broadband Coaxial Cable	SCV	-	16/08/01							8/11/01
LT Reticulation	PowerGrid Ltd	15/06/04								

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	✓	-BD	✓
-PC	✓	-CC	✓
-AE	✓	-CF	✓
-AM	✓	-GC	✓
-AA	✓	-PQP	✓

Project Files to be initiated by PM as and when required

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

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 (Latest Set)	SKY
Incoming Architectural Sketches/Details (Latest Set)	SKY
Incoming Structural Drawings (Latest Set)	SKY
M&E Drawings	
- Electrical Installation	SKY
- Lift & Escalator Installation	-
- Air Conditioning & Ventilation Installation	LTC
- Fire Fighting & Alarm Installation	-
- Plumbing & Sanitary Installation	LTC
- Swimming Pool Filtration & Plant Installation	LTC
- Autogate Control System	SKY
Other Drawings	

Note: All superseded hard copies of drawings (with soft copies in server) are discarded.

SECTION 6

INTERFACING

6.1 Method of Interface

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

Note: M&E Design report not required by Client

SECTION 6

INTERFACING

6.2 Internal Design Interface

Item No.	Description*	Required From	Required By	Date Required	Remarks
1.	Air Conditioning Equipment Electrical Loading	LTC	SKY	-	Completed

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

* Denotes Activities which could be authorized by Project Assistants (M&E)

SECTION 8

DESIGN INPUT & METHODOLOGY

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

ITEM	KEPT BY
Sales Brochure	SKY
N.A	N.A

8.2 List of Applicable Code of Practice and Regulations

Electrical Installation	~~BS~~	SS	IEE	~~NFPA~~	
Lightning Protection System	BS	SS			
Air Conditioning & Ventilation Installation	BS	~~AS~~	~~NFPA~~	SS	~~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

Trane Air Conditioning Manual

Carrier's System Piping Design Part 3

ASHRAE Handbooks

8.4 List of Applicable Quality System Procedures

Alpha Engineering Consultant's Quality Management System Procedures

Section	Title
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 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
Q1	Quality System Audit
Q2	Feedback Reporting
Q3	Clients Feedback
Q4	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 Engineering	Lift traffic calculation	
Econdial	2.5	Merlin Gerlin	Design for low voltage network	
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	N.A
M&E Cost Estimate Report	A
Pre-Qualification of Tenderers	A
Tender Documents	A
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)*

1. Consultants to forward Progress Payment Valuation to QS with 7 days from Contractor's claim submission.

SECTION 10

LIST OF SUB-JOB

10.1 List of Sub-Job Numbers

Sub Job No	Description	Allocation Details
1285-601	Abortive Works related to Show Units	